



RE: EXT :Re: ATK (3 of 3) renewal and SM01 draft TV permit

2 messages

Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
To: "Chertkovsky, Natalya V" <natalya.v.chertkovsky@wv.gov>

Tue, Oct 8, 2024 at 10:50 AM

I am good with Jill's comments. Go ahead and go to notice.

Sue Ellen

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
Sent: Tuesday, October 8, 2024 10:49 AM
To: Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
Subject: EXT :Re: ATK (3 of 3) renewal and SM01 draft TV permit

Good morning, Sue Ellen,

Just FYI - yesterday I received comments on the draft from Jill, and it was very helpful.

Please, send me your comments when you're ready (by tomorrow or sooner), and we'll finalize the draft.

The notice is planned for October 15, 2024.

As always, thank you for your cooperation!

Natalya

On Thu, Oct 3, 2024 at 9:00 AM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

Good morning, SueEllen and Jill,

Please, find attached draft TV permit and a fact sheet for your review.

Please, let me know by Wednesday, October 9, 2024 (or sooner, if you can) if you have any questions or comments.

We plan to publish a notice on Tuesday, October 15, 2024.

Thank you for your cooperation,

Sincerely,

Natalya Chertkovsky

(304) 926 0499 x 41250

On Mon, Sep 30, 2024 at 11:48 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

Hi SueEllen,

Just wanted to make sure you got my 2 emails on September 25, 2024.

Thank you in advance for your feedback,

Sincerely,

Natalya Chertkovsky

On Wed, Sep 25, 2024 at 2:54 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

and one more on 45CSR10 applicability to the same heaters:

3) My understanding this condition is applicable:

"§45-10-3. Sulfur Dioxide Weight Emission Standards for Fuel Burning Units.

3.1. Total Allowable Emission Rates for Similar Units in Priority I and Priority II Regions. -- No person shall cause, suffer, allow or permit the discharge of sulfur dioxide into the open air from all stacks located at one plant, measured in terms of pounds per hour, in excess of the amount determined as follows:

3.1.5. For Type 'b', and Type 'c' fuel burning units, the product of 3.1 and the total design heat inputs for such units discharging through those stacks in million BTU's per hour."

What are the Total Allowable Emission Rates for the heaters P4-5S and P4-6S?

Thank you!

Natalya

On Wed, Sep 25, 2024 at 2:31 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

Hello SueEllen!

Few more questions on applicability of 45CSR2 for the new heaters P4-5S and P4-6S

1) My understanding they are type C units, and therefore 45CSR2-4.1.3 applies - is it correct:

"4.1.3. For Type 'c' fuel burning units, in excess of the values listed in Table 45-2, provided however that no more than 300 pounds per hour of particulate matter shall be discharged into the open air from all such units."

4.1.3.a. For values between any two corresponding consecutive values listed in Table 45-2, linear interpolation is to be used for both columns.

2) What would be your determination of the **Total Allowable PM Emission Rate for Units Located at One Plant in lbs/hr** (according to Table 45-2)?

Thank you!

Natalya

On Mon, Sep 16, 2024 at 2:55 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

SueEllen,

Thank you very much for your quick response!

On Mon, Sep 16, 2024 at 1:24 PM Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com> wrote:

Natalya,

I have been good, but busy. Hopefully all is well with you as well.

I apologize that I missed these. Please see below.

Sue Ellen

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Sent: Monday, September 16, 2024 10:20 AM

To: Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>

Subject: EXT :ATK (3 of 3) renewal and SM01 draft TV permit

Hello SueEllen,

How have you been?

I'm working on your (3 of 3) permit renewal / SMO1 and have a quick question on PTEs.

In the renewal application I couldn't find PTEs for the following HAPs (but actuals are reported in SLEIS for 2023):

| Hazardous Air Pollutants | Potential Emissions | 2023 Actual Emissions |
|----------------------------------|---------------------|-----------------------|
| Bis(2-Ethylhexyl)Phthalate (HAP) | ? 0.2 | 0.02 |
| Naphthalene | ? 0.02 | 0.01 0.004 |
| Styrene | ? 0.37 | 0.02 |

Thank you for your help.

Sincerely,

Natalya Chertkovsky

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

To: "Foor, SueEllen [US] (DS)" <sueellen.foor@ngc.com>

Tue, Oct 8, 2024 at 10:52 AM

Sounds good - thank you for your quick feedback!

Natalya

[Quoted text hidden]



RE: EXT :Re: Draft comments for 3186E

2 messages

Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>
To: "Chertkovsky, Natalya V" <natalya.v.chertkovsky@wv.gov>

Tue, Oct 8, 2024 at 7:54 AM

Thanks Natalya,

I think P3-7S, P3-8S and P3-9S listed in the SMO2/MMO2 modification was an overlook. They do not belong in Part 1.

Appreciate everything.

Jill

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
Sent: Monday, October 7, 2024 4:47 PM
To: Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>
Subject: EXT :Re: Draft comments for 3186E

Jill,

I checked Part 1 of 3 permit - looks like heaters P3-7S, P3-8S and P3-9S were listed in the SMO2/MMO2 modification as well as P3-10S (does it stay in Part 1?). And I didn't find P3-11S, P3-12S and P3-13S heaters in Part 1 or 2 at all.

We'll remove the heaters P3-7S, P3-8S, P3-9S during Part 1 of 3 renewal.

Thank you,

Natalya

On Mon, Oct 7, 2024 at 3:55 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

Jill, please, disregard my email above - I was thinking about Plant 1 and 3 instead of Part 1 and 3.

Let me get back to you on this.

On Mon, Oct 7, 2024 at 3:52 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

Jill,

Thank you for your comment!

I think the heaters are already shown at Plant 3 in the Emission Units Table 1.1 - page 4, 3rd line from the bottom says "Plant 3", and the heaters are listed underneath of it on page 5. Please, let me know if it is what you were looking for.

Thanks again,

Natalya

On Mon, Oct 7, 2024 at 11:50 AM Clayton, Jill W [US] (DS) <jill.clayton@ngc.com> wrote:

Natalya,

Everything looks good in the draft but will you please remove the process heaters below from Part 1 as we moved them to Part 3 a few years ago to keep all of the combustion units in the same part.

| | | | | | |
|--------|--------|----------------------------------|------|--------------|------|
| P3-7S | P3-7E | Process Heater 11S for B3040 | 2018 | 0.5 MMBtu/hr | None |
| P3-8S | P3-8E | Process Heater 12S for B3040 | 2018 | 0.5 MMBtu/hr | None |
| P3-9S | P3-9E | Process Heater 13S for B3040 | 2018 | 0.5 MMBtu/hr | None |
| P3-11S | P3-10E | Process Heater Unit #7 for 3030A | 2019 | 0.5 MMBtu/hr | None |
| P3-12S | P3-11E | Process Heater Unit #8 for 3030A | 2019 | 0.5 MMBtu/hr | None |
| P3-13S | P3-12E | Process Heater Unit #9 for 3030A | 2019 | 0.5 MMBtu/hr | None |

Let me know if you have any questions.

Thank you!!!

Jill Clayton | Environmental Engineer

Northrop Grumman Corporation | Defense Systems Sector

Jill.Clayton@ngc.com | O: 304-726-7984 | C: 240-727-1790



Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
To: "Clayton, Jill W [US] (DS)" <jill.clayton@ngc.com>

Tue, Oct 8, 2024 at 10:40 AM

Thank you, Jill!
[Quoted text hidden]



RE: EXT :Re: Re: Re: Re: ATK (3 of 3) renewal and SM01 draft TV permit

2 messages

Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>

Thu, Oct 3, 2024 at 12:34 PM

To: "Chertkovsky, Natalya V" <natalya.v.chertkovsky@wv.gov>, "McCumbers, Carrie" <carrie.mccumbers@wv.gov>

I will have my comments, if any, back to you by tomorrow COB.

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Sent: Thursday, October 3, 2024 11:54 AM

To: Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>; McCumbers, Carrie <carrie.mccumbers@wv.gov>

Subject: EXT :Re: Re: Re: Re: ATK (3 of 3) renewal and SM01 draft TV permit

Thank you, Jill!

Let me know if you want to have a google meet with me and Carrie any time today.

I look forward to hearing from you with all your questions or comments on the draft by October 9, 2024.

We need to finalize the draft by the end of next week.

Thanks again for your cooperation,

Natalya

On Thu, Oct 3, 2024 at 11:33 AM Clayton, Jill W [US] (DS) <jill.clayton@ngc.com> wrote:

Thanks Natalya. I will get back with you soon.

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Sent: Thursday, October 3, 2024 11:01 AM

To: Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>; McCumbers, Carrie <carrie.mccumbers@wv.gov>; Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>

Subject: EXT :Re: Re: Re: Re: ATK (3 of 3) renewal and SM01 draft TV permit

Jill,

I agree. For the new heaters it's addressed in conditions 4.1.11.c and 4.1.13 (last sentence) of the draft permit I sent you earlier today for your review. Please, take a look and let me know if you agree with it, or if you want to discuss it further.

In addition, in condition 7.1.1.d of the R13-3186E the 45CSR10-3.1 is listed as not applicable to the heaters because of "heat input limit", but Ed admitted later he shouldn't have put it in the permit since the heaters over 10 MMBtu/hr are not exempt form Section 3 SO2 limits.

Thank you,

Natalya

On Thu, Oct 3, 2024 at 10:21 AM Clayton, Jill W [US] (DS) <jill.clayton@ngc.com> wrote:

Natalya,

You highlighted our Plant 1 boilers that are 12MMBtu/hr combusting NG as primary and distillate fuel as back up.

The new process heaters P4-5S and P4-6S combust NG only. So Limitations and Standard Section should read as 4.1.1(e) as below.

Jill

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Sent: Thursday, October 3, 2024 10:07 AM

To: Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>; McCumbers, Carrie <carrie.mccumbers@wv.gov>

Subject: EXT :Re: Re: ATK (3 of 3) renewal and SM01 draft TV permit

3.2.3. For Type 'b' and Type 'c' fuel burning units, the product of 1.6 and the total design heat inputs for such units discharging through those stacks in million BTU's per hour, provided however, that no more than 5,500 pounds per hour of sulfur dioxide shall be discharged into the open air from all such stacks.

3.3. **Maximum Allowable Emission Rates for Similar Units in All Priority III Regions Except Region IV** -- No person shall cause, suffer, allow or permit the discharge of sulfur dioxide into the open air from all stacks located at one plant, measured in terms of pounds per hour, in excess of the amount determined as follows:

3.3.1. For fuel burning units of the Harrison Power Station of Monongahela Power Company, located in Air Quality Control Region VI, the product of 5.12 and the total actual operating heat inputs for such units discharging from those stacks in million BTU's per hour.

3.3.2. Reserved.

3.3.3. Reserved.

3.3.4. For fuel burning units of the Fort Martin Power Station of Monongahela Power Company, located in Air Quality Control Region VI, the product of 3.1 and the total actual operating heat inputs for such units discharging from those stacks in million BTU's per hour.

3.3.5. Reserved.

3.3.6. For Type 'b' and Type 'c' fuel burning units, the product of 3.2 and the total design heat inputs for such units discharging through those stacks in million BTU's per hour.

4

4.1. Limitations and Standards

4.1.1. The following conditions and requirements are specific to boilers identify as L-23S through L-32S:

- a. Each boiler shall be fired with "pipeline quality natural gas" at all times except when conducting periodic testing, and readiness checks of the boilers' ability to fire on liquid fuel (distillate oil); during periods of natural gas curtailment; or gas supply emergencies. The duration of such periodic testing and/or readiness check shall not exceed more than 48 hours per year for each boiler.
- b. The total release of CO through emission points E01 and E02 shall not exceed 9.4 pounds per hour on a combined total basis.
- c. The total release of NO_x through emission points E01 and E02 shall not exceed 4.6 pounds per hour on a combined total basis.
- d. The maximum sulfur content of the distillate oil to be fired in the boilers shall not exceed 0.0015 percent weight or 15 ppm by weight. The use of ultra-low sulfur diesel as the distillate oil in these boilers satisfies this limit.
[45 CSR §10-3.3.f, and 40 CFR §60.42c(d)]
- e. At times when the boiler(s) is fired entirely with natural gas, this operating condition satisfies compliance with the limitations of 45CSR§2-3.1., 45CSR§2-4.1.b., and 45CSR§10-3.3.f.
[45CSR§2A-3.1.a., 45CSR§10-10.3., and 45CSR§10A-3.1.b.]
- f. At all times when each affected emission unit is operated on distillate oil or any combination of distillate oil and natural gas, the unit shall not exhibit visible emissions greater than 10% opacity on a six-minute block average. Compliance shall be verified in accordance with Condition 4.2.2. of this permit.

Jill,

Please, see attached excerpt from Rule 10 and excerpt from Permit R13-3186E.

The section 3.3.6 of the rule applies to fuel burning units in Priority III Regions.

Also, in the permit R13-3186E (condition 4.1.1.d and e) section 3.3 listed as applicable for Boilers L-23S through L-32S.

Please, let me know if you have any questions.

On Thu, Oct 3, 2024 at 9:29 AM Andrews, Edward S <edward.s.andrews@wv.gov> wrote:

The ABL is in the Frankfort Tax District of Mineral County, which is a Priority 3 Area per Table 45-10A.

<https://mapwv.gov/parcel/?pid=29-04-0012-0002-0000>

<https://mapwv.gov/parcel/?pid=29-04-0012-0001-0000>

Because the rule does not address "Type B" units in Priority 3 Areas, there are no SO2 standards for such units.

These process heaters are "Type B" units located in Priority 3 Area under Rule 10 and therefore there is no SO2 allowable for these units.

These heaters are restricted to burn only natural gas per 7.1.1.c. Also, Rule 10 excludes natural gas fired units from Section 8 "Testing, Monitoring, Recordkeeping and Reporting".

Ed

On Thu, Oct 3, 2024 at 8:52 AM Clayton, Jill W [US] (DS) <jill.clayton@ngc.com> wrote:

Natalya,

After reading 45CSR 2 and the published definitions, these process heaters should be considered type 'b' as they are gas-fired.

2.10.b. Type 'b' means any fuel burning unit not classified as a Type 'a' or Type 'c' unit such as industrial pulverized-fuel-fired furnaces, cyclone furnaces, gas-fired and liquid-fuel-fired units.

I will confirm with Ed Andrews directly.

Thanks,

Jill

From: Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
Sent: Wednesday, September 25, 2024 3:08 PM
To: Clayton, Jill W [US] (DS) <jill.clayton@ngc.com>
Subject: FW: EXT :Re: ATK (3 of 3) renewal and SM01 draft TV permit

From: Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
Sent: Wednesday, September 25, 2024 2:31 PM

To: Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
Subject: EXT :Re: ATK (3 of 3) renewal and SM01 draft TV permit

Hello SueEllen!

Few more questions on applicability of 45CSR2 for the new heaters P4-5S and P4-6S

1) My understanding they are type C units, and therefore 45CSR2-4.1.3 applies - is it correct:

"4.1.3. For Type 'c' fuel burning units, in excess of the values listed in Table 45-2, provided however that no more than 300 pounds per hour of particulate matter shall be discharged into the open air from all such units."

4.1.3.a. For values between any two corresponding consecutive values listed in Table 45-2, linear interpolation is to be used for both columns.

2) What would be your determination of the **Total Allowable PM Emission Rate for Units Located at One Plant in lbs/hr** (according to Table 45-2)?

Thank you!

Natalya

On Mon, Sep 16, 2024 at 2:55 PM Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov> wrote:

SueEllen,

Thank you very much for your quick response!

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Natalya,

I have been good, but busy. Hopefully all is well with you as well.

I apologize that I missed these. Please see below.

Sue Ellen

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Hello SueEllen,

How have you been?

I'm working on your (3 of 3) permit renewal / SM01 and have a quick question on PTEs.

In the renewal application I couldn't find PTEs for the following HAPs (but actuals are reported in SLEIS for 2023):

| Hazardous Air Pollutants | Potential Emissions | 2023 Actual Emissions |
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| Bis(2-Ethylhexyl)Phthalate (HAP) | ?0.2 | 0.02 |
| Naphthalene | ? 0.02 | 0.01 0.004 |
| Styrene | ? 0.37 | 0.02 |

Thank you for your help.

Sincerely,

Natalya Chertkovsky

--

Edward Andrews, P.E.

Engineer

WVDEP/Division of Air Quality

304-926-0499 Ext 41244

[601 57th Street, SE](#)

[Charleston, WV 25304](#)

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
To: "Clayton, Jill W [US] (DS)" <jill.clayton@ngc.com>

Thu, Oct 3, 2024 at 12:45 PM

Jill, it would be great, thank you!

[Quoted text hidden]



RE: EXT :ATK (3 of 3) renewal and SM01 draft TV permit

7 messages

Foor, SueEllen [US] (DS) <sueellen.foor@ngc.com>
To: "Chertkovsky, Natalya V" <natalya.v.chertkovsky@wv.gov>

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To: "Foor, SueEllen [US] (DS)" <sueellen.foor@ngc.com>

and one more on 45CSR10 applicability to the same heaters:

3) My understanding this condition is applicable:

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3.1.5. For Type 'b', and Type 'c' fuel burning units, the product of 3.1 and the total design heat inputs for such units discharging through those stacks in million BTU's per hour."

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Thank you!

Natalya

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Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Mon, Sep 30, 2024 at 11:48 PM

To: "Foor, SueEllen [US] (DS)" <sueellen.foor@ngc.com>

Hi SueEllen,

Just wanted to make sure you got my 2 emails on September 25, 2024.

Thank you in advance for your feedback,

Sincerely,

Natalya Chertkovsky

[Quoted text hidden]

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Thu, Oct 3, 2024 at 9:00 AM

To: "Foor, SueEllen [US] (DS)" <sueellen.foor@ngc.com>, "Clayton, Jill W [US] (DS)" <Jill.Clayton@ngc.com>

Good morning, SueEllen and Jill,

Please, find attached draft TV permit and a fact sheet for your review.

Please, let me know by Wednesday, October 9, 2024 (or sooner, if you can) if you have any questions or comments.

We plan to publish a notice on Tuesday, October 15, 2024.

Thank you for your cooperation,

Sincerely,


Natalya Chertkovsky

(304) 926 0499 x 41250

[Quoted text hidden]

2 attachments

 **DPFactSheetRenewal2024(3 of 3).docx**
104K

 **DPPermitRenewal2024 (3 of 3).docx**
375K

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Tue, Oct 8, 2024 at 10:49 AM

To: "Foor, SueEllen [US] (DS)" <sueellen.foor@ngc.com>

Good morning, Sue Ellen,
Just FYI - yesterday I received comments on the draft from Jill, and it was very helpful.
Please, send me your comments when you're ready (by tomorrow or sooner), and we'll finalize the draft.
The notice is planned for October 15, 2024.
As always, thank you for your cooperation!
Natalya

[Quoted text hidden]

Fact Sheet



For Draft/Proposed Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-05700011-2024 (3 of 3)**
Application Received: **May 8, 2024 (renewal) / February 28, 2024 (SM01)**
Plant Identification Number: **057-00011**
Permittee: **Alliant Techsystems Operations LLC**
Facility Name: **Allegany Ballistics Laboratory**
Mailing Address: **210 State Route 956, Rocket Center, WV 26726-3548**

Physical Location: Rocket Center, Mineral County, West Virginia
UTM Coordinates: 686.47 km Easting • 4381.25 km Northing • Zone 17
Directions: Left on plant access road from State Route 956 at the North Branch of
the Potomac River

Facility Description

SIC Codes: Primary - 3764, Secondary – 3089

Fabrication of both steel and composite structure rocket motor and warhead cases, production of propellants and explosives which are loaded into above cases and all associated case preparation and testing for motors.

The facility is located at four plants - Plant 1, Plant 2, Plant 3 and Plant IV. For Title V Permit purposes, the facility operations were divided into the following Parts:

Part 1 - Motor Manufacturing,

Part 2 - Composites Manufacturing and Metal Fabrication,

Part 3 - Miscellaneous Units.

This Permit covers Part 3 of the facility - Miscellaneous Units.

Significant Modification SM01 is included with this renewal permitting action and is based on recently issued underlying permit R13-3186E. It covers the installation of two process heaters (Emission Unit IDs P4-5S and P4-6S), and one emergency engine (Emission Unit ID EG-19) at Plant IV.

Emissions Summary

| Plantwide Emissions Summary [Tons per Year] | | |
|--|----------------------------|------------------------------|
| Regulated Pollutants | Potential Emissions | 2023 Actual Emissions |
| Carbon Monoxide (CO) | 410.62 | 20.63 |
| Nitrogen Oxides (NO _x) | 331.94 | 23.76 |
| Particulate Matter (PM _{2.5}) | 7.1 | 4.02 |
| Particulate Matter (PM ₁₀) | 18.07 | 7.89 |
| Total Particulate Matter (TSP) | 89.11 | 7.93 |
| Sulfur Dioxide (SO ₂) | 283.18 | 0.23 |
| Volatile Organic Compounds (VOC) | 223.58 | 29.58 |

PM₁₀ is a component of TSP.

| Hazardous Air Pollutants | Potential Emissions | 2023 Actual Emissions |
|--------------------------------------|----------------------------|------------------------------|
| Acetonitrile | 0.27 | 0.01 |
| Antimony compounds* | 0.01 | < 0.01 |
| Benzene | 0.37 | 0.15 |
| Cadmium compounds* | 0.01 | 0 |
| Bis (2-Ethylhexyl) Phthalate (HAP) | 0.2 | 0.02 |
| Chloroform | 0.10 | 0.05 |
| Chromium* | 0.01 | < 0.01 |
| Chromium compounds (not identified)* | 0.14 | 0 |
| Cobalt* | 0.01 | 0 |
| Diocetyl phthalate | 0.85 | 0 |
| Ethyl benzene | 0.62 | 0.26 |
| Formaldehyde | 0.03 | < 0.01 |
| Glycol ether compounds | 0.06 | < 0.01 |
| Hexane | 0.96 | 0.08 |
| Hydrochloric Acid | 6.44 | 3.65 |

| Hazardous Air Pollutants | Potential Emissions | 2023 Actual Emissions |
|-------------------------------|---------------------|-----------------------|
| Lead* | 1.98 | 0.27 |
| Lead compounds* | 0.01 | 0 |
| Mercury* | 0.01 | < 0.01 |
| Methanol | 1.81 | 0.15 |
| Methyl isobutyl ketone (MIBK) | 3.73 | 0.48 |
| Methylene chloride | 2.0 | 1.09 |
| Naphthalene | 0.02 | < 0.01 |
| Nickel* | 0.01 | < 0.01 |
| Phenol | 0.16 | < 0.01 |
| Strontium chromate* | 0.01 | 0 |
| Styrene | 0.37 | 0.02 |
| Toluene | 30.89 | 1.56 |
| Trichloroethylene (TCE) | 0.13 | 0 |
| Xylenes (Mixed Isomers) | 5.29 | 1.28 |
| Zinc chromate* | 0.01 | 0 |
| Other (not specified) | 0.12 | 0 |
| Total HAPs | 56.63 | < 9.15 |

* Component of TSP emissions in Plantwide Emission Summary table above

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 223.58 TPY of VOC, 331.94 TPY of NO_x, 283.18 TPY of SO₂, 410.62 TPY of CO, 30.89 TPY of Toluene and 56.04 TPY of aggregate HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, Alliant Techsystems Operations LLC is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

| | | |
|--------------------|--------|--|
| Federal and State: | 45CSR2 | Particulate/Indirect Heat Exchangers |
| | 45CSR6 | Open burning prohibited. |
| | 45CSR7 | Fugitive dust, particulate matter, and visible |

| | | |
|-------------|-----------------------------|--|
| | 45CSR10 | emissions |
| | 45CSR13 | Sulfur oxides emissions |
| | 45CSR16 | Preconstruction permits for sources |
| | WV Code § 22-5-4 (a) (15) | New Stationary Sources 40C.F.R.60 (NSPS) |
| | 45CSR30 | The Secretary can request any pertinent information such as annual emission inventory reporting. |
| | 45CSR34 | Operating permit requirement. |
| | 40 C.F.R. 60, Subpart Dc | Emission Standards For Hazardous Air Pollutants |
| | 40 C.F.R. 60, Subpart IIII | Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units |
| | 40 C.F.R. 63, Subpart ZZZZ | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines |
| | 40 C.F.R. 63, Subpart DDDDD | National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines |
| State Only: | 45CSR4 | No objectionable odors. |
| | 45CSR27 | Toxic Air Pollutants |

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

| Permit or Consent Order Number | Date of Issuance | Permit Determinations or Amendments That Affect the Permit (if any) |
|--------------------------------|------------------|---|
| R13-1771B | 04/27/2004 | |
| R13-2301A | 07/13/2001 | |
| R13-3186E | 06/04/2024 | |
| G60-C020 | 09/30/2010 | |
| G60-C066 | 11/20/2014 | |

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

The following changes to the permit covered by Significant Modification SM01 (based on permit R13-3186E) were included with this renewal permitting action:

1. Emission Units Table 1.1 – added two new process heaters 10.2 MMBtu/hr each (Emission Unit IDs P4-5S and P4-6S), and one 48.8 Bhp emergency engine (Emission Unit ID EG-19) to Plant IV.
2. Boilerplate - revised in conditions 3.1.6, 3.3.1 and 3.3.1.b.
3. Section 4.0 – the new process heaters P4-5S and P4-6S are located at a major source of HAPs, therefore they are subject to 40 C.F.R. 63 Subpart DDDDD. Since they were constructed after June 4, 2010, per 40 C.F.R. §63.7490(b) they are considered new, and need to comply with the requirements of this Subpart upon startup (40 C.F.R. §63.7495(a)). Since these heaters are in the “designed to burn gas 1 fuels subcategory” (natural gas), per 40 C.F.R. §63.7500(e) they “are not subject to the emission limits in Tables 1 and 2 or Tables 11 through 15 to this subpart, or the operating limits in Table 4 to this subpart”. They are only subject to work practice requirements in Table 3 (line 3) including tune-ups – units greater than 10 MMBtu/hr without oxygen trim systems are required to be tuned up once every year (condition 4.1.11.e). Applicable requirements for the heaters were already included in the permit under existing conditions 4.1.9, 4.4.3, 4.5.2 and 4.5.3. Also, new requirements 4.1.11, 4.1.12 (PM Weight Emission Standards 45CSR§2-4.1), 4.1.13 (Sulfur Dioxide Weight Emission Standards for Fuel Burning Units per 45CSR§10-3.3.6), 4.2.2, 4.4.5 (recordkeeping per 45CSR§2-8.3.3 and 45CSR§2A-7.1.a.1), and 4.4.6 (recordkeeping per 40 C.F.R. 60, Subpart Dc §60.48c(g)(2)) were added.

The following sentence was left out of the Title V permit condition 4.1.11.d (underlying condition 7.1.1.d): “These heaters (*P4-5S and P4-6S*) are excluded from the standards of 45CSR§2-4.1 and 45CSR§10-3.1.e due to this heat input limit” because it is a mistake. Per 45CSR§2-11.1, only fuel burning units with a heat input under 10 MMBtu/hr will be exempt from sections 4, 5, 6, 8 and 9, and, per 45CSR§10-10.1, only fuel burning units having a design heat input under 10 million MMBtu/hr will be exempt from section 3 and sections 6 through 8. Therefore, since each of these heaters’ design heat input is above 10 MMBtu/hr, standards of 45CSR§2-4.1 and 45CSR§10-3.3.6 are applicable. However, because the heaters are fired with pipeline quality natural gas, they are exempt from the testing and monitoring requirements of 45CSR§§2-8.1.1 and 8.2 and the testing, monitoring, recordkeeping and reporting requirements of 45CSR§10-8. Streamlining language was added under conditions 4.1.12 and 4.1.13 of the Title V permit.

- 45CSR§2-4.1 (condition 4.1.12) –Total Allowable PM Emission Rate for heaters P4-5S and P4-6S – the heaters are considered “type b” units, therefore, total allowable PM emission rate is 1.836 lbs/hr ($0.09 \times 2 \times 10.2$ MMBtu/hr). There are no PM emission limits for the heaters in the permit, but total PTE for PM for both heaters is 0.36 lbs/hr, and it is well below the total allowable PM emission rate. Therefore, the heaters are in compliance with the 45CSR§2-4.1 standard.
 - 45CSR§10-3.3.6 (condition 4.1.13) – SO₂ Weight Emission Standards for heaters P4-5S and P4-6S - the heaters are considered “type b or c” units, therefore, for 2 x 10.2 MMBtu/hr heaters total allowable SO₂ weight emission rate is $10.2 \times 2 \times 3.2 = 65.28$ lbs/hr. There are no SO₂ emission limits for the heaters in the permit, but total PTE for SO₂ for both heaters is 0.01 lbs/hr, and it is well below the total allowable SO₂ weight emission rate. Therefore, the heaters are in compliance with the 45CSR§10-3.3.6 standard.
4. Section 7.0 – the new emergency CI engine EG-19 is a certified engine, and it is subject to requirements of 40 C.F.R. 60 Subpart IIII. Per 40 C.F.R. 63 Subpart ZZZZ §§63.6590(c)(6) and (c)(7), “a new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions” and “a new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions” “must meet the requirements of this part by meeting the requirements of 40 C.F.R. part 60 subpart IIII, for compression ignition engines”, therefore, the emergency engine is not subject to any other requirements of Subpart ZZZZ. Applicable

requirements for the emergency engine were already included in the permit under existing conditions 7.1.9 through 7.1.11, 7.2.2, 7.3.1, 7.4.2, 7.4.6 and 7.4.7.

In addition, conditions 7.1.5, 7.2.1, and 7.4.1 were revised due to changes to 40 C.F.R. 63 Subpart ZZZZ.

5. Section 7.0 of the underlying permit R13-3186E was re-named to “Section 8.0”, therefore, all the underlying conditions from former Section 7.0 were re-numbered accordingly throughout the Title V permit.
6. Attachment 1 (Appendix A of the permit R13-3186D) – was not included in the underlying permit R13-3186E, but condition 8.3.1 (Title V condition 4.4.1) still references an example form to be used for visible emission checks, therefore Attachment 1 was left in the Title V permit, but reference to Appendix A of the permit R13-3186D was deleted.

Non-Applicability Determinations

1. The following requirements have been determined not to be applicable to the subject facility due to the following:
 - (a) 45CSR21– Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds. The facility is not located in a county that is currently subject to 45CSR21, and therefore is currently exempt from this regulation.
 - (b) 40 C.F.R. 63, Subpart PPP – National Emission Standards for Polyether Polyol Production. The facility manufactures Terathane Polyethylene Glycol Block Copolymer (TPEG), which is a Polyether Polyol. However, the operation is exempted from this MACT because there are no HAPs used or generated during the manufacturing operation.
 - (c) 40 C.F.R. 63, Subpart GGGGG – National Emission Standards for Site Remediation. The facility currently has two sites under remediation for groundwater contamination. These sites are both CERCLA (“Superfund”) sites and are thus exempt from the MACT requirements. The facility also has a third site, commonly referred to as Plant 2, which is currently being investigated under the RCRA corrective action program, that could potentially require some form of active groundwater remediation or treatment within the next five to ten years. This site would also be exempted since it is being managed under a RCRA corrective action.
 - (d) 40 C.F.R. 63, Subpart WWWW – National Emission Standards for Reinforced Plastic Composites Manufacturing. The facility manufactures composite based rocket motor chambers and aircraft components. However, the facility is exempt from this MACT because none of the resin or fiber systems used, contain HAPs.
2. CAM Rule – the Alliant Techsystems Operations LLC, Allegany Ballistics Laboratory Motor Manufacturing Facility (Part 3 of 3) does not own or operate a subject pollutant specific emissions unit as defined in 40 C.F.R. §64.1, because all plant control devices either have potential pre-control device annual emissions of applicable regulated air pollutants that are less than major source threshold, and thus are exempt per 40 C.F.R. §64.2(a)(3), or are already subject to a Title V permit that specifies a continuous compliance determination method as defined in 40 C.F.R. §64.1, and thus are exempt from CAM requirements per 40 C.F.R. §64.2(b)(1)(vi), or are not subject to a regulated air pollutant emission limitation or standard, and thus are not subject to CAM requirements per 40 C.F.R. §64.2(a)(1). There were no new PSEU units added during Significant Modification SM01 and the renewal, since new heaters and new emergency engine don’t use control devices (not subject per 40 C.F.R. §64.2(a)(2)).

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: (Date of Notice Publication)

Ending Date: (Publication Date PLUS 30 Days)

Point of Contact

All written comments should be addressed to the following individual and office:

Natalya V. Chertkovsky-Veselova
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
304/926-0499 ext. 41250
natalya.v.chertkovsky@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

(Choose) Not applicable.

OR

Describe response to comments that are received and/or document any changes to the final permit from the draft/proposed permit.

West Virginia Department of Environmental Protection

Harold D. Ward
Cabinet Secretary

Permit to Operate



Pursuant to
Title V
of the Clean Air Act

Issued to:
Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory
R30-05700011-2024 (3 of 3)

Laura M. Crowder
Director, Division of Air Quality

Issued: [Date of issuance] • Effective: [Equals issue date plus two weeks]
Expiration: [5 years after issuance date] • Renewal Application Due: [6 months prior to expiration]

Permit Number: **R30-05700011-2024 (3 of 3)**
Permittee: **Alliant Techsystems Operations LLC**
Facility Name: **Allegany Ballistics Laboratory**
Permittee Mailing Address: **210 State Route 956, Rocket Center, WV 26726-3548**

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45CSR30 — Requirements for Operating Permits. The permittee identified at the above-referenced facility is authorized to operate the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

| | |
|---------------------------|---|
| Facility Location: | Rocket Center, Mineral County, West Virginia |
| Facility Mailing Address: | 210 State Route 956, Rocket Center, WV 26726-3548 |
| Telephone Number: | (304) 726 - 5506 |
| Type of Business Entity: | LLC |
| Facility Description: | Fabrication of both steel and composite structure rocket motor and warhead cases, production of propellants and explosives which are loaded into above cases and all associated case preparation and testing for motors |
| SIC Codes: | Primary - 3764, Secondary – 3089 |
| UTM Coordinates: | 686.47 km Easting • 4381.25 km Northing • Zone 17 |

Permit Writer: Natalya Chertkovsky-Veselova

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

Issuance of this Title V Operating Permit does not supersede or invalidate any existing permits under 45CSR13, 14 or 19, although all applicable requirements from such permits governing the facility's operation and compliance have been incorporated into the Title V Operating Permit.

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ATTACHMENT 1 – Record of Visible Emission Observation

ATTACHMENT 2 - HAP list (from Permit R13-1771B)

1.0 Emission Units and Active R13, R14, and R19 Permits

1.1 Emission Units

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|---|-------------------|---|--------------------|-----------------|----------------|
| Laser Products Fabrication - Group 009 | | | | | |
| 9-1S | VI | Inert Gas Welding Machine-8 | 1997 | Variable | |
| 9-2S | 9-1E | Exhaust Hood-8 | Early 90s | Variable | |
| 9-4S | VI | Small Electric Oven-8 | Early 90s | Variable | |
| 9-5S | VI | Small Electric Oven-8 | Early 90s | Variable | |
| 9-6S | VI | Small Electric Oven-8 | Early 90s | Variable | |
| 9-7S | VI | Small Electric Oven-8 | Early 90s | Variable | |
| 9-8S | 9-2E | Exhaust Hood-8 | Early 90s | Variable | |
| 9-9S | VI | Inert Gas Welding Machine-432 | 1997 | Variable | |
| 9-10S | 9-3E | Exhaust Hood-432 | 1997 | Variable | |
| 9-11S | VI | Zero Grit Blaster-432 | 1997 | Variable | 9-1C |
| 9-12S | VI | Small Electric Oven-432 | 1997 | Variable | |
| 9-13S | VI | Small Electric Oven-432 | 1997 | Variable | |
| 9-14S | VI | Small Electric Oven-432 | 1997 | Variable | |
| 9-15S | 9-4E | Exhaust Hood-432 | 1997 | Variable | |
| 9-16S | VI | Helium Leak Detector-432 | 1997 | Variable | |
| 9-17S | VI | Vacuum Oven-432 | 1997 | Variable | |
| 9-18S | VI | Vacuum Oven-432 | 1997 | Variable | |
| 9-19S | 9-5E | Laser Etch Workstation-432 | 1997 | Variable | |
| 9-20S | 9-6E | Aqueous Parts Washer-432 | 1997 | Variable | |
| 9-21S | VI | Conditioning Chamber-432 | 1997 | Variable | |
| 9-22S | VI | Conditioning Chamber-432 | 1997 | Variable | |
| 9-23S | 9-7E | Grenade Fuze Testing Chamber – 361 | 2006 | Variable | |
| 9-24S | NDV | Grenade Fuze Marking Printer - 361 | 2006 | Variable | |
| 9-25S | 9-8E | Electronic Fuze – SMT Heller Oven – 432A | 2005 | Variable | |
| 9-26S | 9-9E | Electronic Fuze – MOFA Paint Hood – 432A | 2006 | Variable | |
| 9-27S | 9-10E | Electronic Fuze – M74 Cleaning Station – 432A | 2007 | 9 gal | |
| 9-28S | 9-11E | Electronic Fuze – ETFM Cleaning Station | 2008 | 100 gal | |
| Boilers and Heaters - Group 00L | | | | | |
| Plant 2 | | | | | |
| L-12S | L-6E | Dual Fuel Steam Boiler | 2005/2006/ 2014 | 9.96 MMBtu/hr | None |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|-----------------------|---------------------|--|----------------|-----------------|----------------|
| L-33S | L-10E/L-13E | Dual Fuel Boiler (NG as primary w/ULSD as back-up supply) L-33S, L-34S & L-35S share a common economizer Mfg.: Miura Model: EX200SGO-07 | 2020 | 7.9 MMBtu/hr | None |
| L-34S | L-11E/L-13E | Dual Fuel Boiler (NG as primary w/ULSD as back-up supply) L-33S, L-34S & L-35S share a common economizer Mfg.: Miura Model: EX200SGO-07 | 2020 | 7.9 MMBtu/hr | None |
| L-35S | L-12E/L-13E | Dual Fuel Boiler (NG as primary w/ULSD as back-up supply) L-33S, L-34S & L-35S share a common economizer Mfg.: Miura Model: EX200SGO-07 | 2020 | 7.9 MMBtu/hr | None |
| L-21S | VI | Nalco 1720 Oxygen Scavenger Feed Tank-8501 | 2001 | 100 gal | |
| L-22S | VI | Boiler Feedwater Chemical Tank-8501 | 2001 | 100 gal | |
| Plant 1 | | | | | |
| L-23S | L-8E*** or L-9E**** | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-24S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-25S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-26S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-27S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-28S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-29S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-30S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-31S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| L-32S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12 MMBtu/hr | None |
| Plant 3 (Section X.0) | | | | | |
| L-36S | L-14E | Dual Fuel Boiler (NG as primary w/ULSD as back-up supply) Mfg.: Miura Model: EX100SGO-07 | 2020 | 3.94 MMBtu/hr | None |
| L-37S | L-15E | Dual Fuel Boiler (NG as primary w/ULSD as back-up supply) Mfg.: Miura Model: EX100SGO-07 | 2020 | 3.94 MMBtu/hr | None |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|------------------|-------------------|----------------------------------|----------------|-----------------|----------------|
| P3-7S | P3-7E | Process Heater 11S for B3040 | 2018 | 0.5 MMBtu/hr | None |
| P3-8S | P3-8E | Process Heater 12S for B3040 | 2018 | 0.5 MMBtu/hr | None |
| P3-9S | P3-9E | Process Heater 13S for B3040 | 2018 | 0.5 MMBtu/hr | None |
| P3-11S | P3-10E | Process Heater Unit #7 for 3030A | 2019 | 0.5 MMBtu/hr | None |
| P3-12S | P3-11E | Process Heater Unit #8 for 3030A | 2019 | 0.5 MMBtu/hr | None |
| P3-13S | P3-12E | Process Heater Unit #9 for 3030A | 2019 | 0.5 MMBtu/hr | None |

Plant IV

| | | | | | |
|-------|-------|--|------|---------------|------|
| P4-5S | P4-8E | Process Heater Mfg.: CleaverBrooks Model: CBLE-4D 700-250-125HW SN: T9692-1-1 | 2024 | 10.2 MMBtu/hr | None |
| P4-6S | P4-9E | Process Heater Mfg.: CleaverBrooks Model: CBLE-4D 700-250-125HW SN: T9692-2-1 | 2024 | 10.2 MMBtu/hr | None |

Emergency Engines

| | | | | | |
|----------|-------|---|---------------|------------------------|--|
| EG-1 | EG-1 | Onan DGEA (Portable) (Bldg 372) | 1998 | 167.6 bhp / 1800 rpm | |
| EG-2 | EG-2 | Cummins-Onan 400 DFEB (Bldg (344) | 2000 | 600 bhp / 1800 rpm | |
| EG-3 | EG-3 | Kohler (Bldg 415) | 1999 | 241.4 bhp / 1800 rpm | |
| EG-4 | EG-4 | Kohler 300ROEZD71 (Bldg 440) | 1995 | 490 bhp / 1800 rpm | |
| EG-5 | EG-5 | Kohler 300ROEZD72 (Bldg 440) | 1998 | 490 bhp / 1800 rpm | |
| EG-6 | EG-6 | Kohler 800REOZM (Bldg 449) | 2004 | 1207 bhp / 1800 rpm | |
| EG-7 | EG-7 | Kohler 500REOZVB-IC2C2 Tier 2 (Bldg 440) | 2008 | 757 bhp / 1800 rpm | |
| EG-8**** | EG-8 | Stamford D5847/1(Bldg 8501) | Before 1990 | 90 bhp / 1800 rpm | |
| EG-9 | EG-9 | MTU 1250RXC5DT2 Tier 2 (Bldg 449) | 2010 | 1675.25 bhp / 1800 rpm | |
| EG-10 | EG-10 | Caterpillar D100-4 Tier 2 (Bldg 385) | November 2006 | 157.5 bhp / 1800 rpm | |
| EG-11 | EG-11 | Caterpillar C3456 TA (Bldg 2006) Manufactured: 2002 | 2012 | 670.5 bhp / 1800 rpm | |
| EG-12 | EG-12 | MTU Detroit Diesel 2250-RXC6DT2 Tier 2 (Bldg 600); Manufactured: 2008 | 2012 | 3,352 bhp / 1800 rpm | |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|-----------------------|-------------------|---|----------------|---------------------|----------------|
| EG-17 | EG-17E | Emergency Generator for Bldg. 8501 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 500REOZJC Engine Mfg. John Deere Model 6135HFG75 Engine Family LJDXL13.5132 Model Year: 2022 | 2022 | 755 hp | None |
| EG-18 | EG-18E | Emergency Generator for Bldg. 2007 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 300REOZJ Engine Mfg. John Deere Model 6090HFG86A Engine Family NJDXL09.0114 Model Year: 2022 | 2022 | 463 hp | None |
| Plant 1 | | | | | |
| EG-13 | EG-13 | Generator Set (Emergency Use) (Kohler 700 XC6DT2) w/Diesel Engine Mfg & Model: MTU 12V2000 G85TB EPA Engine Family: EMDDL35.8GRR | 2015 | 890 kW/1193 Bbhp | None |
| EG-15 | EG-15E | Emergency Generator for Bldg. 362 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 40REOZk Engine Mfg. Kohler Model 6135HFG75 Engine Family KJDXL13.5132 | 2019 | 67 bhp | None |
| EG-16 | EG-16E | Emergency Generator for Bldg. 372 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 150REOZJF Engine Mfg. John Deere Model 6068HF285K Engine Family KJDXL06.8120-003 | 2019 | 237 bhp | None |
| Plant 3 (Section X.0) | | | | | |
| EG-14 | EG-14E | Emergency Generator for B3030 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 500REOZJB Engine Mfg. John Deere Model 6135HFG75 Engine Family KJDXL13.5132 | 2020 | 755 hp | None |
| Plant IV | | | | | |
| EG-19 | EG-19E | Emergency Generator for Bldg. 429 Compression Ignition (CI) Engine Engine Mfg.: Kohler Engine Model KD12504TM/G18 Engine Family: PKHL02.5EST Model Year: 2023 | 2024 | 48.8 bhp | None |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|----------------------------------|-------------------|--|----------------|-----------------|----------------|
| Storage Tanks - Group 00M | | | | | |
| M-2S | M-2E | Fuel Oil Storage Tank-344 | 1971 | 50,000 gal | |
| M-3S | M-3E | Fuel Oil Storage Tank-344 | 1971 | 50,000 gal | |
| M-5S | M-5E | Fuel Oil Aboveground Storage Tank-344 | 2000 | 550 gal | |
| M-6S | M-6E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-7S | M-7E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-8S | M-8E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-28S | M-28E | Propane Storage Tank | 1993 | 1,000 gal | |
| M-29S | M-29E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-30S | M-30E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-9S | M-9E | Propane Storage Tank-412 | 1997 | 1,000 gal | |
| M-10S | M-10E | Propane Storage Tank-412 | 1997 | 1,000 gal | |
| M-31S | M-31E | Propane Storage Tank-412 | 1997 | 1,000 gal | |
| M-11S | M-11E | Propane Storage Tank-438 | 1996 | 18,000 gal | |
| M-32S | M-32E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-33S | M-33E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-34S | M-34E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-35S | M-35E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-12S | M-12E | Gasoline Storage Tank-7 | 1993 | 6,000 gal | |
| M-13S | M-13E | Diesel Storage Tank-7 | 1993 | 4,000 gal | |
| M-20S | M-20E | Fuel Oil Storage Tank-8501 | 1996 | 15,000 gal | |
| M-21S | M-21E | Fuel Oil Storage Tank-8501 | 1996 | 15,000 gal | |
| M-22S | M-22E | Actrel Storage Tank-2014 | 1995 | 1,800 gal | |
| M-23S | M-23E | Actrel Storage Tank-2014 | 1995 | 1,500 gal | |
| M-24S | M-24E | Solvent Storage Tank-8203 | 1998 | 500 gal | |
| M-25S | M-25E | Solvent Storage Tank-8203 | 1998 | 500 gal | |
| M-26S | M-26E | Solvent Storage Tank-8203 | 1998 | 500 gal | |
| M-27S | M-27E | Diesel Fuel Storage Tank-344 | | 275 gal | |
| M-36S (M-28S in R13-3186) | N/A | Storage Vessel (Ultra-Low Sulfur Diesel) | 2015 | 30,000 gallons | None |

Water Treatment - Group 00N

| | | | | | |
|------|-----|---|------|-----------------|----------------|
| N-1S | FUG | Reactor Basin-442 | 1996 | 100,000 gal | |
| N-2S | FUG | Reactor Basin-442 | 1996 | 100,000 gal | |
| N-4S | CS | Explosive Wastewater Treatment System-383 | 1994 | 14,000 gal/day | Full Enclosure |
| N-5S | FUG | Facility Water Treatment System-535 | 1996 | 504,000 gal/day | |
| N-6S | FUG | Aeration Basin-8560 | 1968 | 2,160 gal | |

Explosive Solid Waste Treatment - Group 00O

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|-------------------------------------|-------------------|---|----------------|-----------------|----------------|
| O-1S | FUG | Burning pans BG | 2005 | Variable | |
| Research Complex - Group 00P | | | | | |
| P-20S | P-12E | Large (100 pound) Dessicator Sparge Line-21 | 1992 | 100 lb | |
| P-21S | P-13E | Large (100 pound) Dessicator Sparge Line-21 | 1992 | 100 lb | |
| P-30S | OS | Sweco Grinder | NA | | |
| P-28S | VI | Scrap Storage Drum-289 | 1996 | 55 gallon | |
| P-29S | VI | Scrap Storage Drum-289 | 1996 | 55 gallon | |
| P-31S | P-21E | 5-gal Mixer-290 | 1963 | 5 gallon | |
| P-32S | P-22E | Parts Cleaning Station-290 | 1963 | Variable | |
| P-33S | P-23E | Exhaust hood (Rm.109)-394 | 1996 | Variable | |
| P-34S | P-23E | Exhaust hood (Rm.110)- 394 | 1996 | Variable | |
| P-35S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-36S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-37S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-38S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-39S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-40S | P-24E | Neslab Low Temp Bath Circulator for Tensile Testing-394 | 1996 | Variable | |
| P-41S | P-25E | Exhaust hood-405-108 | 1996 | Variable | |
| P-42S | P-25E | Exhaust hood-405-110 | 1996 | Variable | |
| P-43S | P-25E | Exhaust hood-405-110 | 1996 | Variable | |
| P-44S | P-25E | Exhaust hood-405-112 | 1996 | Variable | |
| P-45S | P-25E | Exhaust hood-405-114 | 1996 | Variable | |
| P-46S | P-25E | Exhaust hood-405-115 | 1996 | Variable | |
| P-47S | P-25E | Exhaust hood-405-117 | 1996 | Variable | |
| P-48S | P-25E | Exhaust hood-405-119 | 1996 | Variable | |
| P-49S | P-25E | Exhaust hood-405-119 | 1996 | Variable | |
| P-50S | P-25E | Exhaust hood-405-124 | 1996 | Variable | |
| P-51S | P-25E | Exhaust hood-405-124 | 1996 | Variable | |
| P-52S | P-25E | Exhaust hood-405-124 | 1996 | Variable | |
| P-53S | P-25E | Exhaust hood-405-125 | 1996 | Variable | |
| P-54S | P-25E | Exhaust hood-405-125 | 1996 | Variable | |
| P-56S | P-25E | Exhaust hood-405-129 | 1996 | Variable | |
| P-57S | P-25E | Exhaust hood-405-131 | 1996 | Variable | |
| P-58S | P-25E | Exhaust hood-405-133 | 1996 | Variable | |
| P-59S | P-25E | Exhaust hood-405-134 | 1996 | Variable | |
| P-60S | P-25E | Exhaust hood-405-135 | 1996 | Variable | |
| P-61S | P-25E | Exhaust hood-405-135 | 1996 | Variable | |
| P-62S | P-25E | Exhaust hood-405-138 | 1996 | Variable | |
| P-63S | P-25E | Exhaust hood-405-138 | 1996 | Variable | |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|-------------------------|--------------------------|--|-----------------------|------------------------|-----------------------|
| P-64S | P-26E | Exhaust hood-405-119 | 1996 | Variable | |
| P-65S | P-27E | Exhaust hood-405-135 | 1996 | Variable | |
| P-66S | P-27E | Exhaust hood-405-135 | 1996 | Variable | |
| P-68S | P-28E | Exhaust hood-405-138 | 1996 | Variable | |
| P-68S | P-28E | Exhaust hood-405-138 | 1996 | Variable | |
| P-69S | P-29E | Fume Extractors for Atomic Absorption Test Equipment-405-110 | 1996 | Variable | |
| P-70S | P-29E | Fume Extractors for Atomic Absorption Test Equipment-405-110 | 1996 | Variable | |
| P-71S | P-25E | Fume Extractors for Gas Chromatography-405-129 | 1996 | Variable | |
| P-72S | P-25E | Fume Extractors for Gas Chromatography-405-129 | 1996 | Variable | |
| P-73S | P-25E | Fume Extractors for Gas Chromatography-405-129 | 1996 | Variable | |
| P-74S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-75S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-76S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-77S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-78S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-79S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-80S | P-25E | Parr Bomb Exhaust-405-136 | 1996 | Variable | |
| P-81S | P-31E | Exhaust hood-406-101 | 1996 | Variable | |
| P-82S | P-31E | Exhaust hood-406-103 | 1996 | Variable | |
| P-83S | P-31E | Exhaust hood-406-106 | 1996 | Variable | |
| P-84S | P-31E | Exhaust hood-406-106 | 1996 | Variable | |
| P-85S | P-31E | Exhaust hood-406-107 | 1996 | Variable | P-4C |
| P-86S | P-31E | Benchtop Slotted Exhaust-406-106 | 1996 | Variable | |
| P-87S | P-31E | Walk-in Electric Oven-406-107 | 1996 | Variable | |
| P-88S | P-31E | Despatch Electric Oven-406-109 | 1996 | Variable | |
| P-89S | P-31E | Young Brothers Electric Oven-406-109 | 1996 | Variable | |
| P-90S | P-31E | Young Brothers Electric Oven-406-109 | 1996 | Variable | |
| P-91S | P-31E | 3 Roll Mill-406-113 | 1996 | Variable | |
| P-92S | P-31E | 2 Roll Mill-406-113 | 1996 | Variable | |
| P-93S | VI | Dake Press-406-113 | 1996 | Variable | |
| P-94S | VI | Dake Press-406-113 | 1996 | Variable | |
| P-95S | VI | Dake Press-406-113 | 1996 | Variable | |
| P-96S | VI | Empire Grit Blaster-406-110 | 1996 | | P-5C |
| P-97S | FUG | Sensitivity Test Pits-500 | Pre-70s | Variable | |
| P-94S | P-33E | Exhaust hood-404-102 | 1997 | Variable | |
| P-95S | P-33E | Exhaust hood-404-104 | 1997 | Variable | |
| P-96S | P-33E | Exhaust hood-404-106 | 1997 | Variable | |
| P-97S | P-33E | Exhaust hood-404-108 | 1997 | Variable | |
| P-99S | P-33E | Exhaust hood-404-105 | 1997 | Variable | |
| P-100S | P-33E | Exhaust hood-404-107 | 1997 | Variable | |
| P-101 | P-33E | Exhaust hood-404-111 | 1997 | Variable | |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|------------------|-------------------|-------------------------------|----------------|-----------------|----------------|
| P-102S | P-33E | Exhaust hood-404-111 | 1997 | Variable | |
| P-103S | P-33E | Exhaust hood-404-111 | 1997 | Variable | |
| P-104S | P-34E | Fume extractor-404-114 | 2004 | Variable | P-7C |
| P-108S | P-34E | Fume extractor-404-112 | 2004 | Variable | P-7C |
| P-105S | P-35E | Chemical fume hood-403-101 | 1998 | Variable | |
| P-106S | P-36E | Slotted exhaust-403-101 | 1998 | Variable | P-8C |
| P-107S | P-36E | Slotted exhaust-403-101 | 1998 | Variable | P-8C |
| P-109S | P-37E | 5 gallon mixer-396 | 2001 | 5 gallons | |
| P-110S | P-38E | Exhaust hood-396 | 2001 | Variable | |
| P-111S | P-39E | Fume extractor-396 | 2001 | Variable | |
| P-115S | P-43E | Fume hood-400-121 | 1999 | Variable | |
| P-116S | P-44E | Fume extractor-400-116 | 1999 | Variable | |
| P-117S | P-45E | Micro mixer-400-116 | 1999 | Variable | |
| P-118S | P-46E | One pound Sigma mixer-400-116 | 1999 | 1 lb | |
| P-119S | P-46E | One pound Sigma mixer-400-110 | 1999 | 1 lb | |
| P-120S | P-47E | One pound Sigma mixer-400-106 | 1999 | 1 lb | |
| P-121S | P-48E | Fume hood-400-117 | 1999 | Variable | |
| P-122S | P-49E | Fume extractor-401 | 1999 | Variable | |
| P-123S | P-50E | Fume hood-401 | 1999 | Variable | |
| P-124S | P-51E | Ten pound mixer-401 | 1999 | 10 lb | |
| P-116S | P-44E | Fume extractor-400-116 | 1999 | Variable | |

Static Firing / X-Range - Group 00Q

| | | | | | |
|------|-----|----------------------------|-------------------------|----------|--|
| Q-1S | FUG | Static Test Firing Bay-77 | 1959 | Variable | |
| Q-2S | FUG | Static Test Firing Bay-193 | 1959 | Variable | |
| Q-3S | FUG | Static Test Firing Bay-194 | 1959/ Summer 2002 | Variable | |
| Q-4S | FUG | Static Test Firing Bay-242 | 1961 | Variable | |

Hazardous Waste Storage - Group 00R

| | | | | | |
|-----|-----|-----------------------------|------|-----------|-----|
| N/A | FUG | Hazardous Waste Storage Pad | 1989 | 320 drums | N/A |
|-----|-----|-----------------------------|------|-----------|-----|

Photographic Development - Group 00S

| | | | | | |
|------|----|----------------------------|------|----------|--|
| S-1S | VI | 3M-2300 Processor Camera-8 | 1995 | Variable | |
| S-2S | VI | Photo Developer Machine | 1995 | Variable | |
| S-3S | VI | Kodamatic 42S Processor | 1995 | Variable | |
| S-4S | VI | Agfa-Geraert Developer | 1995 | Variable | |

TPEG Polymer Manufacture - Group 00T

| | | | | | |
|------|--------------|-----------------------------|------|---------------|------|
| T-1S | T-1E or T-2E | Reactor vessel | 1999 | 6500 lb/batch | T-1C |
| T-2S | T-1E | Reactor distillate receiver | 1999 | 7 GPM | T-1C |

| Emission Unit ID | Emission Point ID | Emission Unit Description | Year Installed | Design Capacity | Control Device |
|------------------|-------------------|------------------------------|----------------|-----------------|----------------|
| T-3S | T-1E or T-3E | Separator | 1999 | 5000 lb/batch | T-1C |
| T-4S | T-1E | Wiped film evaporator | 1999 | 120 GPM | T-1C |
| T-5S | T-1E or T-4E | Waste acid water tank | 2001 | 1000 | T-1C |
| T-6S | T-5E | Tetrahydrofuran drum filling | 1999 | 6 GPM | |

Groundwater Pump & Treatment- Group 00U

| | | | | | |
|------|------|---------------------------|------|----------|--------|
| U-1S | CS | Peroxide contact tank-424 | 1999 | 300 gpm | Closed |
| U-2S | CS | Pressure filters-424 | 1999 | 5 gpm/SF | Closed |
| U-3S | CS | UV/Oxidation unit-424 | 1999 | 220 gpm | Closed |
| U-4S | U-1E | Air stripper-424 | 1999 | Variable | |
| U-5S | CS | Carbon filter-424 | 1999 | 300 gpm | Closed |
| U-6S | CS | Peroxide storage tote-424 | 1999 | 100 gal | Closed |
| U-7S | CS | Peroxide storage tote-424 | 1999 | 100 gal | Closed |
| U-8S | CS | Peroxide storage tote-424 | 1999 | 100 gal | Closed |

Control Devices

| Control Device ID | Emission Point ID | Control Device Description | Year Installed / Modified | Design Capacity | Comments |
|-------------------|------------------------|-------------------------------------|---------------------------|-----------------|----------|
| 9-1C | VI | Cyclone dust collector grit blaster | 1997 | 99.9% (PM) | |
| L-1C | L-1E | Baghouse | 1988 | 93.75 (PM) | |
| P-4C | P-31E | Fabric filter for exhaust hood | 1996 | 90-95% (PM) | |
| P-5C | VI | Cyclone dust collector grit blaster | 1999 | 99.9% (PM) | |
| P-7C | P-34E | Acid neutralization system | 2001 | 99.9% (HCl) | |
| P-8C | P-36E | HEPA filter for slotted hood | 1996 | 99.9% (PM) | |
| T-1C | T-1E, T-2E, T-3E, T-4E | Packed bed scrubber | 1999 | 99% (THF) | |

* VI stands for "Vents inside of building"

** FUG stands for "Fugitives"

*** L-8E is the economizer stack

**** L-9E is the by-pass stack around the economizer

***** Emergency generator EG-8 will remain in this permit until such time that the General Permit Registration G60-C020 is modified to remove it and its requirements

1.2. Active R13, R14, and R19 Permits

The underlying authority for any conditions from R13, R14, and/or R19 permits contained in this operating permit is cited using the original permit number (e.g. R13-1234). The current applicable version of such permit(s) is listed below.

| Permit Number | Date of Issuance |
|----------------------|-------------------------|
| R13-1771B | 04/27/2004 |
| R13-2301A | 07/13/2001 |
| R13-3186E | 06/04/2024 |
| G60-C020 | 09/30/2010 |
| G60-C066 | 11/20/2014 |

2.0 General Conditions

2.1 Definitions

- 2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.39.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.
- 2.1.4. Unless otherwise specified in a permit condition or underlying rule or regulation, all references to a "rolling yearly total" shall mean the sum of the monthly data, values or parameters being measured, monitored, or recorded, at any given time for the previous twelve (12) consecutive calendar months.

2.2 Acronyms

| | | | |
|---------------------------------------|---|------------------------|---|
| CAAA | Clean Air Act Amendments | NSPS | New Source Performance Standards |
| CBI | Confidential Business Information | PM | Particulate Matter |
| CEM | Continuous Emission Monitor | PM₁₀ | Particulate Matter less than 10µm in diameter |
| CES | Certified Emission Statement | pph | Pounds per Hour |
| C.F.R. or CFR | Code of Federal Regulations | ppm | Parts per Million |
| CO | Carbon Monoxide | PSD | Prevention of Significant Deterioration |
| C.S.R. or CSR | Codes of State Rules | psi | Pounds per Square Inch |
| DAQ | Division of Air Quality | SIC | Standard Industrial Classification |
| DEP | Department of Environmental Protection | SIP | State Implementation Plan |
| FOIA | Freedom of Information Act | SO₂ | Sulfur Dioxide |
| HAP | Hazardous Air Pollutant | TAP | Toxic Air Pollutant |
| HON | Hazardous Organic NESHAP | TPY | Tons per Year |
| HP | Horsepower | TRS | Total Reduced Sulfur |
| lbs/hr or lb/hr | Pounds per Hour | TSP | Total Suspended Particulate |
| LDAR | Leak Detection and Repair | USEPA | United States Environmental Protection Agency |
| m | Thousand | UTM | Universal Transverse Mercator |
| MACT | Maximum Achievable Control Technology | VEE | Visual Emissions Evaluation |
| mm | Million | VOC | Volatile Organic Compounds |
| mmBtu/hr | Million British Thermal Units per Hour | | |
| mmft³/hr or mmcf/hr | Million Cubic Feet Burned per Hour | | |
| NA or N/A | Not Applicable | | |
| NAAQS | National Ambient Air Quality Standards | | |
| NESHAPS | National Emissions Standards for Hazardous Air Pollutants | | |
| NO_x | Nitrogen Oxides | | |

2.3. Permit Expiration and Renewal

- 2.3.1. Permit duration. This permit is issued for a fixed term of five (5) years and shall expire on the date specified on the cover of this permit, except as provided in 45CSR§30-6.3.b. and 45CSR§30-6.3.c.
[45CSR§30-5.1.b.]
- 2.3.2. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration.
[45CSR§30-4.1.a.3.]
- 2.3.3. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted consistent with 45CSR§30-6.2. and 45CSR§30-4.1.a.3.
[45CSR§30-6.3.b.]
- 2.3.4. If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.
[45CSR§30-6.3.c.]

2.4. Permit Actions

- 2.4.1. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
[45CSR§30-5.1.f.3.]

2.5. Reopening for Cause

- 2.5.1. This permit shall be reopened and revised under any of the following circumstances:
- a. Additional applicable requirements under the Clean Air Act or the Secretary's legislative rules become applicable to a major source with a remaining permit term of three (3) or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 45CSR§§30-6.6.a.1.A. or B.
 - b. Additional requirements (including excess emissions requirements) become applicable to an affected source under Title IV of the Clean Air Act (Acid Deposition Control) or other legislative rules of the Secretary. Upon approval by U.S. EPA, excess emissions offset plans shall be incorporated into the permit.
 - c. The Secretary or U.S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - d. The Secretary or U.S. EPA determines that the permit must be revised or revoked and reissued to assure compliance with the applicable requirements.

[45CSR§30-6.6.a.]

2.6. Administrative Permit Amendments

- 2.6.1. The permittee may request an administrative permit amendment as defined in and according to the procedures specified in 45CSR§30-6.4.
[45CSR§30-6.4.]

2.7. Minor Permit Modifications

- 2.7.1. The permittee may request a minor permit modification as defined in and according to the procedures specified in 45CSR§30-6.5.a.
[45CSR§30-6.5.a.]

2.8. Significant Permit Modification

- 2.8.1. The permittee may request a significant permit modification, in accordance with 45CSR§30-6.5.b., for permit modifications that do not qualify for minor permit modifications or as administrative amendments.
[45CSR§30-6.5.b.]

2.9. Emissions Trading

- 2.9.1. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit and that are in accordance with all applicable requirements.
[45CSR§30-5.1.h.]

2.10. Off-Permit Changes

- 2.10.1. Except as provided below, a facility may make any change in its operations or emissions that is not addressed nor prohibited in its permit and which is not considered to be construction nor modification under any rule promulgated by the Secretary without obtaining an amendment or modification of its permit. Such changes shall be subject to the following requirements and restrictions:
- a. The change must meet all applicable requirements and may not violate any existing permit term or condition.
 - b. The permittee must provide a written notice of the change to the Secretary and to U.S. EPA within two (2) business days following the date of the change. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted, and any applicable requirement that would apply as a result of the change.
 - c. The change shall not qualify for the permit shield.
 - d. The permittee shall keep records describing all changes made at the source that result in emissions of regulated air pollutants, but not otherwise regulated under the permit, and the emissions resulting from those changes.
 - e. No permittee may make any change subject to any requirement under Title IV of the Clean Air Act (Acid Deposition Control) pursuant to the provisions of 45CSR§30-5.9.

- f. No permittee may make any changes which would require preconstruction review under any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) pursuant to the provisions of 45CSR§30-5.9.

[45CSR§30-5.9.]

2.11. Operational Flexibility

- 2.11.1. The permittee may make changes within the facility as provided by § 502(b)(10) of the Clean Air Act. Such operational flexibility shall be provided in the permit in conformance with the permit application and applicable requirements. No such changes shall be a modification under any rule or any provision of Title I of the Clean Air Act (including 45CSR14 and 45CSR19) promulgated by the Secretary in accordance with Title I of the Clean Air Act and the change shall not result in a level of emissions exceeding the emissions allowable under the permit.

[45CSR§30-5.8]

- 2.11.2. Before making a change under 45CSR§30-5.8., the permittee shall provide advance written notice to the Secretary and to U.S. EPA, describing the change to be made, the date on which the change will occur, any changes in emissions, and any permit terms and conditions that are affected. The permittee shall thereafter maintain a copy of the notice with the permit, and the Secretary shall place a copy with the permit in the public file. The written notice shall be provided to the Secretary and U.S. EPA at least seven (7) days prior to the date that the change is to be made, except that this period may be shortened or eliminated as necessary for a change that must be implemented more quickly to address unanticipated conditions posing a significant health, safety, or environmental hazard. If less than seven (7) days notice is provided because of a need to respond more quickly to such unanticipated conditions, the permittee shall provide notice to the Secretary and U.S. EPA as soon as possible after learning of the need to make the change.

[45CSR§30-5.8.a.]

- 2.11.3. The permit shield shall not apply to changes made under 45CSR§30-5.8., except those provided for in 45CSR§30-5.8.d. However, the protection of the permit shield will continue to apply to operations and emissions that are not affected by the change, provided that the permittee complies with the terms and conditions of the permit applicable to such operations and emissions. The permit shield may be reinstated for emissions and operations affected by the change:

- a. If subsequent changes cause the facility's operations and emissions to revert to those authorized in the permit and the permittee resumes compliance with the terms and conditions of the permit, or
- b. If the permittee obtains final approval of a significant modification to the permit to incorporate the change in the permit.

[45CSR§30-5.8.c.]

- 2.11.4. "Section 502(b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

[45CSR§30-2.40]

2.12. Reasonably Anticipated Operating Scenarios

- 2.12.1. The following are terms and conditions for reasonably anticipated operating scenarios identified in this permit.
- a. Contemporaneously with making a change from one operating scenario to another, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating and to document the change in reports submitted pursuant to the terms of this permit and 45CSR30.
 - b. The permit shield shall extend to all terms and conditions under each such operating scenario; and
 - c. The terms and conditions of each such alternative scenario shall meet all applicable requirements and the requirements of 45CSR30.

[45CSR§30-5.1.i.]

2.13. Duty to Comply

- 2.13.1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

[45CSR§30-5.1.f.1.]

2.14. Inspection and Entry

- 2.14.1. The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:
- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
 - d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

[45CSR§30-5.3.b.]

2.15. Schedule of Compliance

- 2.15.1. For sources subject to a compliance schedule, certified progress reports shall be submitted consistent with the applicable schedule of compliance set forth in this permit and 45CSR§30-4.3.h., but at least every six (6) months, and no greater than once a month, and shall include the following:
- a. Dates for achieving the activities, milestones, or compliance required in the schedule of compliance, and dates when such activities, milestones or compliance were achieved; and
 - b. An explanation of why any dates in the schedule of compliance were not or will not be met, and any preventative or corrective measure adopted.

[45CSR§30-5.3.d.]

2.16. Need to Halt or Reduce Activity not a Defense

- 2.16.1. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

[45CSR§30-5.1.f.2.]

2.17. Reserved

2.18. Federally-Enforceable Requirements

- 2.18.1. All terms and conditions in this permit, including any provisions designed to limit a source's potential to emit and excepting those provisions that are specifically designated in the permit as "State-enforceable only", are enforceable by the Secretary, USEPA, and citizens under the Clean Air Act.

[45CSR§30-5.2.a.]

- 2.18.2. Those provisions specifically designated in the permit as "State-enforceable only" shall become "Federally-enforceable" requirements upon SIP approval by the USEPA.

2.19. Duty to Provide Information

- 2.19.1. The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records required to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

[45CSR§30-5.1.f.5.]

2.20. Duty to Supplement and Correct Information

- 2.20.1. Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

[45CSR§30-4.2.]

2.21. Permit Shield

- 2.21.1. Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance provided that such applicable requirements are included and are specifically identified in this permit or the Secretary has determined that other requirements specifically identified are not applicable to the source and this permit includes such a determination or a concise summary thereof.

[45CSR§30-5.6.a.]

- 2.21.2. Nothing in this permit shall alter or affect the following:

- a. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance; or
- b. The applicable requirements of the Code of West Virginia and Title IV of the Clean Air Act (Acid Deposition Control), consistent with § 408 (a) of the Clean Air Act.
- c. The authority of the Administrator of U.S. EPA to require information under § 114 of the Clean Air Act or to issue emergency orders under § 303 of the Clean Air Act.

[45CSR§30-5.6.c.]

2.22. Credible Evidence

- 2.22.1. Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee including but not limited to any challenge to the credible evidence rule in the context of any future proceeding.

[45CSR§30-5.3.e.3.B.]

2.23. Severability

- 2.23.1. The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid by a court of competent jurisdiction, the remaining permit terms and conditions or their application to other circumstances shall remain in full force and effect.

[45CSR§30-5.1.e.]

2.24. Property Rights

- 2.24.1. This permit does not convey any property rights of any sort or any exclusive privilege.

[45CSR§30-5.1.f.4]

2.25. Acid Deposition Control

- 2.25.1. Emissions shall not exceed any allowances that the source lawfully holds under Title IV of the Clean Air Act (Acid Deposition Control) or rules of the Secretary promulgated thereunder.
- a. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the acid deposition control program, provided that such increases do not require a permit revision under any other applicable requirement.
 - b. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement.
 - c. Any such allowance shall be accounted for according to the procedures established in rules promulgated under Title IV of the Clean Air Act.

[45CSR§30-5.1.d.]

- 2.25.2. Where applicable requirements of the Clean Air Act are more stringent than any applicable requirement of regulations promulgated under Title IV of the Clean Air Act (Acid Deposition Control), both provisions shall be incorporated into the permit and shall be enforceable by the Secretary and U. S. EPA.

[45CSR§30-5.1.a.2.]

3.0 Facility-Wide Requirements

3.1 Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person is prohibited except as noted in 45CSR§6-3.1. [45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause or allow any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible. [45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them. [40 C.F.R. §61.145(b) and 45CSR34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. [45CSR§4-3.1 State-Enforceable only.]
- 3.1.5. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11. [45CSR§11-5.2]
- 3.1.6. **Emission inventory.** The permittee is responsible for submitting, on an annual basis, an emission inventory in accordance with the submittal requirements of the Division of Air Quality. [W.Va. Code § 22-5-4(a)(15)]
- 3.1.7. **Ozone-depleting substances.** For those facilities performing maintenance, service, repair or disposal of appliances, the permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 C.F.R. Part 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
- a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the prohibitions and required practices pursuant to 40 C.F.R. §§ 82.154 and 82.156.
 - b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 C.F.R. § 82.158.

- c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 C.F.R. § 82.161.

[40 C.F.R. 82, Subpart F]

- 3.1.8. **Risk Management Plan.** Should this stationary source, as defined in 40 C.F.R. § 68.3, become subject to Part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 C.F.R. § 68.10 and shall certify compliance with the requirements of Part 68 as part of the annual compliance certification as required by 40 C.F.R. Part 70 or 71.

[40 C.F.R. 68]

- 3.1.9. The pertinent sections of 45CSR13 applicable to this facility include, but are not limited to, the following:

§45-13-6.1

At the time a stationary source is alleged to be in compliance with an applicable emission standard and at reasonable times to be determined by the Director thereafter, appropriate tests consisting of visual determinations or conventional in-stack measurements or such other tests the Director may specify shall be conducted to determine compliance.

[45CSR13, R13-2301, B.6 and R13-1771, B.7]

- 3.1.10. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.

[45CSR13, R13-3186, 4.1.5, 6.1.4 and 45CSR§13-5.10]

3.2. Monitoring Requirements

- 3.2.1. None.

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63, if applicable, in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable.

- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit shall be revised in accordance with 45CSR§30-6.4 or 45CSR§30-6.5 as applicable
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
- d. The permittee shall submit a report of the results of the stack test within 60 days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language.
 2. The result of the test for each permit or rule condition.
 3. A statement of compliance or non-compliance with each permit or rule condition.

[WV Code §§ 22-5-4(a)(15-16) and 45CSR13]

- 3.3.2. A test protocol (as per Requirement 3.3.1.c.) shall include detailing on the proposed test methods, the date and the time the proposed testing is to take place, as well as identifying the sampling locations and other relevant information.
[45CSR13, R13-1771, B.9]
- 3.3.3. Test results shall be submitted to the Secretary no more than sixty (60) days after the date the testing takes place.
[45CSR13, R13-1771, B.9]
- 3.3.4. Tests that are required by the Director to determine compliance with the emission limitations set forth in this permit shall be conducted in accordance with the methods as set forth below. The Director may require a different test method or approve an alternative method in light of any new technology advancements that may occur. Compliance testing shall be conducted at 100% of the peak load unless otherwise specified by the Director.
 - a. Tests to determine compliance with PM emission limits shall be conducted in accordance with Method 5, 5A, 5B, 5C, 5D, 5E, 5F, 5G, or 5H as set forth in 40 CFR 60, Appendix A.

- b. Tests to determine compliance with SO₂ emission limits shall be conducted in accordance with Method 6, 6A, 6B, or 6C as set forth in 40 CFR 60, Appendix A.
- c. Tests to determine compliance with CO emission limits shall be conducted in accordance with Method 10, 10A, or 10B as set forth in 40 CFR 60, Appendix A.
- d. Tests to determine compliance with NO_x emission limits shall be conducted in accordance with Method 7, 7A, 7B, 7C, 7D, or 7E as set forth in 40 CFR 60, Appendix A.
- e. Tests to determine compliance with VOC and Hydrocarbons emission limits shall be conducted in accordance with Method 25, or 25A as set forth in 40 CFR 60, Appendix A.
- f. Tests to determine compliance with Opacity of emissions shall be conducted in accordance with Method 9 as set forth in 40 CFR 60, Appendix A.
- g. Tests to determine compliance with HAP emission limits shall be conducted in accordance with 40 CFR 63.
- h. Tests to determine compliance with Sulfuric Acid emission limits shall be conducted in accordance with Method 8 as set forth in 40 CFR 60, Appendix A.
- i. Tests to determine compliance with Lead Oxide emission limits shall be conducted in accordance with Method 12 as set forth in 40 CFR 60, Appendix A.

[45CSR13, R13-1771, B.8]

3.4. Recordkeeping Requirements

- 3.4.1. **Monitoring information.** The permittee shall keep records of monitoring information that include the following:
- a. The date, place as defined in this permit and time of sampling or measurements;
 - b. The date(s) analyses were performed;
 - c. The company or entity that performed the analyses;
 - d. The analytical techniques or methods used;
 - e. The results of the analyses; and
 - f. The operating conditions existing at the time of sampling or measurement.

[45CSR§30-5.1.c.2.A; 45CSR13, R13-3186, 4.4.1, 6.3.1; G60-D, 4.2.1]

- 3.4.2. **Retention of records.** The permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of monitoring sample, measurement, report, application, or record creation date. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports

required by the permit. Where appropriate, records may be maintained in computerized form in lieu of the above records.

[45CSR§30-5.1.c.2.B.]

- 3.4.3. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.

[45CSR§30-5.1.c. State-Enforceable only.]

- 3.4.4. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

[45CSR13, R13-3186, 4.4.2, 6.3.2]

- 3.4.5. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

- a. The equipment involved.
- b. Steps taken to minimize emissions during the event.
- c. The duration of the event.
- d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

- e. The cause of the malfunction.
- f. Steps taken to correct the malfunction.
- g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

[45CSR13, R13-3186, 4.4.3, 6.4.3]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

[45CSR§§30-4.4. and 5.1.c.3.D.]

- 3.5.2. A permittee may request confidential treatment for the submission of reporting required under 45CSR§30-5.1.c.3. pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

[45CSR§30-5.1.c.3.E.]

- 3.5.3. Except for the electronic submittal of the annual compliance certification and semi-annual monitoring reports to the DAQ and USEPA as required in 3.5.5 and 3.5.6 below, all notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class or by private carrier with postage prepaid to the address(es), or submitted in electronic format by e-mail as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

US EPA:

Section Chief
U. S. Environmental Protection Agency, Region III
Enforcement and Compliance Assurance Division
Air, RCRA and Toxics Branch (3ED21)
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103-2852

DAQ Compliance and Enforcement¹:

DEPAirQualityReports@wv.gov

¹For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status reports, Initial Notifications, etc.

- 3.5.4. **Fees.** The permittee shall pay fees on an annual basis in accordance with 45CSR§30-8. [45CSR§30-8.]
- 3.5.5. **Compliance certification.** The permittee shall certify compliance with the conditions of this permit on the forms provided by the DAQ. In addition to the annual compliance certification, the permittee may be required to submit certifications more frequently under an applicable requirement of this permit. The annual certification shall be submitted to the DAQ and USEPA on or before March 15 of each year, and shall certify compliance for the period ending December 31. The permittee shall maintain a copy of the certification on site for five (5) years from submittal of the certification. The annual certification shall be submitted in electronic format by e-mail to the following addresses:

DAQ:

DEPAirQualityReports@wv.gov

US EPA:

R3_APD_Permits@epa.gov

[45CSR§30-5.3.e.]

- 3.5.6. **Semi-annual monitoring reports.** The permittee shall submit reports of any required monitoring on or before September 15 for the reporting period January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with 45CSR§30-4.4. The semi-annual monitoring reports shall be submitted in electronic format by e-mail to the following address:

DAQ:

DEPAirQualityReports@wv.gov

[45CSR§30-5.1.c.3.A.]

3.5.7. **Reserved.**

3.5.8. **Deviations.**

- a. In addition to monitoring reports required by this permit, the permittee shall promptly submit supplemental reports and notices in accordance with the following:
 1. Reserved.
 2. Any deviation that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to the Secretary immediately by telephone or email. A written report of such deviation, which shall include the probable cause of such deviation, and any corrective actions or preventative measures taken, shall be submitted by the responsible official within ten (10) days of the deviation.
 3. Deviations for which more frequent reporting is required under this permit shall be reported on the more frequent basis.
 4. All reports of deviations shall identify the probable cause of the deviation and any corrective actions or preventative measures taken.

[45CSR§30-5.1.c.3.C.]

- b. The permittee shall, in the reporting of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, report the probable cause of such deviations and any corrective actions or preventive measures taken in accordance with any rules of the Secretary.

[45CSR§30-5.1.c.3.B.]

- 3.5.9. **New applicable requirements.** If any applicable requirement is promulgated during the term of this permit, the permittee will meet such requirements on a timely basis, or in accordance with a more detailed schedule if required by the applicable requirement.

[45CSR§30-4.3.h.1.B.]

3.6. Compliance Plan

- 3.6.1. None.

3.7. Permit Shield

- 3.7.1. The permittee is hereby granted a permit shield in accordance with 45CSR§30-5.6. The permit shield applies provided the permittee operates in accordance with the information contained within this permit.
- 3.7.2. The following requirements specifically identified are not applicable to the source based on the determinations set forth below. The permit shield shall apply to the following requirements provided the conditions of the determinations are met.

- (a) 45CSR21– Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds. The facility is not located in a county that is currently subject to 45CSR21, and is therefore currently exempt from this regulation.
- (b) 40 C.F.R. 63, Subpart PPP – National Emission Standards for Polyether Polyol Production. The facility manufactures Terathane Polyethylene Glycol Block Copolymer (TPEG), which is a Polyether Polyol. However, the operation is exempted from this MACT because there are no HAPs used or generated during the manufacturing operation.
- (c) 40 C.F.R. 63, Subpart GGGGG – National Emission Standards for Site Remediation. The facility currently has two sites under remediation for groundwater contamination. These sites are both CERCLA (“Superfund”) sites and are thus exempt from the MACT requirements. The facility also has a third site, commonly referred to as Plant 2, which is currently being investigated under the RCRA corrective action program, that could potentially require some form of active groundwater remediation or treatment within the next five to ten years. This site would also be exempted since it is being managed under a RCRA corrective action.
- (d) 40 C.F.R. 63, Subpart WWWW – National Emission Standards for Reinforced Plastic Composites Manufacturing. The facility manufactures composite based rocket motor chambers and aircraft components. However, the facility is exempt from this MACT because none of the resin or fiber systems used, contain HAPs.

4.0. Boilers and Heaters Requirements [Emission Units Group ID 00L]

4.1. Limitations and Standards

4.1.1. The following conditions and requirements are specific to Boiler L-12S:

- a. The boiler shall be fired with “pipeline quality natural gas” at all times except when conducting periodic testing, and readiness checks of the boiler’s ability to fire on liquid fuel (distillate oil); during periods of natural gas curtailment; or gas supply emergencies. The duration of such periodic testing and/or readiness check shall not exceed more than 48 hours per year for the boiler.
- b. The boiler shall be limited to a CO emission rate not to exceed 0.36 pounds per hour, a NO_x emissions rate not to exceed of 1.44 pounds per hour, and an SO₂ emission rate of 5.1 pounds per hour while firing on distillate oil or any combination of distillate oil with natural gas.
- c. The maximum sulfur content of the distillate oil to be fired in the boiler shall not exceed 0.5 percent weight or 5,000 ppm by weight. This limit satisfies the SO₂ emissions limit in item (b) of this condition.
- d. At times when the boiler is fired entirely with natural gas, this operating condition satisfies compliance with the limitations of 45CSR§2-3.1.
[45CSR§2A-3.1.a]
- e. At all times when the affected emission unit is operated on distillate oil or any combination of distillate oil and natural gas, the unit shall not exhibit visible emissions greater than 10% opacity on a six minute block average. Compliance shall be verified in accordance with Condition 4.2.5 of this permit.
[45CSR§2-3.1]
- f. The boiler shall not have a maximum heat input in excess as listed in Table 1.1. Compliance with this limit shall be satisfied by limiting the annual heat input to 87,250 MMBtu/hr for L-12S.
- g. The permittee shall conduct the initial tune-up for the unit before January 31, 2016 (40 CFR §63.7510(e) & §63.7495(b)) and subsequent tune-up every 25 months thereafter (40 CFR §63.7515(d)). If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of re-startup of the unit. Each tune-up shall be conducted in accordance with Condition 4.1.9.
[40 C.F.R. §63.7500(a)(1), §63.7505(a), §§63.7510(e) and(j), §63.7515(d), §§63.7540(a)(11) and (13), and Table 3 to Subpart DDDDD of Part 63 Work Practice Standards; 45CSR34]

[45CSR13, R13-3186, 6.1.1]

4.1.2. The permittee shall conduct a “one-time energy assessment” of the facility, which shall include Boiler L-12S, as specified in Table 3 of 40 CFR 63 Subpart DDDDD. Pursuant to 40 CFR §63.7510(e), the energy assessment shall be completed no later than January 31, 2016.
[45CSR13, R13-3186, 6.1.2 and 40 C.F.R. §63.7500(a)(1), §63.7505(a), and Table 3 of 40 C.F.R. 63 Subpart DDDDD; 45CSR34]

4.1.3. The following conditions and requirements are specific to boilers identified as L-23S through L-32S:

- a. Each boiler shall be fired with “pipeline quality natural gas” at all times except when conducting periodic testing, and readiness checks of the boilers’ ability to fire on liquid fuel (distillate oil); during periods of natural gas curtailment; or gas supply emergencies. The duration of such periodic testing and/or readiness check shall not exceed more than 48 hours per year for each boiler.

- b. The total release of CO through emission points L-8E and L-9E shall not exceed 9.4 pounds per hour on a combined total basis.
- c. The total release of NO_x through emission points L-8E and L-9E shall not exceed 4.6 pounds per hour on a combined total basis.
- d. The maximum sulfur content of the distillate oil to be fired in the boilers shall not exceed 0.0015 percent weight or 15 ppm by weight. The use of ultra-low sulfur diesel as the distillate oil in these boilers satisfies this limit.
[45 CSR §10-3.3.6, 45CSR16 and 40 CFR §60.42c(d)]
- e. At times when the boiler(s) is fired entirely with natural gas, this operating condition satisfies compliance with the limitations of 45CSR§2-3.1, 45CSR§2-4.1.2, and 45CSR§10-3.3.6.
[45CSR§2A-3.1.a, 45CSR§10-10.3, and 45CSR§10A-3.1.b]
- f. At all times when each affected emission unit is operated on distillate oil or any combination of distillate oil and natural gas, the unit shall not exhibit visible emissions greater than 10% opacity on a six minute block average. Compliance shall be verified in accordance with Condition 4.2.5 of this permit.
[45CSR§2-3.1]
- g. Each boiler shall not have a maximum heat input in excess of 12 MMBtu/hr and aggregated total from all ten boilers of no greater than 120 MMBtu/hr of heat input. Compliance with this limit shall be satisfied by limiting the aggregated total annual heat input to 1,051,200 MMBtu per year.

[45CSR13, R13-3186, 4.1.1]

- 4.1.4. The following conditions and requirements are specific to Boilers L-33S, L-34S, and L-35S:
 - a. Each boiler shall be fired with “pipeline quality natural gas” at all times except when conducting periodic testing, and readiness checks of the boilers’ ability to fire on liquid fuel (distillate oil); during periods of natural gas curtailment; or gas supply emergencies. The duration of such periodic testing and/or readiness check shall not exceed more than 48 hours per year for each boiler. When using distillate oil, the units are restricted to using ultra low sulfur diesel.
 - b. CO emissions from emission point L-13E shall not exceed an amount as calculated using the following equation.

$$EL_{CO} = [(0.074 \text{ lb/MMBtu} \times \Sigma HI_{gas}) + (0.234 \text{ lb/MMBtu} \times \Sigma HI_{diesel})] / HI_{total}$$

Where:

EL_{CO} = Emission Limit for CO, in terms of lb per hour.

HI_{gas} = Actual Heat Input from natural gas firing from the boilers venting to L-13E, in terms of MMBtu/hr

HI_{diesel} = Actual Heat Input from diesel firing from the boilers venting to L-13E, in terms of MMBtu/hr

HI_{total} = Total Heat Input from the boilers venting to Emission Point L-13E, in term of MMBtu/hr

Compliance with this limit shall be based on three (3) hour average.

- c. NO_x emissions from emission point L-13E shall not exceed an amount as calculated using the following equation.

$$EL_{NO_x} = [(0.12 \text{ lb/MMBtu} \times \Sigma HI_{gas}) + (0.154 \text{ lb/MMBtu} \times \Sigma HI_{diesel})] / HI_{total}$$

Where:

EL_{NO_x} = Emission Limit for NO_x in terms of lb per hour.

HI_{gas} = Heat Input from natural gas firing from the boilers venting to Emission Point L-13E, in terms of MMBtu/hr

HI_{diesel} = Heat Input from diesel firing, in terms of MMBtu/hr

HI_{total} = Total Heat Input from the boilers venting to Emission Point L-13E, in terms of MMBtu/hr

Compliance with this limit shall be based on three (3) hour average.

- d. At times when the boilers are by-passed around the economizer, the NO_x emissions shall not exceed 0.96 pounds per hour during natural gas firing and 1.19 pounds per hour during diesel firing for each by-passed boiler. Compliance with this limit shall be based on three (3) hour average.
- e. At times when any of the boilers are by-passed by the economizer, the CO emissions shall not exceed 0.58 pounds per hour during natural gas firing and 1.80 pounds per hour during diesel firing for each by-passed boiler. Compliance with this limit shall be based on three (3) hour average.
- f. Compliance with the above emission limits shall be satisfied by tuning each unit to a CO concentration level no greater than 100 ppm with the concentration of NO_x (expressed as NO₂) no greater than 100 ppm while operating on natural gas unless ordered by the Director to conduct a compliance demonstration. For tuning each unit while operating using diesel, the CO concentration level shall not exceed 300 ppm with the NO_x (NO₂) concentration level being no greater than 120 ppm.
- g. Each boiler shall be designed or constructed with a maximum design heat input of 7.9 MMBtu/hr. Compliance with this limit shall be satisfied by limiting the annual heat input to 69,003 MMBtu per year for each unit.
- h. The permittee shall conduct the initial tune-up for each unit within twenty-five months after initial startup of the respective unit and subsequent tune-up every 25 months thereafter (40 CFR §63.7515(d)). If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of re-startup of the unit. These tune-ups shall consist of the requirements in Condition 4.1.9 to the limitation stated in item f of this condition.
- i. At all times when each affected emission unit is operated on distillate oil or any combination of distillate oil and natural gas, the unit shall not exhibit visible emissions greater than 10% opacity on a six-minute block average. Compliance shall be verified in accordance with Condition 4.2.5 of this permit.
[45CSR§2-3.1]
- j. These boilers are excluded from the standards of 45CSR§2-4.1 and 45CSR§10-3.3.6 due to this heat input limit.
[45CSR§2-11.1 and 45CSR§10-10.1]

[45CSR13, R13-3186, 6.1.3]

4.1.5. The following conditions and requirements are specific to Boilers L-36S and L-37S:

- a. Each boiler shall be fired with “pipeline quality natural gas” at all times except when conducting periodic testing, and readiness checks of the boilers’ ability to fire on liquid fuel (distillate oil); during periods of natural gas curtailment; or gas supply emergencies. The duration of such periodic testing and/or readiness check shall not exceed more than 48 hours per year for each boiler. This distillate oil-fired operation shall be conducted with oil that has a sulfur content of no greater than 15 ppm.
- b. NO_x emissions from each unit shall not exceed 0.48 pounds per hour during natural gas firing and 0.59 pounds per hour during diesel firing.
- c. CO emissions from each unit shall not exceed 0.29 pounds per hour during natural gas firing and 0.90 pounds per hour during diesel firing.
- d. Compliance with the above emission limits shall be satisfied by tuning each unit to a CO concentration level no greater than 100 ppm with the concentration of NO_x (NO₂) no greater than 100 ppm while operating on natural gas unless ordered by the Director to conduct a compliance demonstration. For tuning each unit while operating using diesel, the CO concentration level shall not exceed 300 ppm with the NO_x (NO₂) concentration level being no greater than 120 ppm.
- e. Visible emissions from each respective emission point of these units shall not exhibit visible emissions greater than ten (10) percent (%) opacity in a six-minute block average. **[45CSR§2-3.1]**
- f. Each boiler shall be designed or constructed with a maximum design heat input of 3.94 MMBtu/hr and a maximum annual heat input of no greater than 34,506 MMBtu per year for each unit.
- g. These units are excluded from the standards of 45CSR§2-4.1 and 45CSR§10-3.3.6 due to above heat input limitations.

[45CSR§2-11.1 and 45CSR§10-10.1]

[45CSR13, R13-3186, 5.1.2]

4.1.6. The following conditions and requirements are specific to Process Heaters Nos. P3-7S, P3-8S, P3-9S, P3-11S, P3-12S, and P3-13S:

- a. Each heater shall only be fired with pipeline quality natural gas. This condition satisfies compliance with the limitation of 45CSR§2-3.1. **[45CSR§2A-3.1]**
- b. Each heater shall be designed or constructed with a maximum design heat input of 0.5 MMBtu/hr. Compliance with this limit for each heater shall be satisfied by limiting the annual consumption of natural gas to 4.38 MM cubic feet, measured on a 12-month rolling total. If the natural gas usage for all three units is metered through a common meter, then the 12-month rolling total shall not exceed 13.14 MM cubic feet. These heaters are excluded from the standards of 45CSR§2-4.1 and 45CSR§10-3.3.6 due to this heat input limit. **[45CSR§2-11.1 and 45CSR§10-10.1]**

[45CSR13, R13-3186, 5.1.1]

4.1.7. The permittee shall conduct the initial tune-up and subsequent tune-ups for each boiler (Emission Units L-23S through L-32S) in accordance with the following timing and tune-up requirements:

- a. The initial tune up for each boiler shall be completed no later than 13 months after initial start-up of each affected unit respectively. **[45CSR34; 40 C.F.R. §63.7510(g) & §63.7490(b)]**

- b. Subsequent tune-ups for each boiler shall be completed no later than 13 months after the previous tune-up. **[45CSR34; 40 C.F.R. §63.7515(d), §63.7540(a)(10)]**
- c. Each tune-up shall be conducted in accordance with Condition 4.1.9. **[45CSR34; 40 C.F.R. §63.7515(d) & §63.7540]**

[45CSR13, R13-3186, 4.1.2]

4.1.8. The permittee shall conduct the initial tune-up and subsequent tune-ups for these boilers and heaters in accordance with the following timing and tune-up requirements:

- a. The initial tune up for Boilers L-36S and L-37S; and Heater Nos. P3-7S, P3-8S, P3-9S, P3-11S, P3-12S, and P3-13S shall be completed no later than 61 months after initial start-up of each affected unit respectively. **[45CSR34; 40 C.F.R. §63.7510(g) & §63.7490(b)]**
- b. Subsequent tune-ups for Boilers L-36S and L-37S; Heaters Nos. P3-7S, P3-8S, P3-9S, P3-11S, P3-12S, and P3-13S shall be completed no later than 61 months after the previous tune-up. **[45CSR34; 40 C.F.R. §63.7515(d) & §63.7540(a)(12)]**
- c. Each tune shall be conducted in accordance with Condition 4.1.9. **[45CSR34; 40 C.F.R. §63.7515(d) & §63.7540(a)(12)]**

[45CSR13, R13-3186, 5.1.3]

4.1.9. Each tune-up as required within the permit shall be performed in accordance with the following:

- i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
- ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
- iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown);
- iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications the optimization of NOx emissions needs to be consistent with the manufacturer's NOx concentration setting point unless otherwise stated in this permit;
- v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

[45CSR13, R13-3186, 8.1.1; 45CSR34; 40 C.F.R. §63.7500(a)(1), §63.7505(a), §63.7510(g), §63.7515(d), §63.7540(a)(10), and Table 3 to Subpart DDDDD of Part 63—Work Practice Standards]

- 4.1.10. The boilers (Emission Units L-23S through L-32S, L-36S and L-37S) may be fired with the diesel meeting the requirement of condition 7.1.11, which satisfies compliance with the sulfur content limit in item d of Condition 4.1.3 and item a of Condition 4.1.5.
[45CSR13, R13-3186, 4.1.4, 5.1.5; 40 C.F.R. §60.42c(d), 45CSR16 and 45CSR§10-3.3.6 (for L-23S through L-32S)]
- 4.1.11. The following conditions and requirements are specific to Process Heaters Nos. P4-5S and P4-6S:
- a. NO_x emissions from each heater shall not exceed 0.26 lb/hr on a 3-hour average basis nor 2.24 tons per year on a 12-month rolling total.
 - b. CO emissions from each heater shall not exceed 0.43 lb/hr on a 3-hour average basis nor 3.75 tons per year on a 12-month rolling total.
 - c. Each heater shall only be fired with pipeline quality natural gas. This condition satisfies compliance with the limitation of 45CSR§2-3.1.
[45CSR§2A-3.1]
 - d. Each heater shall be designed or constructed with a maximum design heat input of 10.2 MMBtu/hr. Compliance with this limit for each heater shall be satisfied by limiting the annual consumption of natural gas to 178.8 MM cubic feet, measured on a 12-month rolling total. If the natural gas usage for the two units is metered through a common meter, then the 12-month rolling total shall not exceed 357.6 MM cubic feet.
 - e. Each process heater shall be tuned up in accordance with Condition 4.1.9 within 12-months after initial startup and annually thereafter.
[40 C.F.R. §63.7500(a)(1), Row 3 of Table 3 to Subpart DDDDD of Part 63-Work Practice Standards, 45CSR34]
 - f. Each process heater shall be equipped and maintained with low NO_x burners.
[45CSR13, R13-3186, 7.1.1]
- 4.1.12. No person shall cause, suffer, allow or permit the discharge of particulate matter into the open air from all fuel burning units located at one plant, measured in terms of pounds per hour in excess of the amount determined as follows:
- For Type 'b' fuel burning units, the product of 0.09 and the total design heat inputs for such units in million B.T.U.'s per hour, provided however that no more than 600 pounds per hour of particulate matter shall be discharged into the open air from all such units.
- Condition 4.1.11.c satisfies compliance with the limitations of 45CSR§2-4.1.2.
[45CSR§§2-4.1 and 4.1.2; 45CSR§2-8.4.2 and 45CSR§2A-3.1.a][P4-5S, P4-6S]
- 4.1.13. Maximum Allowable Emission Rates for Similar Units in Priority III Regions except Region IV. -- No person shall cause, suffer, allow or permit the discharge of sulfur dioxide into the open air from all stacks located at one plant, measured in terms of pounds per hour, in excess of the amount determined as follows:
- 3.3.6. For Type 'b', and Type 'c' fuel burning units, the product of 3.2 and the total design heat inputs for such units discharging through those stacks in million BTU's per hour.

Condition 4.1.11.c satisfies compliance with the limitations of 45CSR§10-3.3.6.

[45CSR§§10-3.3 and 3.3.6; 45CSR§10-10.3, and 45CSR§10A-3.1.b][P4-5S, P4-6S]

4.2. Monitoring Requirements

- 4.2.1. For each month, the permittee shall record the amount of fuel by type (natural gas and distillate oil) consumed by boilers L-12S, L-33S, L-34S and L-35S. Using the monthly fuel records, the permittee shall determine the total heat input for the previous 12 months at the end of each calendar month for the purpose of demonstrating compliance with Conditions 4.1.1.f and 4.1.4.g. Such records shall be maintained in accordance with Condition 3.4.2 of this permit.

[45CSR13, R13-3186, 6.2.1]

- 4.2.2. The permittee shall monitor and record the amount and type of fuel consumed by each boiler L-36S and L-37S and process heater P3-7S, P3-8S, P3-9S, P3-11S, P3-12S, P3-13S, P4-5S and P4-6S individually or collectively through a common meter on a monthly basis. With these records, the permittee shall calculate the total heat energy inputted into each unit and the 12-month rolling total for each unit. Such records shall be maintained in accordance with Condition 3.4.2.

[45CSR13, R13-3186, 5.2.1 and 7.2.1]

- 4.2.3. For the purpose of demonstrating compliance with periodic testing, and readiness checks limitation of Conditions 4.1.1.a, 4.1.3.a, 4.1.4.a, and 4.1.5.a. The permittee shall record the length of time and date that periodic testing, and readiness checks of the liquid fuel delivery system is conducted for each boiler (i.e. when the boiler is operating on distillate oil for readiness checks) as allowed in Conditions 4.1.1.a, 4.1.3.a, 4.1.4.a and 4.1.5.a of this permit. Such records shall be maintained in accordance with Condition 3.4.2.

[45CSR13, R13-3186, 4.2.2, 5.2.2, 6.2.2]

- 4.2.4. For each month, the permittee shall record the amount of fuel by type (natural gas and diesel) consumed by the boilers identified as L-23S through L-32S and shall calculate the combined total heat input for boilers on a rolling 12 month total. In lieu of monthly diesel fuel usage records, records of distillate oil (diesel) delivered to the facility must be kept, which include the date and quantity delivered. Such records shall be maintained in accordance with Condition 3.4.2 of this permit.

[45CSR13, R13-3186, 4.2.1; 45CSR16, 40 C.F.R. §60.48c(g)(2), 45CSR§2-8.3.3, and 45CSR§2A-7.1.a.1; 40 C.F.R. §63.7540(a)(10)(vi)(c), 45CSR34]

- 4.2.5. When any boiler covered by this permit is operated using any amount of distillate oil (diesel) for more than 30 consecutive operating days, the permittee shall conduct visible emission checks and/or opacity monitoring and recordkeeping of the corresponding emission point of the associated boiler that is subject to the visible emission standard of Conditions 4.1.1.e, 4.1.3.f and 4.1.4.i after the 30th consecutive operating day and no later than 45 consecutive days. Once the boiler is switched back to 100% natural gas, the counting of 30 consecutive operating days shall reset to zero and not resume counting until the unit begins to consume distillate oil (diesel) again.

The visible emission check shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40 CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40 CFR Part 60, Appendix A, Method 9 certification course.

Visible emission checks shall be conducted at least once every forty-five (45) days when the boiler is being fired with distillate oil. These checks shall be performed at each source (stack, transfer point, fugitive

emission source, etc.) for a sufficient time interval, but no less than one (1) minute, to determine if any visible emissions are present. Visible emission checks shall be performed during periods of normal facility operation and appropriate weather conditions.

If visible emissions are present at a source(s) for three (3) consecutive checks, the permittee shall conduct an opacity reading at that source(s) using the procedures and requirements of METHOD 9 as soon as practicable, but within seventy-two (72) hours of the final visual emission check. A METHOD 9 observation at a source(s) restarts the count of the number of consecutive readings with the presence of visible emissions.
[45CSR13, R13-3186, 8.2.1]

4.3. Testing Requirements

4.3.1. None.

4.4. Recordkeeping Requirements

4.4.1. The permittee shall maintain records of all monitoring data required by Condition 4.2.5 documenting the date and time of each visible emission check, the emission point or equipment/source identification number, the name or means of identification of the observer, the results of the check(s), whether the visible emissions are normal for the process, and, if applicable, all corrective measures taken or planned. The permittee shall also record the general weather conditions (i.e. sunny, approximately 80°F, 6 - 10 mph NE wind) during the visual emission check(s). An example form is supplied as ATTACHMENT 1. Should a visible emission observation be required to be performed per the requirements specified in METHOD 9, the data records of each observation shall be maintained per the requirements of METHOD 9. For an emission unit out of service during the normal monthly evaluation, the record of observation may note “out of service”. Such records shall be maintained in accordance with Condition 3.4.2.

[45CSR13, R13-3186, 8.3.1]

4.4.2. For the purpose of ensuring that the boilers covered by Conditions 4.1.1 and 4.1.4 are using “pipeline quality natural gas”, the permittee shall have a current, valid purchase contract, tariff sheet or transportation contract or fuel records for the natural gas used that indicates the sulfur content meets the standard of “pipeline quality natural gas” as defined in 45 CSR §10A-2.7. Such records shall be maintained in accordance with Condition 3.4.2.

[45CSR13, R13-3186, 6.3.4]

4.4.3. The permittee shall keep the following records in accordance with 40CFR§63.7555 of each tune-up. This includes but not limited to the following information during the tune up as required in Condition 4.1.9 and 40 CFR §63.7540:

a. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater. If concentrations of NO_x were taken during the tune-up of the unit, record of such measurements shall be included;

b. A description of any corrective actions taken as a part of the tune-up.

[45CSR13, R13-3186, 8.3.2; 40 C.F.R. §§63.7540(a)(10)(vi) and 63.7555; 45CSR34] (*Boilers L-12S, L-23S through L-37S, Heaters P3-7S through P3-13S, P4-5S, P4-6S*)

- 4.4.4. The permittee shall maintain the following records in accordance with Condition 3.4.2 of this permit:
- The name of the diesel supplier;
 - A statement from the diesel supplier that the fuel complies with the specification under the definition of distillate oil in 40CFR§60.41c; and
 - Sulfur content or maximum sulfur content of the diesel supplied.

[45CSR13, R13-3186, 4.4.4; 40 C.F.R. §60.48c(f)(1), 45CSR16, 45CSR§10-8.3.1][L-23S through L-32S]

- 4.4.5. The owner or operator shall maintain records of the operating schedule and the quantity and quality of fuel consumed in each fuel burning unit in a manner to be established by the Secretary. Such records are to be maintained on-site and made available to the Secretary upon request.
- For fuel burning unit(s) which burn only pipeline quality natural gas, such records shall include, but not be limited to, the date and time of start-up and shutdown, and the quantity of fuel consumed on a monthly basis.

[45CSR§2-8.3.3 and 45CSR§2A-7.1.a.1][P4-5S, P4-6S]

- 4.4.6. § 60.48c Reporting and recordkeeping requirements.

(g)(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in § 60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

[40 C.F.R. §60.48c(g)(2), 45CSR16][P4-5S, P4-6S]

4.5. Reporting Requirements

- 4.5.1. Any exceedance(s) of the allowable visible emission requirement for any emission source discovered during observations using 40 CFR Part 60, Appendix A, Method 9 must be reported in writing to the Director as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the exceedance(s), and any corrective measures taken or planned. Such notification shall be submitted in accordance with Condition 3.5.1. of this permit.
[45CSR13, R13-3186, 8.4.2]
- 4.5.2. The permittee shall submit a “Notification of Compliance Status” for Boilers L-33S, L-34S, 35S; Boilers L-36S, L-37S and Process Heaters Nos. P3-7S, P3-8S, P3-9S, P3-11S, P3-12S, P3-13S, P4-5S and P4-6S to the Director before the close of business on the sixtieth (60th) day after completion of the initial compliance demonstration as required in Conditions 4.1.4.h, 4.1.8. and 4.1.11.e. Such “Notification of Compliance Status” shall be in accordance with 40 CFR §63.9(h)(2)(ii) and contain the information specified in 40 CFR §§63.7545(e)(1) and (8), which includes a statement that the initial tune-up for each boiler and heater was completed.
[45CSR13, R13-3186, 5.4.1, 6.4.1 and 7.4.1; 40 C.F.R. §63.7545(e); 45CSR34]
- 4.5.3. The permittee shall submit annual, biennial (once every 2-years), and 5 year “Compliance Reports” to the Director for boilers and heaters covered under this permit with the first report being submitted by no later

than January 31, following the initial tune-up of the unit, and subsequent reports are due based on the frequency of the required tune-up (annually for all units at Plants 1 and IV, biennially for all units at Plant 2, and every 5 years for all units at Plant 3) from thereafter. Such reports shall contain the information specified in 40 CFR §§63.7550(c)(5)(i) through (iii), (xiv), and (xvii) or as required in the applicable template located at <https://www.epa.gov/electronic-reporting-air-emissions/cedri#list> which are:

- a. Permittee and facility name, and address;
- b. Process unit information, emission limitations, and operating limitations;
- c. Date of report and beginning and ending dates of the reporting period;
- d. Include the date of the most recent tune-up for the boiler; and
- e. Include the date of the most recent burner inspection if it was not done within the annual, biennial or 5 year period and was delayed until the next scheduled or unscheduled unit shutdown.
- f. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

The permittee must submit this report electronically (upload) using CEDRI that is accessed through the EPA's Center Data Exchange (CDX) at <https://cdx.epa.gov/>.

[45CSR13, R13-3186, 8.4.1 and 40 C.F.R. §§63.7550(b), (b)(1), (c)(1), & (c)(5)(i) though (iii), (xiv), and (xvii); 45CSR34]

- 4.5.4. If you operate a unit designed to burn natural gas, refinery gas, or other gas 1 fuels that is subject to this subpart, and you intend to use a fuel other than natural gas, refinery gas, gaseous fuel subject to another subpart of this part, part 60, 61, or 65, or other gas 1 fuel to fire the affected unit during a period of natural gas curtailment or supply interruption, as defined in §63.7575, you must submit a notification of alternative fuel use within 48 hours of the declaration of each period of natural gas curtailment or supply interruption, as defined in §63.7575. The notification must include the information specified in paragraphs (f)(1) through (5) of this section.

- (1) Company name and address.
- (2) Identification of the affected unit.
- (3) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.
- (4) Type of alternative fuel that you intend to use.
- (5) Dates when the alternative fuel use is expected to begin and end.

[40 C.F.R. §63.7545(f) and 45CSR34]

- 4.5.5. The permittee shall include with the facility's Title V Compliance Report a compliance report for the boilers at Plant 1 (Emission Units L-23S through L-32S) with regards to complying with the sulfur limit (item d of Condition 4.1.3) Subpart Dc to Part 60. Such reports shall cover the six month period of January to June and July to December for the diesel fuel consumed by the boilers or delivered to the facility during the reporting period. These reports shall include the records required in Condition 3.4.5 and a certified statement signed

by the permittee that the records of fuel supplier certifications submitted represent all of the diesel combusted during the reporting period.
[45CSR13, R13-3186, 4.5.1; 45CSR16 and 40CFR§§60.48c(d), (e)(11), (f)(1) and (j)]

4.6. Compliance Plan

4.6.1. None.

5.0. Research Complex Requirements [Emission Units Group ID 00P]

5.1. Limitations and Standards

5.1.1. Emission to the atmosphere from the Research Complex shall not exceed the following limits:

| Building ID | Emission Point ID | Pollutant | Annual (TPY) |
|-------------|--|----------------|--------------|
| 394 | P-23E, P-24E | Total VOC | 1 |
| | | Total HAPs | 0.25 |
| | | PM | 0.003 |
| | | NOx | 0.001 |
| | | CO | 0.001 |
| | | Lead compounds | 0.001 |
| 396 | P-37E, P-38E, P-39E | Total VOC | 1.6 |
| | | Total HAPs | 1.5 |
| 400 | P-43E, P-44E, P-45E, P-46E, P-47E, P-48E | Total VOC | 1 |
| | | Total HAPs | 0.5 |
| 401 | P-49E, P-50E, P-51E | Total VOC | 1.5 |
| | | Total HAPs | 1 |
| 403 | P-35E | Total VOC | 1 |
| | | Total HAPs | 1 |
| 404 | P-33E, P-34E | Total VOC | 1 |
| | | Total HAPs | 0.5 |
| | | PM | 0.01 |
| | | NOx | 0.001 |
| | | CO | 0.001 |
| | | Lead compounds | 0.001 |
| 405 | P-25E, P-26E, P-27E, P-28E, P-29E | Total VOC | 1 |
| | | Total HAPs | 1 |
| 406 | P-31E | Total VOC | 0.5 |
| | | Total HAPs | 0.25 |

[45CSR13, R13-1771, A.1]

5.1.2. Emissions of all mineral acids from the Research Complex (Emission Points P-23E, P-25E, P-26E, P-28E, P-29E, P-34E) shall be less than 0.1 lb/hr for any Emission Point and less than 100 lb/year aggregate for all mineral acids sources in order to be exempt from requirements of 45CSR§7-4.2 (per 45CSR§7-10.6).

[45CSR13, R13-1771, A.2]

5.1.3. Total emissions of Methylene Chloride from the Research Complex (Buildings 394, 404, 405, 406; Emission Points P-23E, P-24E, P-33E, P-34E, P-25E, P-26E, P-27E, P-28E, P-29E, P-31E) and Building 21 (Laboratory and small scale nitroglycerin sparging operations, Emission Point P-12E), shall not exceed 922 lb/yr.

[45CSR13, R13-1771, A.3]

5.1.4. If the Research Complex emits any Hazardous Air Pollutant (HAP) or Toxic Air Pollutant (TAP) from the Research Complex other than listed in Attachment 2, the permittee shall provide written notification to the Director of the Division of Air Quality within fifteen (15) days after knowledge of such emissions. This written notification shall include the potential to emit (in lb/hr and TPY) for each of these HAP species. Unless the Director determines these emissions to be insignificant, the Company shall submit a compliance program for control of such emissions within sixty (60) days of the date of notification. Upon a determination by the Director that the proposed compliance program represents BAT, the Director shall, in his or her discretion, consider such program for a consent order and shall determine the conditions to be met for approval and entry of such consent order.

[45CSR13, R13-1771, A.4]

5.1.5. The pertinent sections of 45CSR7 applicable to this facility include, but are not limited to, the following:

No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity, except as noted in subsections 3.2, 3.3, 3.4, 3.5, 3.6, and 3.7.

[45CSR§7-3.1]

The provisions of 45CSR§7-3.1 shall not apply to smoke and/or particulate matter emitted from any process source operation which is less than forty (40) percent opacity for any period or periods aggregating no more than five (5) minutes in any sixty (60) minute period.

[45CSR§7-3.2]

No person shall cause, suffer, allow or permit visible emissions from any storage structure(s) associated with any manufacturing process(es) that pursuant to 45CSR§7-5.1 is required to have a full enclosure and be equipped with a particulate matter control device.

[45CSR§7-3.7]

No person shall cause, suffer, allow or permit particulate matter to be vented into the open air from any type source operation or duplicate source operation, or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity specified under the appropriate source operation type in Table 45-7A found at the end of 45CSR7.

[45CSR§7-4.1]

Mineral acids shall not be released from any type source operation or duplicate source operation or from all air pollution control equipment installed on any type source operation or duplicate source operation in excess of the quantity give in Table 45-7B found at the end of this rule.

[45CSR§7-4.2]

Any stack serving any process source operation or air pollution control equipment on any process source operation shall contain flow straightening devices or a vertical run of sufficient length to establish flow patterns consistent with acceptable stack sampling procedures.

[45CSR§7-4.12]

No person shall cause, suffer, allow or permit any manufacturing process or storage structure generating fugitive particulate matter to operate that is not equipped with a system, which may include, but not be limited to, process equipment design, control equipment design or operation and

maintenance procedures, to minimize the emissions of fugitive particulate matter. To minimize means such system shall be installed, maintained and operated to ensure the lowest fugitive particulate matter emissions reasonably achievable.

[45CSR§7-5.1]

The owner or operator of a plant shall maintain particulate matter control of the plant premises, and plant owned, leased or controlled access roads, by paving, application of asphalt, chemical dust suppressants or other suitable dust control measures. Good operating practices shall be implemented and when necessary particulate matter suppressants shall be applied in relation to stockpiling and general material handling to minimize particulate matter generation and atmospheric entrainment.

[45CSR§7-5.2]

At such reasonable times as the Director may designate, the operator of any manufacturing process source operation may be required to conduct or have conducted stack tests to determine the particulate matter loading in exhaust gases. Such tests shall be conducted in such manner as the Director may specify and be filed on forms and in a manner acceptable to the Director. The Director, or his duly authorized representative, may at his option witness or conduct such stack tests. Should the Director exercise his option to conduct such tests, the operator will provide all the necessary sampling connections and sampling ports to be located in such manner as the Director may require, power for test equipment, and the required safety equipment such as scaffolding, railings and ladders to comply with generally accepted good safety practices.

[45CSR§7-8.1]

The Director, or his duly authorized representative, may conduct such other tests as he or she may deem necessary to evaluate air pollution emissions.

[45CSR§7-8.2]

[45CSR13, R13-1771, B.6]

5.2. Monitoring Requirements

- 5.2.1. Compliance with Section 3 of 45CSR7 (Requirement 5.1.5 of this Permit) shall be determined by conducting visual emission observations in accordance with Method 22 of 40 CFR 60, Appendix A for the Emission Points subject to 45CSR7, and units emitting directly into the open air from points other than stack outlet (including visible fugitive dust emissions that leave the plant site boundaries).

Visual emission observations shall be conducted monthly during periods of facility operation to determine if the unit has visible emissions using procedures outlined in 40 CFR 60 Appendix A, Method 22.

If sources of visible emissions are identified, the permittee shall conduct an Opacity Evaluation as outlined in 45CSR§7A-2.1.a, b, within 24 hour period unless the permittee can demonstrate a valid reason that the time frame should be extended. A 45CSR§7A-2.1.a, b evaluation shall not be required if the visible emission condition is corrected in a timely manner and the units are operated at normal operating conditions with no visible emissions being observed.

Anytime when not in compliance with the opacity limit per 45CSR§7-3.1 for any emission point, reporting as per Requirement 5.5.1 shall be initiated, and for this emission point, Method 22 checks shall revert to a weekly frequency for a minimum of 4 consecutive weeks. If in compliance, then monthly Method 22 checks shall be conducted.

Compliance with this Requirement will assure compliance with requirement 3.3.4.f.

[45CSR§30-5.1.c]

5.3. Testing Requirements

- 5.3.1. If testing is required by Director to determine compliance with the emission limitations as set forth in Requirements 5.1.1, 5.1.2, 5.1.3 and 5.1.4 above, such test(s) shall be conducted in accordance with Requirements 3.3.1 through 3.3.4 contained herein.

[45CSR13, R13-1771, B.5 and 45CSR§30-5.1.c]

5.4. Recordkeeping Requirements

- 5.4.1. To determine compliance with the emission limits set forth in Requirement 5.1.1 above, the permittee shall maintain monthly and yearly records of materials purchased for each building, and perform monthly emission calculations based on mass balance for each building. Compliance with the annual emission limits for each building shall be demonstrated using a Rolling Yearly Total (Attachment B of the Permit R13-1771B): for each year and for each pollutant (VOC(s), NO_x, CO and PM) record Pounds and Tons Emitted on a monthly basis. Rolling Yearly Total means the sum of emissions of any pollutant emitted at any given time for the previous twelve (12) consecutive calendar months. Said records shall be maintained on-site for a period of no less than five (5) years and shall be certified and made available to the Director or his/her duly authorized representative upon request.

[45CSR13, R13-1771, B.1]

- 5.4.2. In order to demonstrate compliance with the Requirement 5.1.2, the permittee shall maintain monthly and yearly records. Compliance with hourly emission rate shall be demonstrated based on monthly calculations of mineral acids emissions for each Emission Point listed. Compliance with the annual emission limit shall be demonstrated using a Rolling Yearly Total. Rolling Yearly Total means the sum of all mineral acids generated by all the Emission Points listed at any given time for the previous twelve (12) consecutive calendar months. Said records shall be maintained on-site for a period of no less than five (5) years and shall be certified and made available to the Director or his/her duly authorized representative upon request.

[45CSR13, R13-1771, B.2]

- 5.4.3. In order to demonstrate compliance with the Requirement 5.1.3, the permittee shall maintain monthly and yearly records of methylene chloride emissions for all the Research Complex buildings. Compliance with the annual emission limit shall be demonstrated using a Rolling Yearly Total. Rolling Yearly Total means the sum of total methylene chloride emissions generated by all the Research Complex buildings at any given time for the previous twelve (12) consecutive calendar months. Said records shall be maintained on-site for a period of no less than five (5) years and shall be certified and made available to the Director or his/her duly authorized representative upon request.

[45CSR13, R13-1771, B.3]

- 5.4.4. In order to demonstrate compliance with the Requirement 5.1.4, the permittee shall maintain yearly records of all the HAPs emitted at the Research Complex (except lead compounds and methylene chloride as noted in Requirements 5.4.1 and 5.4.3). Compliance with the Table 45-13A / 45CSR27 Emission Rate Threshold shall be demonstrated using a Rolling Yearly Total. Rolling Yearly Total means the sum of total emissions of each individual HAP generated by the Research Complex at any given time for the previous twelve (12) consecutive calendar months. Said records shall be maintained on-site for a period of no less than five (5) years and shall be certified and made available to the Director or his/her duly authorized representative upon request.

[45CSR13, R13-1771, B.4]

- 5.4.5. The permittee shall conduct an annual preventative maintenance inspection / cleaning / replacement / refurbishment of the bags, filters, bag connection, and dust hoppers, as appropriate, of the baghouses and HEPA Filter Systems (Source ID No. P-8C) in order to ensure proper operation of the control devices. Records shall be maintained on site stating the date and time of each control device annual preventative

maintenance activity, the results and all corrective actions taken.

[45CSR§30-5.1.c]

- 5.4.6. A record of each visible emission observation and opacity evaluation per Requirement 5.2.1 shall be maintained on site and shall be made available to the Director or his/her duly authorized representative upon request. Said records shall include, the date, time, name of emission unit, the applicable visible emission requirement, the results of the check, what action(s), if any, was/were taken, and the name of the observer.

[45CSR§30-5.1.c.]

5.5. Reporting Requirements

- 5.5.1. Upon observing any visible emissions during an Opacity Evaluation as per Requirement 5.2.1 in excess of twenty percent (20%) opacity (but less than forty percent (40%) opacity) for any period or periods aggregating more than five (5) minutes in any sixty (60) minute period, or upon observing any visible emissions in excess of forty percent (40%) opacity, the Company shall submit a written report (including day and time of the observation, observation results, and corrective actions taken (if any)), certified by a responsible official, to the Director of the Division of Air Quality within ten (10) days after taking said reading.

[45CSR§30-5.1.c.]

5.5. Compliance Plan

- 5.6.1. None.

6.0. TPEG Polymer Manufacture Requirements [Emission Units Group ID 00T]

6.1. Limitations and Standards

6.1.1. Maximum production shall not exceed the following:

| Product | lbs/batch | tons/year |
|---|-----------|-----------|
| Terathane/Polyethylene Glycol Block Copolymer | 3001 | 250 |
| Tetrahydrofuran (by product) | 2998 | 250 |

[45CSR13, R13-2301, A.1]

6.1.2. Maximum emissions shall not exceed the following:

| Emission Point ID | Control Device ID | Emission Source Name and ID | Pollutant | lb/hr | lb/year |
|-------------------|-------------------|----------------------------------|-----------------|-------|---------|
| T-1E | T-1C | Reactor T-1S | Tetrahydrofuran | 1.25 | 1700 |
| | | Reactor Distillate Receiver T-2S | | | |
| | | Separator T-3S | | | |
| | | Wiped Film Evaporator T-4S | | | |
| | | Waste Acid Water Tank T-5S | | | |
| T-5E | None | THF Drum Filling Station T-6S | Tetrahydrofuran | 2.5 | 800 |

[45CSR13, R13-2301, A.2]

6.1.3. The scrubber (T-1C) shall be maintained, and operated in accordance with the information submitted in Permit Application No. R13-2301. The principal operating conditions which shall be adhered to include, but are not limited to the following:

| Nitrogen Purge Rate (CFM) | Liquor Flow Rate to Scrubber (gallons/minute) |
|---------------------------|---|
| 17 | 24 |

[45CSR13, R13-2301, A.3]

6.2. Monitoring Requirements

- 6.2.1. None.

6.3. Testing Requirements

- 6.3.1. If testing is required by Director to determine compliance with the maximum allowable emission limits established in Requirement 6.1.2, the facility shall conduct performance tests of the scrubber (T-1C) in accordance with Requirements 3.3.1 through 3.3.4 contained herein.
[45CSR13, R13-2301, C.4 and 45CSR§30-5.1.c]

6.4. Recordkeeping Requirements

- 6.4.1. For the purpose of determining compliance with the maximum production rates set forth in Requirement 6.1.1, the facility shall maintain monthly and annual records of production. Records shall be maintained on site for a period of five (5) years. Certified copies of these records shall be made available to the Director or his duly authorized representative upon request.
[45CSR13, R13-2301, B.2]
- 6.4.2. For the purpose of determining compliance with the maximum allowable emission limits for Emission Point T-5E established in Requirement 6.1.2, the facility shall maintain monthly and annual records of the number of drums filled and the cumulative time required for drum filling at the tetrahydrofuran drum filling station (T-6S), and perform monthly and annual emission calculations. Compliance with the hourly emission rates shall be determined using the average hourly emission rate for each month. Compliance with the annual emission rates shall be determined using a rolling yearly total. A rolling yearly total shall mean the total emission rates emitted at any given time for the previous twelve (12) consecutive calendar months.
[45CSR13, R13-2301, B.3 and 45CSR§30-5.1.c]
- 6.4.3. For the purpose of determining compliance with the maximum allowable emission limits for Emission Point T-1E established in Requirement 6.1.2, the facility shall maintain monthly and annual records, and perform monthly and annual emission calculations. Compliance with the hourly emission rates shall be determined using the average hourly emission rate for each month based on a test derived emission factor and reaction time (recorded on a daily basis). Compliance with the annual emission rates shall be determined using a rolling yearly total. A rolling yearly total shall mean the total emission rates emitted at any given time for the previous twelve (12) consecutive calendar months.
[45CSR§30-5.1.c]
- 6.4.4. Malfunctions of the scrubber (T-1C) must be documented in writing and records maintained at the facility for a period of five (5) years. At a minimum, the following information must be documented for each malfunction:
- a. The equipment involved and associated cause of the malfunction.
 - b. Steps taken to correct the malfunction.
 - c. Steps taken to minimize emissions during the malfunction.
 - d. The duration of the malfunction.
 - e. The estimated increase in emissions during the malfunction.
 - f. Any changes or modifications to equipment or procedures that would help prevent future recurrence of the malfunction.

[45CSR13, R13-2301, B.5]

- 6.4.5. For purpose of demonstrating compliance with the Requirement 6.1.3. the permittee shall keep records of the scrubber principal operating conditions (Nitrogen Purge Rate and Liquor Flow Rate to Scrubber).
[45CSR§30-5.1.c]

6.5. Reporting Requirements

- 6.5.1. None.

6.6. Compliance Plan

- 6.6.1. None.

7.0 Emergency Engines [emission point ID(s): EG-1 through EG-19]

7.1. Limitations and Standards

7.1.1. The permittee is authorized to operate Engines EG-1 through EG-10 with following emission limits in accordance with all terms and conditions of the 45CSR13 G60-D Class II General Permit:

| Emission Unit ID | Pollutant | Maximum Hourly Emissions (lb/hr) | Maximum Annual (TPY) |
|--|----------------------------|----------------------------------|----------------------|
| EG-1 Building 372 Onan DGEA 167.6 HP (1998) | Nitrogen Oxides | 5.20 | 1.30 |
| | Carbon Monoxide | 1.12 | 0.28 |
| | Volatile Organic Compounds | 0.41 | 0.10 |
| | Sulfur Dioxide | 0.34 | 0.09 |
| | Particulate Matter-10 | 0.37 | 0.09 |
| EG-2 Building 344 Cummins- Onan 400DFEB 600 HP (1993) | Nitrogen Oxides | 18.60 | 4.65 |
| | Carbon Monoxide | 4.01 | 1.00 |
| | Volatile Organic Compounds | 1.48 | 0.37 |
| | Sulfur Dioxide | 1.23 | 0.31 |
| | Particulate Matter-10 | 1.32 | 0.33 |
| EG-3 Building 415 Kohler 241.4 HP (1999) | Nitrogen Oxides | 7.48 | 1.87 |
| | Carbon Monoxide | 1.61 | 0.40 |
| | Volatile Organic Compounds | 0.60 | 0.15 |
| | Sulfur Dioxide | 0.49 | 0.12 |
| | Particulate Matter-10 | 0.53 | 0.13 |
| EG-4 Building 440 Kohler 300ROEZD71 490 HP (1995) | Nitrogen Oxides | 15.19 | 3.80 |
| | Carbon Monoxide | 3.27 | 0.82 |
| | Volatile Organic Compounds | 1.21 | 0.30 |
| | Sulfur Dioxide | 1.00 | 0.25 |
| | Particulate Matter-10 | 1.08 | 0.27 |
| EG-5 Building 440 Kohler 300ROEZD72 490 HP (1998) | Nitrogen Oxides | 15.19 | 3.80 |
| | Carbon Monoxide | 3.27 | 0.82 |
| | Volatile Organic Compounds | 1.21 | 0.30 |
| | Sulfur Dioxide | 1.00 | 0.25 |
| | Particulate Matter-10 | 1.08 | 0.27 |

| Emission Unit ID | Pollutant | Maximum Hourly Emissions (lb/hr) | Maximum Annual (TPY) |
|--|----------------------------|----------------------------------|----------------------|
| EG-6 Building 449 Kohler 800REOZM 1207 HP (2004) | Nitrogen Oxides | 28.97 | 7.24 |
| | Carbon Monoxide | 6.64 | 1.66 |
| | Volatile Organic Compounds | 0.85 | 0.21 |
| | Sulfur Dioxide | 0.49 | 0.12 |
| | Particulate Matter-10 | 0.84 | 0.21 |
| EG-7 Building 440 Kohler 500REOZVBIC2 C2 (Tier 2) 757 HP (2008) | Nitrogen Oxides | 8.01 | 2.0 |
| | Carbon Monoxide | 4.34 | 1.08 |
| | Volatile Organic Compounds | 0.53 | 0.13 |
| | Sulfur Dioxide | 0.31 | 0.08 |
| | Particulate Matter-10 | 0.25 | 0.06 |
| EG-8 Building 8501 Stamford D5487/1 90 HP | Nitrogen Oxides | 2.79 | 0.70 |
| | Carbon Monoxide | 0.60 | 0.15 |
| | Volatile Organic Compounds | 0.22 | 0.06 |
| | Sulfur Dioxide | 0.18 | 0.05 |
| | Particulate Matter-10 | 0.20 | 0.05 |
| EG-9 Building 449 MTU 1250RXC5DT2 Tier 2 1676.25 HP (2010) | Nitrogen Oxides | 17.74 | 4.43 |
| | Carbon Monoxide | 9.61 | 2.40 |
| | Volatile Organic Compounds | 1.18 | 0.30 |
| | Sulfur Dioxide | 0.68 | 0.17 |
| | Particulate Matter-10 | 0.55 | 0.14 |
| EG-10 Building 385 Caterpillar D100-4 Tier 2 157.5 HP (2006) | Nitrogen Oxides | 1.70 | 0.43 |
| | Carbon Monoxide | 1.28 | 0.32 |
| | Volatile Organic Compounds | 0.39 | 0.10 |
| | Sulfur Dioxide | 0.32 | 0.08 |
| | Particulate Matter-10 | 0.55 | 0.02 |
| <i>Total Emissions From Generators EG-1 through EG-10</i> | Nitrogen Oxides | 120.87 | 30.22 |
| | Carbon Monoxide | 35.68 | 8.92 |
| | Volatile Organic Compounds | 8.08 | 2.02 |
| | Sulfur Dioxide | 6.04 | 1.51 |
| | Particulate Matter-10 | 6.77 | 1.69 |

[45CSR13, G60-C020 General Permit Registration, Emission Limitations and G60-D, 5.1.2]

| Emission Unit ID | Pollutant | Maximum Hourly Emissions (lb/hr) | Maximum Annual (TPY) |
|---|----------------------------|----------------------------------|----------------------|
| EG-11 Building 2006 CAT 3456 TA 670.5 HP (2012) | Nitrogen Oxides | 16.09 | 4.02 |
| | Carbon Monoxide | 3.69 | 0.92 |
| | Volatile Organic Compounds | 0.47 | 0.12 |
| EG-12 Building 600 MTU Detroit Diesel 3,352 HP (2012) | Nitrogen Oxides | 39.50 | 9.88 |
| | Carbon Monoxide | 5.19 | 1.30 |
| | Volatile Organic Compounds | 0.66 | 0.17 |
| <i>Total Emissions From Generators EG-11 and EG-12</i> | Nitrogen Oxides | 55.59 | 13.9 |
| | Carbon Monoxide | 8.88 | 2.22 |
| | Volatile Organic Compounds | 2.60 | 0.29 |

[45CSR13, G60-C066 General Permit Registration, Emission Limitations and G60-D, 5.1.2]

7.1.2. **Fuel Oil Requirements.** The maximum sulfur content of the diesel fuel to be fired in the engines shall not exceed 0.05 percent weight. The minimum Cetane Index: 40 or Maximum Aromatic Content of: 35% by Volume.

[EG-1 through 10] [45CSR13, G60-C020, General Permit Registration and G60-D]

7.1.3. *Maximum Hourly Limitation.* The maximum hours of operation for any registered emergency generator listed in the General Permit Registration application shall not exceed 500 hours per year. Compliance with the Maximum Yearly Hourly Operation Limitation shall be determined using a twelve-month rolling total. A twelve-month rolling total shall mean the sum of the hours of operation at any given time during the previous twelve consecutive calendar months.

[EG-1 through 12][45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.1.3]

7.1.4. The applicable emergency generator(s) shall be operated and maintained as follows:

- a. In accordance with the manufacturer’s recommendations and specifications or in accordance with a site specific maintenance plan; and,
- b. In a manner consistent with good operating practices.

[EG-1 through 12][45CSR13, G60-C020 & G60-C066 General Permit Registrations, & G60-D, 5.1.4]

7.1.5. **40 C.F.R. §63.6590 What parts of my plant does this subpart cover?**

(c) *Stationary RICE subject to Regulations under 40 C.F.R. Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 C.F.R. part 60 subpart IIII, for compression ignition engines. No further requirements apply for such engines under this part.

- (6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

[EG-10, 15, 16, 18] [45CSR34, 40 C.F.R. §63.6590(c); 45CSR13, G60-C020, General Permit Registration & G60-D, 5.1.6]

§63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE. [EG-2, 6, 7, 9, 11, 12, 13, 14, 17][45CSR34, 40 C.F.R. §63.6600(c)]

40 C.F.R. § 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in §63.6620 and Table 4 to this subpart.

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in 40 C.F.R. §§63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

| For each . . . | You must meet the following requirement, except during periods of startup . . . | During periods of startup you must . . . |
|--|---|---|
| 1. Emergency stationary CI RICE and black start stationary CI RICE. ¹ | a. Change oil and filter every 500 hours of operation or within 1 year + 30 days of the previous change, whichever comes first; ² b. Inspect air cleaner every 1,000 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or within 1 year + 30 days of the previous inspection, whichever comes first, and replace as necessary. ³ | Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply. ³ |

¹If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under Federal, State, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under Federal, State, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under Federal, State, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the Federal, State or local law under which the risk was deemed unacceptable.

²Sources have the option to utilize an oil analysis program as described in 40 C.F.R. §63.6625(i) in order to extend the specified oil change requirement in Table 2c of this subpart.

³Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[EG-1, 3, 4, 5, 8] [45CSR34, 40 C.F.R. §63.6602 and Table 2c; 45CSR13, G60-C020, General Permit Registration & G60-D, 5.1.6]

7.1.6. Reserved.

7.1.7. 40 C.F.R. § 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations and other requirements in this subpart that apply to you at all times except during periods of start-up and shut-down provided that the duration of these periods does not exceed 30 minutes per occurrence. The registrant shall operate the engine in a manner consistent with good air pollution control practices for minimizing emissions at all times, including periods of start-up and shut-down. The emissions from start-up and shut-down shall be included in the twelve (12) month rolling total of emissions. The registrant shall comply with all applicable start-up and shut-down requirements in accordance with 40 CFR Part 60, Subparts IIII and 40 C.F.R. Part 63, Subpart ZZZZ.

(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[EG-1 through 9, 11, 12, 13, 14, 17][45CSR34; 40 C.F.R. §63.6605 and 45CSR13, G60-C020 and G60-C066 General Permit Registrations & G60-D, 5.1.6 and 5.1.7 for EG-1 through 9, 11, 12]

7.1.8. 40 C.F.R. § 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in §63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

| For each . . . | Complying with the requirement to | You must demonstrate continuous compliance by . . . |
|---|-----------------------------------|---|
| 9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP [EG-1, 3, 4, 5, 8] | a. Work or Management practices | i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. |

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

[EG-1 through 9, 11, 12, 13, 14, 17][45CSR34, 40 C.F.R. §§63.6640(a), (f) and Table 6; 45CSR13, G60-C020 and G60-C066 General Permit Registrations & G60-D, 5.1.6 for EG-1 through 9, 11 and 12]

7.1.9. **§60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?**

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 over the entire life of the engine.

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19]

40 C.F.R. §60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 C.F.R. §1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19]

40 C.F.R. §60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19]

40 C.F.R. §60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

- (1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;
- (2) Change only those emission-related settings that are permitted by the manufacturer; and
- (3) Meet the requirements of 40 CFR part 1068, as they apply to you.

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19]

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(a) or §60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section. [EG-10]

- (1) Purchasing an engine certified to emission standards for the same model year and maximum engine power as described in 40 CFR parts 1039 and 1042, as applicable. The engine must be installed and configured according to the manufacturer's specifications.
- (2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.
- (3) Keeping records of engine manufacturer data indicating compliance with the standards.
- (4) Keeping records of control device vendor data indicating compliance with the standards.
- (5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner

or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

[EG-7, 9, 12, 13, 14, 15, 16, 17, 18, 19]

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for the purpose specified in paragraph (f)(2)(i) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

[EG-15, 19]

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. **[EG-10, 16, 18]**

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards. **[EG-7, 9, 12, 13, 14, 17]**

40 C.F.R. §60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115 and table 2 to this subpart, for 2008 model year and later engines. [EG-19]

(2) For engines with a rated power greater than or equal to 37 KW (50 HP), the Tier 2 or Tier 3 emission standards for new nonroad CI engines for the same rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 beginning in model year 2007. [EG-7, 9, 13, 14, 15, 16, 17, 18]

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power. [EG-12]

40 C.F.R. §60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I. [EG-10]

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE. [EG-7, 9, 12, 13, 14, 15, 16, 17, 18, 19]

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19] [45CSR16, 40 C.F.R. §§60.4202(a)(1)(ii), (a)(2) and (b)(1), §§60.4205(a) and (b), §60.4206, §60.4207(b), §60.4209(a), §§60.4211(a), (b), (c), (f), (g); 45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.1.6; 45CSR13, R13-3186, 4.1.3.a through d, 4.1.3.f, 5.1.4.a through d, 5.1.4.f, 7.1.2.a, b, c, d and f]

7.1.10. The following conditions and requirements are specific to generator set identified as EG-13, EG-14, EG-15, EG-16, EG-17, EG-18 and EG-19:

Each generator set is permitted as a compression ignition engine which is operated on diesel. The maximum nameplate power output of the engine shall not be greater than as listed in Table 1.1 of this permit.

[EG-13, 14, 15, 16, 17, 18, 19] [45CSR13, R13-3186, 4.1.3.e, 5.1.4.e, and 7.1.2.e]

- 7.1.11. Diesel fuel used by each engine for the generator set EG-13, 14, 15, 16, 17, 18 and 19 shall have a maximum sulfur content no greater than 15 ppm (ultra-low sulfur diesel) and with either a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent. Diesel meeting the specifications of Nonroad diesel under 40 CFR §1090.305 is equivalent. [EG-13, 14, 15, 16, 17, 18, 19] [45CSR13, R13-3186, 4.1.4, 5.1.5 and 7.1.2.h; 45CSR16 and 40 C.F.R. §60.4207(b)]

7.2. Monitoring Requirements

7.2.1. 40 C.F.R. § 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

- (e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:
- (2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions; stationary RICE [EG-1, 3, 4, 5, 8]
- (f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed. [EG-1, 3, 4, 5, 8]
- (h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply. [EG-1, 3, 4, 5, 8]
- (i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil and filter change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil and filter in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil and filter. If any of the limits are exceeded, the engine owner or operator must change the oil and filter within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil and filter within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil and filter changes for the engine. The analysis program must be part of the maintenance plan for the engine. [EG-1, 3, 4, 5, 8]

[EG-1, 3, 4, 5, 8] [45CSR34; 40 C.F.R. §§63.6625(e), (f), (h), (i) and 45CSR13, G60-C020, General Permit Registration & G60-D, 5.1.6]

- 7.2.2. For the purpose of demonstrating compliance with the hours of operation limit in 40 C.F.R. §60.4211(f) (Condition 7.1.9), the permittee shall record the number of hours each generator set EG-13, 14, 15, 16, 17, 18 and 19 operated for non-emergency situations during the calendar month and the reason for such operation. Such records shall be maintained in accordance with Condition 3.4.2.

[EG-13, 14, 15, 16, 17, 18, 19] [45CSR13, R13-3186, 4.2.3, 5.2.3 and 7.2.2; 45CSR16 and 40 C.F.R. §60.4211(f)]

7.3. Testing Requirements

- 7.3.1. **§60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?**

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

[EG-7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19] [45CSR16, 40 C.F.R. §60.4212; 45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.4.1 for EG-7, 9, 10, 12]

7.4. Recordkeeping Requirements

- 7.4.1. **40 C.F.R. § 63.6655 What records must I keep?**

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) of this section.

- (1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).
- (2) Records of the occurrence and duration (in hours) of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
- (3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).
- (4) Records of all required maintenance performed on the air pollution control and monitoring equipment.
- (5) Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

- (1) Records described in §63.10(b)(2)(vi) through (xi).

- (2) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in §63.8(d)(3).
- (3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in §63.8(f)(6)(i), if applicable.
- (d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.
- (e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;
 - (1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.
 - (2) An existing stationary emergency RICE.
- (f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purpose specified in §63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time and end time of engine operation for these purposes.
 - (1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[EG-1, 3, 4, 5, 8][45CSR34; 40 C.F.R. §§63.6655(a), (b), (d), (e)(1) and (e)(2), (f)(1) and 45CSR13, G60-C020 General Permit Registration & G60-D, 5.3.4]

7.4.2. §60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.
[EG-19]

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates for the purpose-specified in §60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

- (ii) Date of the report and beginning and ending dates of the reporting period.
- (iii) Engine site rating and model year.
- (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.
- (v) Reserved.
- (vi) Reserved.
- (vii) Hours spent for operation for the purposes specified in §60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in §60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in §60.4. Beginning February 26, 2025, submit annual report electronically according to 40 C.F.R. §60.4214(g)

[EG-7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19] [45CSR16, 40 C.F.R. §§60.4214(b), (d); 45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.3.4 for EG-7, 9, 10, 11, 12]

- 7.4.3. To demonstrate compliance with condition 7.1.3, the registrant shall maintain records of the hours of operation of the emergency generator(s) on a monthly basis.
[EG-1 through 12] [45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.3.1]
- 7.4.4. To demonstrate compliance with section 7.1.4, the registrant shall maintain records of the maintenance performed on each emergency generator.
[EG-1 through 12] [45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.3.2]
- 7.4.5. All records required by this section shall be maintained in accordance with section 3.5.1 of the general permit (requirement 3.4.2).
[EG-1 through 12] [45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.3.5]
- 7.4.6. The permittee shall maintain records of maintenance conducted on the engines for EG-13, 14, 15, 16, 17, 18 and 19 in accordance with Condition 3.4.2.
[EG-13, 14, 15, 16, 17, 18, 19] [45CSR13, R13-3186, 4.4.5, 5.3.1, 7.3.1; 45CSR16 and 40 C.F.R. 60.4214(a)(2)(ii)]
- 7.4.7. The permittee shall maintain documentation from the manufacturer for EG-13, 14, 15, 16, 17, 18 and 19 that the engine is certified to meet the emission standards and information as required in 40 C.F.R. Parts 90, 1048,

1054, and 1060, as applicable.

[EG-13, 14, 15, 16, 17, 18, 19] [45CSR13, R13-3186, 4.4.6, 5.3.2, 7.3.2; 45CSR16 and 40 C.F.R. 60.4214(a)(2)(iii)]

7.5. Reporting Requirements

7.5.1. § 63.6645 What notifications must I submit and when?

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in §63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

[EG-6, 7, 9, 11, 12, 13, 14, 17] [45CSR34, 40 C.F.R. §63.6645(f); 45CSR13, G60-C020 and G60-C066 General Permit Registrations, & G60-D, 5.5.1 for EG-6, 7, 9, 11, 12]

7.6. Compliance Plan

7.6.1. None.

ATTACHMENT 2
 Allegany Ballistics Laboratory
 R13-1771B 057-00011

| CAS No. | HAP | Table 45-13A / Rule 27 Toxic Air Pollutant? | Facility Exceeds 45-13A / Rule 27 Potential Emission Rate Threshold? |
|-----------|----------------------------------|---|--|
| 75-07-0 | Acetaldehyde | No | --- |
| 60-35-5 | Acetamide | No | --- |
| 75-05-8 | Acetonitrile | No | --- |
| 98-86-2 | Acetophenone | No | --- |
| 107-13-1 | Acrylonitrile | Yes | No |
| 107-05-1 | Allyl chloride | Yes | No |
| 62-53-3 | Aniline | No | --- |
| 1332-21-4 | Asbestos | Yes | No |
| 100-44-7 | Benzyl chloride | No | --- |
| 92-52-4 | Biphenyl | No | --- |
| 117-81-7 | Bis(2-ethylhexyl)phthalate (DOP) | No | --- |
| 75-25-2 | Bromoform | No | --- |
| 75-15-0 | Carbon disulfide | No | --- |
| 56-23-5 | Carbon tetrachloride | Yes | No |
| 79-11-8 | Chloroacetic acid | No | --- |
| 108-90-7 | Chlorobenzene | No | --- |
| 67-66-3 | Chloroform | Yes | No |
| 98-82-8 | Cumene | No | --- |
| 84-74-2 | Dibutyl phthalate | No | --- |
| 106-46-7 | Dichlorobenzene-1,4 (p) | No | --- |
| 111-42-2 | Diethanolamine | No | --- |
| 68-12-2 | Dimethyl formamide | No | --- |
| 131-11-3 | Dimethyl phthalate | No | --- |
| 51-28-5 | Dinitrophenol-2,4 | No | --- |
| 121-14-2 | Dinitrotoluene-2,4 | No | --- |
| 123-91-1 | Dioxane-1,4 | No | --- |
| 106-89-8 | Epichlorohydrin | No | --- |
| 140-88-5 | Ethyl acrylate | No | --- |

| CAS No. | HAP | Table 45-13A / Rule 27 Toxic Air Pollutant? | Facility Exceeds 45-13A / Rule 27 Potential Emission Rate Threshold? |
|-----------|---------------------------------------|---|--|
| 100-41-4 | Ethyl benzene | No | --- |
| 51-79-6 | Ethyl carbamate (Urethane) | No | --- |
| 107-21-1 | Ethylene glycol | No | --- |
| 151-56-4 | Ethylene imine (Aziridine) | No | --- |
| 75-21-8 | Ethylene oxide | Yes | No |
| 50-00-0 | Formaldehyde | Yes | No |
| 822-06-0 | Hexamethylene-1,6-diisocyanate (HDI) | No | --- |
| 110-54-3 | Hexane | No | --- |
| 7647-01-0 | Hydrochloric acid | No | --- |
| 7664-39-3 | Hydrofluoric acid | No | --- |
| 123-31-9 | Hydroquinone | No | --- |
| 78-59-1 | Isophorone | No | --- |
| 108-31-6 | Maleic anhydride | No | --- |
| 67-56-1 | Methanol | No | --- |
| 74-83-9 | Methyl bromide (Bromomethane) | No | --- |
| 74-87-3 | Methyl chloride (Chloromethane) | No | --- |
| 71-55-6 | Methyl chloroform (1,1,1-TCA) | No | --- |
| 78-93-3 | Methyl ethyl ketone (MEK) | No | --- |
| 74-88-4 | Methyl iodide (Iodomethane) | No | --- |
| 108-10-1 | Methyl isobutyl ketone (MIBK) | No | --- |
| 80-62-6 | Methyl methacrylate | No | --- |
| 101-68-8 | Methylene diphenyl diisocyanate (MDI) | No | --- |
| 91-20-3 | Naphthalene | No | --- |
| 98-95-3 | Nitrobenzene | No | --- |
| 100-02-7 | Nitrophenol-4 | No | --- |
| 79-46-9 | Nitropropane-2 | No | --- |
| 87-86-5 | Pentachlorophenol | No | --- |
| 109-95-2 | Phenol | No | --- |
| 106-50-3 | Phenylenediamine-p | No | --- |
| 7723-14-0 | Phosphorus | No | --- |

| CAS No. | HAP | Table 45-13A / Rule 27 Toxic Air Pollutant? | Facility Exceeds 45-13A / Rule 27 Potential Emission Rate Threshold? |
|-----------|---------------------------------------|---|--|
| 85-44-9 | Phthalic anhydride | No | --- |
| 75-55-8 | Propylenimine-1,2 (2-Methylaziridine) | No | --- |
| 100-42-5 | Styrene | No | --- |
| 108-88-3 | Toluene | No | --- |
| 584-84-9 | Toluene diisocyanate-2,4 | No | --- |
| 95-53-4 | Toluidine-o | No | --- |
| 120-82-1 | Trichlorobenzene-1,2,4 | No | --- |
| 79-01-6 | Trichloroethylene | Yes | No |
| 121-44-8 | Triethylamine | No | --- |
| 108-05-4 | Vinyl acetate | No | --- |
| 1330-20-7 | Xylenes | No | --- |
| | Antimony compounds | No | --- |
| | Arsenic compounds | Yes | No |
| | Beryllium compounds | Yes | No |
| | Cadmium compounds | No | --- |
| | Chromium compounds | No | --- |
| | Cobalt compounds | No | --- |
| | Glycol ethers | No | --- |
| | Lead compounds | Yes | No |
| | Manganese compounds | No | --- |
| | Mercury compounds | Yes | No |
| | Fine Mineral Fibers | No | --- |
| | Nickel compounds | No | --- |
| | Radionuclides | No | --- |
| | Selenium compounds | No | --- |



Completeness Determination, Northrop Grumman (Alliant Techsystems Operations - ABL Operations), Application No. R30-05700011-2024 (Part 3 of 3)

1 message

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>

Fri, May 24, 2024 at 11:36 AM

To: "Foor, SueEllen [US] (DS)" <sueellen.foor@ngc.com>, bill.hixon@ngc.com

Your Title V renewal application for a permit to operate the above referenced facility was received by this Division on May 8, 2024. After review of said application, it has been determined that the application is administratively complete as submitted. Therefore, the above referenced facility qualifies for an Application Shield.

The applicant has the duty to supplement or correct the application. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a draft permit.

The submittal of a complete application shall not affect the requirement that any source have all **preconstruction permits** required under the rules of the Division.

If during the processing of this application it is determined that additional information is necessary to evaluate or take final action on this application, a request for such information will be made in writing with a reasonable deadline for a response. Until which time as your renewal permit is issued or denied, please continue to operate this facility in accordance with 45CSR30, section 6.3.c. which states: *If the Secretary fails to take final action to deny or approve a timely and complete permit application before the end of the term of the previous permit, the permit shall not expire until the renewal permit has been issued or denied, and any permit shield granted for the permit shall continue in effect during that time.* This protection shall cease to apply if, subsequent to the completeness determination made pursuant to paragraph 6.1.d. of 45CSR30 and as required by paragraph 4.1.b., the applicant fails to submit by the deadline specified in writing any additional information identified as being needed to process the application.

Please remember, **failure of the applicant to timely submit information required or requested to process the application may cause the Application Shield to be revoked.** Should you have any questions regarding this determination, please contact me.

Sincerely,

Natalya V. Chertkovsky-Veselova,
WV DEP DAQ
TV Permit Engineer
304 926 0499 x 41250



Mink, Stephanie R <stephanie.r.mink@wv.gov>

WV DAQ Title V Permit Application Status for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory

3 messages

Mink, Stephanie R <stephanie.r.mink@wv.gov>

Wed, May 8, 2024 at 2:51 PM

To: bill.hixon@ngc.com, sueellen.foor@ngc.com, "Clayton, Jill W [US] (DS)" <jill.clayton@ngc.com>

Cc: Carrie McCumbers <carrie.mccumbers@wv.gov>, Natalya V Chertkovsky <natalya.v.chertkovsky@wv.gov>

RE: Application Status

Alliant Techsystems Operations LLC

Allegany Ballistics Laboratory

Facility ID No. 057-00011

Application No. R30-05700011-2024 (3 of 3)

Dear Mr. Hixon,

Your application for a Title V Permit Renewal for Alliant Techsystems Operations LLC's Allegany Ballistics Laboratory was received by this Division on May 8, 2024, and was assigned to Natalya Chertkovsky-Veselova.

Should you have any questions, please contact the assigned permit writer, Natalya Chertkovsky-Veselova, at 304-926-0499, extension 41250, or Natalya.V.Chertkovsy@wv.gov.

--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281

McCumbers, Carrie <carrie.mccumbers@wv.gov>

Wed, May 8, 2024 at 2:53 PM

To: stephanie.r.mink@wv.gov

Your message

To: McCumbers, Carrie

Subject: WV DAQ Title V Permit Application Status for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory

Sent: 5/8/24, 2:51:43 PM EDT

was read on 5/8/24, 2:53:00 PM EDT

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
To: stephanie.r.mink@wv.gov

Thu, May 9, 2024 at 1:03 PM

Your message

To: Chertkovsky, Natalya V
Subject: WV DAQ Title V Permit Application Status for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory
Sent: 5/8/24, 2:51:43 PM EDT

was read on 5/9/24, 1:03:51 PM EDT

Received
May 8, 2024
WV DEP/Div of Air Quality

Table of Contents

| Document | Paper or Electronic Submittal? |
|--|--------------------------------|
| Cover Letter | Electronic |
| Title V Permit Application Checklist | Electronic |
| Title V Permit Renewal Application Form | Electronic |
| Attachment A: Site Location Map | Electronic |
| Attachment B: Plot Plan | Electronic |
| Attachment C: Process Flow Diagrams | Electronic |
| Attachment D: Title V Equipment Table | Electronic |
| Attachment E: Emission Unit Forms | Electronic |
| Attachment G: Air Pollution Control Device Forms | Electronic |
| Attachment H: Compliance Assurance Monitoring (CAM) Form | Electronic |
| Facility Information | Electronic |
| Process Description with NAICS | Electronic |
| List of Active Permits | Electronic |
| Facility Wide Emissions Summary | Electronic |
| List of Insignificant Activities | Electronic |

Division of Air Quality Permit Application Submittal

Please find attached a permit application for :

[Company Name; Facility Location]

• DAQ Facility ID (for existing facilities only):

• Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only):

• Type of NSR Application (check all that apply):

- Construction
- Modification
- Class I Administrative Update
- Class II Administrative Update
- Relocation
- Temporary
- Permit Determination

• Type of 45CSR30 (TITLE V) Application:

- Title V Initial
- Title V Renewal
- Administrative Amendment**
- Minor Modification**
- Significant Modification**
- Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

• Payment Type:

- Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
- Check (Make checks payable to: WVDEP – Division of Air Quality)

Mail checks to:
WVDEP – DAQ – Permitting
Attn: NSR Permitting Secretary
601 57th Street, SE
Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

• If the permit writer has any questions, please contact (all that apply):

Responsible Official/Authorized Representative

- Name:
- Email:
- Phone Number:

Company Contact

- Name:
- Email:
- Phone Number:

Consultant

- Name:
- Email:
- Phone Number:



Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center, WV 26726

May 8, 2024

Laura Crowder, Director
WV Department of Environmental Protection
Division of Air Quality
601 – 57th Street
Charleston, WV 25304

Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory
WVDAQ ID# 057-00011

REFERENCE: Permit R30-05700011-2019 Part 3 of 3 (Issued November 19, 2019)

SUBJECT: Title V Permit Renewal Application

Dear Director Crowder:

NGSC – Alliant Techsystems Operations LLC – Allegany Ballistics Laboratory hereby submits the enclosed application for renewal of the referenced Title V permit. We believe the enclosed renewal application contains the appropriate elements as indicated by the DAQ's "Title V Permit Application Checklist for Administrative Completeness".

Should you have additional questions regarding this submittal please contact Sue Ellen Foor, Environmental Engineer, at 304-726-5506 or sueellen.foor@ngc.com; or Jill Clayton, Environmental Engineer, at 304-726-7984 or jill.clayton@ngc.com.

Respectfully,

A handwritten signature in blue ink, appearing to read "Jill Clayton".

Jill Clayton
Environmental Engineer
NGSC-Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory

Cc: Chris Scanlan

**TITLE V PERMIT APPLICATION CHECKLIST
FOR ADMINISTRATIVE COMPLETENESS**

A complete application is demonstrated when all the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a Title V permit application. Any submittal will be considered incomplete if the required information is not included.

| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Application signed by a Responsible Official as defined in 45CSR§30-2.38 (“ <i>Section 6: Certification of Information</i> ” page signed and dated) |
| <input checked="" type="checkbox"/> | Table of Contents (should be included, but not required for administrative completeness) |
| <input checked="" type="checkbox"/> | Facility information |
| <input checked="" type="checkbox"/> | Description of process and products, including NAICS and SIC codes, and including alternative operating scenarios |
| <input checked="" type="checkbox"/> | Area map showing plant location |
| <input checked="" type="checkbox"/> | Plot plan showing buildings and process areas |
| <input checked="" type="checkbox"/> | Process flow diagram(s), showing all emission units, control equipment, emission points, and their relationships |
| <input type="checkbox"/> | Identification of all applicable requirements with a description of the compliance status, the methods used for demonstrating compliance, and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the source is not in compliance |
| <input checked="" type="checkbox"/> | Listing of all active permits and consent orders (if applicable) |
| <input checked="" type="checkbox"/> | Facility-wide emissions summary |
| <input checked="" type="checkbox"/> | Identification of Insignificant Activities |
| <input checked="" type="checkbox"/> | ATTACHMENT D - Title V Equipment Table completed for all emission units at the facility except those designated as insignificant activities |
| <input checked="" type="checkbox"/> | ATTACHMENT E - Emission Unit Form completed for each emission unit listed in the Title V Equipment Table (ATTACHMENT D) and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the emission unit is not in compliance |
| <input checked="" type="checkbox"/> | ATTACHMENT G - Air Pollution Control Device Form completed for each control device listed in the Title V Equipment Table (ATTACHMENT D) |
| <input checked="" type="checkbox"/> | ATTACHMENT H – Compliance Assurance Monitoring (CAM) Plan Form completed for each control device for which the “Is the device subject to CAM?” question is answered “Yes” on the Air Pollution Control Device Form (ATTACHMENT G) |
| <input type="checkbox"/> | Confidential Information submitted in accordance with 45CSR31 |



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475

www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. Name of Applicant (As registered with the WV Secretary of State's Office): Alliant Techsystems Operations LLC
2. Facility Name or Location: Allegany Ballistics Laboratory
3. DAQ Plant ID No.: 0 5 7 - 0 0 0 1 1
4. Federal Employer ID No. (FEIN): 2 7 4 0 2 6 9 0 8
5. Permit Application Type: [X] Permit Renewal
When did operations commence? MM/DD/1946
What is the expiration date of the existing permit? 09/16/2024
6. Type of Business Entity: [X] Corporation
7. Is the Applicant the: [X] Both
8. Number of onsite employees: ~1,650
9. Governmental Code: Facility is owned by the Navy and operated by Alliant Techsystems.
10. Business Confidentiality Claims: Does this application include confidential information (per 45CSR31)? [X] No

| | | |
|---|----------------------------|-----------------|
| 11. Mailing Address | | |
| Street or P.O. Box: 210 State Route 956 | | |
| City: Rocket Center | State: WV | Zip: 26726-3548 |
| Telephone Number: (304) 726-5506 | Fax Number: (304) 726-5562 | |

| | | |
|---|---|---|
| 12. Facility Location | | |
| Street: 210 State Route 956 | City: Rocket Center | County: Mineral |
| UTM Easting: 686.47 km | UTM Northing: 4,381.25 km | Zone: <input checked="" type="checkbox"/> 17 or <input type="checkbox"/> 18 |
| Directions: Turn left off of WV State Route 956 onto plant access road just after crossing bridge into West Virginia from Maryland. | | |
| Portable Source? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| Is facility located within a nonattainment area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If yes, for what air pollutants? | |
| Is facility located within 50 miles of another state? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | If yes, name the affected state(s). MD, PA, VA | |
| Is facility located within 100 km of a Class I Area ¹ ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, do emissions impact a Class I Area ¹ ? <input type="checkbox"/> Yes <input type="checkbox"/> No | If yes, name the area(s). Dolly Sods, Otter Creek, Shenandoah National Park | |
| ¹ Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia. | | |

| | | |
|---|-----------------------------------|--|
| 13. Contact Information | | |
| Responsible Official: Bill Hixon | | Title: Director – Operations Support - ABL Operations |
| Street or P.O. Box: 210 State Route 956 | | |
| City: Rocket Center | State: WV | Zip: 26726-3548 |
| Telephone Number: (304) 726-5558 | Fax Number: (304) 726-5183 | |
| E-mail address: bill.hixon@ngc.com | | |
| Environmental Contact: Sue Ellen Foor, Jill Clayton, or Geoff Frech | | Title: Environmental Engineer |
| Street or P.O. Box: 210 State Route 956 | | |
| City: Rocket Center | State: WV | Zip: 26726-3548 |
| Telephone Number: (304) 726-5506 Or (304) 726-7984 | Fax Number: (304) 726-5562 | |
| E-mail address: sueellen.foor@ngc.com , jill.clayton@ngc.com , geoff.frech@ngc.com | | |
| Application Preparer: Sue Ellen Foor / Jill Clayton / Geoff Frech | | Title: Environmental Engineer |
| Company: Alliant Techsystems Operations LLC Allegany Ballistics Laboratory (ABL) | | |
| Street or P.O. Box: 210 State Route 956 | | |
| City: Rocket Center | State: WV | Zip: 26726-3548 |
| Telephone Number: (304) 726-5506, (304) 726-7984, (304) 726-7611 | Fax Number: (304) 726-5562 | |
| E-mail address: sueellen.foor@ngc.com , jill.clayton@ngc.com , geoff.frech@ngc.com | | |

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

| Process | Products | NAICS | SIC |
|----------------------------------|--|--------|------|
| Rocket Motor Manufacture | Rocket motors, metal rocket cases, composite rocket cases | 336415 | 3764 |
| F-22 Composites Manufacturing | Pivot shafts and obturator plates for F-22 | 336413 | 3728 |
| Electronic Fuzing and Ammunition | Medium caliber ammunition (not loaded), proximity switches, and multiple fuze products for DoD | 332995 | 3489 |

NOTE: Part 2 of this permit covers only the composites and metal fabrication areas.

Provide a general description of operations.

Naval Industrial Reserve Ordnance Plant (NIROP)/Allegany Ballistics Laboratory (ABL) is a facility which is operated by Alliant Techsystems Operations LLC (Northrup Grumman Systems Corporation-NGSC) (headquarters in Falls Church, VA) under the NGSC Missile Products Group. The majority of the facility is owned by the U.S. Navy and is operated by NGIS under a facilities use contract (~1530 acres designated as Plant 1). 57 acres is owned and operated by NGSC and is designated as Plant 2. Approximately 500 acres of Plant 1 are developed. Plant 3 is a 41 acre area designated as Plant 3 dedicated to production of GMLRS rocket motors. Construction is ongoing on 29 acres designated as Plant 4 to be used as a LAP facility to build all-up rounds. The remaining acreage is currently undeveloped. All property is contiguous with internal roads to reach each separate area.

Operations at the plant include:

- metal fabrication of rocket motor and warhead cases;
- metal fabrication of tank ammunition training rounds;
- manufacture of composite material rocket motor and warhead cases;
- manufacture of composite material aircraft components;
- preparation of cases for addition of explosives;
- mixing, casting, curing, and associated operations with propellants and explosives;
- static firing of rocket motors;
- open burning of waste propellants and explosives;
- development and production of laser firing devices;
- analytical and research & development laboratories;
- explosive loading and packing operations for tank ammunition;
- x-ray testing; and
- maintenance and utility operations.

In addition, to these operations, the site is also home to the Robert C. Byrd Institute for Machining and office space for IBM.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

| 18. Applicable Requirements Summary | |
|--|--|
| Instructions: Mark all applicable requirements. | |
| <input checked="" type="checkbox"/> SIP | <input type="checkbox"/> FIP |
| <input checked="" type="checkbox"/> Minor source NSR (45CSR13) | <input type="checkbox"/> PSD (45CSR14) |
| <input checked="" type="checkbox"/> NESHAP (45CSR34) | <input type="checkbox"/> Nonattainment NSR (45CSR19) |
| <input checked="" type="checkbox"/> Section 111 NSPS | <input checked="" type="checkbox"/> Section 112(d) MACT standards |
| <input type="checkbox"/> Section 112(g) Case-by-case MACT | <input type="checkbox"/> 112(r) RMP |
| <input type="checkbox"/> Section 112(i) Early reduction of HAP | <input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e) |
| <input type="checkbox"/> Section 129 Standards/Reqts. | <input checked="" type="checkbox"/> Stratospheric ozone (Title VI) |
| <input type="checkbox"/> Tank vessel reqt., section 183(f) | <input type="checkbox"/> Emissions cap 45CSR§30-2.6.1 |
| <input type="checkbox"/> NAAQS, increments or visibility (temp. sources) | <input checked="" type="checkbox"/> 45CSR27 State enforceable only rule |
| <input checked="" type="checkbox"/> 45CSR4 State enforceable only rule | <input type="checkbox"/> Acid Rain (Title IV, 45CSR33) |
| <input type="checkbox"/> Emissions Trading and Banking (45CSR28) | <input type="checkbox"/> Compliance Assurance Monitoring (40CFR64) |
| <input type="checkbox"/> CAIR NO _x Annual Trading Program (45CSR39) | <input type="checkbox"/> CAIR NO _x Ozone Season Trading Program (45CSR40) |
| <input type="checkbox"/> CAIR SO ₂ Trading Program (45CSR41) | |

| |
|---|
| 19. Non Applicability Determinations |
|---|

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

45CSR21– Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds. The facility is not located in a county that is currently subject to 45CSR21, and is therefore currently exempt from this regulation.

40CFR63, Subpart PPP – National Emission Standards for Polyether Polyol Production. The facility manufactures Terathane Polyethylene Glycol Block Copolymer (TPEG), which is a Polyether Polyol. However, the operation is exempted from this MACT because there are no HAPs used or generated during the manufacturing operation.

40CFR63, Subpart GGGGG – National Emission Standards for Site Remediation. The facility currently has one site under remediation for groundwater contamination. This site is a Superfund site and is thus exempt from the MACT requirements. The facility also has a second site, which will begin remediation as part of a RCRA corrective action program within the next year. This second site would also be exempted since it is being conducted under a RCRA corrective action permit. In addition, neither site would generate emissions of more than 1 megagram per year of HAPs.

40CFR63, Subpart P P P P P – National Emission Standards for Hazardous Air Pollutants from Engine Test Sells/Standards (05/27/03)- This rule applies to the X-Range Static Rocket Motor Firing facility (Group 00Q). However, per 40CFR63.9290(b) & (d)(2) it is exempt from the requirements of this Subpart due to facility was existing source on May 14, 2002 (partially modified in summer of 2002, Source Q-3S) and also, it is used exclusively for rocket motors testing.

40CFR63, Subpart W W W W W – National Emission Standards for Reinforced Plastic Composites Manufacturing. The facility manufactures composite based rocket motor chambers and aircraft components. However, the facility is exempt from this MACT because none of the resin or fiber systems used, contain HAPs.

Permit Shield

19. Non Applicability Determinations (Continued) - Attach additional pages as necessary.

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

See above.

Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements).

45CSR6-3.1. & 3.2. Open burning & open burning exemptions.

40CFR61 Subpart M - 61.145, 61.148, and 61.150 Asbestos.

45CSR4-3.1. [State-Enforceable only.] Odors.

45CSR11-5.2. Standby plan for reducing emissions.

WV Code § 22-5-4(a)(14) Emission inventory.

40 CFR Part 82, Subpart F Ozone-depleting substances.

40 CFR Part 68 Risk Management Plan.

40CFR63, Subpart GG – National Emission Standards for Aerospace Manufacturing Operations.

45CSR7-3.7. Visible emissions from any storage structures.

45CSR7-5.1. & 5.2. Fugitive particulate matter.

45CSR7-4.12. Stack flow straightening devices or a sufficient vertical run.

45CSR§30-5.1.c. Monthly visible emissions checks.

WV Code § 22-5-4(a)(15) and 45CSR13 Stack testing.

45CSR§30-5.1.c.2.A. Monitoring information.

45CSR§30-5.1.c.2.B. Retention of records.

45CSR§§30-4.4. and 5.1.c.3.D. Responsible official.

45CSR31, 45CSR§30-5.1.c.3.E. Confidential business information.

45CSR§30-8. Certified emissions statement.

45CSR§30-5.3.e. Compliance certification.

45CSR§30-5.1.c.3.A. Semi-annual monitoring reports.

45CSR§30-5.7. Emergencies.

45CSR§30-5.1.c.3. Deviations.

45CSR§30-4.3.h.1.B. New applicable requirement.

45CSR§42-3.1. Reporting of greenhouse gas emissions above the *de minimis* threshold

Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

45CSR6-3.1. & 3.2. Open burning & open burning exemptions – Compliance is demonstrated by Condition#s 3.1.1 & 3.1.2.

40CFR61 Subpart M - 61.145, 61.148, and 61.150 Asbestos – Compliance is demonstrated by Condition# 3.1.3.

45CSR4-3.1.; 45CSR§30-5.1.c. Odors – Compliance is demonstrated by Condition#s 3.1.4 & 3.4.3.

45CSR11-5.2. Standby plan for reducing emissions – Compliance is demonstrated by Condition# 3.1.5.

WV Code § 22-5-4(a)(14) Emission inventory – Compliance is demonstrated by Condition# 3.1.6.

40 CFR Part 82, Subpart F Ozone-depleting substances – Compliance is demonstrated by Condition# 3.1.7.

40 CFR Part 68 Risk Management Plan – Compliance is demonstrated by Condition# 3.1.8.

40CFR63, Subpart GG – National Emission Standards for Aerospace Manufacturing Operations – Compliance is demonstrated by Condition#s 3.1.9; 3.2.4; 3.4.5-3.4.6; 3.5.10.

45CSR7-3.7; 45CSR7-5.1. & 5.2.; 45CSR§30-5.1.c. Visible emissions from any storage structures and Fugitive particulate matter– Compliance is demonstrated by Condition#s 3.1.10; 3.1.11; 3.2.1; 3.2.2; 3.2.3; 3.4.7

45CSR§30-5.1.c. Visible emissions checks – Compliance is demonstrated by Condition# 3.2.1; 3.4.4; 3.5.11

45CSR7-4.12. Stack flow straightening devices or a sufficient vertical run – Compliance is demonstrated by Condition#s 3.1.10.

WV Code § 22-5-4(a)(15) and 45CSR13 Stack testing – Compliance is demonstrated by Condition#s 3.1.11; 3.3.1-3.3.4.

45CSR§30-5.1.c.2.A. Monitoring information – Compliance is demonstrated by Condition# 3.4.1.

45CSR§30-5.1.c.2.B. Retention of records – Compliance is demonstrated by Condition# 3.4.2.

45CSR§§30-4.4 and 5.1.c.3.D. Responsible official – Compliance is demonstrated by Condition# 3.5.1.

45CSR31, 45CSR§30-5.1.c.3.E. Confidential business information– Compliance is demonstrated by Condition# 3.5.2.

45CSR§30-8. Certified emissions statement – Compliance is demonstrated by Condition# 3.5.4.

45CSR§30-5.3.e. Compliance certification – Compliance is demonstrated by Condition# 3.5.5.

45CSR§30-5.1.c.3.A. Semi-annual monitoring reports – Compliance is demonstrated by Condition# 3.5.6.

45CSR§30-5.7. Emergencies – Compliance is demonstrated by Condition# 3.5.7.

45CSR§30-5.1.c.3. Deviations – Compliance is demonstrated by Condition# 3.5.8.

45CSR30-4.3.h.1.B. New applicable requirement – Compliance is demonstrated by Condition# 3.5.9.

45CSR§42-3.1. Reporting of greenhouse gas emissions above the *de minimis* threshold - Compliance is demonstrated by Conditions# 3.1.12; 3.5.12.

Are you in compliance with all facility-wide applicable requirements? Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

20. Facility-Wide Applicable Requirements (Continued) - Attach additional pages as necessary.

List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.

Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Are you in compliance with all facility-wide applicable requirements? Yes No

If no, complete the Schedule of Compliance Form as ATTACHMENT F.

| 21. Active Permits/Consent Orders | | |
|-----------------------------------|--------------------------------|--|
| Permit or Consent Order Number | Date of Issuance MM/DD/YYYY | List any Permit Determinations that Affect the Permit <i>(if any)</i> |
| R13-0974A | 05/23/2001 | |
| R13-1771B | 04/27/2004 | |
| R13-2023C | 05/05/2014 | |
| R13-2301A | 07/13/2001 | |
| R13-3186D | 07/19/2022 | R13-3186E (Pending) |
| | | |
| | | |
| | | |
| | / / | |
| | / / | |

22. Inactive Permits/Obsolete Permit Conditions

| Permit Number | Date of Issuance | Permit Condition Number |
|---------------|------------------|-------------------------|
| | MM/DD/YYYY | |
| | / / | |

Section 3: Facility-Wide Emissions

| 23. Facility-Wide Emissions Summary [Tons per Year] | |
|--|---------------------|
| Criteria Pollutants | Potential Emissions |
| Carbon Monoxide (CO) | 409.03 |
| Nitrogen Oxides (NO _x) | 327.36 |
| Lead (Pb) | 1.98 |
| Particulate Matter (PM _{2.5}) ¹ | 6.42 |
| Particulate Matter (PM ₁₀) ¹ | 17.39 |
| Total Particulate Matter (TSP) | 88.93 |
| Sulfur Dioxide (SO ₂) | 283.13 |
| Volatile Organic Compounds (VOC) | 223.10 |
| Hazardous Air Pollutants ² | Potential Emissions |
| Acetonitrile | 0.27 |
| Benzene | 0.37 |
| Cadmium compounds* | 9.9E-04 |
| Chloroform | 0.096 |
| Chromium* | 1.2E-03 |
| Chromium compounds (not identified)* | 0.136 |
| Cobalt* | 5.8E-03 |
| Diethyl phthalate | 0.85 |
| Ethyl benzene | 0.62 |
| Formaldehyde | 0.029 |
| Glycol ether compounds | 0.06 |
| Hexane | 0.80 |
| Hydrochloric Acid | 6.44 |
| Lead * | 1.98 |
| Lead compounds* | 9.8E-04 |
| Mercury* | 2.0E-04 |
| Methanol | 1.81 |

| | |
|---|---------------------|
| Methyl isobutyl ketone | 3.73 |
| Methylene chloride | 1.995 |
| Nickel* | 1.7E-03 |
| Phenol | 0.16 |
| Strontium chromate* | 0.0029 |
| Toluene | 30.89 |
| Trichloroethylene | 0.125 |
| Xylene | 5.29 |
| Zinc chromate* | 4.7E-04 |
| Other (not specified) | 0.1 |
| Total HAPs | 55.76 |
| | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions |
| | |
| ¹ PM _{2.5} and PM ₁₀ are components of TSP. ² For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section. | |

Section 4: Insignificant Activities

| 24. Insignificant Activities (Check all that apply) | |
|---|---|
| <input checked="" type="checkbox"/> | 1. Air compressors and pneumatically operated equipment, including hand tools. |
| <input type="checkbox"/> | 2. Air contaminant detectors or recorders, combustion controllers or shutoffs. |
| <input checked="" type="checkbox"/> | 3. Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment. |
| <input checked="" type="checkbox"/> | 4. Bathroom/toilet vent emissions. |
| <input checked="" type="checkbox"/> | 5. Batteries and battery charging stations, except at battery manufacturing plants. |
| <input checked="" type="checkbox"/> | 6. Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description. |
| <input type="checkbox"/> | 7. Blacksmith forges. |
| <input checked="" type="checkbox"/> | 8. Boiler water treatment operations, not including cooling towers. |
| <input checked="" type="checkbox"/> | 9. Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source. |
| <input type="checkbox"/> | 10. CO ₂ lasers, used only on metals and other materials which do not emit HAP in the process. |
| <input checked="" type="checkbox"/> | 11. Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources. |
| <input type="checkbox"/> | 12. Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel. |
| <input checked="" type="checkbox"/> | 13. Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment. |
| <input checked="" type="checkbox"/> | 14. Demineralized water tanks and demineralizer vents. |
| <input checked="" type="checkbox"/> | 15. Drop hammers or hydraulic presses for forging or metalworking. |
| <input checked="" type="checkbox"/> | 16. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam. |
| <input type="checkbox"/> | 17. Emergency (backup) electrical generators at residential locations. |
| <input checked="" type="checkbox"/> | 18. Emergency road flares. |
| <input checked="" type="checkbox"/> | 19. Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO _x , SO ₂ , VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: <u>Gasoline and diesel small storage tanks – VOC < 1.0 lb/hr & <0.1 tpy</u> <u>Gasoline and diesel fuel dispensing pumps – VOC < 1.0 lb/hr & <0.1 tpy</u> _____ _____ _____ _____ _____ _____ _____ |

24. Insignificant Activities (Check all that apply)

| | |
|-------------------------------------|--|
| <input type="checkbox"/> | 20. Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis: _____ _____ _____ _____ _____ |
| <input checked="" type="checkbox"/> | 21. Environmental chambers not using hazardous air pollutant (HAP) gases. |
| <input checked="" type="checkbox"/> | 22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption. |
| <input type="checkbox"/> | 23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment. |
| <input checked="" type="checkbox"/> | 24. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis. |
| <input checked="" type="checkbox"/> | 25. Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP. |
| <input checked="" type="checkbox"/> | 26. Fire suppression systems. |
| <input checked="" type="checkbox"/> | 27. Firefighting equipment and the equipment used to train firefighters. |
| <input type="checkbox"/> | 28. Flares used solely to indicate danger to the public. |
| <input checked="" type="checkbox"/> | 29. Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted. |
| <input checked="" type="checkbox"/> | 30. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation. |
| <input checked="" type="checkbox"/> | 31. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic. |
| <input checked="" type="checkbox"/> | 32. Humidity chambers. |
| <input checked="" type="checkbox"/> | 33. Hydraulic and hydrostatic testing equipment. |
| <input type="checkbox"/> | 34. Indoor or outdoor kerosene heaters. |
| <input checked="" type="checkbox"/> | 35. Internal combustion engines used for landscaping purposes. |
| <input checked="" type="checkbox"/> | 36. Laser trimmers using dust collection to prevent fugitive emissions. |
| <input checked="" type="checkbox"/> | 37. Laundry activities, except for dry-cleaning and steam boilers. |
| <input checked="" type="checkbox"/> | 38. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities. |
| <input checked="" type="checkbox"/> | 39. Oxygen scavenging (de-aeration) of water. |
| <input type="checkbox"/> | 40. Ozone generators. |

| 24. Insignificant Activities (Check all that apply) | |
|--|--|
| <input checked="" type="checkbox"/> | 41. Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.) |
| <input checked="" type="checkbox"/> | 42. Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device. |
| <input checked="" type="checkbox"/> | 43. Process water filtration systems and demineralizers. |
| <input checked="" type="checkbox"/> | 44. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification. |
| <input checked="" type="checkbox"/> | 45. Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified. |
| <input checked="" type="checkbox"/> | 46. Routing calibration and maintenance of laboratory equipment or other analytical instruments. |
| <input type="checkbox"/> | 47. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers. |
| <input type="checkbox"/> | 48. Shock chambers. |
| <input type="checkbox"/> | 49. Solar simulators. |
| <input checked="" type="checkbox"/> | 50. Space heaters operating by direct heat transfer. |
| <input checked="" type="checkbox"/> | 51. Steam cleaning operations. |
| <input checked="" type="checkbox"/> | 52. Steam leaks. |
| <input checked="" type="checkbox"/> | 53. Steam sterilizers. |
| <input checked="" type="checkbox"/> | 54. Steam vents and safety relief valves. |
| <input type="checkbox"/> | 55. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized. |
| <input checked="" type="checkbox"/> | 56. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list. |
| <input type="checkbox"/> | 57. Such other sources or activities as the Director may determine. |
| <input checked="" type="checkbox"/> | 58. Tobacco smoking rooms and areas. |
| <input type="checkbox"/> | 59. Vents from continuous emissions monitors and other analyzers. |

Section 5: Emission Units, Control Devices, and Emission Points

| |
|---|
| 25. Equipment Table |
| Fill out the Title V Equipment Table and provide it as ATTACHMENT D . |
| 26. Emission Units |
| For each emission unit listed in the Title V Equipment Table , fill out and provide an Emission Unit Form as ATTACHMENT E . |
| For each emission unit not in compliance with an applicable requirement, fill out a Schedule of Compliance Form as ATTACHMENT F . |
| 27. Control Devices |
| For each control device listed in the Title V Equipment Table , fill out and provide an Air Pollution Control Device Form as ATTACHMENT G . |
| For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the Compliance Assurance Monitoring (CAM) Form(s) for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as ATTACHMENT H . |

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

*Note: This Certification must be signed by a responsible official. The **original**, signed in **blue ink**, must be submitted with the application. Applications without an **original** signed certification will be considered as incomplete.*

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

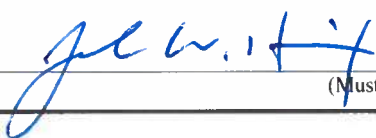
Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name: Bill Hixon

Title: Director – Operations Support – ABL Operations

Responsible official's signature:

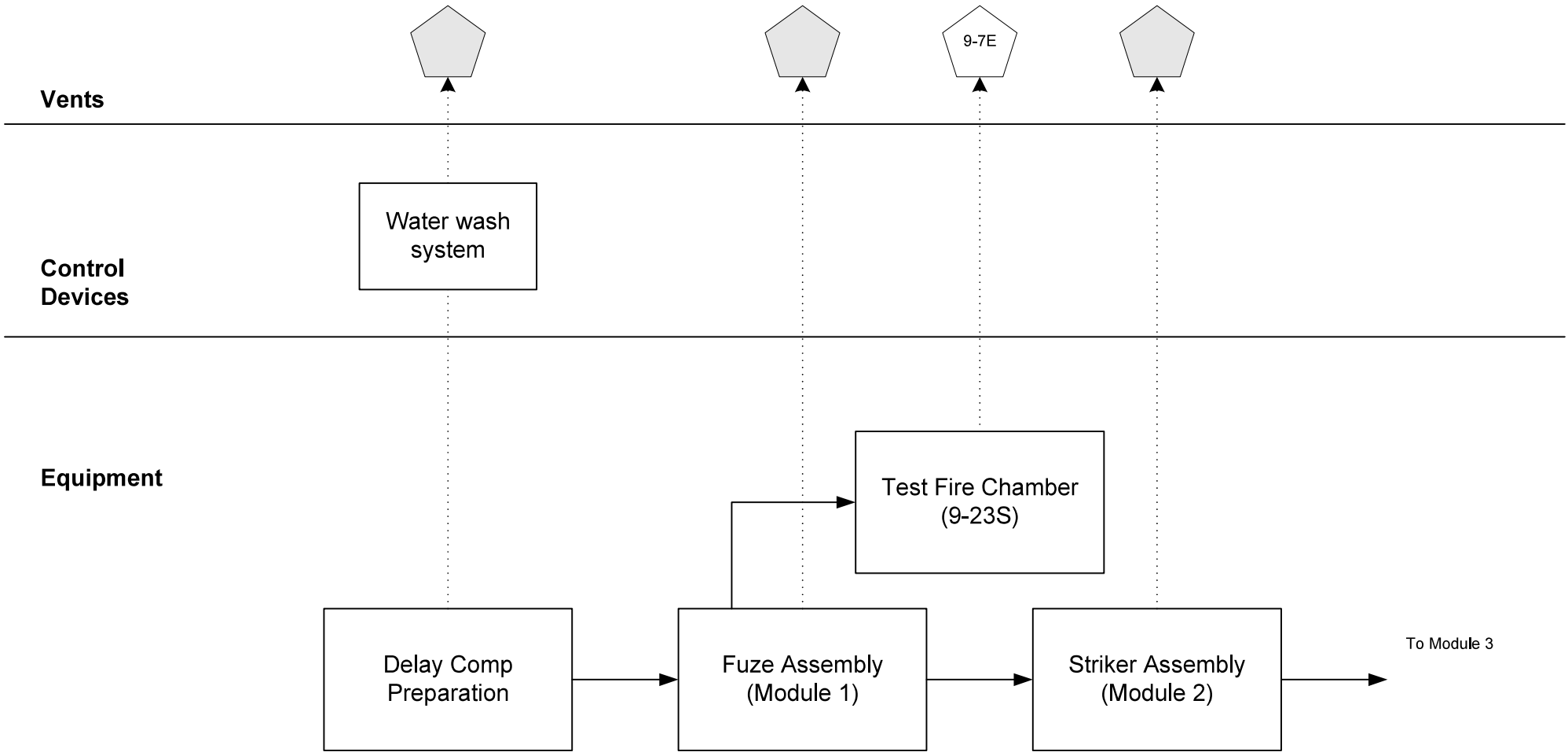
Signature:  Signature Date: 5/7/2024
(Must be signed and dated in blue ink)

Note: Please check all applicable attachments included with this permit application:

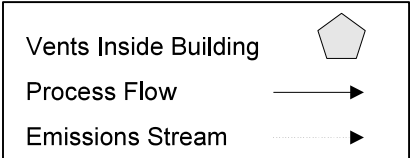
| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | ATTACHMENT A: Area Map |
| <input checked="" type="checkbox"/> | ATTACHMENT B: Plot Plan(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT C: Process Flow Diagram(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT D: Equipment Table |
| <input checked="" type="checkbox"/> | ATTACHMENT E: Emission Unit Form(s) |
| <input type="checkbox"/> | ATTACHMENT F: Schedule of Compliance Form(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT G: Air Pollution Control Device Form(s) |
| <input checked="" type="checkbox"/> | ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s) |

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

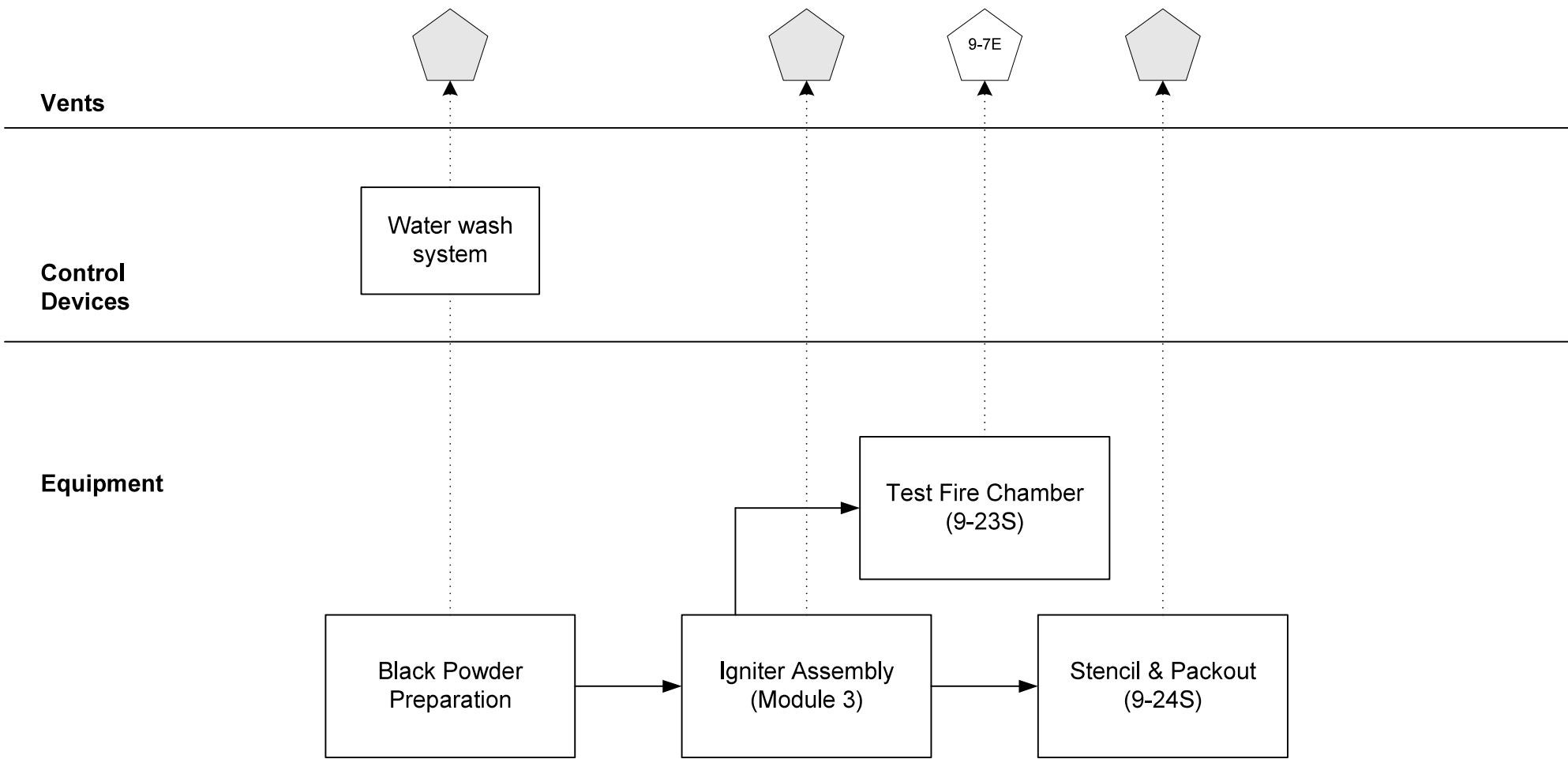
Building 361 Process Flow (Grenade Fuze Production)



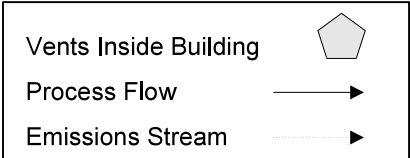
Allegany Ballistics Laboratory
Operated by Alliant Techsystems Inc
Rocket Center, WV 26726



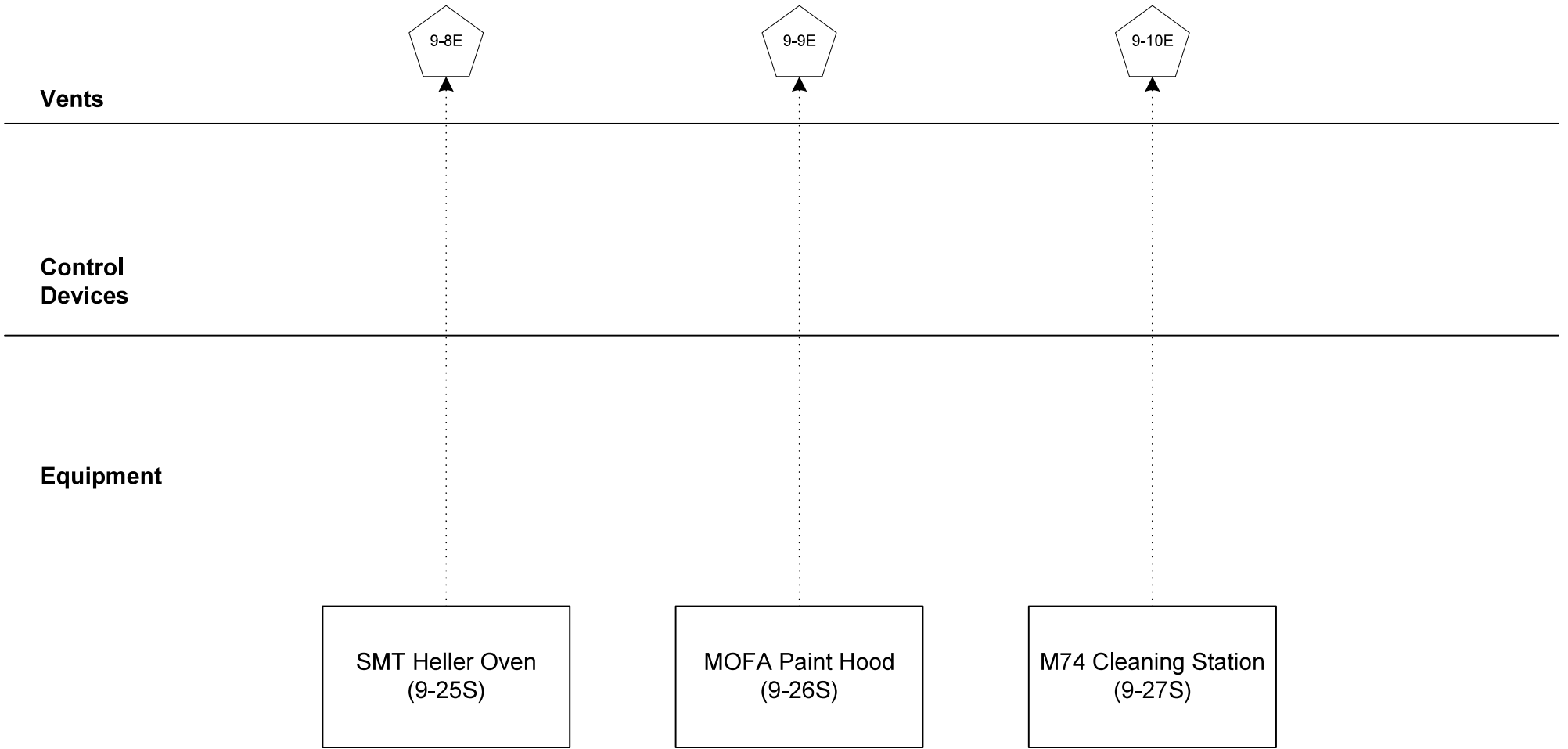
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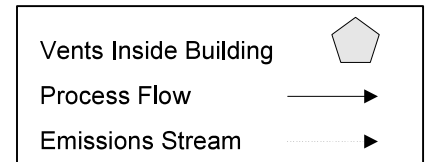
Allegany Ballistics Laboratory
Operated by Alliant Techsystems Inc
Rocket Center, WV 26726



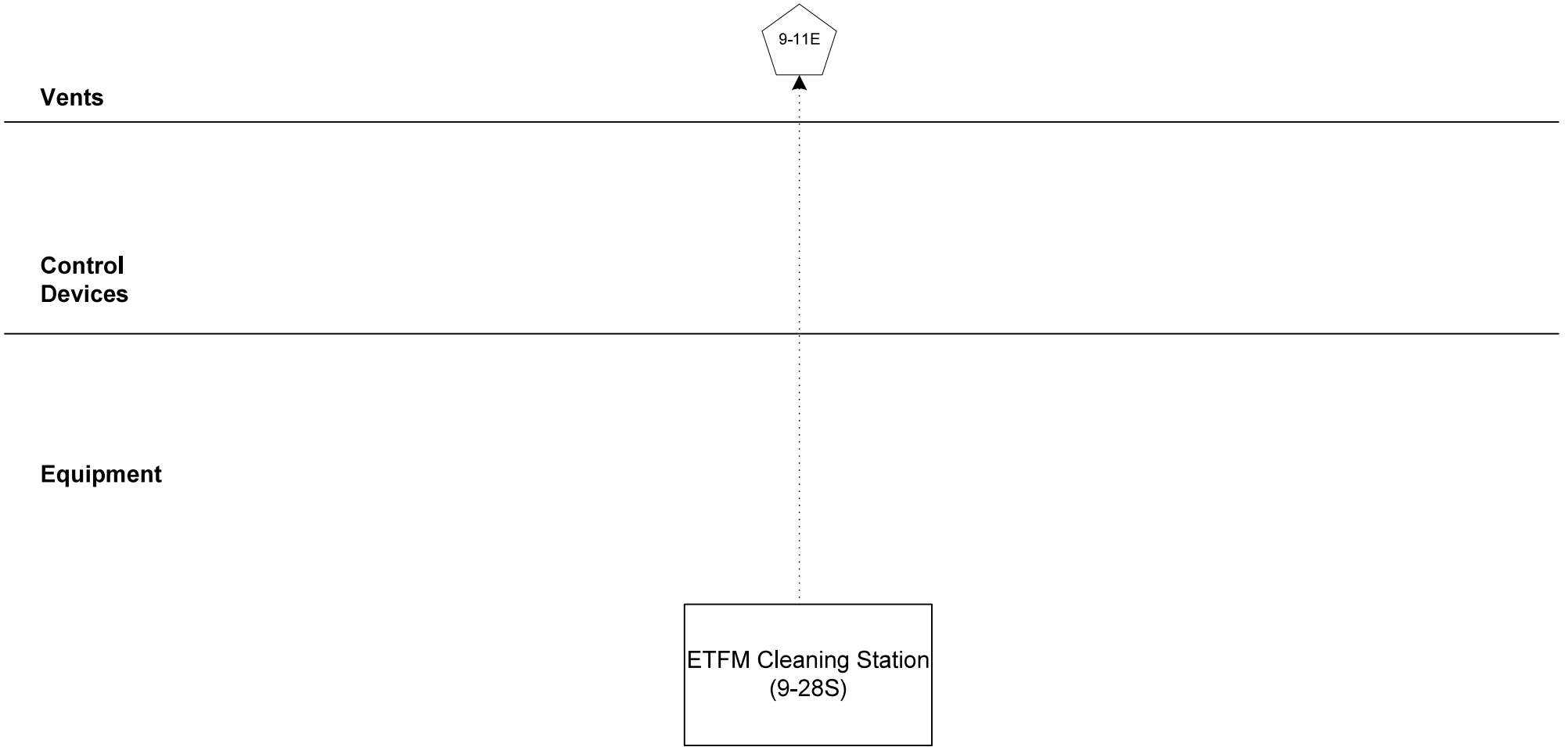
Building 432A Process Flow (Electronic Fuze Production)



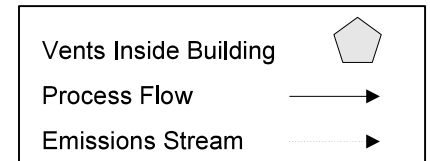
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Rocket Center, WV 26726



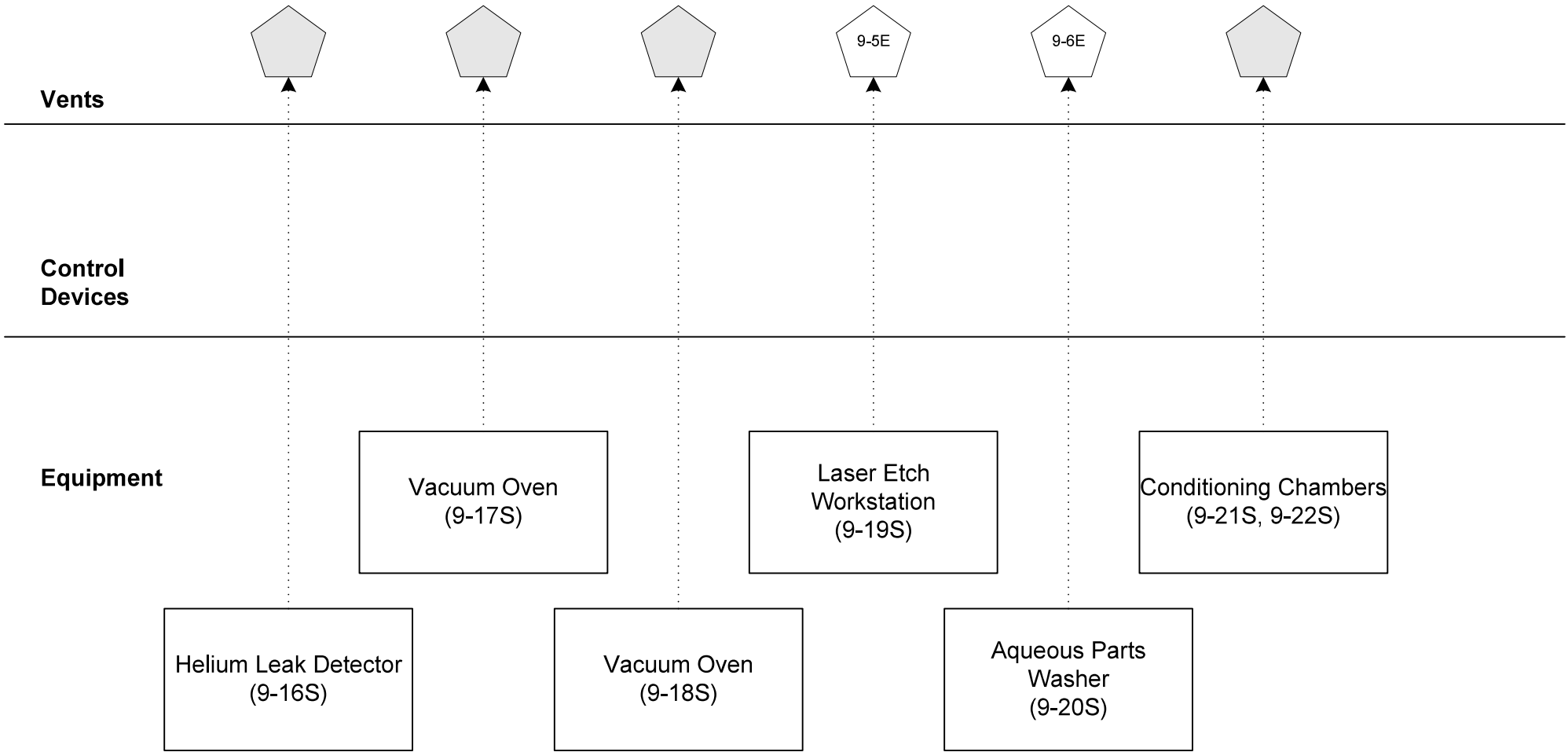
Building 432B Process Flow (Electronic Fuze Production)



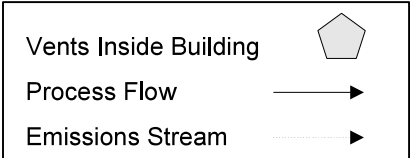
Allegany Ballistics Laboratory
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Rocket Center, WV 26726



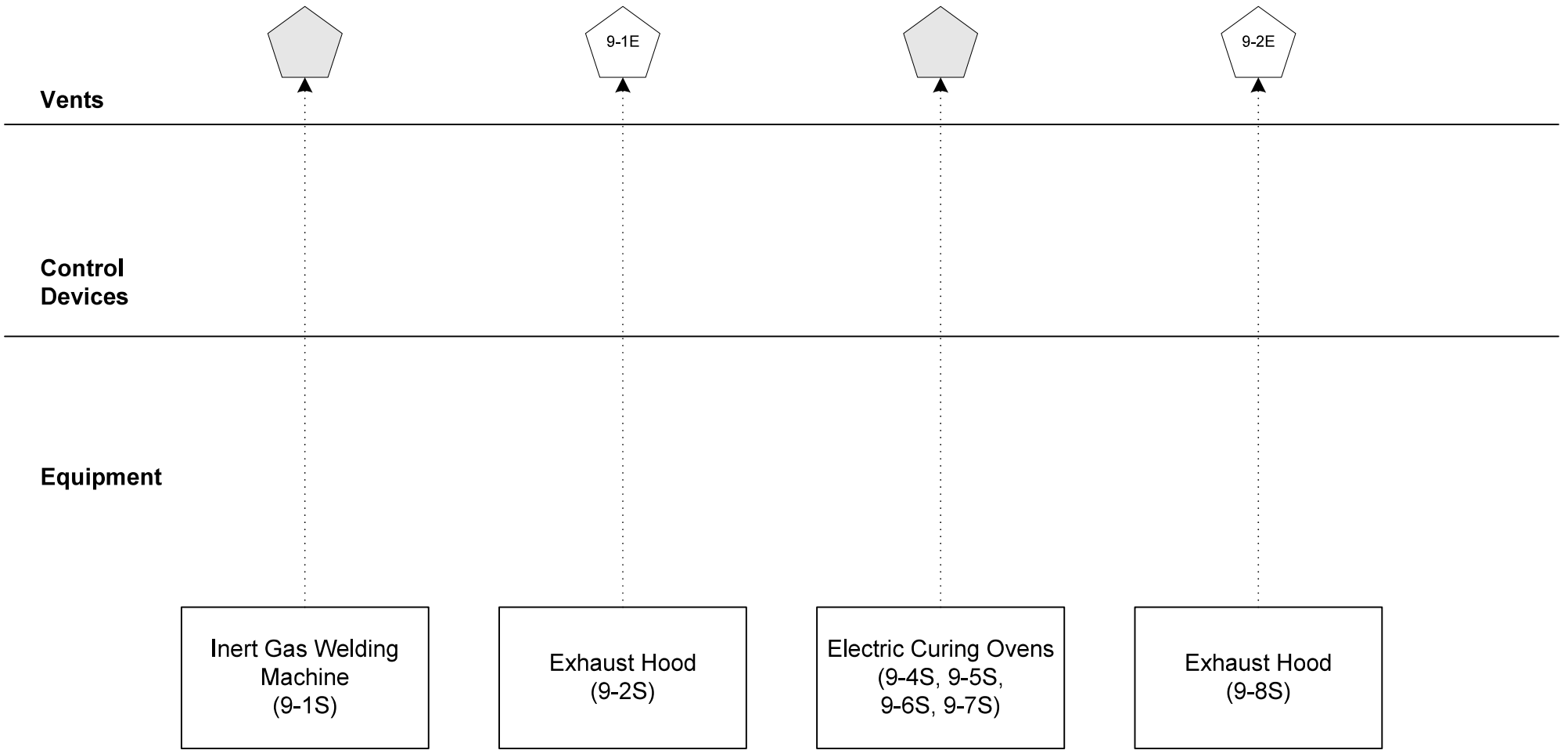
Building 432 Process Flow (Laser Products Fab.)



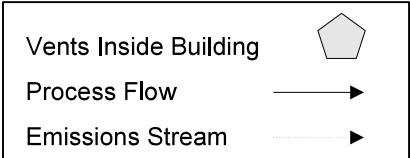
Allegany Ballistics Laboratory
Operated by Alliant Techsystems Inc
Rocket Center, WV 26726



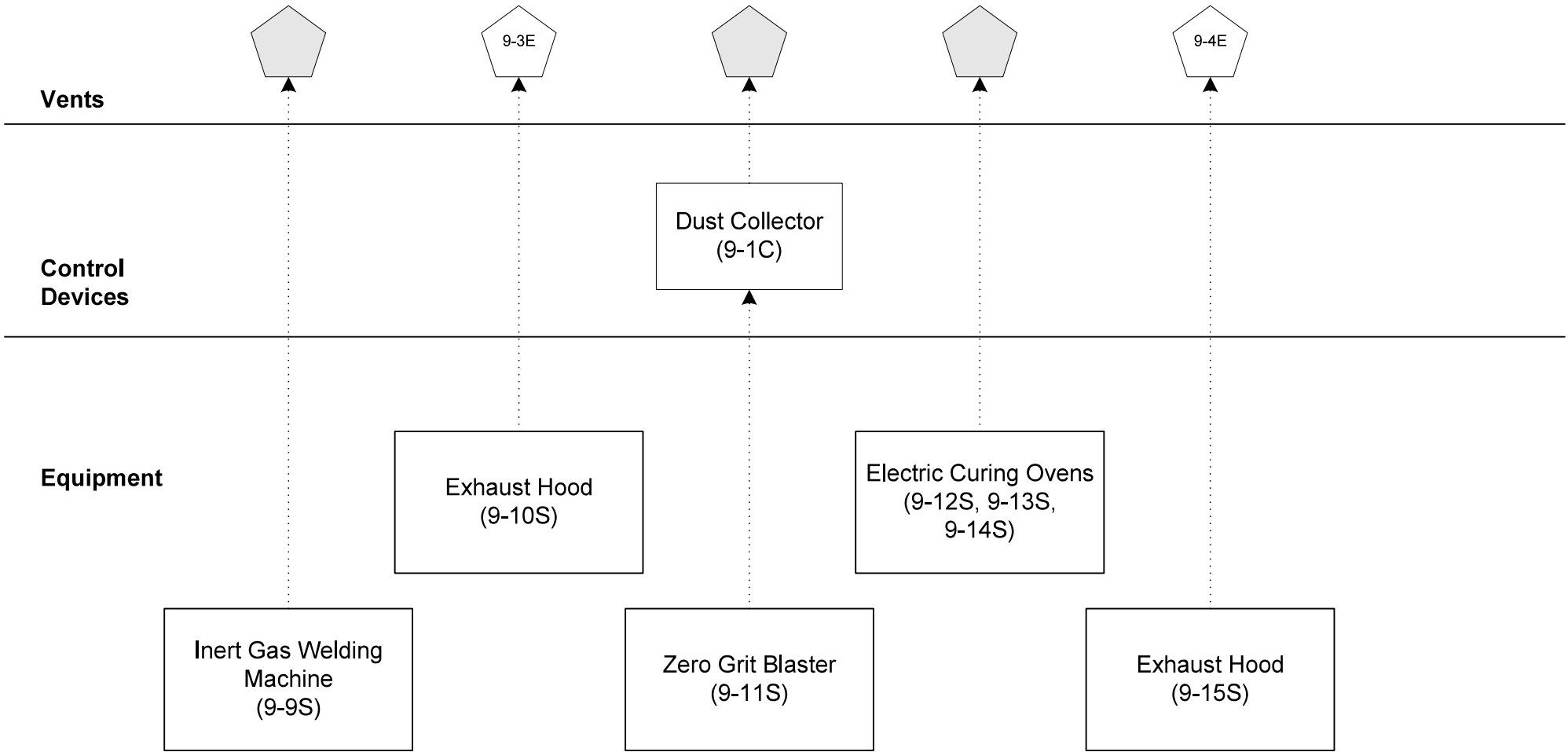
Building 8 Process Flow (Laser Products Dev.)



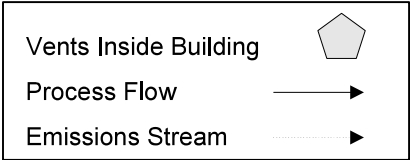
Allegany Ballistics Laboratory
Operated by Alliant Techsystems Inc
Rocket Center, WV 26726



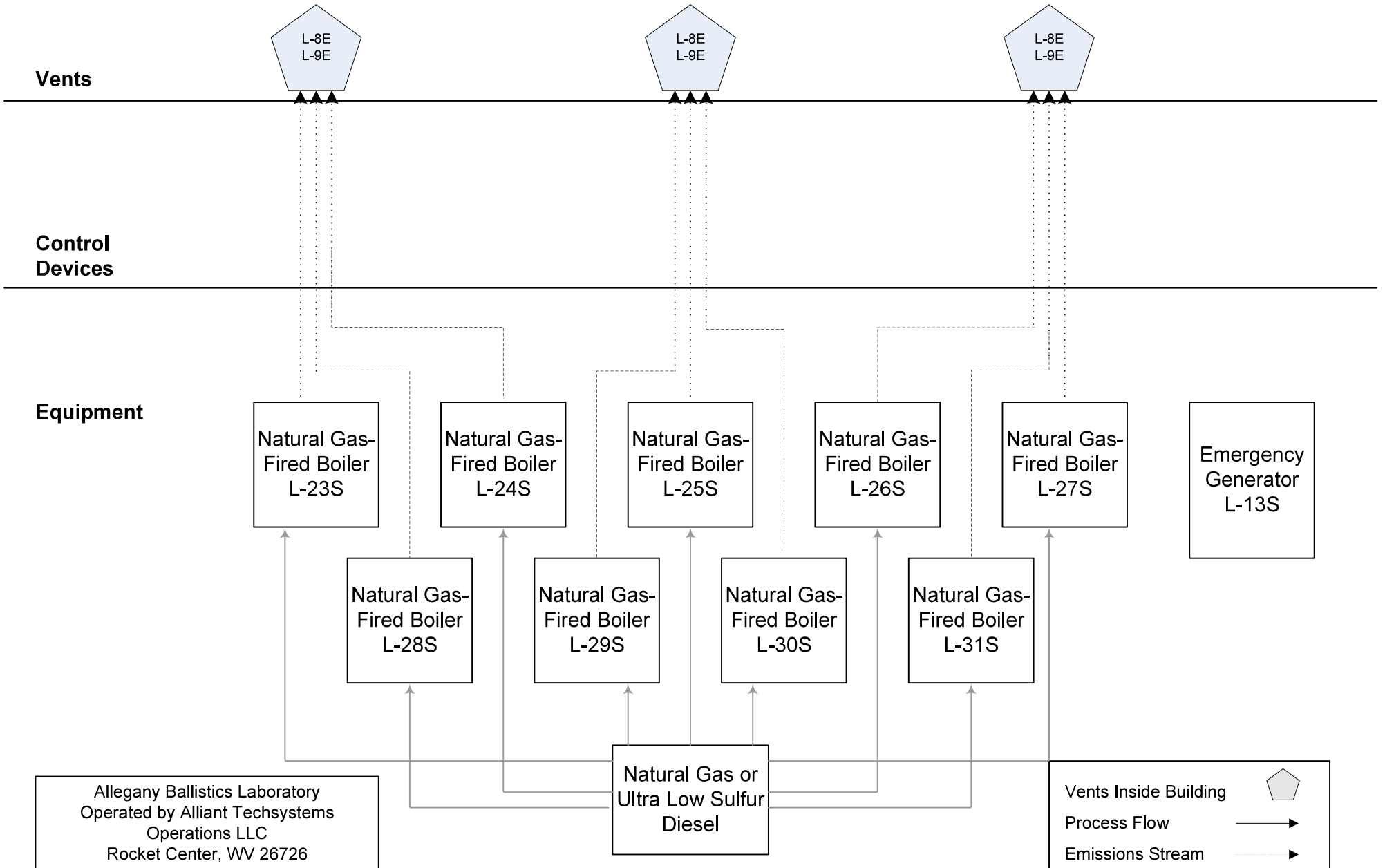
Building 432 Process Flow (Laser Products Fab.)



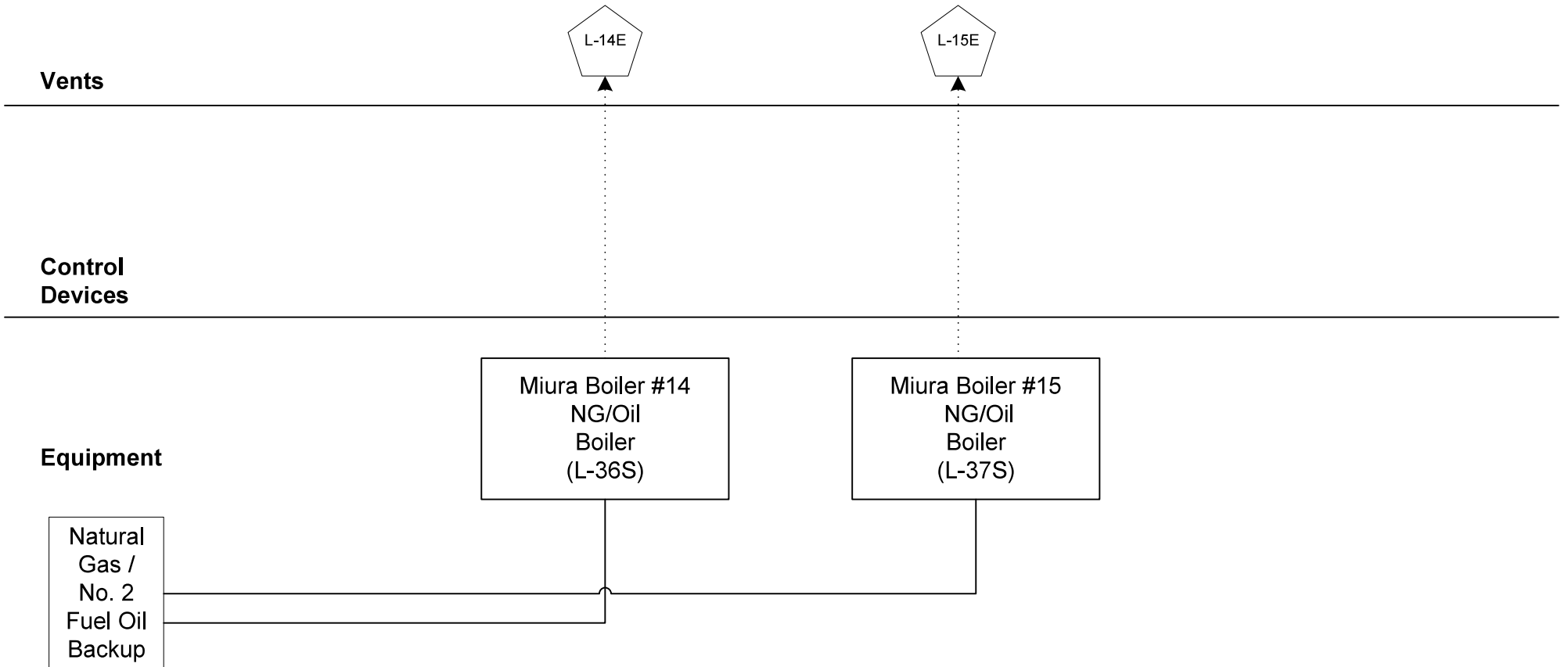
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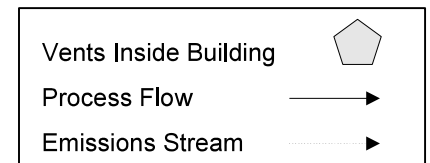
Building 850 Process Flow Plant 1 Boilers



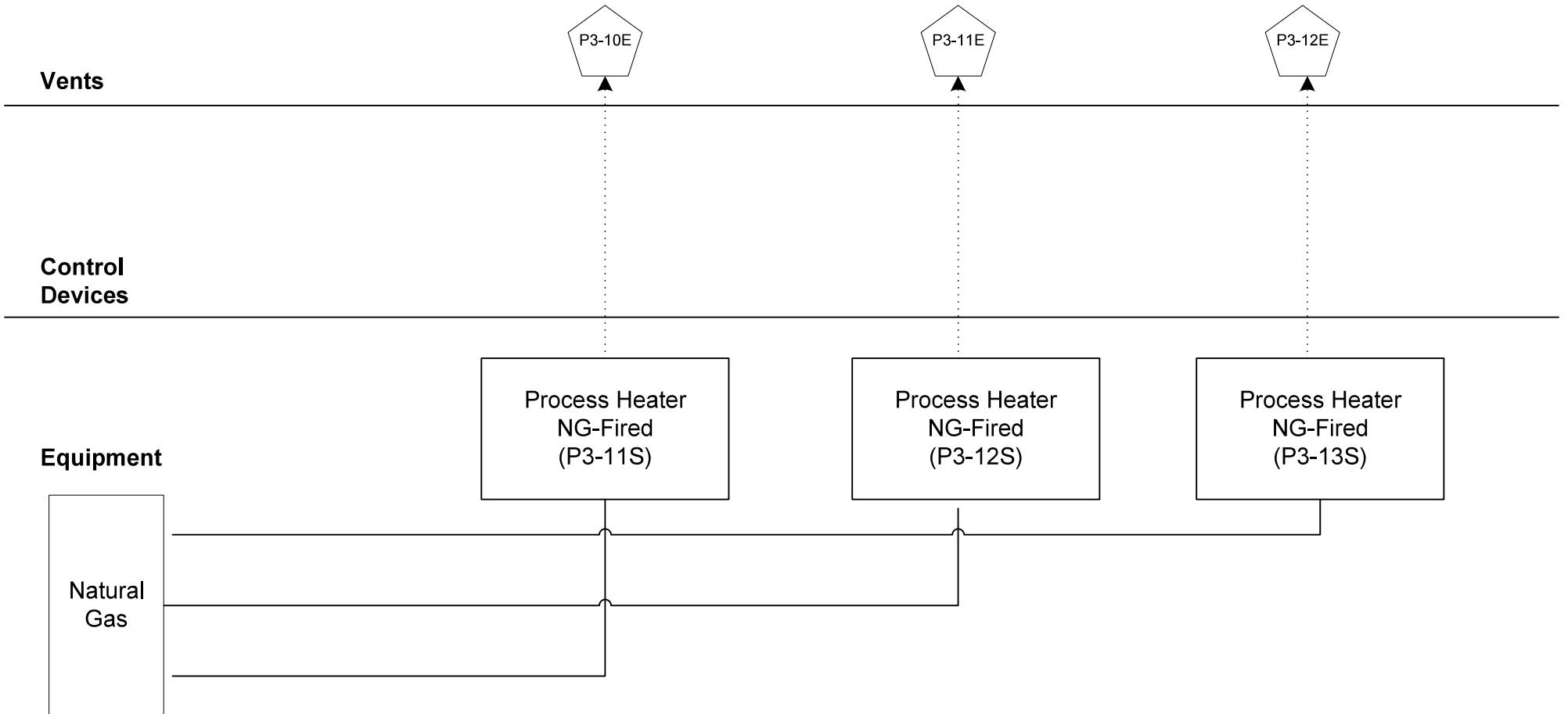
Building 3027 Process Flow (Plant 3 Boilers)



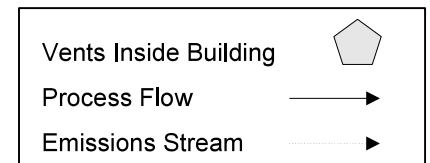
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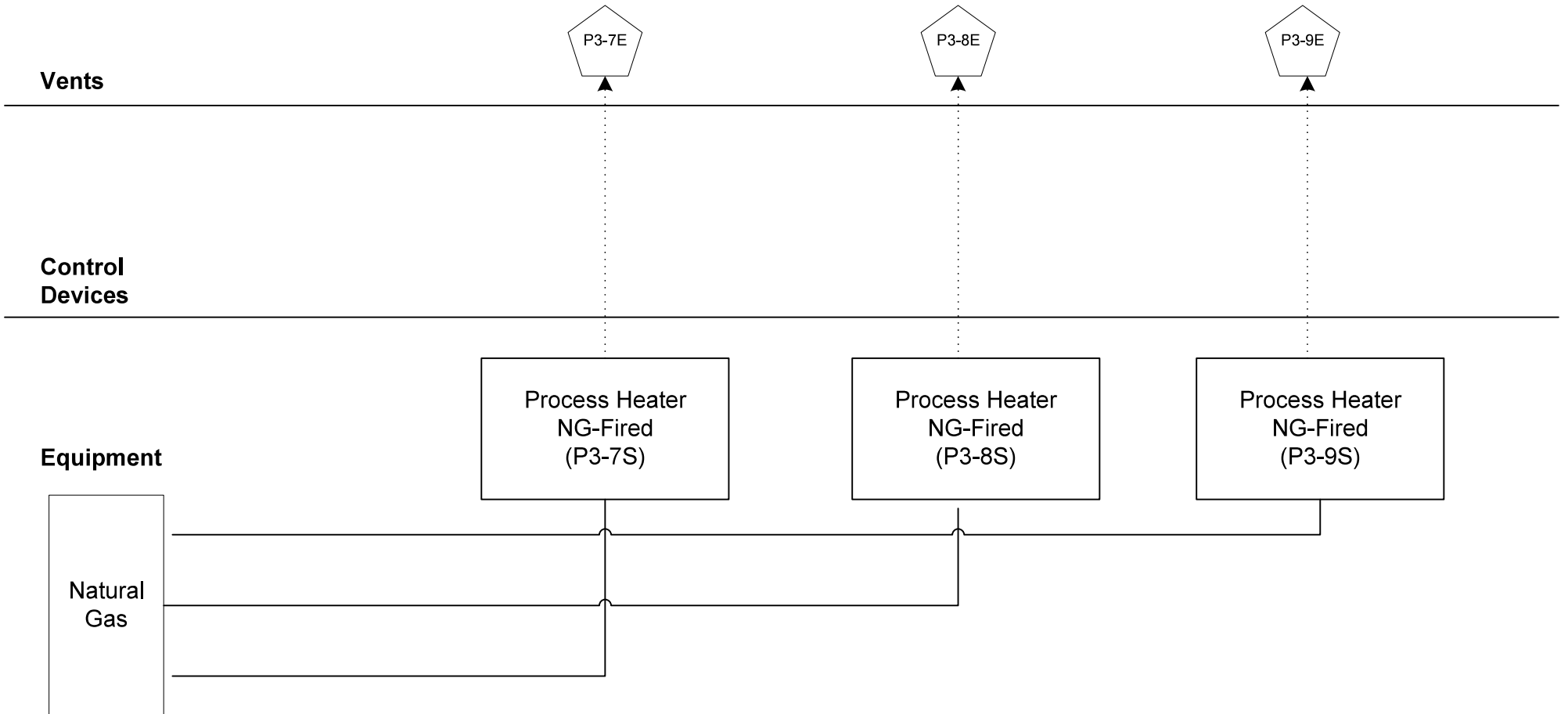
Building 3030 Process Flow (Plant 3 Process Heaters)



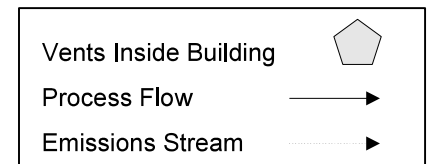
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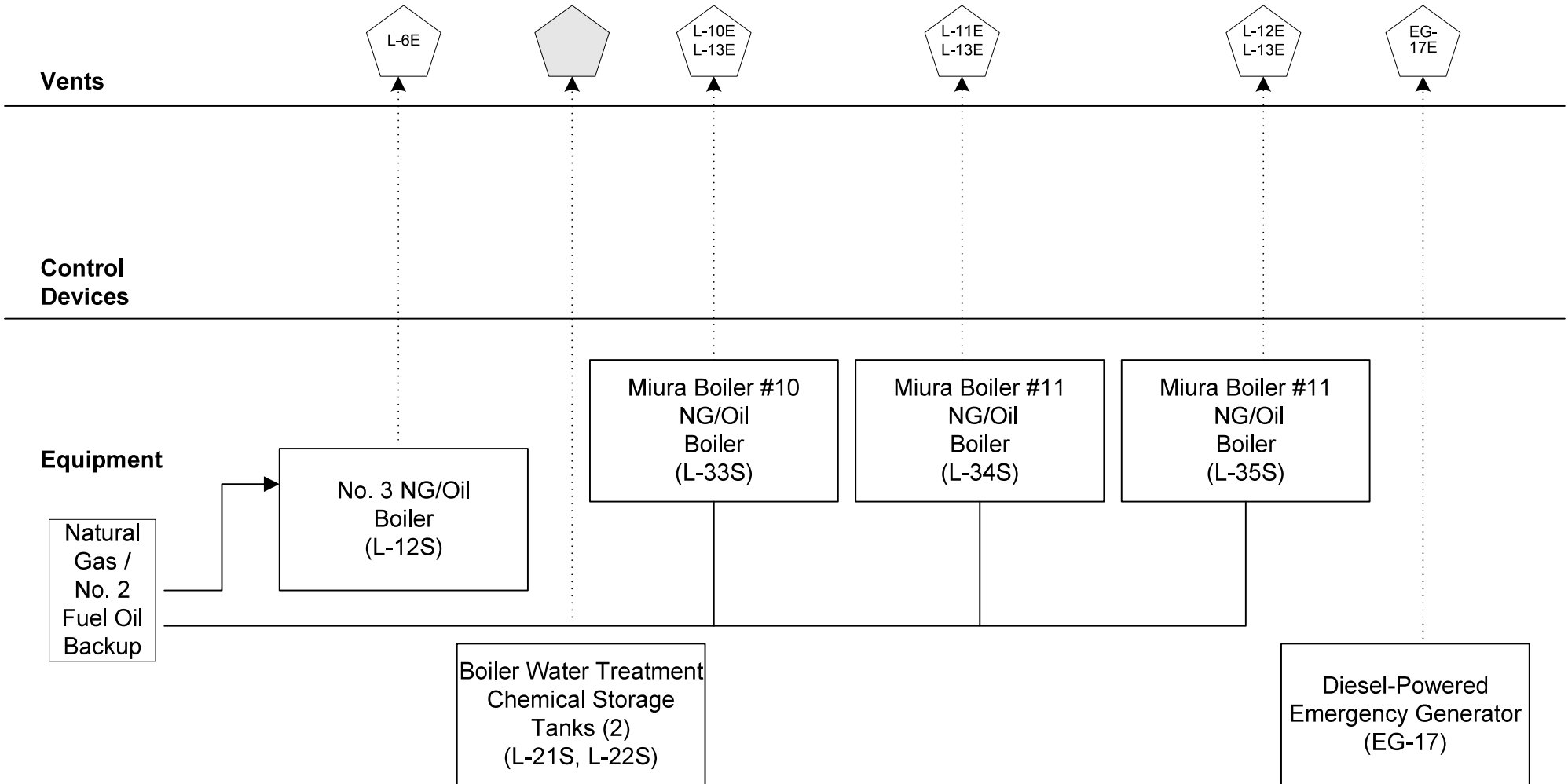
Building 3040 Process Flow (Plant 3 Process Heaters)



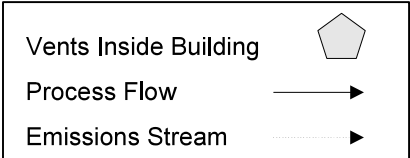
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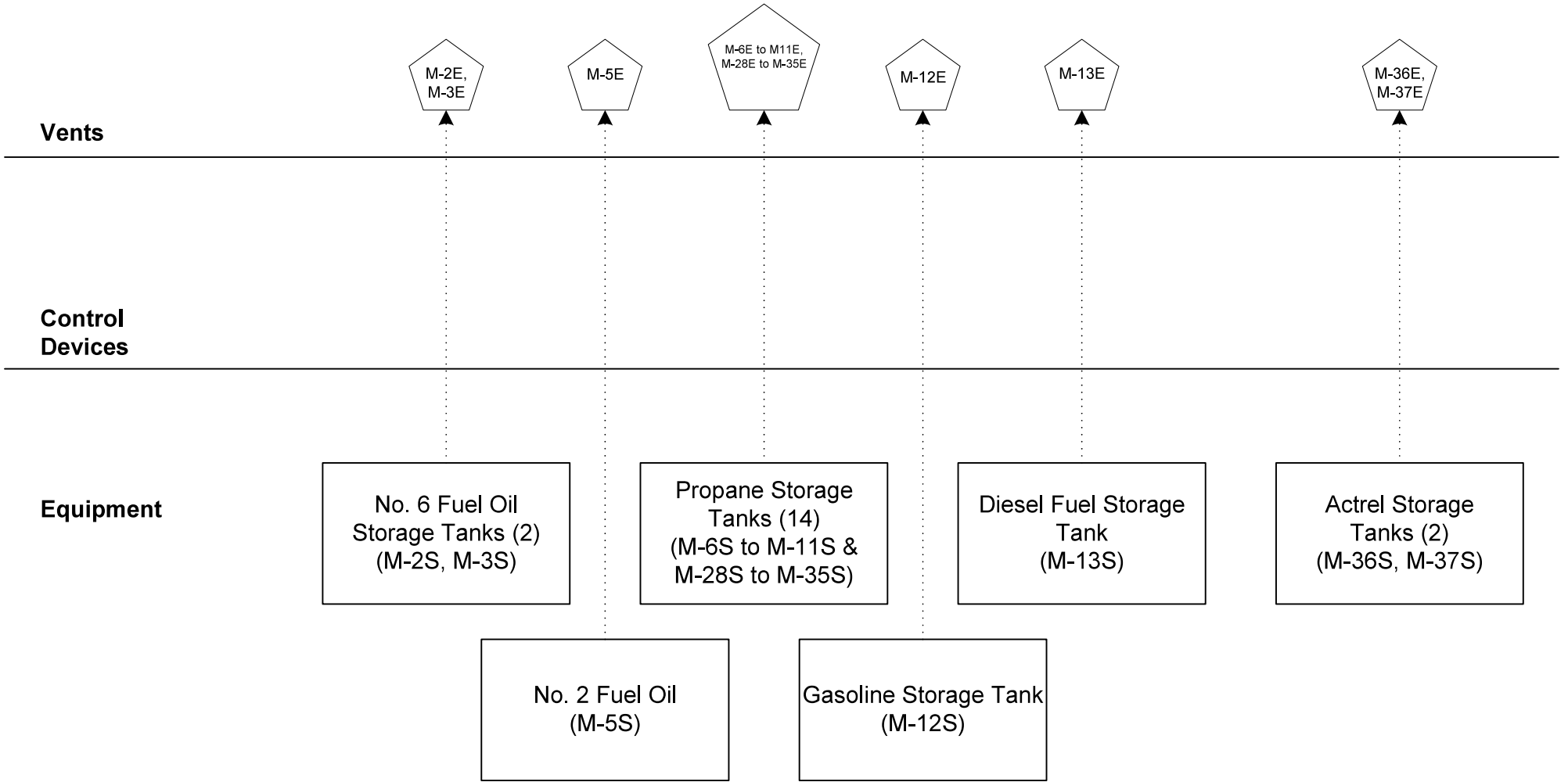
Building 8501 Process Flow (Plant 2 Boilers)



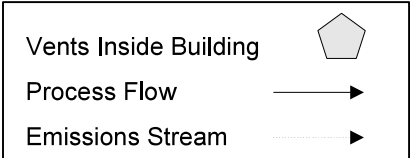
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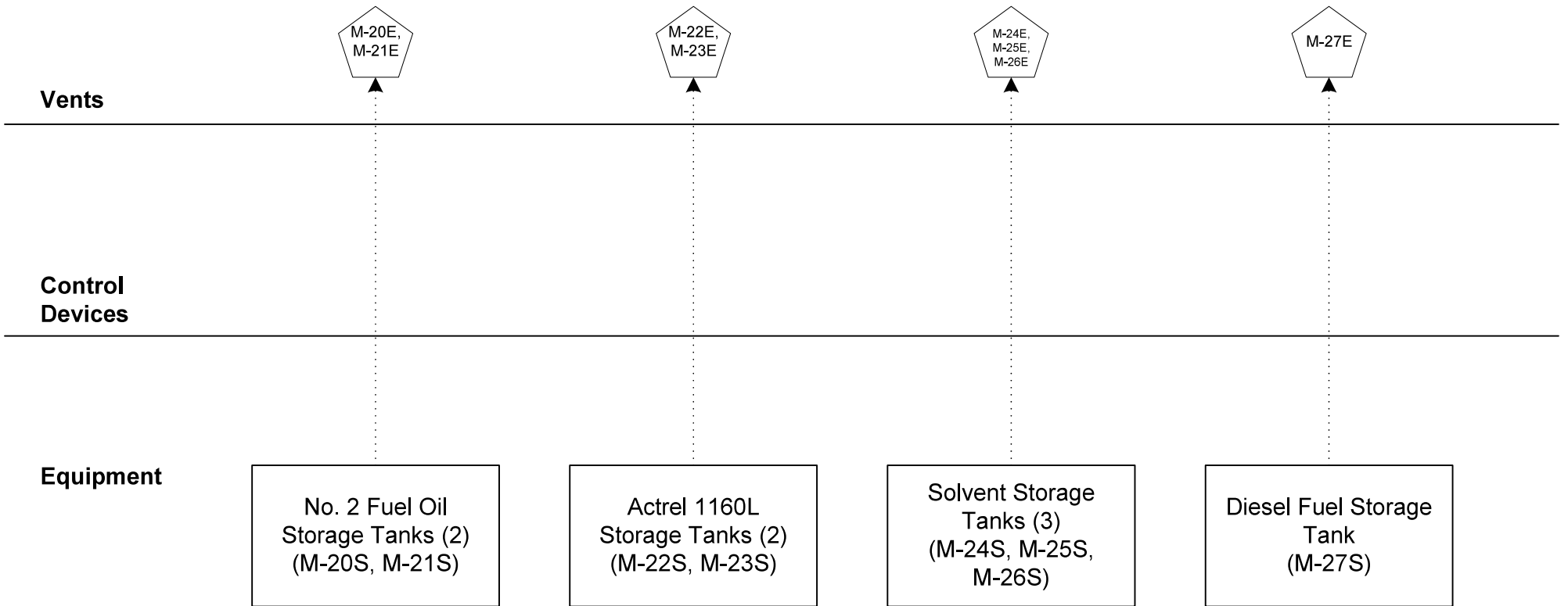
Plant 1 Storage Tanks Process Flow



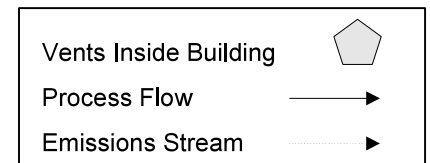
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Plant 2 Storage Tanks Process Flow



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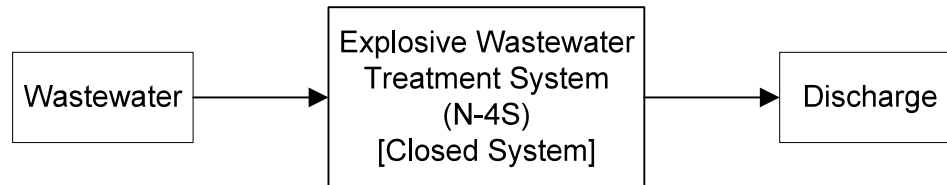


Building 383/389 Process Flow (Explosive Wastewater Treatment)

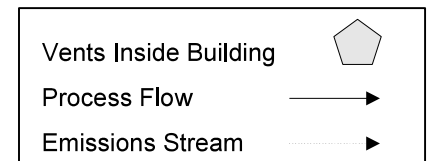
Vents

Control
Devices

Equipment



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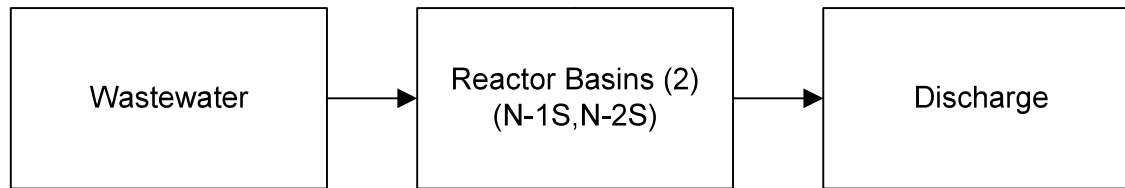
Building 442 Process Flow (Plant 1 Wastewater Treatment)

Vents

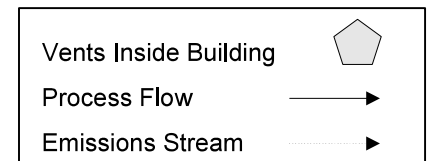


Control
Devices

Equipment



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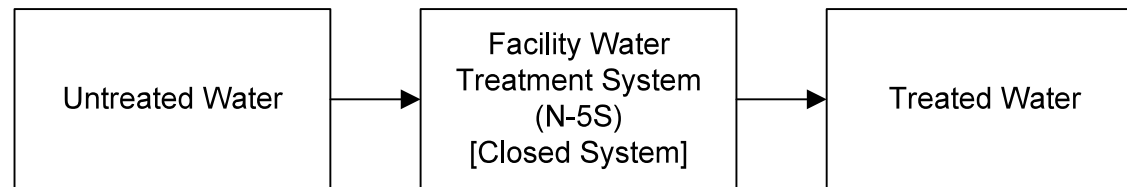


Building 535 Process Flow (Potable Water Treatment)

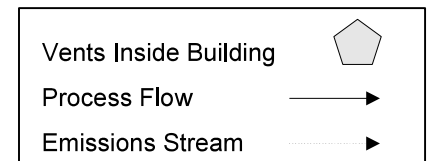
Vents

Control
Devices

Equipment



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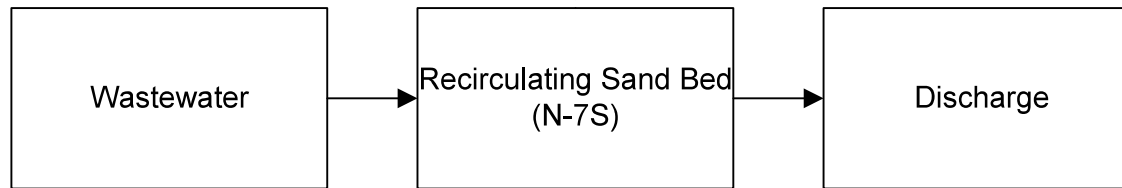
Building 8563 Process Flow (Plant 2 Wastewater Treatment)

Vents

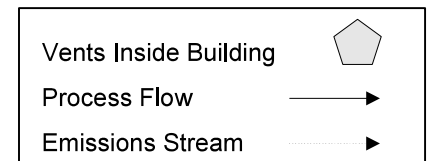


Control
Devices

Equipment



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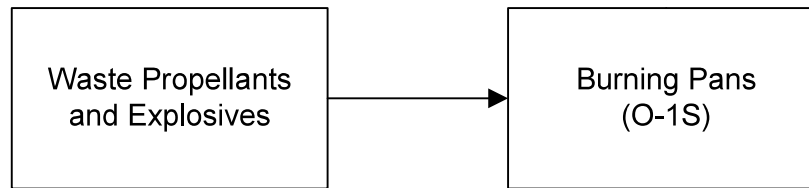
Burning Ground Process Flow

Vents

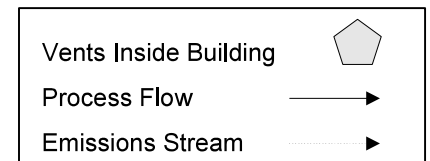


Control
Devices

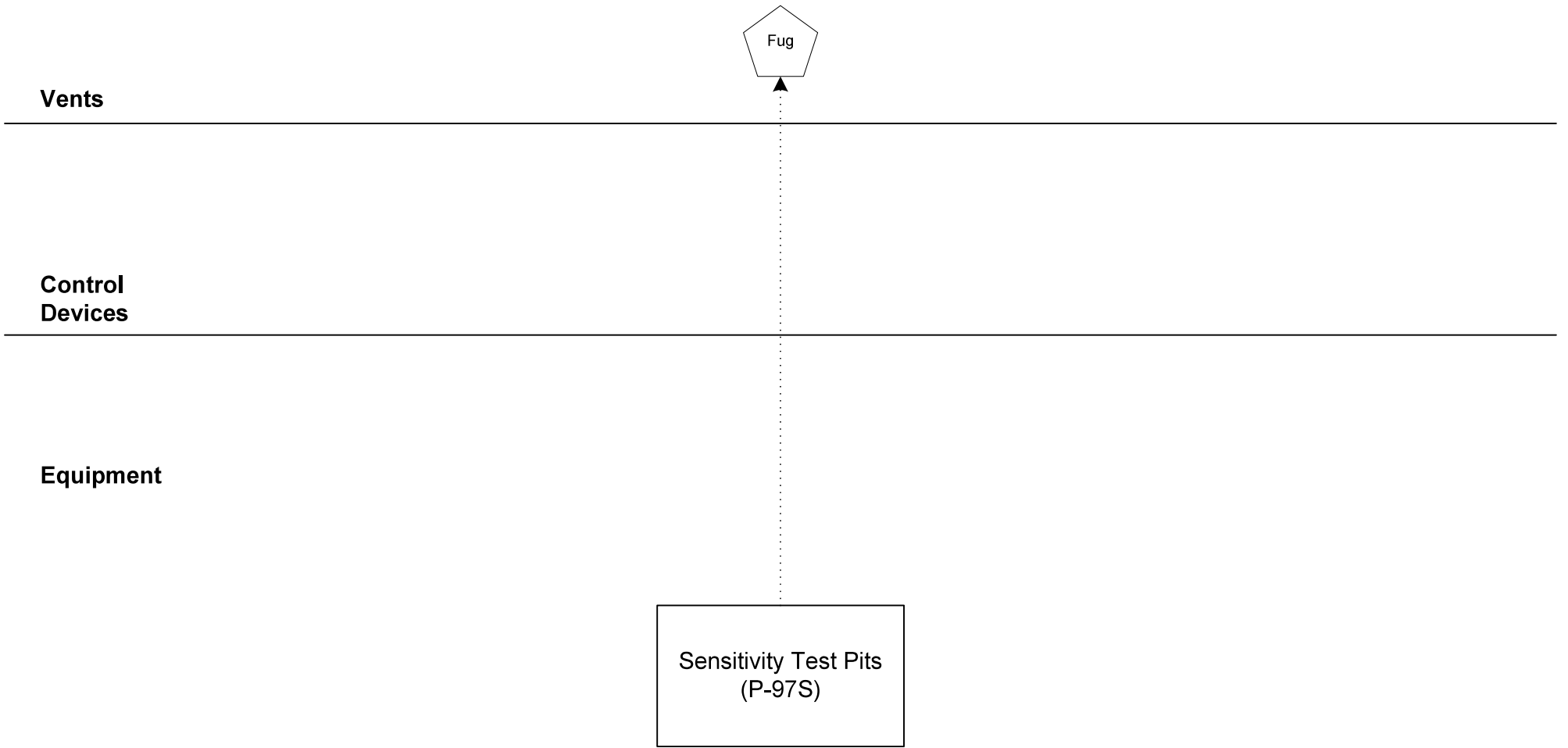
Equipment



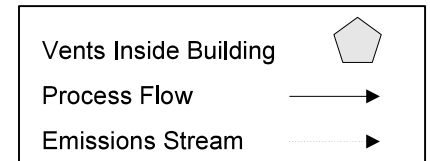
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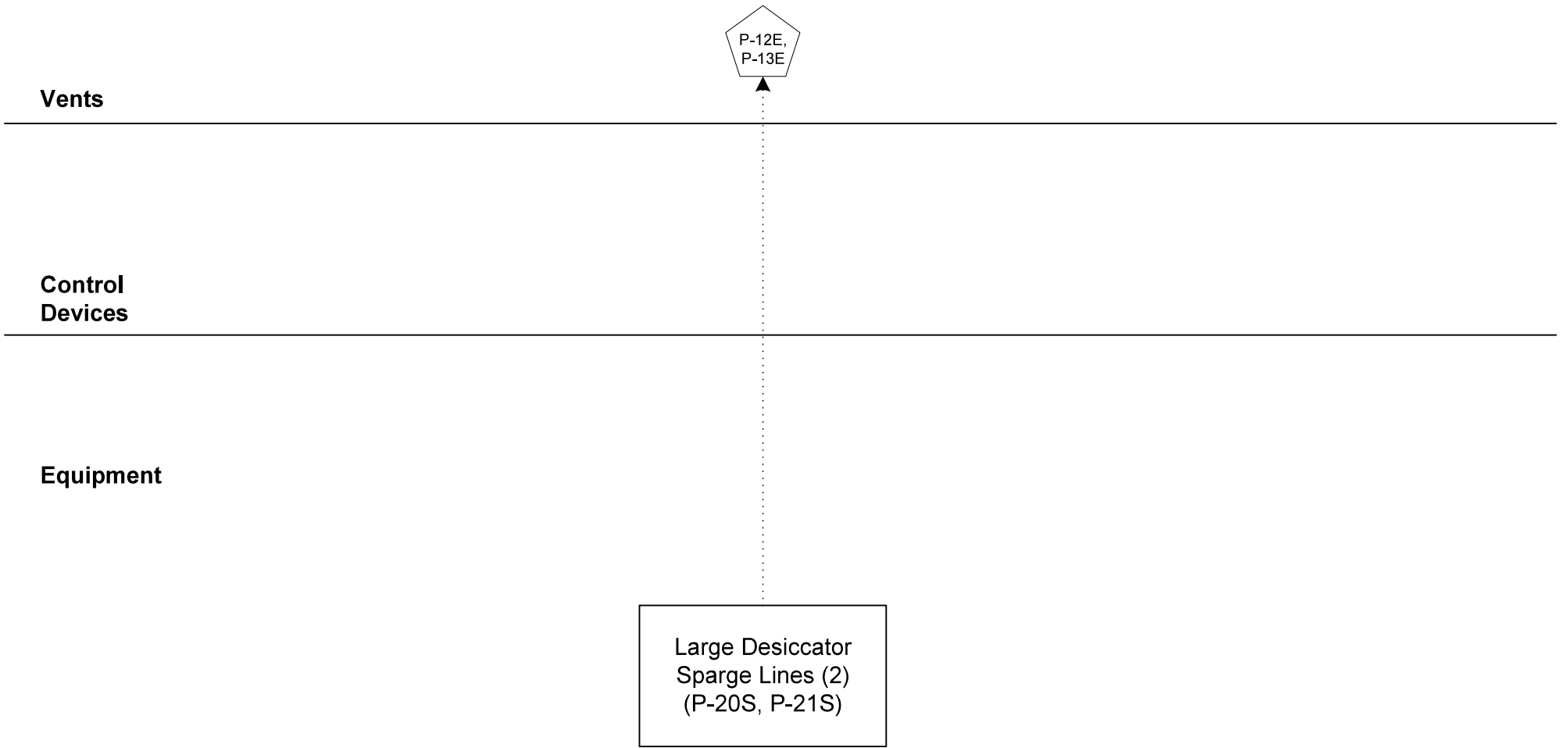
500 Area Process Flow (Sensitivity Testing)



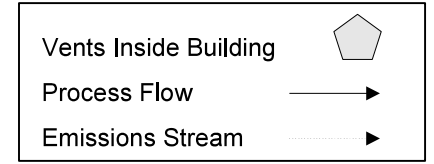
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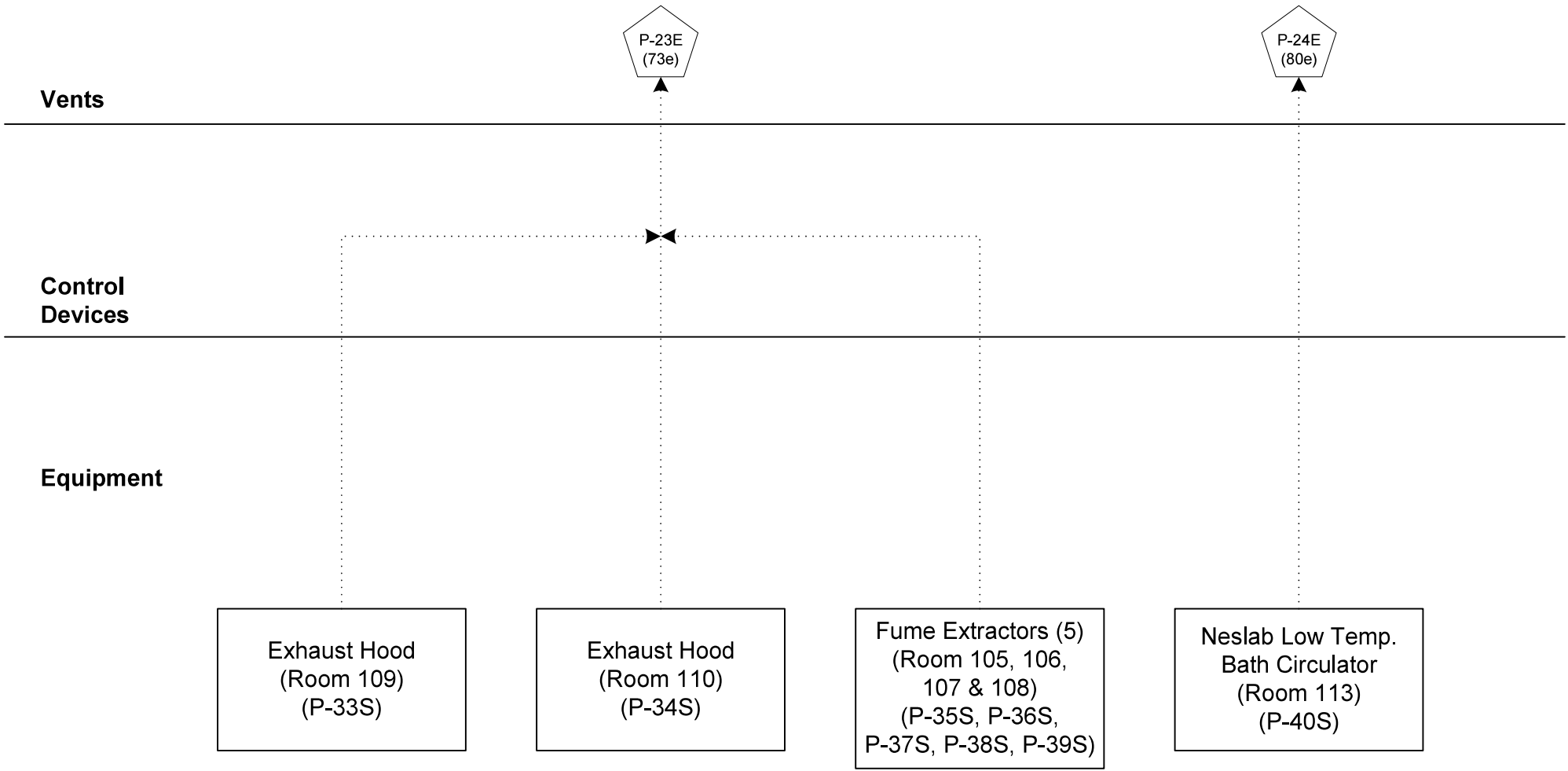
Building 21 Process Flow (Lacquer Preparation)



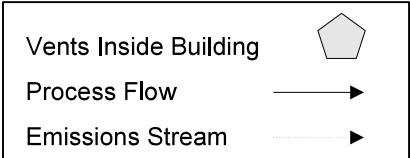
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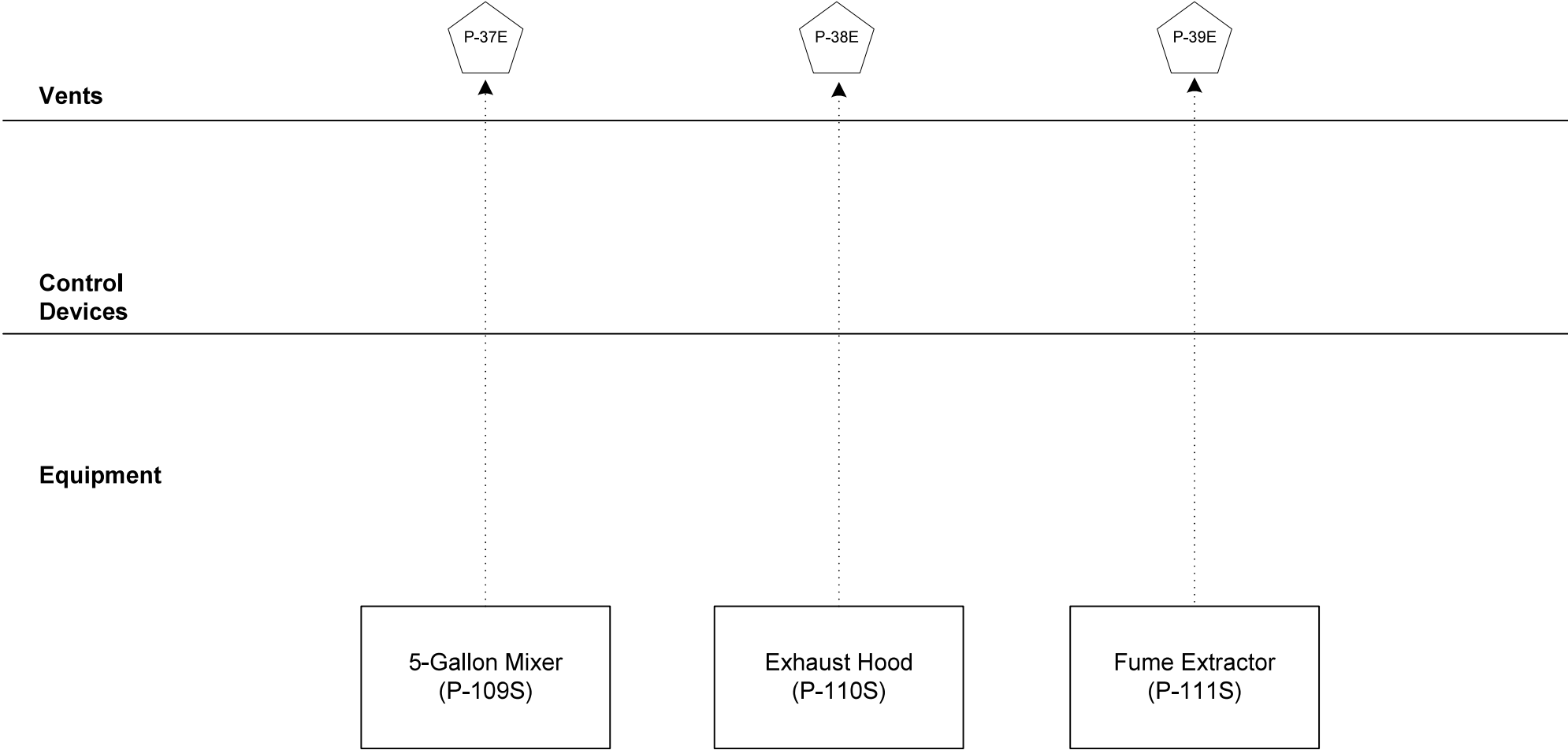
Building 394 Process Flow (Physical & Hazards Testing)






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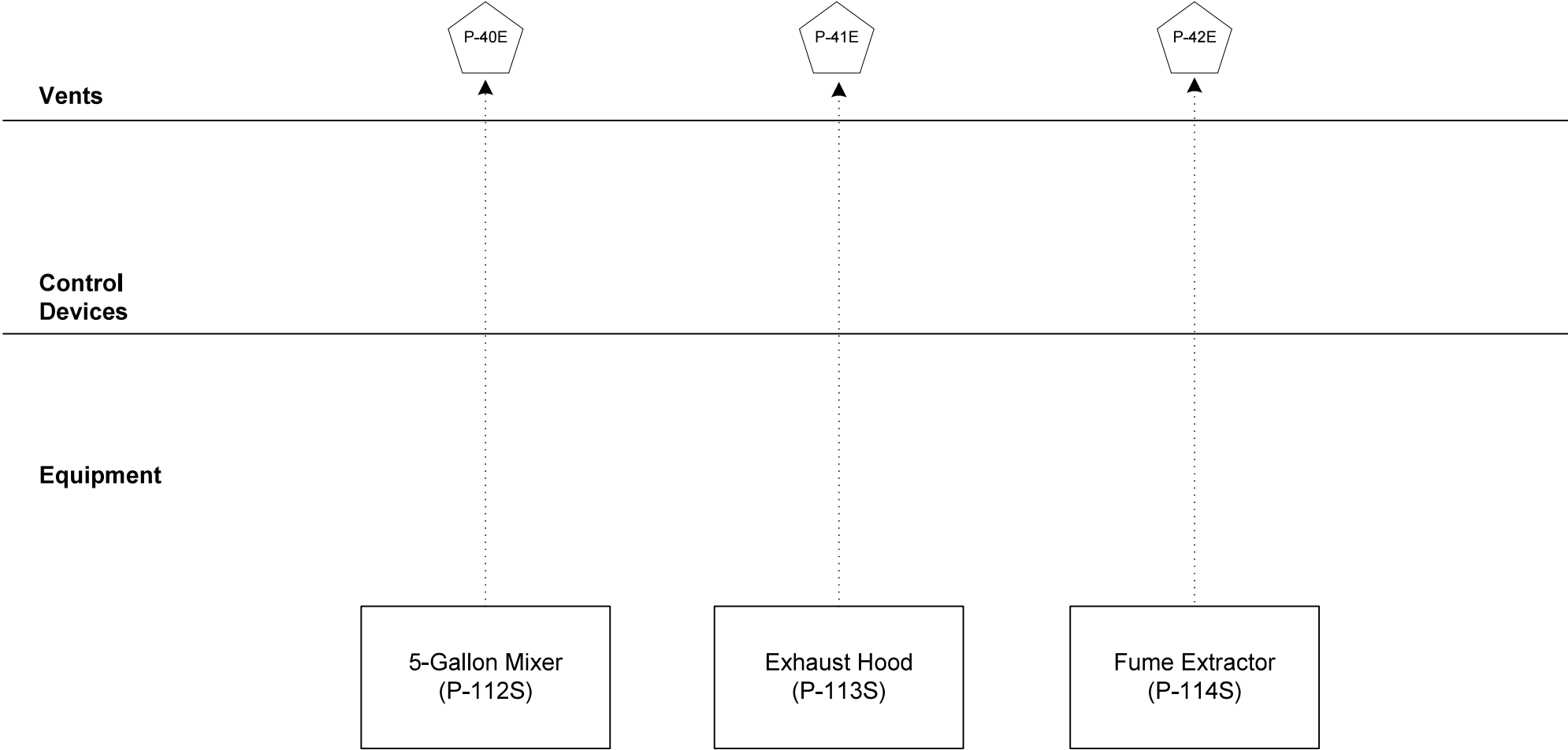
Building 396 Process Flow (Five-Gallon Mixer)




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| | |
|-----------------------|---|
| Vents Inside Building |  |
| Process Flow |  |
| Emissions Stream |  |


Building 397 Process Flow (Five-Gallon Mixer)



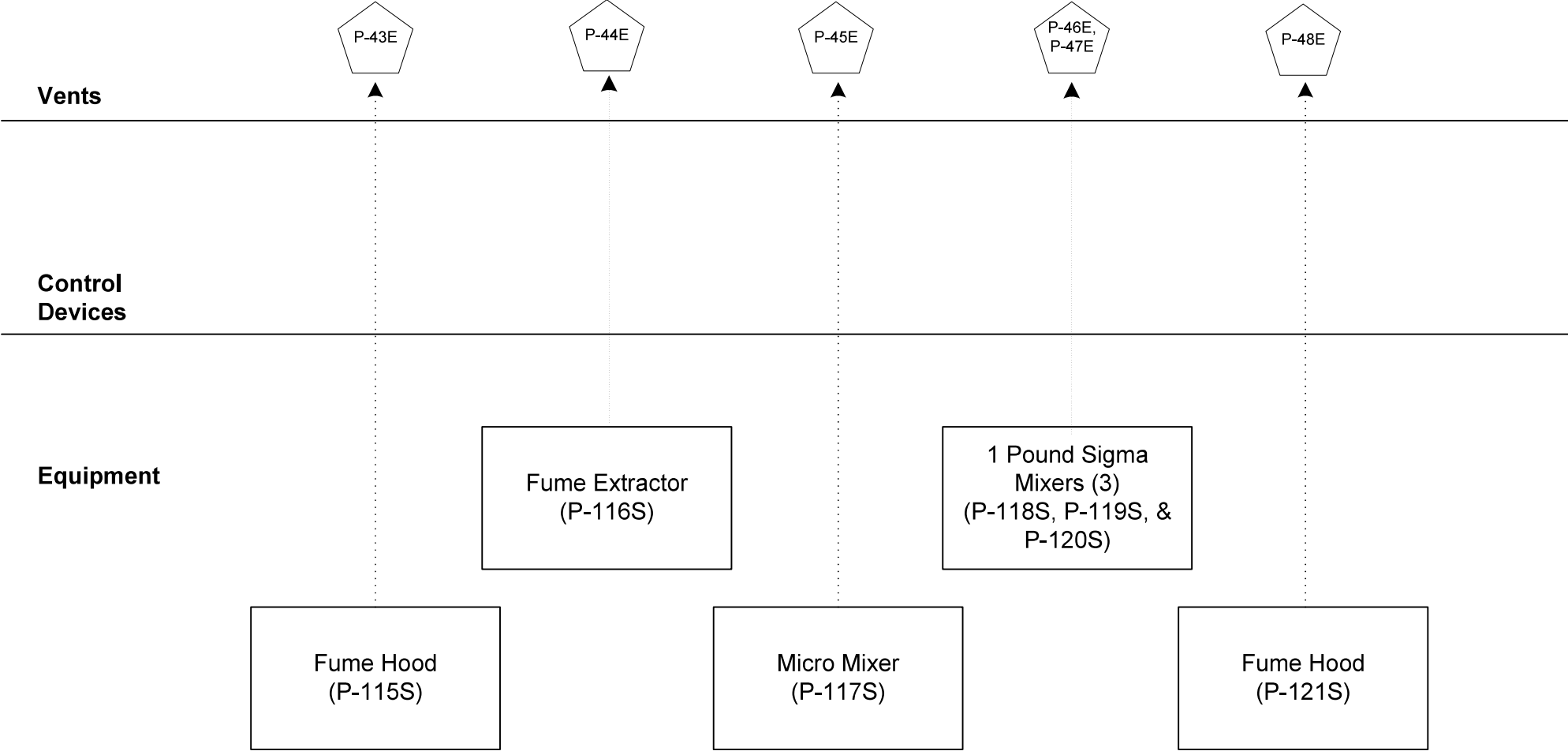
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Vents Inside Building 

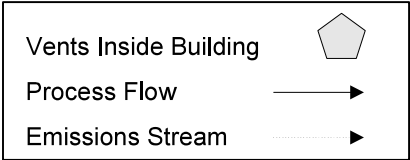
Process Flow 

Emissions Stream 

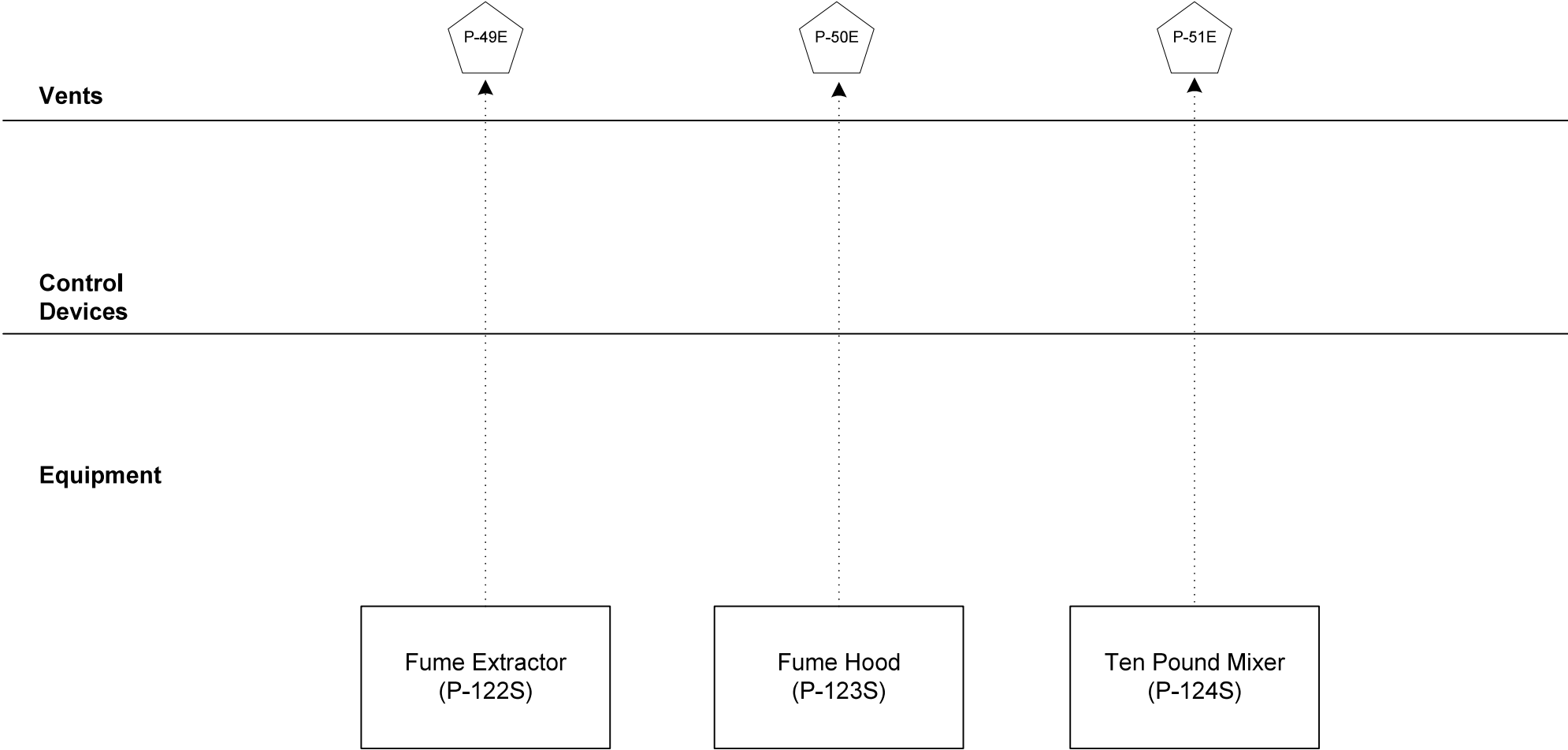
Building 400 Process Flow (Subscale Mixers)



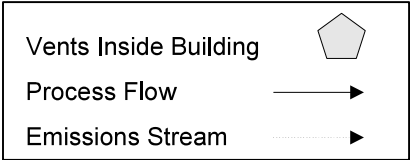
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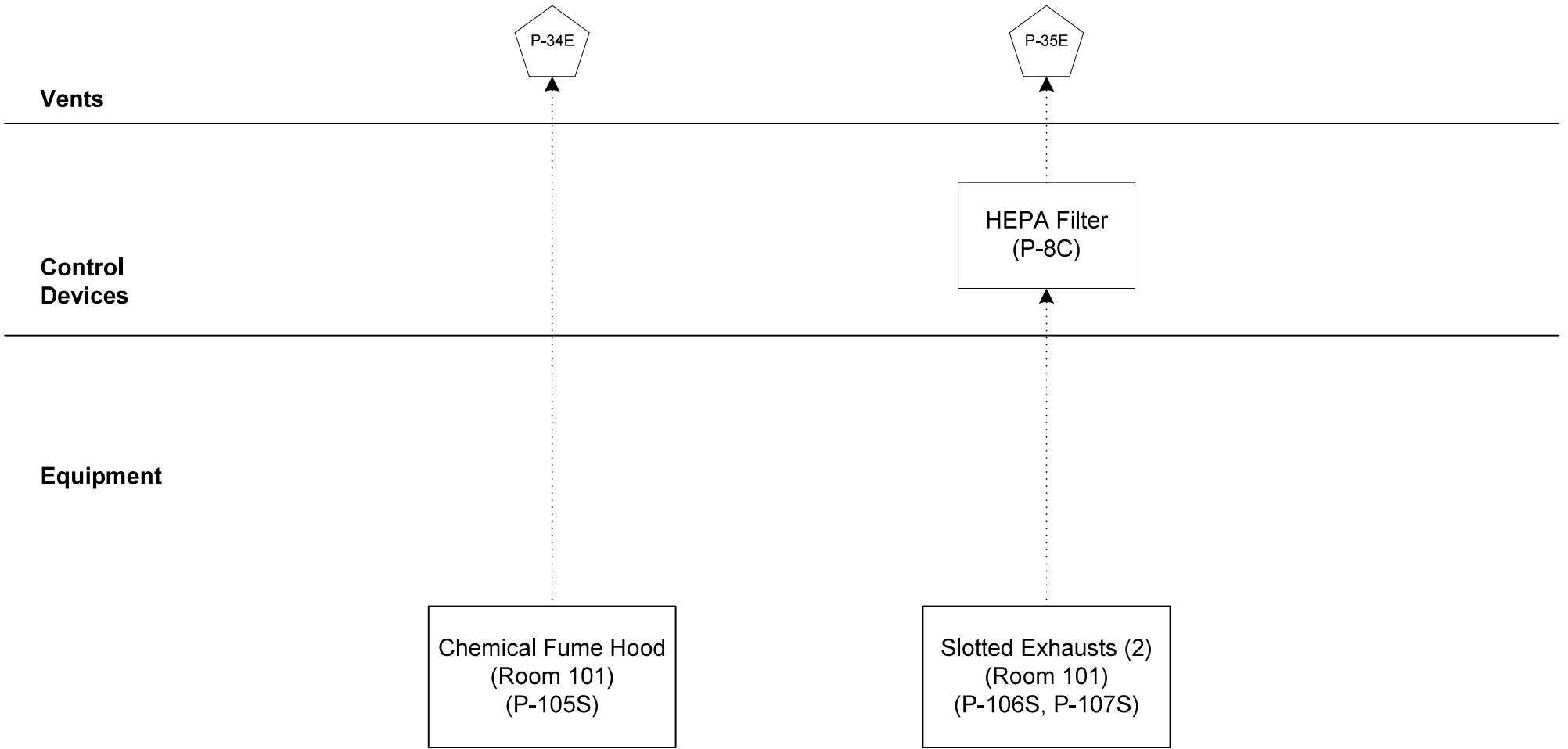
Building 401 Process Flow (Ten Pound Mixer)



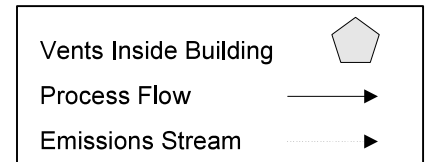
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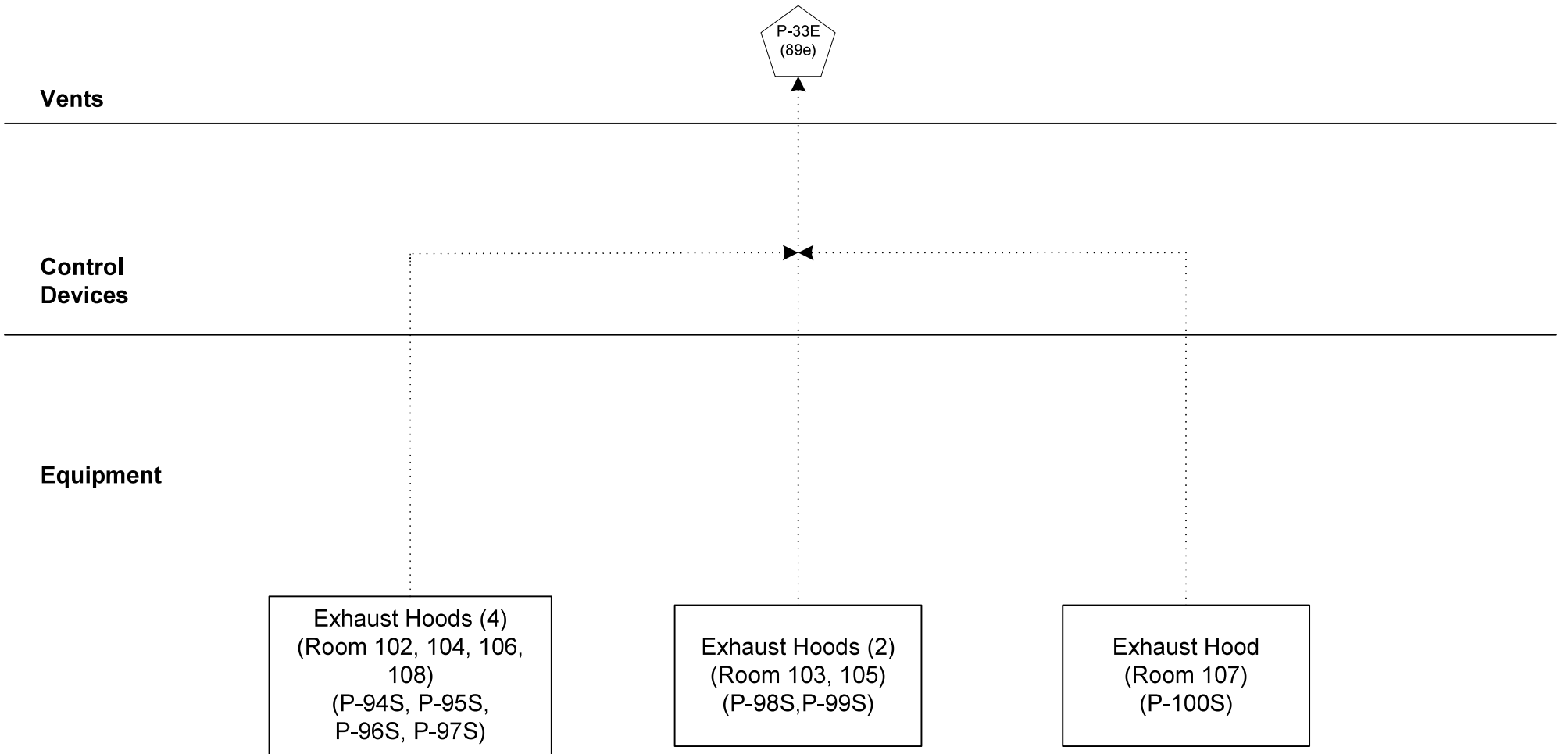
Building 403 Process Flow (Ingredient Preparation)



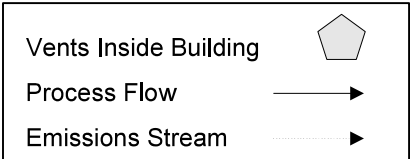
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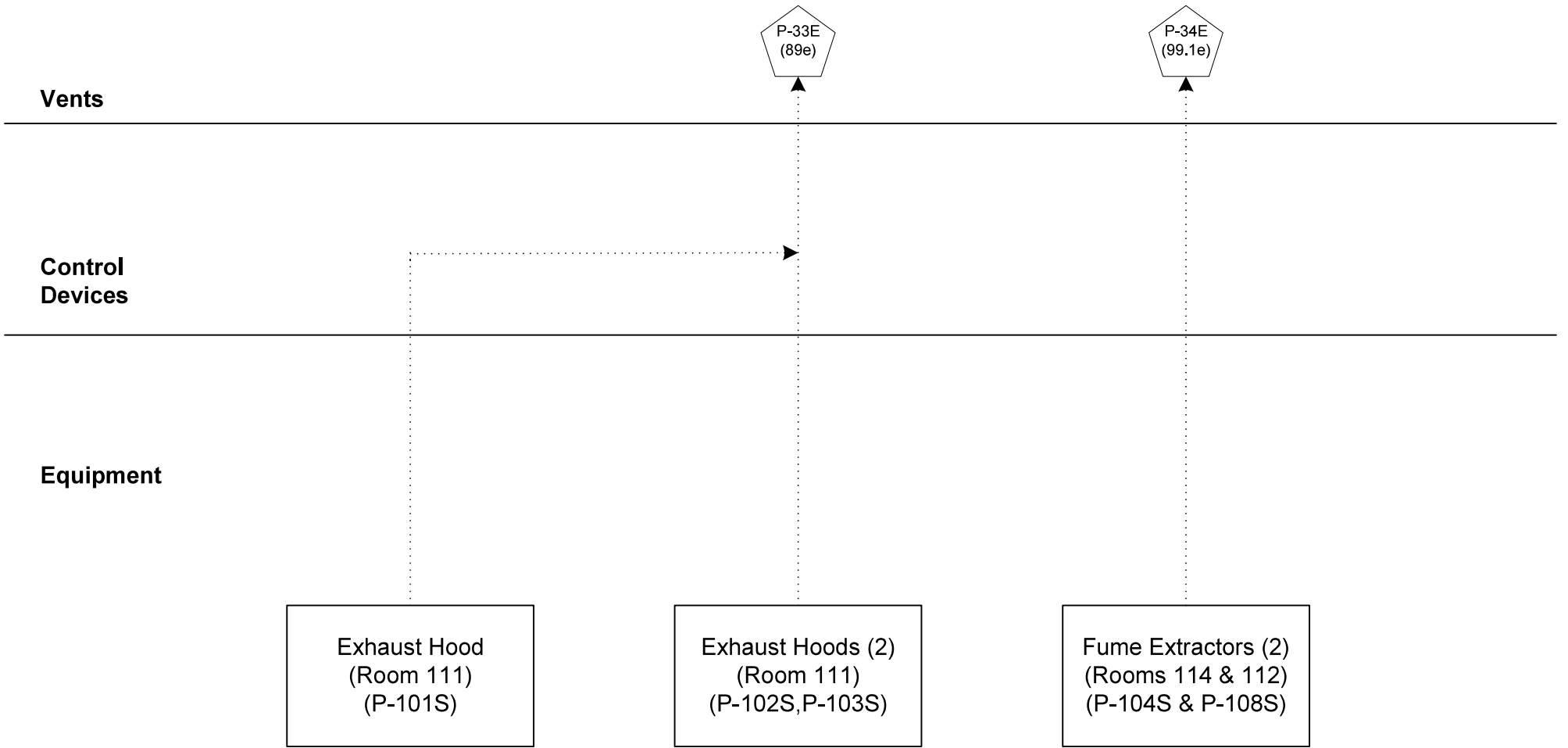
Building 404 Process Flow (Propellant Laboratory)



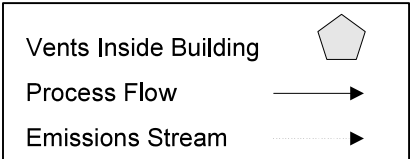
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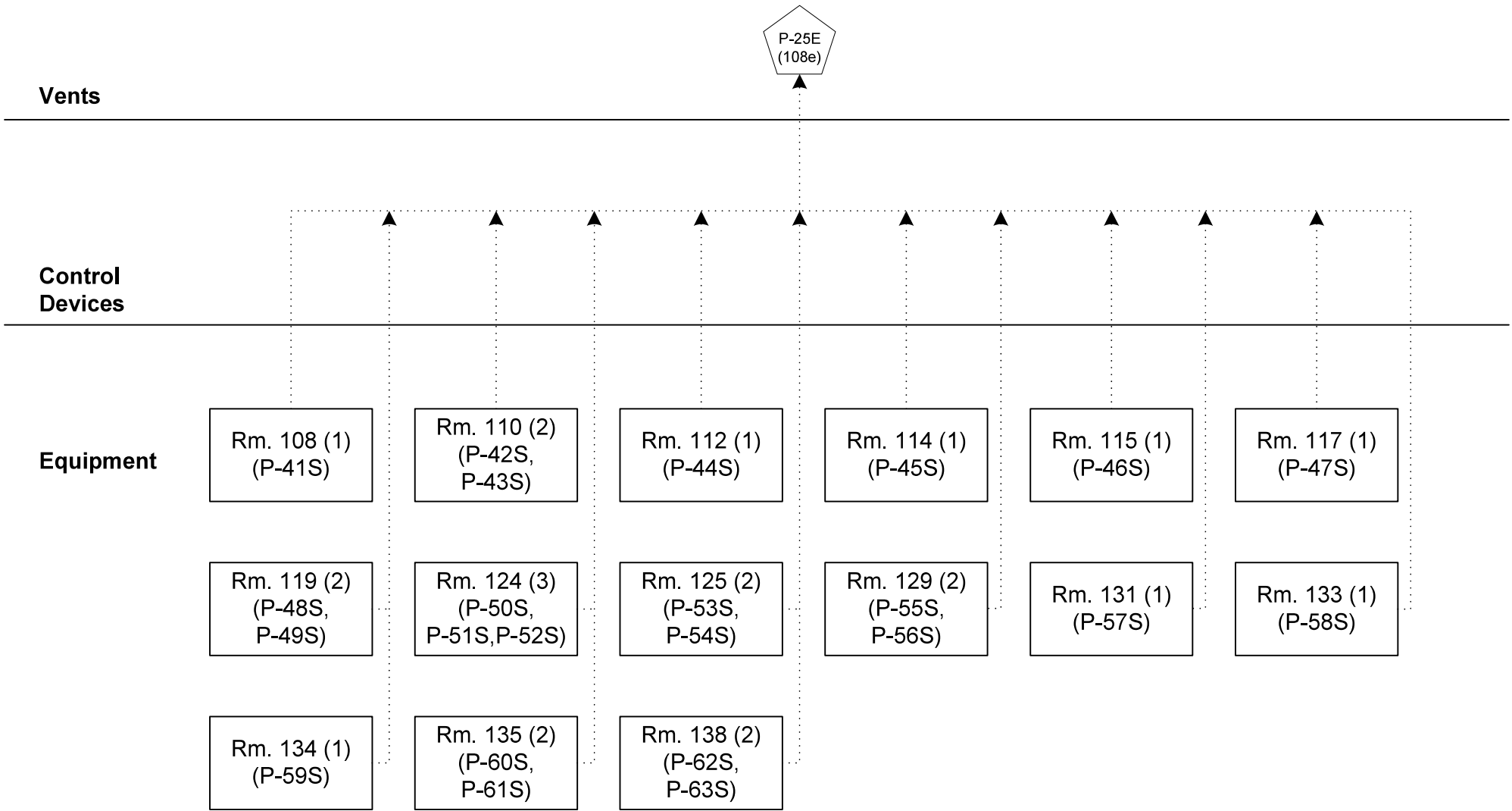
Building 404 Process Flow (Propellant Laboratory - Strand Bomb)



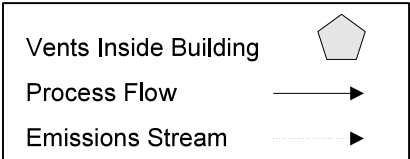
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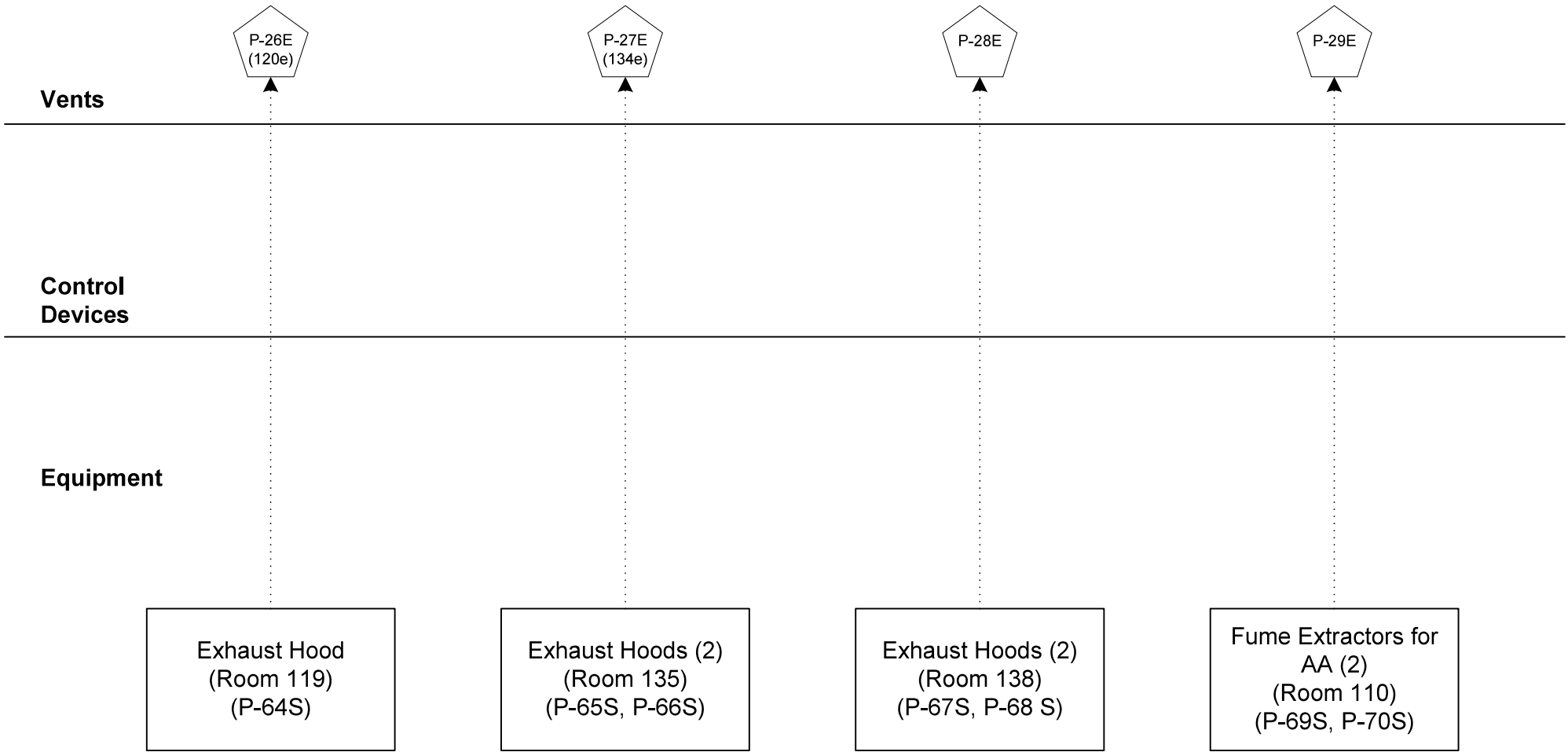
Building 405 Process Flow (Materials Laboratory)



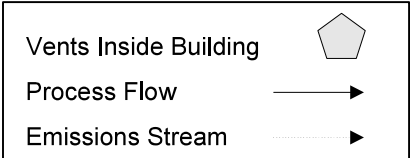
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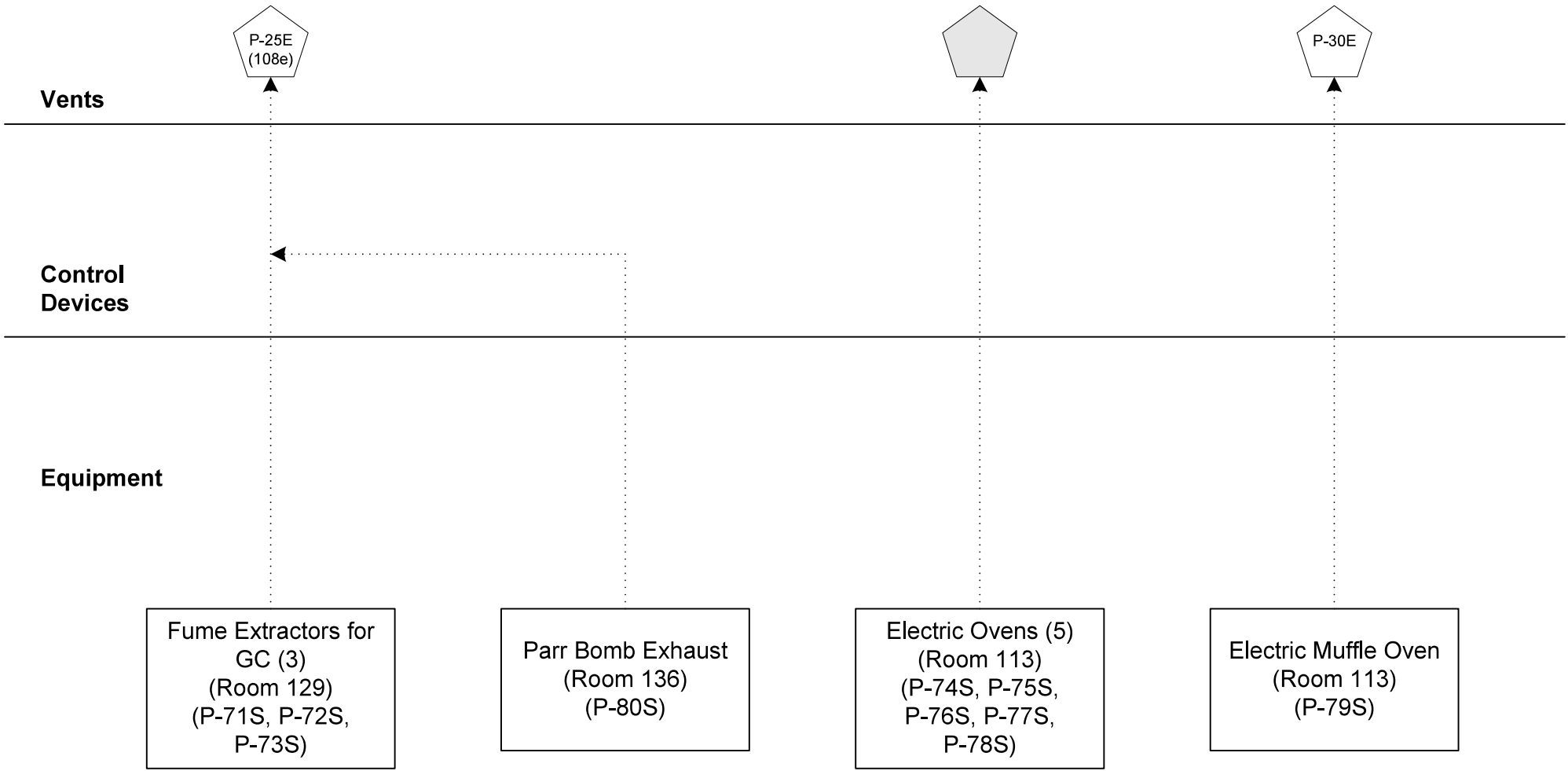
Building 405 Process Flow (Materials Laboratory)



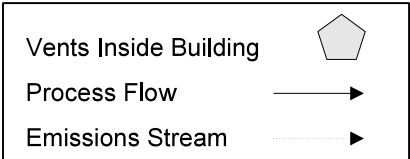
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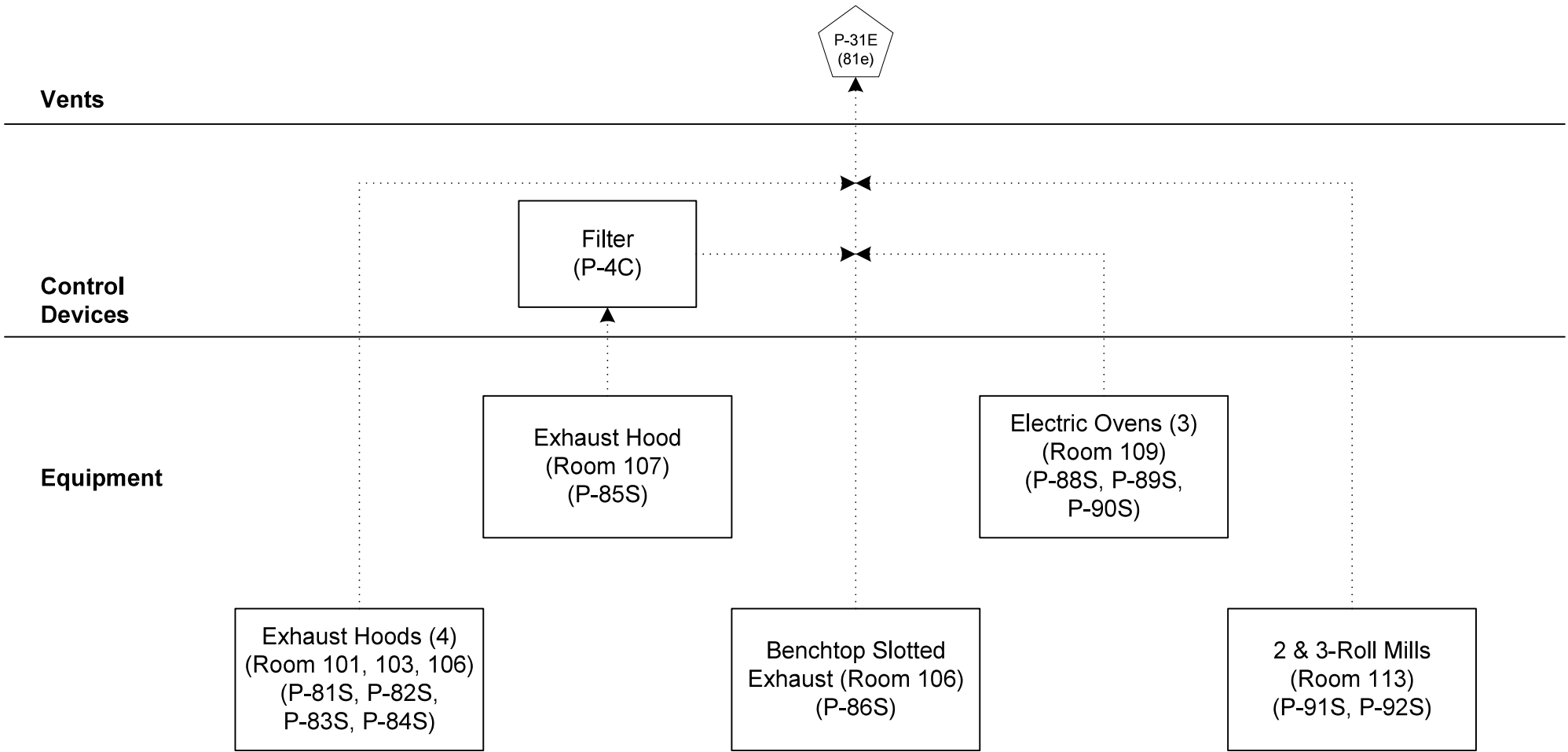
Building 405 Process Flow (Materials Laboratory)



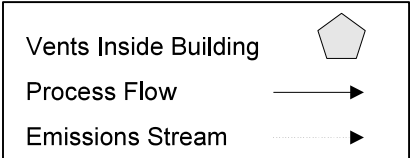
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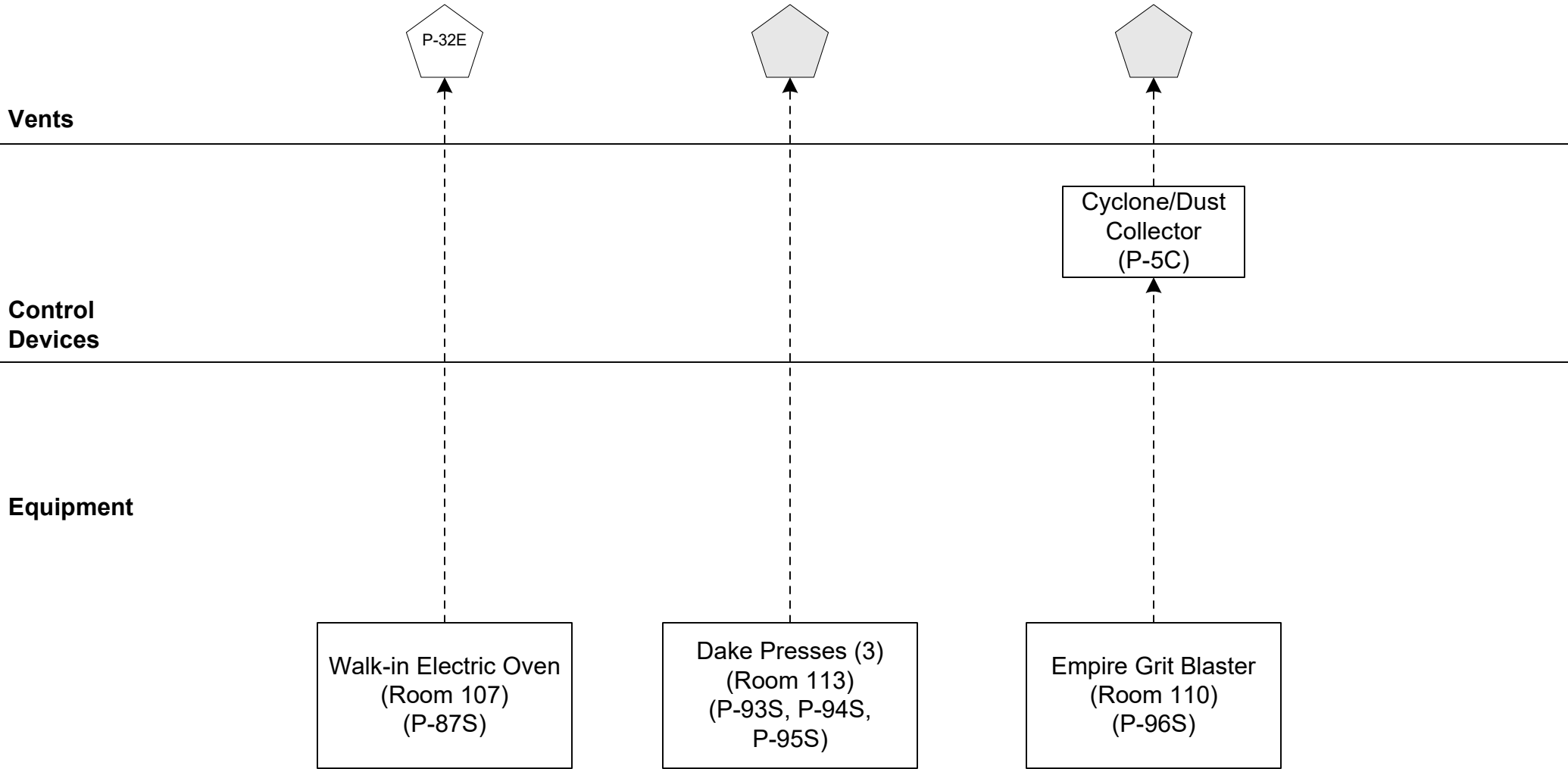
Building 406 Process Flow (Adhesives Laboratory)



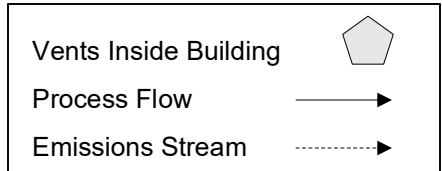
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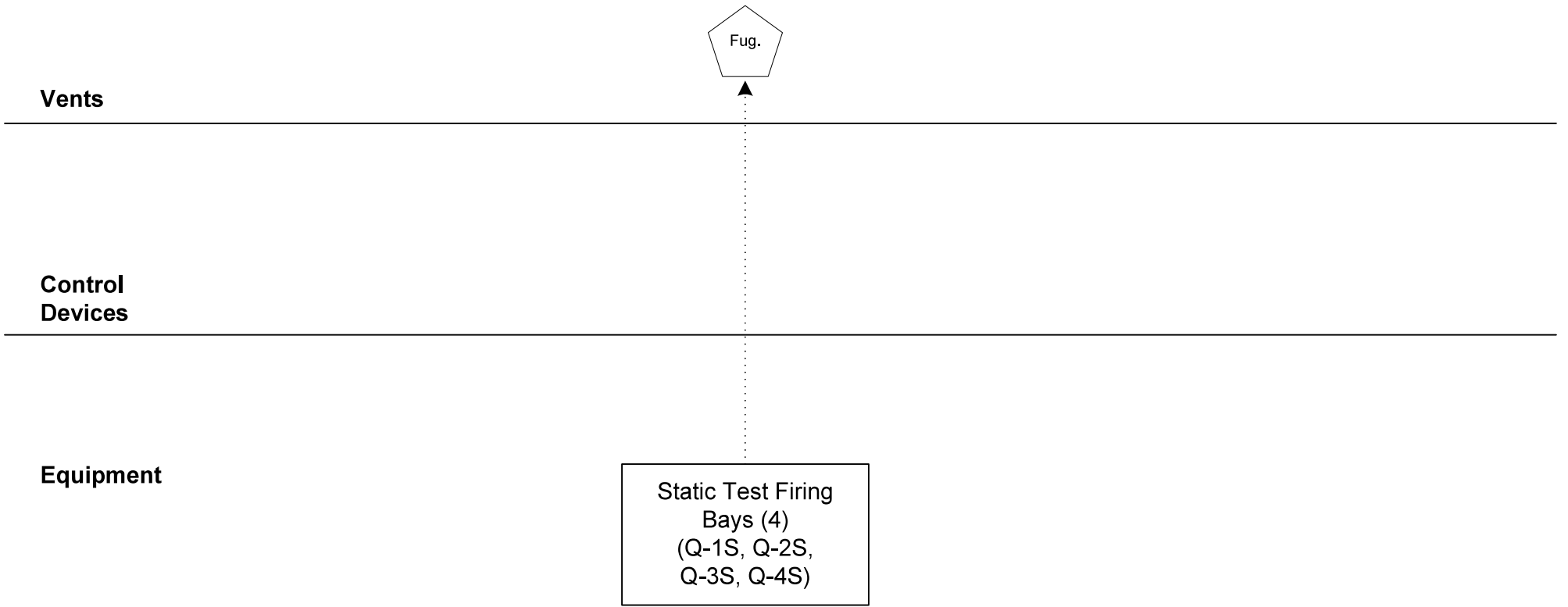
Building 406 Process Flow (Adhesives Laboratory)



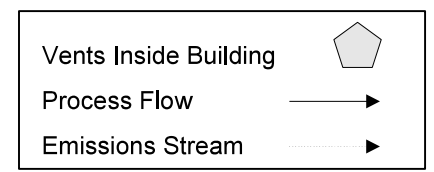
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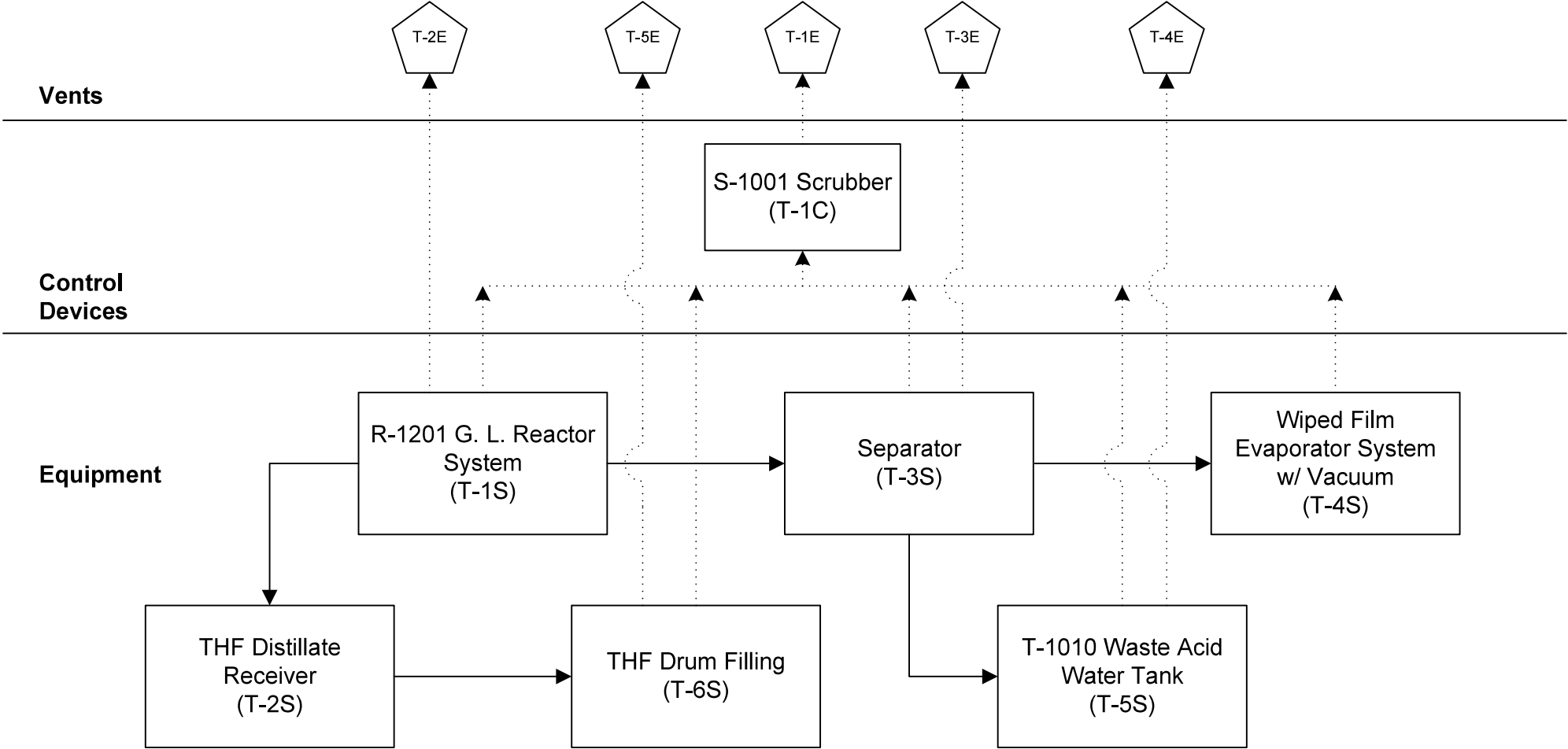
Building 164 Process Flow (Static Firing Range)



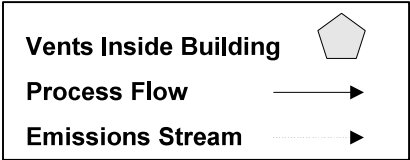
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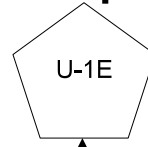
Building 454 Process Flow (TPEG Polymer Manufacturing)



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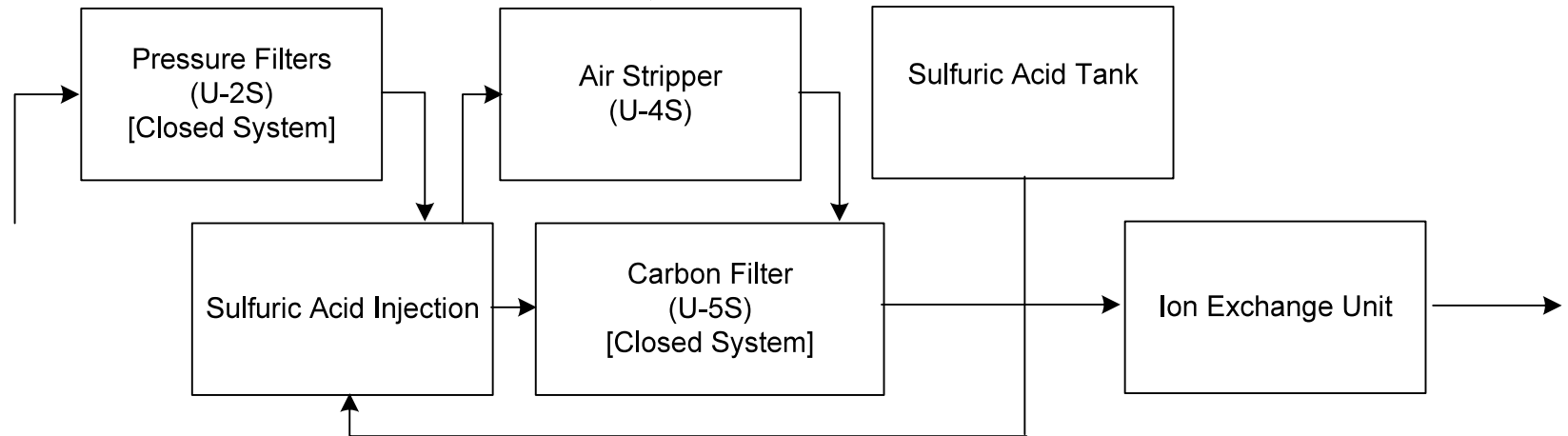
Building 424 Groundwater Pump & Treat System



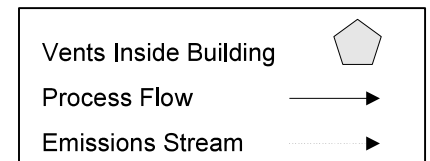
Vents

Control
Devices

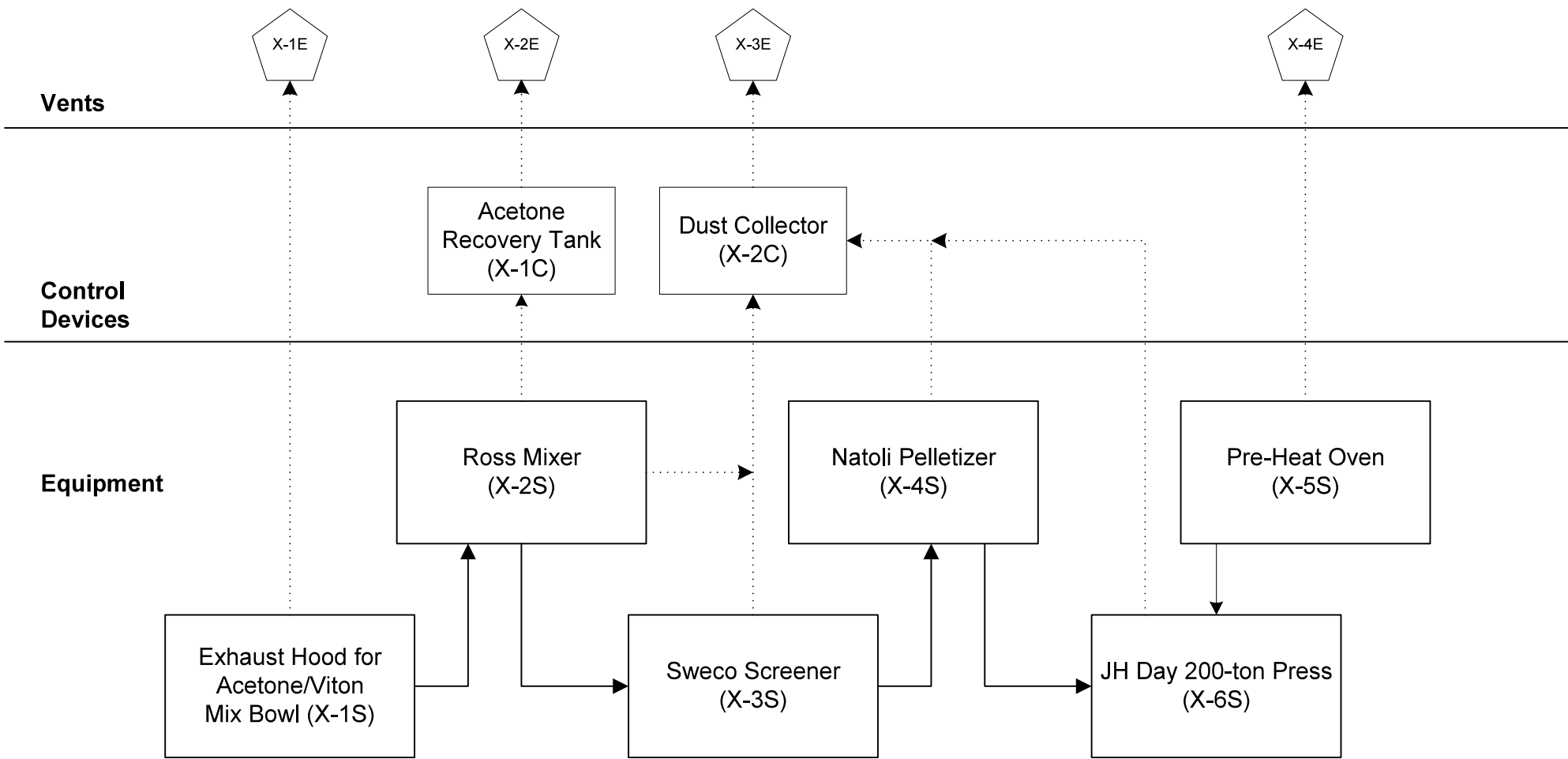
Equipment



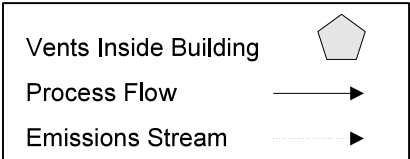
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Building 413 Process Flow (MAC Warhead Operations)



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ATTACHMENT D - Title V Equipment Table
 (includes all emission units at the facility except those designated as
 insignificant activities in Section 4, Item 24 of the General Forms)

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|--|--------------------------------|---|-----------------------------|-----------------|-----------------------------|
| <i>Laser Products Fabrication - Group 009</i> | | | | | |
| 9-1S | NDV | Inert Gas Welding Machine-8 | 1997 | Variable | |
| 9-2S | 9-1E | Exhaust Hood-8 | Early 90s | Variable | |
| 9-4S | NDV | Small Electric Oven-8 | Early 90s | Variable | |
| 9-5S | NDV | Small Electric Oven-8 | Early 90s | Variable | |
| 9-6S | NDV | Small Electric Oven-8 | Early 90s | Variable | |
| 9-7S | NDV | Small Electric Oven-8 | Early 90s | Variable | |
| 9-8S | 9-2E | Exhaust Hood-8 | Early 90s | Variable | |
| 9-9S | NDV | Inert Gas Welding Machine-432 | 1997 | Variable | |
| 9-10S | 9-3E | Exhaust Hood-432 | 1997 | Variable | |
| 9-11S | NDV | Zero Grit Blaster-432 | 1997 | Variable | 9-1C |
| 9-12S | NDV | Small Electric Oven-432 | 1997 | Variable | |
| 9-13S | NDV | Small Electric Oven-432 | 1997 | Variable | |
| 9-14S | NDV | Small Electric Oven-432 | 1997 | Variable | |
| 9-15S | 9-4E | Exhaust Hood-432 | 1997 | Variable | |
| 9-16S | NDV | Helium Leak Detector-432 | 1997 | Variable | |
| 9-17S | NDV | Vacuum Oven-432 | 1997 | Variable | |
| 9-18S | NDV | Vacuum Oven-432 | 1997 | Variable | |
| 9-19S | 9-5E | Laser Etch Workstation-432 | 1997 | Variable | |
| 9-20S | 9-6E | Aqueous Parts Washer-432 | 1997 | Variable | |
| 9-21S | NDV | Conditioning Chamber-432 | 1997 | Variable | |
| 9-22S | NDV | Conditioning Chamber-432 | 1997 | Variable | |
| 9-23S | 9-7E | Grenade Fuze Testing Chamber – 361 | 2006 | Variable | |
| 9-24E | NDV | Grenade Fuze Marking Printer - 361 | 2006 | Variable | |
| 9-25S | 9-8E | Electronic Fuze – SMT Heller Oven – 432A | 2005 | Variable | |
| 9-26S | 9-9E | Electronic Fuze – MOFA Paint Hood – 432A | 2006 | Variable | 9-2C |
| 9-27S | 9-10E | Electronic Fuze – M74 Cleaning Station – 432A | 2007 | 9 gal | 9-27S |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|-------------------------------|--------------------------------|--|-----------------------------|-----------------|-----------------------------|
| 9-28S | 9-11E | Electronic Fuze – ETFM Cleaning Station | 2008 | 100 gal | |
| Boilers - Group 00L | | | | | |
| L-12S | L-6E | No. 3 NG-Fired Boiler-8501 | 2005 / 2013 | 9.92 | |
| L-21S | NDV | Nalco 1720 Oxygen Scavenger Feed Tank-8501 | 2001 | 100 gal | |
| L-22S | NDV | Boiler Feedwater Chemical Tank-8501 | 2001 | 100 gal | |
| L-23S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-24S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-25S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-26S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-27S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-29S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-30S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-31S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-32S | L-8E or L-9E | Boiler, NG with Diesel back-up (Miura EXN-300SGOF) | 2015 | 12MMBtu/hr | |
| L-33S | L-10E/L-13E | Dual Fuel Boiler, NG with Diesel back-up (Miura EX200SGO-07) | 2020 | 7.9MMBtu/hr | |
| L-34S | L-11E/L-13E | Dual Fuel Boiler, NG with Diesel back-up (Miura EX200SGO-07) | 2020 | 7.9MMBtu/hr | |
| L-35S | L-12E/L-13E | Dual Fuel Boiler, NG with Diesel back-up (Miura EX200SGO-07) | 2020 | 7.9MMBtu/hr | |
| L-36S | L-14E | Dual Fuel Boiler, NG with Diesel back-up | 2020 | 3.94MMBtu/h | |
| L-37S | L-15E | Dual Fuel Boiler, NG with Diesel back-up | 2020 | 3.94MMBtu/h | |
| P3-7S | P3-7E | Process Heater for B3040 | 2018 | 0.5MMBtu/hr | |
| P3-8S | P3-8E | Process Heater for B3040 | 2018 | 0.5MMBtu/hr | |
| P3-9S | P3-9E | Process Heater for B3040 | 2018 | 0.5MMBtu/hr | |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|-------------------------------|--------------------------------|--|-----------------------------|----------------------|-----------------------------|
| P3-11S | P3-10E | Process Heater Unit #7 for B3030A | 2019 | 0.5MMBtu/hr | |
| P3-12S | P3-11E | Process Heater Unit #8 for B3030A | 2019 | 0.5MMBtu/hr | |
| P3-13S | P3-12E | Process Heater Unit #9 for B3030A | 2019 | 0.5MMBtu/hr | |
| EG-3 | EG-3 | Kohler (Bldg 415) | 1999 | 241.4 bhp / | |
| EG-4 | EG-4 | Kohler 300ROEZD71 (Bldg 440) | 1995 | 490 bhp / | |
| EG-5 | EG-5 | Kohler 300ROEZD72 (Bldg 440) | 1998 | 490 bhp / | |
| EG-6 | EG-6 | Kohler 800REOZM (Bldg 449) | 2004 | 1207 bhp / | |
| EG-7 | EG-7 | Kohler 500REOZVB-IC2C2 Tier 2 (Bldg 440) | 2008 | 757 bhp / | |
| EG-9 | EG-9 | MTU 1250RXC5DT2 Tier 2 (Bldg 449) | 2010 | 1675.25 bhp / | |
| EG-10 | EG-10 | Caterpillar D100-4 Tier 2 (Bldg 385) | November | 157.5 bhp / | |
| EG-11 | EG-11 | Caterpillar C3456 Tier 2 (Bldg 2006) | 2012 | 670.5 bhp / | |
| EG-12 | EG-12 | MTU 2250-RXC6DT2 Tier 2 | 2012 | 3017.3 bhp / | |
| EG-13 | EG-13 | Generator Set (Emergency Use) (Kohler 700 XC6DT2)) w/ Diesel Engine Mfg & Model: MTU 12V2000 G85TB Engine Family: EMDDL35.8GRR | 2015 | 890 kW / 1193 bhp | |
| EG-14 | EG-14 | Emergency Generator for Bldg. 3030 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 150REOZJF Engine Mfg. John Deere Model 6068HF285K Engine Family KJDXL13.5132 | 2020 | 755 bhp | |
| EG-15 | EG-15 | Emergency Generator for Bldg. 362 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 40REOZK Engine Mfg. John Deere Model 6135HFG75 Engine Family KJDXL13.5132 | 2019 | 67 bhp | |
| EG-16 | EG-16 | Emergency Generator for Bldg. 372 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 150REOZJF Engine Mfg. John Deere Model 6068HF285K Engine Family KJDXL06.8120-003 | 2019 | 237 bhp | |
| EG-17 | EG-17 | Emergency Generator for Bldg. 8501 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 500REOZJC Engine Mfg. John Deere Model 6135HFG75 Engine Family LJDXL13.5132 | 2022 | 755 bhp | |

| Emission Unit ID1 | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|---|--------------------------------|---|-----------------------------|-----------------|-----------------------------|
| EG-18 | EG-18 | Emergency Generator for Bldg. 2007 Compression Ignition (CI) Engine Gen. Mfg. Kohler Model 150REOZJF Engine Mfg. John Deere Model 6068HF285K Engine Family KJDXL06.8120-003 | 2022 | 463 bhp | |
| <i>Storage Tanks - Group 00M</i> | | | | | |
| M-6S | M-6E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-7S | M-7E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-8S | M-8E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-28S | M-28E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-29S | M-29E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-30S | M-30E | Propane Storage Tank-256 | 1993 | 1,000 gal | |
| M-9S | M-9E | Propane Storage Tank-412 | 1997 | 1,000 gal | |
| M-10S | M-10E | Propane Storage Tank-412 | 1997 | 1,000 gal | |
| M-31S | M-31E | Propane Storage Tank-412 | 1997 | 1,000 gal | |
| M-11S | M-11E | Propane Storage Tank-438 | 1996 | 18,000 gal | |
| M-32S | M-32E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-33S | M-33E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-34S | M-34E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-35S | M-35E | Propane Storage Tank-420 | 1999 | 1,000 gal | |
| M-12S | M-12E | Gasoline Storage Tank-7 | 1993 | 6,000 gal | |
| M-13S | M-13E | Diesel Storage Tank-7 | 1993 | 4,000 gal | |
| M-20S | M-20E | Fuel Oil Storage Tank-8501 | 1996 | 15,000 gal | |
| M-21S | M-21E | Fuel Oil Storage Tank-8501 | 1996 | 15,000 gal | |
| M-22S | M-22E | Actrel Storage Tank-2014 | 1995 | 1,800 gal | |
| M-23S | M-23E | Actrel Storage Tank-2014 | 1995 | 1,500 gal | |
| M-24S | M-24E | Solvent Storage Tank-8203 | 1998 | 500 gal | |
| M-25S | M-25E | Solvent Storage Tank-8203 | 1998 | 500 gal | |
| M-26S | M-26E | Solvent Storage Tank-8203 | 1998 | 500 gal | |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|---|--------------------------------|---|-----------------------------|-----------------|-----------------------------|
| M-36S (M-28S in R13-3186) | N/A | Storage Vessel (Ultra-Low Sulfur Diesel) | 2015 | 30,000 gal | |
| <i>Water Treatment - Group 00N</i> | | | | | |
| N-1S | FUG | Reactor Basin-442 | 1996 | 100,000 gal | |
| N-2S | FUG | Reactor Basin-442 | 1996 | 100,000 gal | |
| N-4S | CS | Explosive Wastewater Treatment System-383 | 1994 | 14,000 | Full Enclosure |
| N-5S | FUG | Facility Water Treatment System-535 | 1996 | 504,000 | |
| N-7S | FUG | Recirculating Sand Filter-8563 | 2013 | 6,000 gal | |
| <i>Explosive Solid Waste Treatment - Group 00O</i> | | | | | |
| O-1S | FUG | Burning pans BG | Pre-70s / 2005 | Variable | |
| <i>Research Complex - Group 00P</i> | | | | | |
| P-20S | P-12E | Large (100 pound) Dessicator Sparge Line-21 | 1992 | 100 lb | |
| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
| P-21S | P-13E | Large (100 pound) Dessicator Sparge Line-21 | 1992 | 100 lb | |
| P-30S | OS | Sweco Grinder | NA | | |
| P-28S | NDV | Scrap Storage Drum-289 | 1996 | 55 gallon | |
| P-29S | NDV | Scrap Storage Drum-289 | 1996 | 55 gallon | |
| P-31S | P-21E | 5-gal Mixer-290 | 1963 | 5 gallon | |
| P-32S | P-22E | Parts Cleaning Station-290 | 1963 | Variable | |
| P-33S | P-23E | Exhaust hood (Rm.109)-394 | 1996 | Variable | |
| P-34S | P-23E | Exhaust hood (Rm.110)- 394 | 1996 | Variable | |
| P-35S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-36S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-37S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-38S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-39S | P-23E | Fume extractor-394 | 1996 | Variable | |
| P-40S | P-24E | Neslab Low Temp Bath Circulator for Tensile | 1996 | Variable | |
| P-41S | P-25E | Exhaust hood-405-108 | 1996 | Variable | |
| P-42S | P-25E | Exhaust hood-405-110 | 1996 | Variable | |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|-------------------------------|--------------------------------|---|-----------------------------|-----------------|-----------------------------|
| P-43S | P-25E | Exhaust hood-405-110 | 1996 | Variable | |
| P-44S | P-25E | Exhaust hood-405-112 | 1996 | Variable | |
| P-45S | P-25E | Exhaust hood-405-114 | 1996 | Variable | |
| P-46S | P-25E | Exhaust hood-405-115 | 1996 | Variable | |
| P-47S | P-25E | Exhaust hood-405-117 | 1996 | Variable | |
| P-48S | P-25E | Exhaust hood-405-119 | 1996 | Variable | |
| P-49S | P-25E | Exhaust hood-405-119 | 1996 | Variable | |
| P-50S | P-25E | Exhaust hood-405-124 | 1996 | Variable | |
| P-51S | P-25E | Exhaust hood-405-124 | 1996 | Variable | |
| P-52S | P-25E | Exhaust hood-405-124 | 1996 | Variable | |
| P-53S | P-25E | Exhaust hood-405-125 | 1996 | Variable | |
| P-54S | P-25E | Exhaust hood-405-125 | 1996 | Variable | |
| P-55S | P-25E | Exhaust hood-405-129 | 1996 | Variable | |
| P-56S | P-25E | Exhaust hood-405-129 | 1996 | Variable | |
| P-57S | P-25E | Exhaust hood-405-131 | 1996 | Variable | |
| P-58S | P-25E | Exhaust hood-405-133 | 1996 | Variable | |
| P-59S | P-25E | Exhaust hood-405-134 | 1996 | Variable | |
| P-61S | P-25E | Exhaust hood-405-135 | 1996 | Variable | |
| P-62S | P-25E | Exhaust hood-405-138 | 1996 | Variable | |
| P-63S | P-25E | Exhaust hood-405-138 | 1996 | Variable | |
| P-64S | P-26E | Exhaust hood-405-119 | 1996 | Variable | |
| P-65S | P-27E | Exhaust hood-405-135 | 1996 | Variable | |
| P-66S | P-27E | Exhaust hood-405-135 | 1996 | Variable | |
| P-67S | P-28E | Exhaust hood-405-138 | 1996 | Variable | |
| P-68S | P-28E | Exhaust hood-405-138 | 1996 | Variable | |
| P-69S | P-29E | Fume Extractors for Atomic Absorption Test | 1996 | Variable | |
| P-70S | P-29E | Fume Extractors for Atomic Absorption Test | 1996 | Variable | |
| P-71S | P-25E | Fume Extractors for Gas Chromatography-405- | 1996 | Variable | |
| P-72S | P-25E | Fume Extractors for Gas Chromatography-405- | 1996 | Variable | |
| P-73S | P-25E | Fume Extractors for Gas Chromatography-405- | 1996 | Variable | |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|-------------------------------|--------------------------------|--------------------------------------|-----------------------------|-----------------|-----------------------------|
| P-74S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-75S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-76S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-77S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-78S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-79S | P-30E | Electric oven-405-113 | 1996 | Variable | |
| P-80S | P-25E | Parr Bomb Exhaust-405-136 | 1996 | Variable | |
| P-81S | P-31E | Exhaust hood-406-101 | 1996 | Variable | |
| P-82S | P-31E | Exhaust hood-406-103 | 1996 | Variable | |
| P-83S | P-31E | Exhaust hood-406-106 | 1996 | Variable | |
| P-84S | P-31E | Exhaust hood-406-106 | 1996 | Variable | |
| P-85S | P-31E | Exhaust hood-406-107 | 1996 | Variable | P-4C |
| P-86S | P-31E | Benchtop Slotted Exhaust-406-106 | 1996 | Variable | |
| P-87S | P-31E | Walk-in Electric Oven-406-107 | 1996 | Variable | |
| P-88S | P-31E | Despatch Electric Oven-406-109 | 1996 | Variable | |
| P-89S | P-31E | Young Brothers Electric Oven-406-109 | 1996 | Variable | |
| P-90S | P-31E | Young Brothers Electric Oven-406-109 | 1996 | Variable | |
| P-91S | P-31E | 3 Roll Mill-406-113 | 1996 | Variable | |
| P-92S | P-31E | 2 Roll Mill-406-113 | 1996 | Variable | |
| P-93S | NDV | Dake Press-406-113 | 1996 | Variable | |
| P-94S | NDV | Dake Press-406-113 | 1996 | Variable | |
| P-95S | NDV | Dake Press-406-113 | 1996 | Variable | |
| P-96S | NDV | Empire Grit Blaster-406-110 | 1996 | | P-5C |
| P-97S | FUG | Sensitivity Test Pits-500 | Pre-70s | Variable | |
| P-94S | P-33E | Exhaust hood-404-102 | 1997 | Variable | |
| P-95S | P-33E | Exhaust hood-404-104 | 1997 | Variable | |
| P-96S | P-33E | Exhaust hood-404-106 | 1997 | Variable | |
| P-97S | P-33E | Exhaust hood-404-108 | 1997 | Variable | |
| P-98S | P-33E | Exhaust hood-404-103 | 1997 | Variable | |
| P-99S | P-33E | Exhaust hood-404-105 | 1997 | Variable | |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|--|--------------------------------|-------------------------------|-----------------------------|-----------------|-----------------------------|
| P-100S | P-33E | Exhaust hood-404-107 | 1997 | Variable | |
| P-101 | P-33E | Exhaust hood-404-111 | 1997 | Variable | |
| P-102S | P-33E | Exhaust hood-404-111 | 1997 | Variable | |
| P-103S | P-33E | Exhaust hood-404-111 | 1997 | Variable | |
| P-104S | P-34E | Fume extractor-404-114 | 1997 | Variable | P-7C |
| P-108S | P-34E | Fume extractor-404-112 | 2001 | Variable | P-7C |
| P-105S | P-35E | Chemical fume hood-403-101 | 1998 | Variable | |
| P-106S | P-36E | Slotted exhaust-403-101 | 1998 | Variable | P-8C |
| P-107S | P-36E | Slotted exhaust-403-101 | 1998 | Variable | P-8C |
| P-109S | P-37E | 5 gallon mixer-396 | 2001 | 5 gallons | |
| P-110S | P-38E | Exhaust hood-396 | 2001 | Variable | |
| P-111S | P-39E | Fume extractor-396 | 2001 | Variable | |
| P-115S | P-43E | Fume hood-400-121 | 1999 | Variable | |
| P-116S | P-44E | Fume extractor-400-116 | 1999 | Variable | |
| P-117S | P-45E | Micro mixer-400-116 | 1999 | Variable | |
| P-118S | P-46E | One pound Sigma mixer-400-116 | 1999 | 1 lb | |
| P-119S | P-46E | One pound Sigma mixer-400-110 | 1999 | 1 lb | |
| P-120S | P-47E | One pound Sigma mixer-400-106 | 1999 | 1 lb | |
| P-121S | P-48E | Fume hood-400-117 | 1999 | Variable | |
| P-122S | P-49E | Fume extractor-401 | 1999 | Variable | |
| P-123S | P-50E | Fume hood-401 | 1999 | Variable | |
| P-124S | P-51E | Ten pound mixer-401 | 1999 | 10 lb | |
| <i>Static Firing / X-Range - Group 00Q</i> | | | | | |
| Q-1S | FUG | Static Test Firing Bay-77 | 1959 | Variable | |
| Q-2S | FUG | Static Test Firing Bay-193 | 1959 | Variable | |
| Q-3S | FUG | Static Test Firing Bay-194 | 1959/ Summer | Variable | |
| Q-4S | FUG | Static Test Firing Bay-242 | 1961 | Variable | |
| <i>Hazardous Waste Storage - Group 00R</i> | | | | | |
| N/A | FUG | Hazardous Waste Storage Pad | 1989 | 320 drums | |
| <i>Photographic Development - Group 00S</i> | | | | | |

| Emission Unit ID ¹ | Emission Point ID ¹ | Emission Unit Description | Year Installed/ Modified | Design Capacity | Control Device ¹ |
|---|---------------------------------|-------------------------------------|-----------------------------|-----------------|-----------------------------|
| S-1S | NDV | 3M-2300 Processor Camera-8 | 1995 | Variable | |
| S-2S | NDV | Photo Developer Machine | 1995 | Variable | |
| S-3S | NDV | Kodamatic 42S Processor | 1995 | Variable | |
| S-4S | NDV | Agfa-Geraert Developer | 1995 | Variable | |
| <i>TPEG Polymer Manufacture - Group 00T</i> | | | | | |
| T-1S | T-1E or T-2E | Reactor vessel | 1999 | 6500 lb/batch | T-1C |
| T-2S | T-1E | Reactor distillate receiver | 1999 | 7 GPM | T-1C |
| T-3S | T-1E or T-3E | Separator | 1999 | 5000 lb/batch | T-1C |
| T-4S | T-1E | Wiped film evaporator | 1999 | 120 GPM | T-1C |
| T-5S | T-1E or T-4E | Waste acid water tank | 2001 | 1000 | T-1C |
| T-6S | T-5E | Tetrahydrofuran drum filling | 1999 | 6 GPM | |
| <i>Groundwater Pump & Treatment- Group 00U</i> | | | | | |
| U-1S | CS | Peroxide contact tank-424 | 1999 | 300 gpm | closed |
| U-2S | CS | Pressure filters-424 | 1999 | 5 gpm/SF | closed |
| U-3S | CS | UV/Oxidation unit-424 | 1999 | 220 gpm | closed |
| U-4S | U-1E | Air stripper-424 | 1999 | Variable | |
| U-5S | CS | Carbon filter-424 | 1999 | 300 gpm | closed |
| U-6S | CS | Peroxide storage tote-424 | 1999 | 100 gal | closed |
| U-7S | CS | Peroxide storage tote-424 | 1999 | 100 gal | closed |
| U-8S | CS | Peroxide storage tote-424 | 1999 | 100 gal | closed |
| Control Devices | | | | | |
| 9-1C | NDV | Cyclone dust collector grit blaster | 1997 | 99.9% (PM) | |
| P-4C | P-31E | Fabric filter for exhaust hood | 1996 | 90-95% (PM) | |
| P-5C | NDV | Cyclone dust collector grit blaster | 1999 | 99.9% (PM) | |
| P-8C | P-36E | HEPA filter for slotted hood | 1996 | 99.9% (PM) | |
| T-1C | T-1E, T-2E, T-3E, T-4E | Packed bed scrubber | 1999 | 99% (THF) | |

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¹For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

| ATTACHMENT E - Emission Unit Form | | |
|---|---|---|
| <i>Emission Unit Description</i> Laser and Fuze Operations | | |
| Emission unit ID number: 9-1E or 9-2E | Emission unit name: 9-1S, 9-2S, 9-4S through 9-8S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg. 8 - Laser Products Development</p> <p>--Inert Gas Welding Machine (ID# 9-1S) - used for TIG welding of small initiator closures (both inert and explosive). Vents inside building.</p> <p>--Exhaust Hood (ID# 9-2S) - used to vent emissions from low volume, small-scale pyrotechnic testing. Vents to atmosphere through vent ID# 9-1E.</p> <p>--Small Electric Ovens (4) (ID# 9-4S, 9-5S, 9-6S, & 9-7S) - used to cure small quantities of epoxy adhesives used to bond components. All 4 ovens vent inside building.</p> <p>--Exhaust Hood (ID# 9-8S) - used to house a small- scale temperature test chamber and vents emissions from small-scale pyrotechnic testing and hand soldering. Vents to atmosphere through vent ID# 9-2E.</p> | | |
| Manufacturer: Unknown | Model number: Unknown | Serial number: Unknown |
| Construction date: Early 1990's | Installation date: Early 1990's | Modification date(s): None |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 2,080 hours/year |
| <i>Fuel Usage Data (fill out all applicable fields)</i> NA | | |
| Does this emission unit combust fuel? ___ Yes ___ <input checked="" type="checkbox"/> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | |

| Describe each fuel expected to be used during the term of the permit. | | | |
|--|---------------------|------------------|-----------|
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| | | | |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|--|---------------------|-------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | 0.1 |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| NA | | 0.075 |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on historical data for the operation that was doubled for conservatism. HAPs were conservatively assumed to be 75% of the total VOC emissions.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

There are no underlying applicable requirements associated with this equipment.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

| ATTACHMENT E - Emission Unit Form | | |
|--|--|--|
| <i>Emission Unit Description</i> | | |
| Emission unit ID number: 9-3E, 9-4E, 9-5E, 9-6E and VI | Emission unit name: 9-9S through 9-22S | List any control devices associated with this emission unit: 9-1C (for 9-11S only) |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 432 - Laser Products Fabrication</p> <p>--Inert Gas Welding Machine (ID# 9-9S) - used for TIG welding of small initiator closures (both inert and explosive). Vents inside building.</p> <p>--Exhaust Hood (ID# 9-10S) - used to vent emissions from low volume, small-scale conformal coating application operation. Vents to atmosphere through vent ID# 9-3E.</p> <p>--Zero Grit Blaster (ID# 9-11S) - used for low volume, small-scale grit cleaning of parts. Vents inside building.</p> <p>--Small Electric Ovens (3) (ID# 9-12S, 9-13S, & 9-14S) - used to cure small quantities of epoxy adhesives used to bond components. All 3 ovens vent inside building.</p> <p>--Exhaust Hood (ID# 9-15S) - used for fume extraction at 24 workstations involving soldering and adhesive bonding. Vents to atmosphere through vent ID# 9-4E.</p> <p>--Helium Leak Detector (ID# 9-16S) - used to leak test hermetically sealed devices using small quantities of helium trace gas. Vents inside building.</p> <p>--Vacuum Oven (ID# 9-17S) - used to cure small quantities of adhesives and epoxies. Vents inside building.</p> <p>--Vacuum Oven (ID# 9-18S) - used for removing moisture from boron potassium nitrate igniter material. Vents inside building.</p> <p>--Laser Etch Workstation (ID# 9-19S) - used to mark aluminum, stainless steel, plastic and printed circuit board materials using a laser device. Vents to atmosphere through vent ID# 9-5E.</p> <p>--Aqueous Parts Washer (ID# 9-20S) - used to clean metal parts and deflux electronic assemblies using water based materials. Drying cycle vents moisture to atmosphere through vent ID# 9-6E.</p> <p>--Conditioning Chambers (2) (ID# 9-21S & 9-22S) - used to thermal cycle inert and explosive assemblies. Vents inside building.</p> | | |
| Manufacturer: Unknown | Model number: Unknown | Serial number: Unknown |
| Construction date: 1997 | Installation date: 1997 | Modification date(s): None |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | |

| | | | |
|---|---|--|-----------|
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: Not determined | Maximum Operating Schedule: 4,160 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___ Yes <u> X </u> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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|---|---------------------|-------|
| Emissions Data | | |
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| NA | | 0.075 |
| | | |

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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
| | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on historical data for the operation that was doubled for conservatism. HAPs were conservatively assumed to be 75% of the total VOC emissions.</p> | | |
| <i>Applicable Requirements</i> | | |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (<i>Note: Title V permit condition numbers alone are not the underlying applicable requirements</i>). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> | | |
| <input checked="" type="checkbox"/> Permit Shield | | |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (<i>Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.</i>)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> | | |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> | | |

| ATTACHMENT E - Emission Unit Form | | | |
|--|---|---|-----------|
| <i>Emission Unit Description</i> M228 Grenade Fuze Testing – B361 | | | |
| Emission unit ID number: 9-7E | Emission unit name: 9-23S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 361 – Grenade Fuze Testing Chamber</p> <p>Test chamber (ID# 9-23S) used to test fire grenade fuze firing pins for quality control during manufacture. Firing pins contain approximately 2 grams of black powder and delay composition per unit. Vents to atmosphere through ID# 9-7E.</p> | | | |
| Manufacturer: ABL | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2006 | Installation date: 2006 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | | |
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: Not determined | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___ Yes ___X___ No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|---|---------------------|--------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | 0.021 |
| Nitrogen Oxides (NO _x) | | 0.0021 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | 0.25 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| Nickel Oxide | | 0.039 |
| Chromium | | 0.027 |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on maximum potential production and quality control numbers. See attached calculation sheets.</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|--|-------------------------------------|---|-----------|
| <i>Emission Unit Description</i> M228 Grenade Fuze Marking – B361 | | | |
| Emission unit ID number: VI | Emission unit name: 9-24S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 361 – Grenade Fuze Marking</p> <p>Inkjet printer (ID# 9-24S) used to mark units with lot and serial numbers. Vents inside the building.</p> | | | |
| Manufacturer: ABL | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2006 | Installation date: 2006 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | | |
| Maximum Hourly Throughput: | Maximum Annual Throughput: | Maximum Operating Schedule: | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> NA | | | |
| Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|---|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.2 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| Methyl ethyl ketone (MEK) | | 0.2 |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on maximum potential production and quality control numbers. See attached calculation sheet. Printing inks are 95% MEK.</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|---|--|---|-----------|
| <i>Emission Unit Description</i> Electronic Fuze Lines – Bldg 432A | | | |
| Emission unit ID number: 9-8E | Emission unit name: 9-25S – SMT Heller Oven Vent | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 432A – SMT Heller Oven Vent</p> <p>SMT Line Heller Oven (ID# 9-25S) used to cure solder paste on boards. Vents to atmosphere through ID# 9-8E.</p> | | | |
| Manufacturer: Heller | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2005 | Installation date: 2005 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | | |
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: Not determined | Maximum Operating Schedule: 8,760 hours/year | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> NA | | | |
| Does this emission unit combust fuel? ___ Yes ___X___ No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|--|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
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| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Ovens are used to cure solder paste and are not hot enough to drive off solder vapors. Emissions are expected to be negligible.</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|--|---|---|-----------|
| <i>Emission Unit Description</i> Electronic Fuze Lines – Bldg 432A | | | |
| Emission unit ID number: 9-9E | Emission unit name: 9-26S – MOFA Paint Hood | List any control devices associated with this emission unit: 9-2C | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 432A – MOFA Paint Hood</p> <p>MOFA Paint Hood (ID# 9-26S) used to stencil fuze packaging. Vents to atmosphere through ID# 9-9E.</p> | | | |
| Manufacturer: ABL | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2005 | Installation date: 2005 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | | |
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: Not determined | Maximum Operating Schedule: 8,760 hours/year | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> NA | | | |
| Does this emission unit combust fuel? ___ Yes ___X___ No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.2 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| MEK/Methanol | | 0.15 |
| | | |
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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions are based on historical data from Wisconsin operations. HAP total of 0.15 TPY is based on an assumption of a maximum 75% of VOC total made up of HAPs. HAPs include MEK and methanol.</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|--|--|---|-----------|
| Emission Unit Description Electronic Fuze Lines – Bldg 432A | | | |
| Emission unit ID number: 9-10E | Emission unit name: 9-27S – M74 Cleaning Station | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 432A – M74 Cleaning Station</p> <p>M74 Cleaning Station (ID# 9-27S) used to clean parts with n-propyl bromide prior to soldering. Vents to atmosphere through ID# 9-10E. Unit is refrigerated to minimize evaporative losses from the system.</p> | | | |
| Manufacturer: Branson | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2007 | Installation date: 2007 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 10 gal | | | |
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: Not determined | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___ Yes ___X___ No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.25 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| NA | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
| | | |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions are based on engineering estimates of equipment and production totals.

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Electronic Fuze Lines – Bldg 432A | | | |
| Emission unit ID number: 9-11E | Emission unit name: 9-28S – ETFM Cleaning Station | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 432A – ETFM Cleaning Station</p> <p>ETFM Cleaning Station (ID# 9-28S) used to clean parts with n-propyl bromide prior to soldering. Vents to atmosphere through ID# 9-11E. Unit is refrigerated to minimize evaporative losses from the system. In addition, system is drained if there will be more than a few days of down time.</p> | | | |
| Manufacturer: Infinity | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2008 | Installation date: 2008 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 100 gal | | | |
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: Not determined | Maximum Operating Schedule: None | |
| <i>Fuel Usage Data</i> (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___Yes ___X___ No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|---|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.5 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| NA | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| NA | | |
| | | |
| | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions are based on engineering estimates of equipment and production totals.</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|--|---|---|-----------|
| <i>Emission Unit Description</i> No. 3 Oil Fired Boiler – Plant 2 | | | |
| Emission unit ID number: L-6E | Emission unit name: L-12S (NG-fired Boiler 3) | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg 8501 – Plant 2 Boiler</p> <p>NG-Fired Boiler (ID# L-12S) - used to generate steam for Plant 2. Uses natural gas as the primary fuel with No.2 fuel oil as backup. Vents to atmosphere through vent ID#L-6E.</p> <p>Unit was modified December 2013.</p> | | | |
| Manufacturer: Cleaver Brooks | Model number: CB-600-2238-150ST | Serial number: Unknown | |
| Construction date: 2005 | Installation date: 02/2005 | Modification date(s): 12/2013 | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 9.96 MMBtu/hr | | | |
| Maximum Hourly Throughput: 7800 cf/hr (NG) 75 gal/hr (FO) | Maximum Annual Throughput: 68,328,000 cf/yr (NG) 657,000 gal/yr (FO) | Maximum Operating Schedule: 8,760 hours/year | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 9.96 MMBtu/hr | | Type and Btu/hr rating of burners: | |
| <p>List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.</p> <p>Natural gas with No. 2 oil backup.</p> | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

| | | | |
|------------------|------|----|---------|
| Natural Gas | 0.0% | NA | 1020 |
| No. 2 Distillate | 0.5% | NA | 138,000 |
| | | | |

| <i>Emissions Data</i> | | | |
|---|---------------------|---------|--|
| Criteria Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| Carbon Monoxide (CO) | 1.18 | 3.68 | |
| Nitrogen Oxides (NO _x) | 2.17 | 3.53 | |
| Lead (Pb) | | 2.33E-6 | |
| Particulate Matter (PM _{2.5}) | 0.08 | 0.04 | |
| Particulate Matter (PM ₁₀) | 0.08 | 0.04 | |
| Total Particulate Matter (TSP) | 0.24 | 0.08 | |
| Sulfur Dioxide (SO ₂) | 5.13 | 1.31 | |
| Volatile Organic Compounds (VOC) | 0.07 | 0.24 | |
| Hazardous Air Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| HCl | 0.16 | 0.04 | |
| Chromium | | 7.76E-7 | |
| Beryllium | | 7.76E-7 | |
| Nickel | | 7.76E-7 | |
| Mercury | | 7.76E-7 | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | | |
| | PPH | TPY | |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on maximum usage combined with AP-42 factors. PTE for HAPS - used 8760 hours/year NG for 9.92 mmBTU/hr plus 500 hours/year at 65 gallons oil/hour.
 HCl = 0.015 lb / mmBTU; (AP-42 factors Table 1.1-15, Sep. 1998)
 Cr = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Be = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)

Ni = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
Hg = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-17, Sep. 1998)
Pb = 9 lb / 10¹² BTU; AP-42 factors Table 1.1-18, Sep. 1998).
Max annual oil gallons = 37,500 gallons / year.
Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Operating Parameters - R30-05700011-2019: 4.1.1-4.1.2.; ; 45CSR13, R13-3186; ; 45CSR30-5.1.c.;
2. Emission Limits (PM) – R30-05700011-2019: 4.1.1; 45CSR13, R13-3186; 45CSR2.; 4.2.4., 4.4.7.; 45CSR30-5.1.c.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Visible Emissions – R30-05700011-2019: 4.2.5.; 45CSR13, R13-3186; 45CSR7-3.1, 7-3.2., 7-3.7., 7-4.1., 7-4.12., 7-5.1., 7-5.2., 7-8.1., 7-8.2.
2. Monitoring & Recordkeeping - R30-05700011-2019: 4.2.1., 4.2.3, 4.2.5; 4.4.1.-4.4.4.; 45CSR13, R13-3186, .
3. Reporting – R30-05700011-2019: 4.5.1.- 4.5.5.; 45CSR13, R13-3186.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| Emission Unit Description 10 NG Fired Boilers – Plant 1 | | | |
| Emission unit ID number: L-8E or L-9E | Emission unit name: L-23S-L-32S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>10 NG-Fired Boilers (ID# L-23S – 32S) - used to generate steam for Plant 1. Uses natural gas as primary fuel and No. 2 fuel oil as back-up fuel. Vents to atmosphere through vent ID# L-8E or 9E.</p> | | | |
| Manufacturer: Miura | Model number: EXN-300SGOF | Serial number: Unknown | |
| Construction date: 2015 | Installation date: 2015 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 12 MMBtu/hr each | | | |
| Maximum Hourly Throughput: 12,000 cf/hr (NG) 87.6 gal/hr (FO) | Maximum Annual Throughput: 90,144,000 cf/yr (NG) 109,325 gal/yr (FO) | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 12 MMBtu/hr each | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Natural gas with No. 2 oil backup. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Natural Gas | 0.0% | NA | 1020 |
| No. 2 Distillate | 0.5% | NA | 138,000 |

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| <i>Emissions Data</i> | | |
|---|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 1.45 | 40.59 |
| Nitrogen Oxides (NO _x) | 2.35 | 33.47 |
| Lead (Pb) | 6.00E-06 | 2.25E-04 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.09 | 0.55 |
| Total Particulate Matter (TSP) | 0.38 | 5.23 |
| Sulfur Dioxide (SO ₂) | 4.98 | 31.32 |
| Volatile Organic Compounds (VOC) | 0.17 | 5.18 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HCl | 1.31E-12 | 0.00 |
| Chromium | 1.68E-05 | 6.0E-04 |
| Beryllium | 5.28E-05 | 2.0E-03 |
| Nickel | 2.52E-05 | 9.0E-04 |
| Mercury | 3.12E-06 | 1.0E-04 |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on maximum usage combined with AP-42 factors. PTE for HAPS - used 7512 hours/year NG for 12 mmBTU/hr plus 1248 hours/year at 87.6 gallons oil/hour.

HCl = 0.015 lb / mmBTU; (AP-42 factors Table 1.1-15, Sep. 1998)
 Cr = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Be = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Ni = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Hg = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-17, Sep. 1998)
 Pb = 9 lb / 10¹² BTU; AP-42 factors Table 1.1-18, Sep. 1998).

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Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Operating Parameters - R30-05700011-2019: 4.1.3., 4.1.7., 4.1.10.; 45CSR13, R13-3186;; 45CSR45CSR30-5.1.c.
2. Emission Limits (PM) – R30-05700011-2019: 4.1.3; 45CSR2.; 4.2.4., 4.4.7.; 45CSR30-5.1.c.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Visible Emissions – R30-05700011-2019: 4.2.5.; 45CSR7-3.1, 7-3.2., 7-3.7., 7-4.1., 7-4.12., 7-5.1., 7-5.2., 7-8.1., 7-8.2.
2. Monitoring & Recordkeeping - R30-05700011-2019: 4.2.4., 4.4.3., 4.4.4.; 45CSR13, R13-3186
3. Reporting – R30-05700011-2019: 45CSR13, R13-3186.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|--|---|---|-----------|
| <i>Emission Unit Description</i> 3 (Miura) Dual Fuel Boilers (NG as primary with ULSD as back-up) | | | |
| Emission unit ID number: L-33S, L-34S, L-35S | Emission unit name: L-10E/L-13E, L-11E/L-13E, L-12E/L-13E | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>3 Dual Fuel-Fired Boilers (ID# L-33S – 35S) - used to generate steam for Plant 2. Uses natural gas as primary fuel and No. 2 fuel oil as back-up fuel. Vents to atmosphere through vent ID# L-10E/L-13E, L-11E/L-13E, and L-12E/L-13E.</p> | | | |
| Manufacturer: Miura | Model number: EX200SGO-07 | Serial number: Unknown | |
| Construction date: 09/2020 | Installation date: 0/2020 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 7.9 MMBtu/hr each | | | |
| Maximum Hourly Throughput: 7850 cf/hr (NG) 56.3 gal/hr (FO) | Maximum Annual Throughput: 205,167,600 cf/yr (NG) 8107 gal/yr (FO) | Maximum Operating Schedule: 8760 hours for NG with 48 hr for oil | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 7.9 MMBtu/hr each | | Type and Btu/hr rating of burners: | |
| <p>List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.</p> <p>Natural Gas with ULSD for back up.</p> | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

| | | | |
|------------------|------|----|---------|
| Natural Gas | 0% | NA | 1020 |
| No. 2 Distillate | 0.5% | NA | 138,000 |
| | | | |

| Emissions Data | | | |
|--|---------------------|----------|--|
| Criteria Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| Carbon Monoxide (CO) | 0.941 | 8.64 | |
| Nitrogen Oxides (NO _x) | 1.519 | 5.21 | |
| Lead (Pb) | 7.22E-05 | 5.62E-05 | |
| Particulate Matter (PM _{2.5}) | | | |
| Particulate Matter (PM ₁₀) | 0.056 | 0.00 | |
| Total Particulate Matter (TSP) | 0.245 | 0.79 | |
| Sulfur Dioxide (SO ₂) | 0.0047 | 0.06 | |
| Volatile Organic Compounds (VOC) | 0.109 | 1.13 | |
| Hazardous Air Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| HCl | 8.45E-13 | 0.00 | |
| Chromium | 1.10E-05 | 0.00 | |
| Beryllium | 3.45E-05 | 0.00 | |
| Nickel | 1.65E-05 | 0.00 | |
| Mercury | 2.48E-05 | 2.83E-05 | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | | |
| | PPH | TPY | |
| | | | |
| | | | |
| | | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on maximum usage combined with AP-42 factors. PTE for HAPS - used 8712 hours/year NG for 7.9 mmBTU/hr each plus 48 hours/year at 56.3 gallons oil/hour. HCl = 0.015 lb / mmBTU; (AP-42 factors Table 1.1-15, Sep. 1998) Cr = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998) Be = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)</p> | | | |

Ni = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
Hg = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-17, Sep. 1998)
Pb = 9 lb / 10¹² BTU; AP-42 factors Table 1.1-18, Sep. 1998).

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Operating Parameters - R30-05700011-2019: 4.1.4., 4.1.10.; 45CSR13, R13-3186.;45CSR30-5.1.c.
2. Emission Limits (PM) – R30-05700011-2019: 4.1.4; 45CSR2.; 4.2.4., 4.4.7.; 45CSR30-5.1.c.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Visible Emissions – R30-05700011-2019: 4.2.5.; 45CSR7-3.1, 7-3.2., 7-3.7., 7-4.1., 7-4.12., 7-5.1., 7-5.2., 7-8.1., 7-8.2.
2. Monitoring & Recordkeeping - R30-05700011-2019: 4.2.1., 4.2.5., 4.4.3.; 45CSR13, R13-3186
3. Reporting – R30-05700011-2019: 45CSR13, R13-3186.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|--|---|---|-----------|
| Emission Unit Description 2 (Miura) Dual Fuel Boilers (NG as primary with ULSD as back-up) | | | |
| Emission unit ID number: L-36S, L-37S | Emission unit name: L-14E, L-15E | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>2 Dual Fuel-Fired Boilers (ID# L-36S and L-37S) - used to generate steam for Plant 3. Uses natural gas as primary fuel and No. 2 fuel oil as back-up fuel. Vents to atmosphere through vent ID# L-14E and L-15E.</p> | | | |
| Manufacturer: Miura | Model number: EX100SGO-07 | Serial number: Unknown | |
| Construction date: 09/2020 | Installation date: 09/2020 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 3.94 MMBtu/hr each | | | |
| Maximum Hourly Throughput: 3920 cf/hr (NG) 96 gal/hr (FO) | Maximum Annual Throughput: 68,302,080 cf/yr (NG) 2,698 gal/yr (FO) | Maximum Operating Schedule: 8,760 hours/year for NG and 48 hours/year for FO | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 3.94 MMBtu/hr each | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Natural Gas with ULSD for back up. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Natural Gas | 0.0% | NA | 1020 |
| No. 2 Distillate | 0.5% | NA | 138000 |

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| <i>Emissions Data</i> | | |
|---|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 0.470 | 2.88 |
| Nitrogen Oxides (NO _x) | 0.758 | 1.73 |
| Lead (Pb) | 6.88E-05 | 2.03E-05 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.028 | 0.00 |
| Total Particulate Matter (TSP) | 0.123 | 0.26 |
| Sulfur Dioxide (SO ₂) | 0.0024 | 0.02 |
| Volatile Organic Compounds (VOC) | 0.054 | 0.38 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HCl | 4.22E-13 | 0.00 |
| Chromium | 5.49E-06 | 0.187 |
| Beryllium | 1.72E-05 | 0.5890 |
| Nickel | 8.23E-06 | 0.2811 |
| Mercury | 2.33E-05 | 9.95E-06 |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on maximum usage combined with AP-42 factors. PTE for HAPS - used 8712 hours/year NG for 3.94 mmBTU/hr each plus 96 hours/year at 28.1 gallons oil/hour each.

HCl = 0.015 lb / mmBTU; (AP-42 factors Table 1.1-15, Sep. 1998)
 Cr = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Be = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Ni = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Hg = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-17, Sep. 1998)
 Pb = 9 lb / 10¹² BTU; AP-42 factors Table 1.1-18, Sep. 1998).

| |
|---|
| <p><i>Applicable Requirements</i></p> <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <ol style="list-style-type: none">1. Operating Parameters - R30-05700011-2019: 4.1.4., 4.1.8., 4.1.10.; 45CSR13, R13-3186; 45CSR45CSR30-5.1.c.2. Emission Limits (PM) – R30-05700011-2019: 4.1.4. ; 45CSR2.; 4.2.4., 4.4.7.; 45CSR30-5.1.c. |
| <p><input checked="" type="checkbox"/> Permit Shield</p> <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <ol style="list-style-type: none">1. Visible Emissions – R30-05700011-2019: 4.2.5.; 45CSR7-3.1, 7-3.2., 7-3.7., 7-4.1., 7-4.12., 7-5.1., 7-5.2., 7-8.1., 7-8.2.2. Monitoring & Recordkeeping - R30-05700011-2019: 4.2.2, 4.2.5., ., 4.4.3., .; 45CSR13, R13-31863. Reporting – R30-05700011-2019: 45CSR13, R13-3186. |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Process Heaters for Bldg. 3040 - Plant 3 | | | |
| Emission unit ID number: P3-7S, P3-8S, P3-9S | Emission unit name: P3-7E, P3-8E, P3-9E | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>3 NG-Fired Process Heaters (ID# P3-7S, P3-8S, P3-9S) - used to generate comfort heat for Bldg. 3040 on Plant 3. Vents to atmosphere through vent ID# P3-7E, P3-8E, and P3-9E.</p> | | | |
| Manufacturer: DynaFlame | Model number: 501 | Serial number: | |
| Construction date: 07/2019 | Installation date: 07/2019 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 0.5 MMBtu/hr each | | | |
| Maximum Hourly Throughput: 1500cf/hr | Maximum Annual Throughput: 39,420,000 cf/yr | Maximum Operating Schedule: 8760 hours/year | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 0.5 MMBtu/hr each | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. Natural Gas | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Natural Gas | 0.0% | NA | 1020 |

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| Emissions Data | | |
|---|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 0.126 | 1.66 |
| Nitrogen Oxides (NO _x) | 0.075 | 0.99 |
| Lead (Pb) | 7.50E-07 | 9.86E-06 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.00 | 0.00 |
| Total Particulate Matter (TSP) | 0.011 | 0.15 |
| Sulfur Dioxide (SO ₂) | 0.0009 | 0.01 |
| Volatile Organic Compounds (VOC) | 0.017 | 0.22 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HCl | 0.00 | 0.00 |
| Chromium | 2.10E-06 | 0.0414 |
| Beryllium | 6.60E-06 | 0.1301 |
| Nickel | 3.15E-06 | 0.0621 |
| Mercury | 3.90E-07 | 5.12E-06 |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on maximum usage combined with AP-42 factors. PTE for HAPS - used 8760 hours/year NG for 0.5 mmBTU/hr (each).
 HCl = 0.015 lb / mmBTU; (AP-42 factors Table 1.1-15, Sep. 1998)
 Cr = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Be = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Ni = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Hg = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-17, Sep. 1998)
 Pb = 9 lb / 10¹² BTU; AP-42 factors Table 1.1-18, Sep. 1998).

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| <p><i>Applicable Requirements</i></p> <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <ol style="list-style-type: none">1. Operating Parameters - R30-05700011-2019: 4.1.6., 4.1.8.; 45CSR13, R13-3186.; 45CSR45CSR30-5.1.c2. Emission Limits (PM) - R30-05700011-2019: 4.1.6. ; 45CSR2.; 4.2.4., 4.4.7.; 45CSR30-5.1.c. |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <ol style="list-style-type: none">1. Monitoring & Recordkeeping - R30-05700011-2019: 4.2.2, 4.5.2.; 45CSR13, R13-31862. Reporting – R30-05700011-2019: 45CSR13, R13-3186. |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
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| <i>Emission Unit Description</i> Process Heaters for Bldg. 3030A - Plant 3 | | | |
| Emission unit ID number: P3-9S, P3-11S, P3-12S, P3-13S | Emission unit name: P3-10E, P3-11E, P3-12E | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>2 NG-Fired Process Heaters (ID# P3-11S, P3-12S, P3-13S) - used to generate comfort heat for Bldg. 3030A on Plant 3. Vents to atmosphere through vent ID# P3-10E, P3-11E, and P3-12E.</p> | | | |
| Manufacturer: DynaFlame | Model number: 501 | Serial number: Unknown | |
| Construction date: 09/2019 | Installation date: 09/2019 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): 0.5 MMBtu/hr each | | | |
| Maximum Hourly Throughput: 17520 cf/hr | Maximum Annual Throughput: 26,280,000 | Maximum Operating Schedule: 8760 hr each | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 0.5 MMBtu/hr each | | Type and Btu/hr rating of burners: | |
| <p>List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.</p> <p>Natural Gas</p> | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Natural Gas | 0.0% | NA | 1020 |
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| <i>Emissions Data</i> | | |
|---|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 0.126 | 1.10 |
| Nitrogen Oxides (NO _x) | 0.075 | 0.66 |
| Lead (Pb) | 7.50 E-07 | 6.57E-06 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.00 | 0.00 |
| Total Particulate Matter (TSP) | 0.011 | 0.10 |
| Sulfur Dioxide (SO ₂) | 0.0009 | 0.01 |
| Volatile Organic Compounds (VOC) | 0.017 | 0.14 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HCl | 0.00 | 0.00 |
| Chromium | 2.10E-06 | 0.0276 |
| Beryllium | 6.60E-06 | 0.0867 |
| Nickel | 3.15E-06 | 0.0414 |
| Mercury | 3.90E-07 | 3.42E-06 |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on maximum usage combined with AP-42 factors. PTE for HAPS - used 8760 hours/year NG for 0.5 mmBTU/hr (each).
 HCl = 0.015 lb / mmBTU; (AP-42 factors Table 1.1-15, Sep. 1998)
 Cr = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Be = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Ni = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-18, Sep. 1998)
 Hg = 3 lb / 10¹² BTU; (AP-42 factors Table 1.1-17, Sep. 1998)
 Pb = 9 lb / 10¹² BTU; AP-42 factors Table 1.1-18, Sep. 1998).

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| <p><i>Applicable Requirements</i></p> <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <ol style="list-style-type: none">1. Operating Parameters - R30-05700011-2019: 4.1.6., 4.1.8.; 45CSR13, R13-3186;; 45CSR45CSR30-5.1.c.2. Emission Limits (PM) – R30-05700011-2019: 4.1.6. ; 45CSR2.; 4.2.4., 4.4.7.; 45CSR30-5.1.c. |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <ol style="list-style-type: none">1. Monitoring & Recordkeeping - R30-05700011-2019: 4.2.2, 4.5.2.; 45CSR13, R13-31862. Reporting – R30-05700011-2019: 45CSR13, R13-3186. |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | |
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| <i>Emission Unit Description</i> Waste Water Treatment Plants | | |
| Emission unit ID number: Fugitive | Emission unit name: N-1S through N-5S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.):</p> <p><u>Bldg. 442 - Plant 1 Wastewater Treatment</u> --Reactor Basins (2) (100,000 gallon capacity) (ID# N-1S & N-2S) - used to treat Plant 1 sewage and non-explosive process wastewater. Vents to atmosphere via fugitive emissions. Constructed in 1996.</p> <p><u>Bldgs 383/389 - Explosive 1 Wastewater Treatment</u> --Explosive Wastewater Treatment System (ID# N-4S) - used to treat Plant 1 explosive process wastewater containing nitrate esters and nitramines by oxidation with hydrogen peroxide and ultraviolet light. Closed treatment system with no significant air emissions. Constructed in 1994.</p> <p><u>Bldg. 535 - Potable Water Treatment</u> --Facility Water Treatment System (ID# N-5S) - used to treat water for facility-wide usage by filtration, softening and chlorination. Approximately 14,000 gallons of water per day is discharged to a filter backwash pond with no significant air emissions. Constructed in 1996.</p> <p><u>Bldg. 8563 – Plant 2 Wastewater Treatment</u> --Recirculating Sand Filter (6000 gallon capacity) (ID# N-7S) - used to treat Plant 2 sewage and non-explosive process wastewater. Vents to atmosphere via fugitive emissions. Constructed in 2013. Replaces N-6S.</p> | | |
| Manufacturer: Unknown | Model number: Unknown | Serial number: Unknown |
| Construction date: See above | Installation date: See above | Modification date(s): See above |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): See above | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Varies | Maximum Operating Schedule: 8,760 hours/year |
| Fuel Usage Data (fill out all applicable fields) NA | | |
| Does this emission unit combust fuel? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | |
| Describe each fuel expected to be used during the term of the permit. | | |

| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
|-----------|---------------------|------------------|-----------|
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| <i>Emissions Data</i> | | |
|--|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are expected to be minimal. Chlorine disinfection is only used for potable water, not for waste water treatment, thus reducing any chlorine or chloroform emissions. Proper operation of the plant precludes the formation of large quantities of methane.

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|--|-----------|
| <i>Emission Unit Description</i> Burning Grounds | | | |
| Emission unit ID number: Fugitive | Emission unit name: O-1S | List any control devices associated with this emission unit: None | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Burning pans (ID# O-1S) - used for open burning of waste propellants and explosives. Vents to atmosphere via fugitive emissions. | | | |
| Manufacturer: ABL | Model number: NA | Serial number: NA | |
| Construction date: Pre-1970 | Installation date: Pre-1970 | Modification date(s): 2005 | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): | | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Varies | Maximum Operating Schedule: 1,460 hours/year | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> NA | | | |
| Does this emission unit combust fuel? <input type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | | |

| Criteria Pollutants | Potential Emissions | |
|---|---------------------|-------|
| | PPH | TPY |
| Carbon Monoxide (CO) | | 10.38 |
| Nitrogen Oxides (NO _x) | | 0.64 |
| Lead (Pb) | | 1.10 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | 7.13 |
| Total Particulate Matter (TSP) | | 14.83 |
| Sulfur Dioxide (SO ₂) | | 0.18 |
| Volatile Organic Compounds (VOC) | | 0.56 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HCl | | 3.58 |
| Other HAPs | | 0.76 |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on emission factors from ABL Burning Grounds Air Modeling Report - Appendix A Tables 3-4 and 3-5. Annual totals are based on a maximum of 250,000 pounds per year per waste type (Composite, Aluminized Composite, Double Base, or PBX Explosives).</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>The burning grounds operations are governed by 45CSR25 Permit HW-X-1 dated July 31, 2005.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | |
|---|---|--|
| <i>Emission Unit Description</i> Research Complex – Building 394 Laboratories | | |
| Emission unit name: P-23E, P-24E | Emission unit name: P-33S through P-40S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.): Bldg. 394 - Physical and Hazards Testing</p> <p>--Exhaust hood (Rm.109) (ID# P-33S) - used to clean glassware used for particle size analysis. Vents to atmosphere through vent ID# P-23E.</p> <p>--Exhaust hood (Rm.110) (ID# P-34S) - used to prepare adhesive samples and perform acid etching of small components. Vents to atmosphere through vent ID# P-23E.</p> <p>--Fume extractors (Rm.105, Rm.106, Rm.107, Rm.108) (ID# P-35S, P-36S, P-37S, P-38S, & P-39S) - used to remove combustion products from sensitivity testing of explosives and propellants. (No emissions expected from the two units in Rm.105 used for the tensile strength test machines.) Vent to atmosphere through vent ID# P-23E.</p> <p>--Neslab Low Temp Bath Circulator for Tensile Testing (ID# P-40S) - used to reduce the temperature of the test chamber so that mechanical properties of cold samples can be obtained. The system previously used trichloroethylene as the refrigerant. Prior to putting the unit back in service after moving to Bldg. 394, the system was converted to use ethylene glycol as the refrigerant. Vents to the atmosphere through vent ID# P-24E.</p> | | |
| Manufacturer: Nederman / Visionaire | Model number: NA | Serial number: NA |
| Construction date: 1996 | Installation date: 1996 | Modification date(s): |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): Variable | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | |
| Does this emission unit combust fuel? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | |
| Describe each fuel expected to be used during the term of the permit. | | |

| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
|-----------|---------------------|------------------|-----------|
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| <i>Emissions Data</i> | | |
|---|---------------------|-------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | 0.001 |
| Nitrogen Oxides (NO _x) | | 0.001 |
| Lead (Pb) | | 0.001 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | 0.003 |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 0.25 |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.</p> | | |

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| <p><i>Applicable Requirements</i></p> |
| <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| Emission Unit Description Research Complex – Building 396 – 5 gallon mixer | | | |
| Emission unit ID number: P-37E, P-38E, P-39E | Emission unit name: P-109S through P-111S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.): Bldg. 396 – 5 Gallon Mixer</p> <p>--5 gallon mixer (ID# P-109S) – used to produce 5 gallon propellant mixes for physical and mechanical properties testing. Vents to atmosphere through vent ID# P-37E.</p> <p>--Exhaust hood (ID# P-110S) – used to exhaust wash basin used for cleaning operations. Vents to atmosphere through vent ID# P-38E.</p> <p>--Fume extractor (ID# P-111S) – used for mix bowl and blade cleaning operations. Vents to atmosphere through vent ID# P-39E.</p> | | | |
| Manufacturer: Labconco / Day | Model number: Unknown | Serial number: Unknown | |
| Construction date: 2001 | Installation date: 2001 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___ Yes ___ <input checked="" type="checkbox"/> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

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| <i>Emissions Data</i> | | | |
|---|---------------------|-----|--|
| Criteria Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| Carbon Monoxide (CO) | | | |
| Nitrogen Oxides (NO _x) | | | |
| Lead (Pb) | | | |
| Particulate Matter (PM _{2.5}) | | | |
| Particulate Matter (PM ₁₀) | | | |
| Total Particulate Matter (TSP) | | | |
| Sulfur Dioxide (SO ₂) | | | |
| Volatile Organic Compounds (VOC) | | 1.6 | |
| Hazardous Air Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| HAP | | 1.5 | |
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| | | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | | |
| | PPH | TPY | |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.</p> | | | |

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | |
|---|---|---|
| <i>Emission Unit Description</i> Research Complex – Building 400 – Subscale Mixers (1 lb) | | |
| Emission unit ID number: P-43E through P-48E | Emission unit name: P-115S through P-121S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg. 400 – Subscale Mixers (1 Pound) --Fume hood (Rm. 121) (ID# P-115S) – used for cleaning extrusion press hardware. Vents to atmosphere through vent ID# P-43E.</p> <p>----Fume extractor (Rm. 116) (ID# P-116S) – used to remove vapors during operation of the Sigma micro mixer and cleanup of one pound mixers. Vents to atmosphere through vent ID# P-44E.</p> <p>--Micro mixer (Rm. 116 (ID# P-117S) – used to produce 50 gram propellant mixes for physical and mechanical properties testing. Vents to atmosphere through vent ID# P-45E.</p> <p>--One pound Sigma mixers (3) (Rms. 116, 110, 106) (ID# P-118S, P-119S, & P-120S) – used to produce 1 pound propellant mixes for physical and mechanical properties testing. Vent to atmosphere through vent ID# P-46E and P-47E.</p> <p>--Fume hood (Rm.117) (ID# P-121S) – used for cleaning viscometer hardware. Vents to atmosphere through vent ID# P-48E.</p> | | |
| Manufacturer: Labconco / Sigma | Model number: Unknown | Serial number: Unknown |
| Construction date: 1999 | Installation date: 1999 | Modification date(s): |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): Variable | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | |
| Does this emission unit combust fuel? ___ Yes <u> X </u> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | |

| Describe each fuel expected to be used during the term of the permit. | | | |
|--|---------------------|------------------|-----------|
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|---|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 0.5 |
| | | |
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| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.</p> | | |

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|--|--|---|-----------|
| Emission Unit Description Research Complex – Building 401 – 10 Pound Mixers | | | |
| Emission unit ID number: P-49E, P-50E, P-51E | Emission unit name: P-122S, P-123S. P-124S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg. 401 – 10 Pound Mixers</p> <p>--Fume extractor (ID# P-122S) – used to remove vapors from dough mixer operation. Vents to atmosphere through vent ID# P-49E. This mixer has not been installed. No date has been determined for installation at this time.</p> <p>--Fume hood (ID# P-123S) – used for cleaning mold tooling. Vents to atmosphere through vent ID# P-50E.</p> <p>--Ten pound mixer (ID# P-124S) – used to produce 10 pound propellant mixes for physical and mechanical properties testing. Vents to atmosphere through vent ID# P-51E.</p> | | | |
| Manufacturer: Labconco / Day | Model number: Unknown | Serial number: Unknown | |
| Construction date: 1999 | Installation date: 1999 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): Variable | | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___ Yes <u> X </u> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| Emissions Data | | |
|--|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 1.5 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 1 |
| | | |
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| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|--|--|-----------|
| Emission Unit Description Research Complex – Building 403 – Ingredient Preparation | | | |
| Emission unit ID number: P-35E, P-36E | Emission unit name: P-105S, P-106S. P-107S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg. 403 - Ingredient Preparation</p> <p>--Chemical fume hood (Rm. 101) (ID# P-105S) - used to vent vapors from cleaning tools and hardware used for ingredient preparation. Vents to atmosphere through P-35E.</p> <p>--Slotted exhausts (2) (Rm. 101) (ID# P-106S & P-107S) - used to vent vapors from transfer of materials from large containers to smaller ones. Minimal emissions are expected due to the types of materials and the quantities involved. Vent to atmosphere through vent P-36E.</p> | | | |
| Manufacturer: Hamilton | Model number: Unknown | Serial number: Unknown | |
| Construction date: 1998 | Installation date: 1998 | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): Variable | | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|---|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 1 |
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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | |
|--|--|---|
| Emission Unit Description Research Complex – Building 404 – Propellant Lab | | |
| Emission unit ID number: P-33E, P-34E | Emission unit name: P-94S through P-104S, P-108S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.): Bldg. 404 - Propellant Lab --Exhaust hoods (Rm.102, Rm.104, Rm.106, Rm.108) (ID# P-94S, P-95S, P-96S, P-97S) used to vent vapors from casting powder coating and catalyst solution preparation for propellant mixes. Vent to atmosphere through vent ID# P-33E.</p> <p>--Exhaust hoods (Rm.103, Rm.105) (ID# P-98S & P-99S) - used to remove vapors from sample preparation and heat gassing studies of propellant samples in mineral oil bath. Vent to atmosphere through vent ID# P-33E.</p> <p>--Exhaust hood (Rm.107) (ID# P-100S) - used to vent vapors (acetone) from sample prep and cleanup of aging study samples. Vents to atmosphere through vent ID# P-33E.</p> <p>--Exhaust hood (Rm.111) (ID# P-101S) - used to vent vapors from coating propellant strands with inhibiting coating. Vents to atmosphere through vent ID# P-33E.</p> <p>--Exhaust hoods (2) (Rm.111) (ID# P-102S & P-103S) - used during installation and disassembly of strand bomb test equipment before and after firing. No emissions expected. Vent to atmosphere through vent ID# P-33E.</p> <p>--Fume extractor (Rm. 114) (ID# P-104S) - used to vent combustion products from 10000 psi strand bomb firing rate testing of propellant samples. Vent to atmosphere through vent ID# P-52E.</p> <p>-- Fume extractor (Rm. 112) (ID# P-108S) - used to vent combustion products from 5000 psi strand bomb firing rate testing of propellant samples. Vents to atmosphere through vent ID# P-34E.</p> | | |
| Manufacturer: Visionaire | Model number: Unknown | Serial number: Unknown |
| Construction date: 1997 | Installation date: 1997 | Modification date(s): |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): Variable | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year |
| Fuel Usage Data (fill out all applicable fields) NA | | |
| Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |

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| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
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| <i>Emissions Data</i> | | |
|--|---------------------|-------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | 0.001 |
| Nitrogen Oxides (NO _x) | | 0.001 |
| Lead (Pb) | | 0.001 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | 0.01 |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 0.5 |
| | | |
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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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Potential Emission

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | |
|--|---|---|
| <i>Emission Unit Description</i> Research Complex – Building 405 – Propellant Lab | | |
| Emission unit ID number: P-25E through P-29E | Emission unit name: P-41S through P-80S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg. 405 - Materials Lab</p> <p>--Exhaust hoods (1 in Rm.108 - ID# P-41S; 2 in Rm.110 - ID# P-42S & P-43S; 1 in Rm.112 - ID# P-44S; 1 in Rm.114 - ID# P-45S; 1 in Rm.115 - ID# P-46S; 1 in Rm.117 - ID# P-47S; 2 in Rm.119 - ID# P-48S & P-49S; 3 in Rm.124 - ID# P-50S, P-51S & P-52S; 2 in Rm.125 - ID# P-53S & P-54S; 2 in Rm.129 - ID# P-55S & P-56S; 1 in Rm.131 - ID# P-57S; 1 in Rm.133 - ID# P-58S; 1 in Rm.134 - ID# P-59S; 2 in Rm.135 - ID# P-60S & P-61S; 2 in Rm.138 -ID# P-62S & P-63S) - used to remove vapors and emissions from various methods of laboratory analysis. Vent to atmosphere through vent ID# P-25E.</p> <p>--Exhaust hood (1 in Rm.119) (ID# P-64S) - used to remove vapors from acid digestion of substances. Vents to atmosphere through vent ID# P-26E.</p> <p>--Exhaust hoods (2 in Rm.135) (ID# P-65S & P-66S) - used to remove vapors from soxlet extractions. Vent to atmosphere through vent ID# P-27E.</p> <p>--Exhaust hoods (2 in Rm.138) (ID# P-67S & P-68S) - used to remove vapors from stability and properties testing of energetic materials (explosives). Vent to atmosphere through vent ID# P-28E.</p> <p>--Fume Extractors for Atomic Absorption Test Equipment (2 in Rm.110) (ID# P-69S & P-70S) - used to remove exhaust from furnace and flame atomic absorption equipment. Vent to atmosphere through vent ID# P-29E.</p> <p>--Fume Extractors for Gas Chromatography (3 in Rm.129) (ID# P-71S, P-72S, & P-73S) used to remove emissions from gas chromatography equipment. Vent to atmosphere through vent ID# P-25E.</p> <p>--Electric ovens (6 in Rm.113) (ID# P-74S, P-75S, P-76S, P-77S, P-78S, & P-79S) - 5 are used for drying and curing samples of various materials which will either be analyzed or used in analysis of other materials. Vent inside building. The remaining muffle oven is used to reduce materials to ash in order to complete specific testing. This oven vents to atmosphere through vent ID# P-30E.</p> <p>--Parr Bomb Exhaust (Rm.136) (ID# P-80S) - used to vent exhaust from the Parr Bomb calorimeter. Vents to atmosphere through vent ID# P-25E.</p> | | |
| Manufacturer: Visionaire | Model number: Unknown | Serial number: Unknown |
| Construction date: 1996 | Installation date: 1996 | Modification date(s): |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): Variable | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year |
| Fuel Usage Data (fill out all applicable fields) NA | | |
| Does this emission unit combust fuel? ___ Yes <u>X</u> No | | If yes, is it? |

| | | | |
|---|---|------------------|-----------|
| | <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | | |
| Maximum design heat input and/or maximum horsepower rating: | Type and Btu/hr rating of burners: | | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

| <i>Emissions Data</i> | | |
|--|---------------------|-----|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 1 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 1 |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Emission Unit Description Research Complex – Building 406 – Adhesives Lab

| | | |
|---|---|---|
| Emission unit ID number: P-31E | Emission unit name: P-81S through P-96S | List any control devices associated with this emission unit: None |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable) Bldg. 406 - Adhesives Lab</p> <p>--Exhaust hoods (Rm.101, 103, 106, 107) (ID# P-81S, P-82S, P-83S, P-84S, & P-85S) used to remove vapors from cleaning propellant contaminated parts; mixing of bondliner, adhesives, and coatings; sample preparation; and bondliner application. Vents to atmosphere through vent ID# P-31E.</p> <p>--Benchtop Slotted Exhaust (Rm.106) (ID# P-86S) - used to remove vapors from sample preparation. Vents to atmosphere through vent ID# P-31E.</p> <p>--Walk-in Electric Oven (Rm.107) (ID#P-87S) - used for drying materials and curing sample's. Vents to atmosphere through vent ID# P-32E.</p> <p>--Despatch Electric Oven (Rm. 109) (ID# P-88S) - used for drying materials and curing samples. Vents to atmosphere through vent ID# P-31E.</p> <p>--Young Brothers Electric Ovens (Rm.109) (ID# P-89S & P-90S) - used for drying materials and curing samples. Vent to atmosphere through vent ID# P-31E.</p> <p>--3 Roll Mill (Rm.113) (ID# P-91S) - used to mill case bondliner samples to insure homogeneity. Vents to atmosphere through vent ID# P-31E.</p> <p>--2 Roll Mill (Rm.113) (ID# P-92S) - used to mill rubber used in case bondliner samples. No emissions are expected. Vents to atmosphere through vent ID# P-31E.</p> <p>--Dake Presses (3) (Rm.113) (ID# P-93S, P-94S, & P-95S) - used to press and mold rubber samples. Vent inside building.</p> <p>--Empire Grit Blaster (Rm.110) (ID# P-96S) - used to grit blast small parts prior to conducting bonding operations. Vents inside building.</p> | | |
| Manufacturer: Visionaire | Model number: Unknown | Serial number: Unknown |
| Construction date: 1996 | Installation date: 1996 | Modification date(s): |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): Variable | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Variable | Maximum Operating Schedule: 8,760 hours/year |
| Fuel Usage Data (fill out all applicable fields) NA | | |
| Does this emission unit combust fuel? ___ Yes ___X___ No | | If yes, is it? ___ Indirect Fired ___ Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |

| | | | |
|---|---------------------|------------------|-----------|
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| | | | |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | | 0.5 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HAP | | 0.25 |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-1771B.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits – R30-05700011-2019: 5.1.1., 5.1.2., 5.1.3., 5.1.4.; 45CSR13, R13-1771B, A.1., A.2., A.3., A.4.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Emission Limits – R30-05700011-2019: 5.2., 5.3., 5.4.; 45CSR13, R13-1771B, B.1. - B.5.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

ATTACHMENT E - Emission Unit Form

Page _____ of _____

| | | | |
|---|---|---|-----------|
| Emission Unit Description X-Range Static Firing | | | |
| Emission unit ID number: Fugitive | Emission unit name: Q-1S through Q-4S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>Static Test Firing Bays (3 - Bldgs, 193, 194, and 242) (ID# Q-1S, Q-2S, Q-3S) - used to test fire rocket motor assemblies. Bay 4 contains a 1,000 gallon propane storage tank and an 850K BTU burner system (Q-4S) used for a pebble bed heat source.</p> | | | |
| Manufacturer: ABL | Model number: NA | Serial number: NA | |
| Construction date: 1959 | Installation date: 1959 | Modification date(s): 2002 | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): See above | | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: Varies | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| | | | |
| | | | |
| | | | |

| |
|-----------------------|
| Emissions Data |
|-----------------------|

| Criteria Pollutants | Potential Emissions | |
|---|---------------------|------|
| | PPH | TPY |
| Carbon Monoxide (CO) | | 2.08 |
| Nitrogen Oxides (NO _x) | | 0.13 |
| Lead (Pb) | | 0.22 |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | 1.43 |
| Total Particulate Matter (TSP) | | 2.97 |
| Sulfur Dioxide (SO ₂) | | 0.04 |
| Volatile Organic Compounds (VOC) | | 0.11 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| HCl | | 0.72 |
| Other HAPs | | 0.16 |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on emission factors from ABL Burning Grounds Air Modeling Report - Appendix A Tables 3-4 and 3-5. Annual totals are based on a maximum of 250,000 pounds per year per waste type (Composite, Aluminized Composite, Double Base, or PBX Explosives).</p> | | |

Potential Emission

| |
|---|
| <p><i>Applicable Requirements</i></p> <p>List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.</p> <p>There are no underlying applicable requirements associated with this equipment.</p> <p>40CFR63, Subpart P P P P P – National Emission Standards for Hazardous Air Pollutants from Engine Test Cells/Stands (05/27/03) – This rule applies to the X-Range Static Rocket Motor Firing facility. However, because the facility is used exclusively for testing rocket motors, and also because it was constructed before 05/14/02 (except modification to Q-3S in summer of 2002) it is exempted from notification requirements, control requirements, recordkeeping requirements, and reporting requirements set forth in the final rule (per 40CFR63.9290 (b) & (d)(2)).</p> |
| <p><input checked="" type="checkbox"/> Permit Shield</p> |
| <p>For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)</p> <p>There are no specified monitoring/testing/recordkeeping/ reporting requirements for this equipment.</p> |
| <p>Are you in compliance with all applicable requirements for this emission unit? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If no, complete the Schedule of Compliance Form as ATTACHMENT F.</p> |

| ATTACHMENT E - Emission Unit Form | | |
|---|---|--|
| <i>Emission Unit Description</i> TPEG Manufacturing System | | |
| Emission unit ID number: T-1E or T-2E | Emission unit name: T-1S, T-2S, T-3S, T-4S, and T-5S | List any control devices associated with this emission unit: T-1C |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>Reactor vessel (ID# T-1S) – used to carry out the reaction of the Terathane feed product to form a new polymer chain. Vents to the atmosphere through vent ID# T-1E or T-2E (relief valve).</p> <p>Reactor distillate receiver (ID# T-2S) – used to collect tetrahydrofuran which is generated during the reaction phase. Vents to the atmosphere through vent ID# T-1E. (Ceramic Coating Co. – SN 6-44107)</p> <p>Separator (ID# T-3S) – used to separate the newly formed polymer from the water phase and neutralize the polymer layer prior to filtration and drying. Vents to atmosphere through vent ID# T-1E or T-3E (relief vent). (Ceramic Coating Co. – SN 5-44268)</p> <p>Wiped film evaporator (ID# T-4S) – used to remove any remaining moisture from the polymer prior to drumming. Vents to atmosphere through vent ID# T-1E. (Incon Tech. – SN 99034)</p> <p>Waste acid water tank (ID# T-5S) – used to collect water/sulfuric acid solution used during reaction for disposal off-site. Vents to atmosphere through vent ID# T-1E or T-4E (relief vent). (Central Fabricators – SN E-54)</p> | | |
| Manufacturer: Ceramic Coating Company | Model number: Unknown | Serial number: 5-442676 |
| Construction date: 1999 | Installation date: 1999 | Modification date(s): None |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 6500 lb / batch | | |
| Maximum Hourly Throughput: NA | Maximum Annual Throughput: 250 tons / year | Maximum Operating Schedule: 8,760 hours/year |
| <i>Fuel Usage Data (fill out all applicable fields)</i> NA | | |
| Does this emission unit combust fuel? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | If yes, is it? <input type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | |
| Describe each fuel expected to be used during the term of the permit. | | |

| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
|-----------|---------------------|------------------|-----------|
| | | | |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|---|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | 1.25 | 0.85 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on limits provided in permit R13-2301A.</p> | | |

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Production Limits R30-05700011-2019: 6.1.1.; 45CSR13, R13-2301A, A.1.
2. Emission Limits – R30-05700011-2019: 6.1.2.; 45CSR13, R13-2301A, A.2.
3. Operating Parameters - R30-05700011-2019: 6.1.3.; 45CSR13, R13-2301A, A.3.
4. Testing Requirements – R30-05700011-2019: 3.1.11., 3.3.1; 45CSR13; R13-2301A, B.6.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Production Limits R30-05700011-2019: 6.4.1.; 45CSR13, R13-2301A, B.2.
2. Emission Limits – R30-05700011-2019: 6.3.1., 6.4.3.; 45CSR13, R13-2301, C.4.; 45CSR45CSR30-5.1.c.
3. Operating Parameters - R30-05700011-2019: 6.4.4., 6.4.5.; 45CSR13, R13-2301A, B.5.; 45CSR45CSR30-5.1.c.
4. Testing Requirements – R30-05700011-2019: 6.3.1.; 45CSR13; R13-2301A, C.4.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| Emission Unit Description THF Drum Filling Station | | | |
| Emission unit ID number: T-5E | Emission unit name: T-6S | List any control devices associated with this emission unit: None | |
| <p>Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)</p> <p>Tetrahydrofuran drum filling – (ID# T-6S) – station used to drum tetrahydrofuran generated during reaction phase for resale or disposal. Vents to atmosphere through vent ID# T-5E.</p> | | | |
| Manufacturer: Velcon | Model number: VFC 104-N7 | Serial number: 21045 | |
| Construction date: 1999 | Installation date: 1999 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): 3000 lb THF / batch | | | |
| Maximum Hourly Throughput: Not determined | Maximum Annual Throughput: 250 ton/yr | Maximum Operating Schedule: 8,760 hours/year | |
| Fuel Usage Data (fill out all applicable fields) NA | | | |
| Does this emission unit combust fuel? ___ Yes <input checked="" type="checkbox"/> No | | If yes, is it? ___ Indirect Fired ___ Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| | | | |
| | | | |
| | | | |
| Emissions Data | | | |

| Criteria Pollutants | Potential Emissions | |
|---|---------------------|------|
| | PPH | TPY |
| Carbon Monoxide (CO) | | |
| Nitrogen Oxides (NO _x) | | |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | | |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | | |
| Volatile Organic Compounds (VOC) | 2.5 | 0.40 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on limits provided in permit R13-2301A.</p> | | |

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Production Limits R30-05700011-2019: 6.1.1.; 45CSR13, R13-2301A, A.1.
2. Emission Limits – R30-05700011-2019: 6.1.2.; 45CSR13, R13-2301A, A.2.

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Production Limits R30-05700011-2019: 6.4.1.; 45CSR13, R13-2301A, B.2.
2. Emission Limits – R30-05700011-2019: 6.4.2 45CSR13, R13-2301A, B.3.; 45CSR45CSR30-5.1.c.

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-3 | | | |
| Emission unit ID number: EG-3 | Emission unit name: EG-3 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Emergency Generator rated at 241.4 bhp / 1800 rpm. | | | |
| Manufacturer: Kohler | Model number: 180ROZT | Serial number: | |
| Construction date: 1999 | Installation date: 1999 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 14.4 gph | Maximum Annual Throughput: 126144 gpy | Maximum Operating Schedule: 100 hr | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 241.4 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|---|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 1.61 | 0.08 |
| Nitrogen Oxides (NO _x) | 7.48 | 0.37 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.53 | 0.03 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 0.49 | 0.02 |
| Volatile Organic Compounds (VOC) | 0.60 | 0.03 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-4 | | | |
| Emission unit ID number: EG-4 | Emission unit name: EG-4 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Emergency Generator rated at 490.0 bhp / 1800 rpm. | | | |
| Manufacturer: Kohler | Model number: 300ROEZD71 | Serial number: | |
| Construction date: 1995 | Installation date: 1995 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 23.5 gph | Maximum Annual Throughput: 205860 gpy | Maximum Operating Schedule: 100 hr | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 490.0 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 3.27 | 0.16 |
| Nitrogen Oxides (NO _x) | 15.19 | 0.76 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 1.08 | 0.05 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 1.00 | 0.05 |
| Volatile Organic Compounds (VOC) | 1.21 | 0.06 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (*Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.*)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|--|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-5 | | | |
| Emission unit ID number: EG-5 | Emission unit name: EG-5 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Emergency Generator rated at 490.0 bhp / 1800 rpm. | | | |
| Model number: 300ROEZD72 | Serial number: | Serial number: | |
| Installation date: 1998 | Modification date(s): None | Modification date(s): | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Annual Throughput: 205860 gpy | Maximum Operating Schedule: 100 hr | Maximum Operating Schedule: | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 490.0 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 3.27 | 0.16 |
| Nitrogen Oxides (NO _x) | 15.19 | 0.76 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 1.08 | 0.05 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 1.00 | 0.05 |
| Volatile Organic Compounds (VOC) | 1.21 | 0.06 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-6 | | | |
| Emission unit ID number: EG-6 | Emission unit name: EG-6 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Emergency Generator rated at 1207.0 bhp / 1800 rpm. | | | |
| Manufacturer: Kohler | Model number: 800REOZM | Serial number: | |
| Construction date: 2004 | Installation date: 2004 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): | | | |
| Maximum Hourly Throughput: 62.2 gph | Maximum Annual Throughput: 544872 gpy | Maximum Operating Schedule: 100 hr | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 1207.0 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 6.64 | 0.33 |
| Nitrogen Oxides (NO _x) | 28.97 | 1.45 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.84 | 0.04 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 0.49 | 0.02 |
| Volatile Organic Compounds (VOC) | 0.85 | 0.04 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-7 | | | |
| Emission unit ID number: EG-7 | Emission unit name: EG-7 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Emergency Generator (Tier 2) rated at 757.0 bhp / 1800 rpm. | | | |
| Manufacturer: Kohler | Model number: 500REOZVB-I2C2 (Tier 2 rated) | Serial number: | |
| Construction date: 2008 | Installation date: 2008 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 36.8 gph | Maximum Annual Throughput: 322368 gpy | Maximum Operating Schedule: 100 hr | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 757.0 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|---|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 1.99 | 0.10 |
| Nitrogen Oxides (NO _x) | 6.63 | 0.33 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.20 | 0.01 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 0.31 | 0.02 |
| Volatile Organic Compounds (VOC) | 0.53 | 0.03 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | |
|--|--|---|
| <i>Emission Unit Description</i> Emergency Generator EG-9 | | |
| Emission unit ID number: EG-9 | Emission unit name: EG-9 | List any control devices associated with this emission unit: |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): MTU Emergency Generator (Tier 2) rated at 1676.25 bhp / 1800 rpm. | | |
| Manufacturer: MTU | Model number: 1250RXC6DT2 (Tier 2 rated) | Serial number: |
| Construction date: 2010 | Installation date: 2010 | Modification date(s): |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): | | |
| Maximum Hourly Throughput: 100.0 gph | Maximum Annual Throughput: 876000 gpy | Maximum Operating Schedule: 100 hr |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired |
| Maximum design heat input and/or maximum horsepower rating: 1676.25 bhp / 1800 rpm | | Type and Btu/hr rating of burners: |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | |
| Describe each fuel expected to be used during the term of the permit. | | |

| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
|-------------|---------------------|------------------|-----------|
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | |
|---|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 4.41 | 0.22 |
| Nitrogen Oxides (NO _x) | 14.69 | 0.73 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.44 | 0.02 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 0.68 | 0.03 |
| Volatile Organic Compounds (VOC) | 1.18 | 0.06 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|--|--|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-10 | | | |
| Emission unit ID number: EG-10 | Emission unit name: EG-10 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Caterpillar Emergency Generator (Tier 2) rated at 157.5 bhp / 1800 rpm. | | | |
| Manufacturer: Caterpillar | Model number: D100-4 (Tier 2 rated) | Serial number: | |
| Construction date: 2006 | Installation date: 2006 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp): | | | |
| Maximum Hourly Throughput: 8.0 gph | Maximum Annual Throughput: 70080 gpy | Maximum Operating Schedule: 100 hr | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 157.5 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. ULSD | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

| | | | |
|-------------|-------|------|---------|
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| <i>Emissions Data</i> | | | |
|---|---------------------|------|--|
| Criteria Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| Carbon Monoxide (CO) | 1.28 | 0.06 | |
| Nitrogen Oxides (NO _x) | 1.70 | 0.09 | |
| Lead (Pb) | | | |
| Particulate Matter (PM _{2.5}) | | | |
| Particulate Matter (PM ₁₀) | 0.04 | 0.00 | |
| Total Particulate Matter (TSP) | | | |
| Sulfur Dioxide (SO ₂) | 0.06 | 0.00 | |
| Volatile Organic Compounds (VOC) | 0.39 | 0.02 | |
| Hazardous Air Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| | | | |
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| | | | |
| | | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | | |
| | PPH | TPY | |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit G60-C020
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|--|---|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-11 | | | |
| Emission unit ID number: EG-11 | Emission unit name: EG-11 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Caterpillar Emergency Generator (Tier 2) rated at 670.5 bhp / 1800 rpm. | | | |
| Manufacturer: Caterpillar | Model number: C3456 (Tier 2 rated) | Serial number: | |
| Construction date: 2007 | Installation date: 2012 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 40.0 gph | Maximum Annual Throughput: 350400 gpy | Maximum Operating Schedule: 100 hr | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 670.5 bhp / 1800 rpm | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. ULSD | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |

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| Emissions Data | | |
|--|---------------------|------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 7.94 | 0.40 |
| Nitrogen Oxides (NO _x) | 26.44 | 1.32 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.79 | 0.04 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 1.22 | 0.06 |
| Volatile Organic Compounds (VOC) | 0.84 | 0.04 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
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| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in 2014 permit mod for Plant 1 NG Steam Plant.
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|--|--|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-14 | | | |
| Emission unit ID number: EG-14 | Emission unit name: EG-14 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Engine Model: John Deere 6135HGG755 Emergency Generator (Tier 2) rated at 755 bhp / 563kW. | | | |
| Manufacturer: Kohler | Model number: John Deere Engine 6135HGG755 (Tier 2 rated) | Serial number: | |
| Construction date: 2019 | Installation date: 2019 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 56.7 gph | Maximum Annual Throughput: 496692 gpy | Maximum Operating Schedule: 500 hr | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 755 bhp / 7.7 MMBtu/hr | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. ULSD | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

| | | | |
|-------------|-------|------|---------|
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
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| <i>Emissions Data</i> | | | |
|--|---------------------|----------|--|
| Criteria Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| Carbon Monoxide (CO) | 0.74 | 0.78 | |
| Nitrogen Oxides (NO _x) | 6.95 | 1.74 | |
| Lead (Pb) | | | |
| Particulate Matter (PM _{2.5}) | | | |
| Particulate Matter (PM ₁₀) | 0.05 | 0.01 | |
| Total Particulate Matter (TSP) | | | |
| Sulfur Dioxide (SO ₂) | 9.16E-03 | 2.29E-03 | |
| Volatile Organic Compounds (VOC) | 0.15 | 0.04 | |
| Hazardous Air Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| | | | |
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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | | |
| | PPH | TPY | |
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| <p>List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).</p> <p>Potential emissions of criteria pollutants are based on limits provided in permit G60-C020 Hourly rates for metals are not given due to the low mass involved.</p> | | | |

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| <i>Emission Unit Description</i> Emergency Generator EG-15 | | | |
| Emission unit ID number: EG-15 | Emission unit name: EG-15 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Engine Model: KDI 3404TM Emergency Generator (Tier 3) rated at 67 bhp / 50kW. | | | |
| Manufacturer: Kohler | Model number: KDI 3404TM (Tier 3 rated) | Serial number: | |
| Construction date: 2019 | Installation date: 2019 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 3.7 gph | Maximum Annual Throughput: 32412 gpy | Maximum Operating Schedule: 500 hr | |
| <i>Fuel Usage Data (fill out all applicable fields)</i> | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 67 bhp / 0.5 MMBtu/hr | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. ULSD | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |

| | | | |
|-------------|-------|------|---------|
| Diesel Fuel | 0.05% | 0.00 | 138,000 |
| | | | |
| | | | |

| Emissions Data | | | |
|---|---------------------|----------|--|
| Criteria Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| Carbon Monoxide (CO) | 0.33 | 0.19 | |
| Nitrogen Oxides (NO _x) | 0.72 | 0.18 | |
| Lead (Pb) | | | |
| Particulate Matter (PM _{2.5}) | | | |
| Particulate Matter (PM ₁₀) | 0.24 | 0.06 | |
| Total Particulate Matter (TSP) | | | |
| Sulfur Dioxide (SO ₂) | 2.06E-04 | 5.15E-05 | |
| Volatile Organic Compounds (VOC) | 0.21 | 0.05 | |
| Hazardous Air Pollutants | Potential Emissions | | |
| | PPH | TPY | |
| | | | |
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| Regulated Pollutants other than Criteria and HAP | Potential Emissions | | |
| | PPH | TPY | |
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List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-3186
 Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the Schedule of Compliance Form as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| Emission Unit Description Emergency Generator EG-16 | | | |
| Emission unit ID number: EG-16 | Emission unit name: EG-16 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Engine Model: John Deere Emergency Generator (Tier 3) rated at 237 bhp / 177kW. | | | |
| Manufacturer: Kohler | Model number: John Deere 6068HF285 (Tier 3 rated) | Serial number: | |
| Construction date: 2019 | Installation date: 2019 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 11.7 gph | Maximum Annual Throughput: 102492 gpy | Maximum Operating Schedule: 500 hr | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 237 bhp / 1.58 MMBtu/hr | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. ULSD | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |

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| <i>Emissions Data</i> | | |
|---|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 0.19 | 0.05 |
| Nitrogen Oxides (NO _x) | 2.18 | 0.54 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.03 | 0.01 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 7.29E-04 | 1.82E-04 |
| Volatile Organic Compounds (VOC) | 0.05 | 0.01 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
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| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-3186. Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the Schedule of Compliance Form as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| Emission Unit Description Emergency Generator EG-17 | | | |
| Emission unit ID number: EG-17 | Emission unit name: EG-17 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Engine Model: John Deere Emergency Generator (Tier 3) rated at 755 bhp / 563kW. | | | |
| Manufacturer: Kohler | Model number: John Deere 6135HFG75 (Tier 3 rated) | Serial number: | |
| Construction date: 2020 | Installation date: 2020 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 47.7 gph | Maximum Annual Throughput: 417852 gpy | Maximum Operating Schedule: 500 hr | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 755 bhp / 6.44 MMBtu/hr | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. ULSD | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |

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| Emissions Data | | |
|--|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 0.74 | 0.19 |
| Nitrogen Oxides (NO _x) | 6.95 | 1.74 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 0.05 | 0.01 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 9.16E-03 | 2.29E-03 |
| Volatile Organic Compounds (VOC) | 0.15 | 0.04 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-3186. Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or **construction permit** with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT E - Emission Unit Form | | | |
|---|---|---|-----------|
| Emission Unit Description Emergency Generator EG-18 | | | |
| Emission unit ID number: EG-18 | Emission unit name: EG-18 | List any control devices associated with this emission unit: | |
| Provide a description of the emission unit (type, method of operation, design parameters, etc.): Kohler Engine Model: John Deere Emergency Generator (Tier 3) rated at 463 bhp / 300kW. | | | |
| Manufacturer: Kohler | Model number: John Deere 6090HFG86 (Tier 3 rated) | Serial number: | |
| Construction date: 2022 | Installation date: 2022 | Modification date(s): None | |
| Design Capacity (examples: furnaces - tons/hr, tanks - gallons): | | | |
| Maximum Hourly Throughput: 63.4 gph | Maximum Annual Throughput: 555384 gpy | Maximum Operating Schedule: 500 hr | |
| Fuel Usage Data (fill out all applicable fields) | | | |
| Does this emission unit combust fuel? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | If yes, is it? <input checked="" type="checkbox"/> Indirect Fired <input type="checkbox"/> Direct Fired | |
| Maximum design heat input and/or maximum horsepower rating: 463 bhp / 8.56 MMBtu/hr | | Type and Btu/hr rating of burners: | |
| List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each. | | | |
| Describe each fuel expected to be used during the term of the permit. | | | |
| Fuel Type | Max. Sulfur Content | Max. Ash Content | BTU Value |
| Diesel Fuel | 0.05% | 0.00 | 138,000 |

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| <i>Emissions Data</i> | | |
|---|---------------------|----------|
| Criteria Pollutants | Potential Emissions | |
| | PPH | TPY |
| Carbon Monoxide (CO) | 2.29 | 0.57 |
| Nitrogen Oxides (NO _x) | 5.25 | 1.31 |
| Lead (Pb) | | |
| Particulate Matter (PM _{2.5}) | | |
| Particulate Matter (PM ₁₀) | 1.48 | 0.37 |
| Total Particulate Matter (TSP) | | |
| Sulfur Dioxide (SO ₂) | 1.42E-03 | 3.56E-04 |
| Volatile Organic Compounds (VOC) | 1.49 | 0.37 |
| Hazardous Air Pollutants | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |
| | | |
| Regulated Pollutants other than Criteria and HAP | Potential Emissions | |
| | PPH | TPY |
| | | |
| | | |
| | | |

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Potential emissions of criteria pollutants are based on limits provided in permit R13-3186. Hourly rates for metals are not given due to the low mass involved.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (Note: Title V permit condition numbers alone are not the underlying applicable requirements). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

1. Emission Limits –R30-05700011-2019: 7.1.1.; 45CSR34; 40 C.F.R § 63.6602
2. Operating Parameters - R30-05700011-2019: 7.1.2. 45CSR34; 40 C.F.R § 63.6602
3. RICE NESHAP –R30-05700011-2019: 7.1.3.; 45CSR34; 40 C.F.R § 63.6602

Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

1. Emission Limits –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
2. Operating Parameters - R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625
3. RICE NESHAP –R30-05700011-2019: 7.2. – 7.5.; 45CSR34; 40 C.F.R § 63.6625

Are you in compliance with all applicable requirements for this emission unit? Yes No

If no, complete the **Schedule of Compliance Form** as ATTACHMENT F.

| ATTACHMENT G - Air Pollution Control Device Form | | |
|--|---|--|
| Control device ID number: 9-1C | List all emission units associated with this control device. 9-11S (No direct vent) | |
| Manufacturer: Zero | Model number: Unknown | Installation date: 1997 |
| Type of Air Pollution Control Device: | | |
| <input type="checkbox"/> Baghouse/Fabric Filter | <input type="checkbox"/> Venturi Scrubber | <input type="checkbox"/> Multiclone |
| <input type="checkbox"/> Carbon Bed Adsorber | <input type="checkbox"/> Packed Tower Scrubber | <input checked="" type="checkbox"/> Single Cyclone |
| <input type="checkbox"/> Carbon Drum(s) | <input type="checkbox"/> Other Wet Scrubber | <input type="checkbox"/> Cyclone Bank |
| <input type="checkbox"/> Catalytic Incinerator | <input type="checkbox"/> Condenser | <input type="checkbox"/> Settling Chamber |
| <input type="checkbox"/> Thermal Incinerator | <input type="checkbox"/> Flare | <input type="checkbox"/> Other (describe) _____ |
| <input type="checkbox"/> Wet Plate Electrostatic Precipitator | <input type="checkbox"/> Dry Plate Electrostatic Precipitator | |
| List the pollutants for which this device is intended to control and the capture and control efficiencies. | | |
| Pollutant | Capture Efficiency | Control Efficiency |
| Aluminum oxide grit | 99.5% | 99% |
| | | |
| Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). Single cyclone with baghouse. Unit runs at ambient pressure and temperature. | | |
| Is this device subject to the CAM requirements of 40 C.F.R. 64? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| If Yes, Complete ATTACHMENT H | | |
| If No, Provide justification. | | |
| Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3). | | |
| Describe the parameters monitored and/or methods used to indicate performance of this control device. Pressure drop is monitored to determine cleaning cycles. Unit undergoes preventive maintenance annually. | | |

| ATTACHMENT G - Air Pollution Control Device Form | | |
|---|--|-----------------------------------|
| Control device ID number: P-4C | List all emission units associated with this control device. P-31E | |
| Manufacturer: Various | Model number: Unknown | Installation date: 1996 |
| Type of Air Pollution Control Device: | | |
| <input checked="" type="checkbox"/> Baghouse/ <u>Fabric Filter</u> <input type="checkbox"/> Venturi Scrubber <input type="checkbox"/> Multiclone <input type="checkbox"/> Carbon Bed Adsorber <input type="checkbox"/> Packed Tower Scrubber <input type="checkbox"/> Single Cyclone <input type="checkbox"/> Carbon Drum(s) <input type="checkbox"/> Other Wet Scrubber <input type="checkbox"/> Cyclone Bank <input type="checkbox"/> Catalytic Incinerator <input type="checkbox"/> Condenser <input type="checkbox"/> Settling Chamber <input type="checkbox"/> Thermal Incinerator <input type="checkbox"/> Flare <input type="checkbox"/> Other (describe) _____ <input type="checkbox"/> Wet Plate Electrostatic Precipitator <input type="checkbox"/> Dry Plate Electrostatic Precipitator | | |
| List the pollutants for which this device is intended to control and the capture and control efficiencies. | | |
| Pollutant | Capture Efficiency | Control Efficiency |
| Particulate matter | 90 | 90 |
| | | |
| Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). Booths have a minimum face velocity of 100 fpm at ambient pressure and temperature. Manometers indicate pressure drop to indicate when filters need changed. | | |
| Is this device subject to the CAM requirements of 40 C.F.R. 64? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Complete ATTACHMENT H If No, Provide justification. Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3). | | |
| Describe the parameters monitored and/or methods used to indicate performance of this control device. Manometers indicate pressure drop to indicate when filters need changed. | | |

| ATTACHMENT G - Air Pollution Control Device Form | | |
|--|---|--|
| Control device ID number: P-5C | List all emission units associated with this control device. P-96S (No direct vent) | |
| Manufacturer: Empire | Model number: Unknown | Installation date: 1996 |
| Type of Air Pollution Control Device: | | |
| <input type="checkbox"/> Baghouse/Fabric Filter | <input type="checkbox"/> Venturi Scrubber | <input type="checkbox"/> Multiclone |
| <input type="checkbox"/> Carbon Bed Adsorber | <input type="checkbox"/> Packed Tower Scrubber | <input checked="" type="checkbox"/> Single Cyclone |
| <input type="checkbox"/> Carbon Drum(s) | <input type="checkbox"/> Other Wet Scrubber | <input type="checkbox"/> Cyclone Bank |
| <input type="checkbox"/> Catalytic Incinerator | <input type="checkbox"/> Condenser | <input type="checkbox"/> Settling Chamber |
| <input type="checkbox"/> Thermal Incinerator | <input type="checkbox"/> Flare | <input type="checkbox"/> Other (describe) _____ |
| <input type="checkbox"/> Wet Plate Electrostatic Precipitator | <input type="checkbox"/> Dry Plate Electrostatic Precipitator | |
| List the pollutants for which this device is intended to control and the capture and control efficiencies. | | |
| Pollutant | Capture Efficiency | Control Efficiency |
| Aluminum oxide grit | 99.5% | 99% |
| | | |
| Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). Single cyclone with baghouse. Unit runs at ambient pressure and temperature. | | |
| Is this device subject to the CAM requirements of 40 C.F.R. 64? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| If Yes, Complete ATTACHMENT H | | |
| If No, Provide justification. | | |
| Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3). | | |
| Describe the parameters monitored and/or methods used to indicate performance of this control device. Pressure drop is monitored to determine cleaning cycles. Units undergo preventive maintenance annually. | | |

| ATTACHMENT G - Air Pollution Control Device Form | | |
|--|--|---|
| Control device ID number: P-8C | List all emission units associated with this control device. P-36E | |
| Manufacturer: Unknown | Model number: Unknown | Installation date: 1996 |
| Type of Air Pollution Control Device: | | |
| <input checked="" type="checkbox"/> Baghouse/Fabric Filter | <input type="checkbox"/> Venturi Scrubber | <input type="checkbox"/> Multiclone |
| <input type="checkbox"/> Carbon Bed Adsorber | <input type="checkbox"/> Packed Tower Scrubber | <input type="checkbox"/> Single Cyclone |
| <input type="checkbox"/> Carbon Drum(s) | <input type="checkbox"/> Other Wet Scrubber | <input type="checkbox"/> Cyclone Bank |
| <input type="checkbox"/> Catalytic Incinerator | <input type="checkbox"/> Condenser | <input type="checkbox"/> Settling Chamber |
| <input type="checkbox"/> Thermal Incinerator | <input type="checkbox"/> Flare | <input type="checkbox"/> Other (describe) _____ |
| <input type="checkbox"/> Wet Plate Electrostatic Precipitator | <input type="checkbox"/> Dry Plate Electrostatic Precipitator | |
| List the pollutants for which this device is intended to control and the capture and control efficiencies. | | |
| Pollutant | Capture Efficiency | Control Efficiency |
| Particulate | 99.97 | 99 |
| | | |
| Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). | | |
| This unit operates at ambient temperature and pressure with a normal flow of 1150 cfm. Filters are HEPA class with a 99.97% efficiency. | | |
| Is this device subject to the CAM requirements of 40 C.F.R. 64? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| If Yes, Complete ATTACHMENT H | | |
| If No, Provide justification. | | |
| Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3). | | |
| Describe the parameters monitored and/or methods used to indicate performance of this control device. | | |
| Manometers are used to determine pressure differential across the filters. Procedures include a manometer check prior to operations. Unit undergoes preventive maintenance annually. | | |

| ATTACHMENT G - Air Pollution Control Device Form | | |
|---|--|---|
| Control device ID number: T-1C | List all emission units associated with this control device. T-1E, T-2E, and T-3E (TPEG reactor vessel, separator equipment, etc.) | |
| Manufacturer: EST Corporation | Model number: S/N EC-96.2809 | Installation date: March 1999 |
| Type of Air Pollution Control Device: | | |
| <input type="checkbox"/> Baghouse/Fabric Filter | <input type="checkbox"/> Venturi Scrubber | <input type="checkbox"/> Multiclone |
| <input type="checkbox"/> Carbon Bed Adsorber | <input checked="" type="checkbox"/> Packed Tower Scrubber | <input type="checkbox"/> Single Cyclone |
| <input type="checkbox"/> Carbon Drum(s) | <input type="checkbox"/> Other Wet Scrubber | <input type="checkbox"/> Cyclone Bank |
| <input type="checkbox"/> Catalytic Incinerator | <input type="checkbox"/> Condenser | <input type="checkbox"/> Settling Chamber |
| <input type="checkbox"/> Thermal Incinerator | <input type="checkbox"/> Flare | <input type="checkbox"/> Other (describe) _____ |
| <input type="checkbox"/> Wet Plate Electrostatic Precipitator | <input type="checkbox"/> Dry Plate Electrostatic Precipitator | |
| List the pollutants for which this device is intended to control and the capture and control efficiencies. | | |
| Pollutant | Capture Efficiency | Control Efficiency |
| Tetrahydrofuran | 90 | |
| | | |
| Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). Scrubber is a water bath type with mist eliminator. Routine sampling and replacement w/fresh water. | | |
| Is this device subject to the CAM requirements of 40 C.F.R. 64? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| If Yes, Complete ATTACHMENT H | | |
| If No, Provide justification | | |
| Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3). | | |
| Describe the parameters monitored and/or methods used to indicate performance of this control device. pH is electronically monitored and adjusted to maintain scrubbing efficiency. | | |

| ATTACHMENT G - Air Pollution Control Device Form | | |
|---|--|---|
| Control device ID number: X-1C | List all emission units associated with this control device. X-2S (Ross Mixer) | |
| Manufacturer: Helex | Model number: PB-1-PF | Installation date: 2005 |
| Type of Air Pollution Control Device: | | |
| <input type="checkbox"/> Baghouse/Fabric Filter | <input type="checkbox"/> Venturi Scrubber | <input type="checkbox"/> Multiclone |
| <input type="checkbox"/> Carbon Bed Adsorber | <input type="checkbox"/> Packed Tower Scrubber | <input type="checkbox"/> Single Cyclone |
| <input type="checkbox"/> Carbon Drum(s) | <input type="checkbox"/> Other Wet Scrubber | <input type="checkbox"/> Cyclone Bank |
| <input type="checkbox"/> Catalytic Incinerator | <input checked="" type="checkbox"/> Condenser | <input type="checkbox"/> Settling Chamber |
| <input type="checkbox"/> Thermal Incinerator | <input type="checkbox"/> Flare | <input type="checkbox"/> Other (describe) _____ |
| <input type="checkbox"/> Wet Plate Electrostatic Precipitator | <input type="checkbox"/> Dry Plate Electrostatic Precipitator | |
| List the pollutants for which this device is intended to control and the capture and control efficiencies. | | |
| Pollutant | Capture Efficiency | Control Efficiency |
| Acetone | 80% | Unknown |
| | | |
| Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.). Acetone is heated in Ross mixer and is chilled in condenser. Runs to recovery tank. | | |
| Is this device subject to the CAM requirements of 40 C.F.R. 64? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| If Yes, Complete ATTACHMENT H | | |
| If No, Provide justification. | | |
| Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3). | | |
| Describe the parameters monitored and/or methods used to indicate performance of this control device. Vacuum levels, tank levels, and chilled water temperature. | | |

ATTACHMENT G - Air Pollution Control Device Form

| | |
|--|---|
| Control device ID number: X-2C | List all emission units associated with this control device. X-2S, X-3S, X-4S, and X-6S |
|--|---|

| | | |
|---|--|-----------------------------------|
| Manufacturer: American Air Filtration | Model number: Type N Rotoclone | Installation date: 2005 |
|---|--|-----------------------------------|

Type of Air Pollution Control Device:

| | | |
|---|---|--|
| <input type="checkbox"/> Baghouse/Fabric Filter | <input type="checkbox"/> Venturi Scrubber | <input type="checkbox"/> Multiclone |
| <input type="checkbox"/> Carbon Bed Adsorber | <input type="checkbox"/> Packed Tower Scrubber | <input type="checkbox"/> Single Cyclone |
| <input type="checkbox"/> Carbon Drum(s) | <input type="checkbox"/> Other Wet Scrubber | <input type="checkbox"/> Cyclone Bank |
| <input type="checkbox"/> Catalytic Incinerator | <input type="checkbox"/> Condenser | <input type="checkbox"/> Settling Chamber |
| <input type="checkbox"/> Thermal Incinerator | <input type="checkbox"/> Flare | <input checked="" type="checkbox"/> Other (describe) <u>Dust collector</u> |
| <input type="checkbox"/> Wet Plate Electrostatic Precipitator | <input type="checkbox"/> Dry Plate Electrostatic Precipitator | |

List the pollutants for which this device is intended to control and the capture and control efficiencies.

| Pollutant | Capture Efficiency | Control Efficiency |
|---------------------|--------------------|--------------------|
| Aluminum/viton dust | 20 micron – 99.9% | Unknown |
| | | |
| | | |

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).
 Aluminum/viton dust is pulled off Ross mixer, Sweco screener, Natoli pelletizer and JH Day press. Vacuum draws into water bed in external collection vessel.

Is this device subject to the CAM requirements of 40 C.F.R. 64? Yes No

If Yes, **Complete ATTACHMENT H**

If No, **Provide justification.**
 Potential pre-control device annual emissions of applicable regulated air pollutants are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3).

Describe the parameters monitored and/or methods used to indicate performance of this control device.
 Air flow is monitored at the pickup points on a periodic basis.
 Dust collector is opened and emptied at least every 2 weeks (more frequently if needed) to prevent build-up of hydrogen.

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at <http://www.epa.gov/ttn/emc/cam.html>

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to EACH regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet all of the following criteria (*If No, then the remainder of this form need not be completed*): YES NO**

- a. The PSEU is located at a major source that is required to obtain a Title V permit;
- b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
 - Stratospheric Ozone Protection Requirements.
 - Acid Rain Program Requirements.
 - Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
 - An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).
- c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;
 - d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND
 - e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit: **Not Applicable**

- RENEWAL APPLICATION. ALL PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.
- INITIAL APPLICATION (submitted after 4/20/98). ONLY large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.
- SIGNIFICANT MODIFICATION TO LARGE PSEUs. ONLY large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

** **Rationale for CAM Exemption:** The Northrop Grumman Systems Corporation - Alliant Techsystems Operations LLC/Allegany Ballistics Laboratory manufacturing facility does not own or operate a subject pollutant-specific emissions unit as defined at 40 C.F.R. §64.1, because all plant control devices either have potential pre-control device annual emissions of applicable regulated air pollutants that are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3), or are already subject to a Title V permit that specifies a continuous compliance determination method as defined in §64.1, and thus are exempt from CAM requirements per 40 C.F.R. §64.2(b)(1)(vi), or are not subject to a regulated air pollutant emission limitation or standard, and thus are not subject to CAM requirements per 40 C.F.R. §64.2(a)(1)(i).

3) ^a BACKGROUND DATA AND INFORMATION

Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU in order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.

| PSEU DESIGNATION | DESCRIPTION | POLLUTANT | CONTROL DEVICE | ^b EMISSION LIMITATION or STANDARD | ^c MONITORING REQUIREMENT |
|--------------------------------|-------------------|-----------|----------------|--|---|
| Not Applicable | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| <u>EXAMPLE</u> Boiler No. 1 | Wood-Fired Boiler | PM | Multiclone | 45CSR§2-4.1.c.; 9.0 lb/hr | Monitor pressure drop across multiclone: Weekly inspection of multiclone |

^a If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

^b Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

^c Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for **EACH** indicator selected for **EACH** PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. If more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

| 4a) PSEU Designation: Not Applicable | 4b) Pollutant: | 4c) ^a Indicator No. 1: | 4d) ^a Indicator No. 2: |
|--|----------------|-----------------------------------|-----------------------------------|
| 5a) GENERAL CRITERIA Describe the <u>MONITORING APPROACH</u> used to measure the indicators: | | | |
| ^b Establish the appropriate <u>INDICATOR RANGE</u> or the procedures for establishing the indicator range which provides a reasonable assurance of compliance: | | | |
| 5b) PERFORMANCE CRITERIA Provide the <u>SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA</u> , such as detector location, installation specifications, and minimum acceptable accuracy: | | | |
| ^c For new or modified monitoring equipment, provide <u>VERIFICATION PROCEDURES</u> , including manufacturer's recommendations, <u>TO CONFIRM THE OPERATIONAL STATUS</u> of the monitoring: | | | |
| Provide <u>QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES</u> that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.): | | | |
| ^d Provide the <u>MONITORING FREQUENCY</u> : | | | |
| Provide the <u>DATA COLLECTION PROCEDURES</u> that will be used: | | | |
| Provide the <u>DATA AVERAGING PERIOD</u> for the purpose of determining whether an excursion or exceedance has occurred: | | | |

^a Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

^b Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

^c The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

^d Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for EACH PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:
 Not Applicable

6b) Regulated Air Pollutant:

7) **INDICATORS AND THE MONITORING APPROACH:** Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer’s recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

8) **INDICATOR RANGES:** Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how EACH indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer’s recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.
- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.
- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers’ design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at <http://www.epa.gov/ttn/emc/cam.html>

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): YES NO**

- a. The PSEU is located at a major source that is required to obtain a Title V permit;
- b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is **NOT** exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
 - Stratospheric Ozone Protection Requirements.
 - Acid Rain Program Requirements.
 - Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
 - An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).
- c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;
 - d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND
 - e. The PSEU is **NOT** an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit: **Not Applicable**

- RENEWAL APPLICATION.** **ALL** PSEUs for which a CAM plan has **NOT** yet been approved need to be addressed in this CAM plan submittal.
- INITIAL APPLICATION** (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.
- SIGNIFICANT MODIFICATION TO LARGE PSEUs.** **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, **Only** address the appropriate monitoring requirements affected by the significant modification.

** **Rationale for CAM Exemption:** The Northrop Grumman Systems Corporation - Alliant Techsystems Operations LLC/Allegany Ballistics Laboratory manufacturing facility does not own or operate a subject pollutant-specific emissions unit as defined at 40 C.F.R. §64.1, because all plant control devices either have potential pre-control device annual emissions of applicable regulated air pollutants that are less than major source levels, and thus are exempt per 40 C.F.R. §64.2(a)(3), or are already subject to a Title V permit that specifies a continuous compliance determination method as defined in §64.1, and thus are exempt from CAM requirements per 40 C.F.R. §64.2(b)(1)(vi), or are not subject to a regulated air pollutant emission limitation or standard, and thus are not subject to CAM requirements per 40 C.F.R. §64.2(a)(1)(i).

3) ^a BACKGROUND DATA AND INFORMATION

Complete the following table for **all** PSEUs that need to be addressed in this CAM plan submittal. This section is to be used to provide background data and information for each PSEU in order to supplement the submittal requirements specified in 40 CFR §64.4. If additional space is needed, attach and label accordingly.

| PSEU DESIGNATION | DESCRIPTION | POLLUTANT | CONTROL DEVICE | ^b EMISSION LIMITATION or STANDARD | ^c MONITORING REQUIREMENT |
|--------------------------------|-------------------|-----------|----------------|--|---|
| Not Applicable | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| <u>EXAMPLE</u> Boiler No. 1 | Wood-Fired Boiler | PM | Multiclone | 45CSR§2-4.1.c.; 9.0 lb/hr | Monitor pressure drop across multiclone: Weekly inspection of multiclone |

^a If a control device is common to more than one PSEU, one monitoring plan may be submitted for the control device with the affected PSEUs identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a). If a single PSEU is controlled by more than one control device similar in design and operation, one monitoring plan for the applicable control devices may be submitted with the applicable control devices identified and any conditions that must be maintained or monitored in accordance with 40 CFR §64.3(a).

^b Indicate the emission limitation or standard for any applicable requirement that constitutes an emission limitation, emission standard, or standard of performance (as defined in 40 CFR §64.1).

^c Indicate the monitoring requirements for the PSEU that are required by an applicable regulation or permit condition.

CAM MONITORING APPROACH CRITERIA

Complete this section for **EACH** PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide monitoring data and information for **EACH** indicator selected for **EACH** PSEU in order to meet the monitoring design criteria specified in 40 CFR §64.3 and §64.4. If more than two indicators are being selected for a PSEU or if additional space is needed, attach and label accordingly with the appropriate PSEU designation, pollutant, and indicator numbers.

| 4a) PSEU Designation: Not Applicable | 4b) Pollutant: | 4c) ^a Indicator No. 1: | 4d) ^a Indicator No. 2: |
|--|----------------|-----------------------------------|-----------------------------------|
| 5a) GENERAL CRITERIA Describe the <u>MONITORING APPROACH</u> used to measure the indicators: | | | |
| ^b Establish the appropriate <u>INDICATOR RANGE</u> or the procedures for establishing the indicator range which provides a reasonable assurance of compliance: | | | |
| 5b) PERFORMANCE CRITERIA Provide the <u>SPECIFICATIONS FOR OBTAINING REPRESENTATIVE DATA</u> , such as detector location, installation specifications, and minimum acceptable accuracy: | | | |
| ^c For new or modified monitoring equipment, provide <u>VERIFICATION PROCEDURES</u> , including manufacturer's recommendations, <u>TO CONFIRM THE OPERATIONAL STATUS</u> of the monitoring: | | | |
| Provide <u>QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) PRACTICES</u> that are adequate to ensure the continuing validity of the data, (i.e., daily calibrations, visual inspections, routine maintenance, RATA, etc.): | | | |
| ^d Provide the <u>MONITORING FREQUENCY</u> : | | | |
| Provide the <u>DATA COLLECTION PROCEDURES</u> that will be used: | | | |
| Provide the <u>DATA AVERAGING PERIOD</u> for the purpose of determining whether an excursion or exceedance has occurred: | | | |

^a Describe all indicators to be monitored which satisfies 40 CFR §64.3(a). Indicators of emission control performance for the control device and associated capture system may include measured or predicted emissions (including visible emissions or opacity), process and control device operating parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities.

^b Indicator Ranges may be based on a single maximum or minimum value or at multiple levels that are relevant to distinctly different operating conditions, expressed as a function of process variables, expressed as maintaining the applicable indicator in a particular operational status or designated condition, or established as interdependent between more than one indicator. For CEMS, COMS, or PEMS, include the most recent certification test for the monitor.

^c The verification for operational status should include procedures for installation, calibration, and operation of the monitoring equipment, conducted in accordance with the manufacturer's recommendations, necessary to confirm the monitoring equipment is operational prior to the commencement of the required monitoring.

^d Emission units with post-control PTE ≥ 100 percent of the amount classifying the source as a major source (i.e., Large PSEU) must collect four or more values per hour to be averaged. A reduced data collection frequency may be approved in limited circumstances. Other emission units must collect data at least once per 24 hour period.

RATIONALE AND JUSTIFICATION

Complete this section for EACH PSEU that needs to be addressed in this CAM plan submittal. This section may be copied as needed for each PSEU. This section is to be used to provide rationale and justification for the selection of EACH indicator and monitoring approach and EACH indicator range in order to meet the submittal requirements specified in 40 CFR §64.4.

6a) PSEU Designation:
 Not Applicable

6b) Regulated Air Pollutant:

7) **INDICATORS AND THE MONITORING APPROACH:** Provide the rationale and justification for the selection of the indicators and the monitoring approach used to measure the indicators. Also provide any data supporting the rationale and justification. Explain the reasons for any differences between the verification of operational status or the quality assurance and control practices proposed, and the manufacturer’s recommendations. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

8) **INDICATOR RANGES:** Provide the rationale and justification for the selection of the indicator ranges. The rationale and justification shall indicate how EACH indicator range was selected by either a COMPLIANCE OR PERFORMANCE TEST, a TEST PLAN AND SCHEDULE, or by ENGINEERING ASSESSMENTS. Depending on which method is being used for each indicator range, include the specific information required below for that specific indicator range. (If additional space is needed, attach and label accordingly with the appropriate PSEU designation and pollutant):

- COMPLIANCE OR PERFORMANCE TEST (Indicator ranges determined from control device operating parameter data obtained during a compliance or performance test conducted under regulatory specified conditions or under conditions representative of maximum potential emissions under anticipated operating conditions. Such data may be supplemented by engineering assessments and manufacturer’s recommendations). The rationale and justification shall INCLUDE a summary of the compliance or performance test results that were used to determine the indicator range, and documentation indicating that no changes have taken place that could result in a significant change in the control system performance or the selected indicator ranges since the compliance or performance test was conducted.
- TEST PLAN AND SCHEDULE (Indicator ranges will be determined from a proposed implementation plan and schedule for installing, testing, and performing any other appropriate activities prior to use of the monitoring). The rationale and justification shall INCLUDE the proposed implementation plan and schedule that will provide for use of the monitoring as expeditiously as practicable after approval of this CAM plan, except that in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval.
- ENGINEERING ASSESSMENTS (Indicator Ranges or the procedures for establishing indicator ranges are determined from engineering assessments and other data, such as manufacturers’ design criteria and historical monitoring data, because factors specific to the type of monitoring, control device, or PSEU make compliance or performance testing unnecessary). The rationale and justification shall INCLUDE documentation demonstrating that compliance testing is not required to establish the indicator range.

RATIONALE AND JUSTIFICATION:

| Facility Information and Description | | | |
|---|--|--------|------|
| List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation. | | | |
| Process | Products | NAICS | SIC |
| Rocket Motor Manufacture | Rocket motors, metal rocket cases, composite rocket cases | 336415 | 3764 |
| F-22 Composites Manufacturing | Pivot shafts and obturator plates for F-22 | 336413 | 3728 |
| Electronic Fuzing and Ammunition | Medium caliber ammunition (not loaded), proximity switches, and multiple fuze products for DoD | 332995 | 3489 |
| NOTE: Part 1 of this permit covers only the rocket motor manufacturing minus the case manufacture in composites or metal fabrication areas. | | | |
| <p>Provide a general description of operations.</p> <p>Naval Industrial Reserve Ordnance Plant (NIROP)/Allegany Ballistics Laboratory (ABL) is a facility which is operated by Alliant Techsystems Operations LLC (Northrup Grumman Systems Corporation-NGSC) (headquarters in Falls Church, VA) under the NGSC Missile Products Group. The majority of the facility is owned by the U.S. Navy and is operated by NGIS under a facilities use contract (~1530 acres designated as Plant 1). 57 acres is owned and operated by NGSC and is designated as Plant 2. Approximately 500 acres of Plant 1 are developed. Plant 3 is a 41 acre area designated as Plant 3 dedicated to production of GMLRS rocket motors. Construction is ongoing on 29 acres designated as Plant 4 to be used as a LAP facility to build all-up rounds. The remaining acreage is currently undeveloped. All property is contiguous with internal roads to reach each separate area.</p> <p>Operations at the plant include:</p> <ul style="list-style-type: none"> • metal fabrication of rocket motor and warhead cases; • metal fabrication of tank ammunition training rounds; • manufacture of composite material rocket motor and warhead cases; • manufacture of composite material aircraft components; • preparation of cases for addition of explosives; • mixing, casting, curing, and associated operations with propellants and explosives; • static firing of rocket motors; • open burning of waste propellants and explosives; • development and production of laser firing devices; • analytical and research & development laboratories; • explosive loading and packing operations for tank ammunition; • x-ray testing; and • maintenance and utility operations. <p>In addition, to these operations, the site is also home to the Robert C. Byrd Institute for Machining and office space for IBM.</p> | | | |

| Active Permits/Consent Orders (Part 3 of 3 only) | | |
|---|--|--|
| Permit or Consent Order Number | Date of Issuance MM/DD/YYYY | List any Permit Determinations that Affect the Permit (<i>if any</i>) |
| R13-0974A | 05/23/2001 | |
| R13-1771B | 04/27/2004 | |
| R13-2023C | 05/05/2014 | |
| R13-2301A | 07/13/2001 | |
| G60-C020 | 09/30/2010 | |
| R13-3186D | 11/19/2019 | |
| R13-3186E | Pending | |

Primary changes to Part 3 of 3 since 2019:

1. Construction of two (2) emergency generators EG-15 and EG-16 for Plant 1 (R13-3186 B and C)
2. Replacement of Boiler L-11S with three (3) natural gas-fired boilers L-33S, L-34S, and L-35S at Plant 2 (R13-3186 B and C)
3. Construction of two (2) natural gas-fired boilers L-36S and L-37S (R13-3186 B and C)
4. Installation of three (3) process heaters P3-11S, P3-12S, and P3-13S for Plant 3 (R13-3186 B and C)
5. Relocation of three (3) process heaters P3-7S, P3-8S, and P3-9S to Part 3 (R13-3186 B and C)
6. Installation of one (1) emergency generator EG-14 at Plant 3 (R13-3186 B and C)
7. Installation of two (2) emergency generators EG-17 (Bldg. 8501) and EG-18 (Bldg. 2007) (R12-3186D).

| Plantwide Emissions Summary [Tons per Year] | | |
|---|----------------------------|------------------------------|
| Regulated Pollutants | Potential Emissions | 2023 Actual Emissions |
| Carbon Monoxide (CO) | 409.03 | 20.63 |
| Nitrogen Oxides (NO _x) | 327.36 | 23.76 |
| Particulate Matter (PM _{2.5}) ¹ | 6.42 | 4 |
| Particulate Matter uncontrolled (PM ₁₀) | 17.39 | 7.86 |
| Total Particulate Matter controlled or uncontrolled? (TSP) | 88.93 | 7.93 |
| Sulfur Dioxide (SO ₂) | 283.13 | 0.22 |
| Volatile Organic Compounds (VOC) | 223.10 | 29.57 |

PM_{2.5} and PM₁₀ are components of TSP.

²For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

| Hazardous Air Pollutants | Potential Emissions | 2023 Actual Emissions |
|---|----------------------------|------------------------------|
| Acetonitrile | 0.27 | 0.008 |
| Benzene | 0.37 | 0.148 |
| Cadmium compounds* | 9.9E-04 | 0 |
| Chloroform | 0.096 | 0.024 |
| Chromium* | 1.2E-03 | 0.006 |
| Chromium compounds (not identified)* | 0.136 | Included in chromium |
| Cobalt* | 5.8E-05 | 0 |
| Diethyl phthalate | 0.85 | 0.018 |
| Ethyl benzene | 0.62 | 0.25 |
| Formaldehyde | 0.029 | 0.0027 |
| Glycol ether compounds | 0.06 | 0.006 |
| Hexane | 0.80 | 0.062 |

| | | |
|---------------------------|--------------|----------------------|
| Hydrochloric Acid | 6.44 | 3.646 |
| Lead * | 9.8E-04 | 0.2684 |
| Lead compounds* | 1.98 | Included in lead |
| Mercury* | 2.0E-04 | 0 |
| Methanol | 1.81 | 0.10 |
| Methyl isobutyl ketone | 3.73 | 0.47 |
| Methylene chloride | 1.995 | 1.08 |
| Nickel* | 1.7E-03 | 0 |
| Phenol | 0.16 | 0.003 |
| Strontium chromate* | 0.0029 | Included in chromium |
| Toluene | 30.89 | 1.556 |
| Trichloroethylene | 0.125 | 0 |
| Xylene | 5.29 | 1.278 |
| Zinc chromate* | 4.7E-04 | Included in chromium |
| Other (not specified) | 0.1 | 0.02 |
| Total | 55.76 | 8.96 |

* Component of TSP emissions in Plantwide Emission Summary table above

Some of the above HAPs may be counted as PM or VOCs.

Changes to PTE table

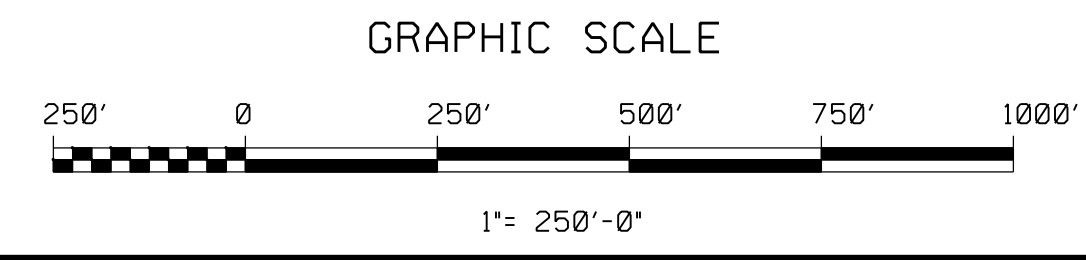
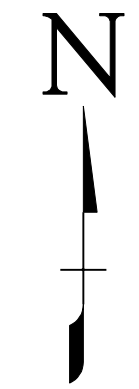
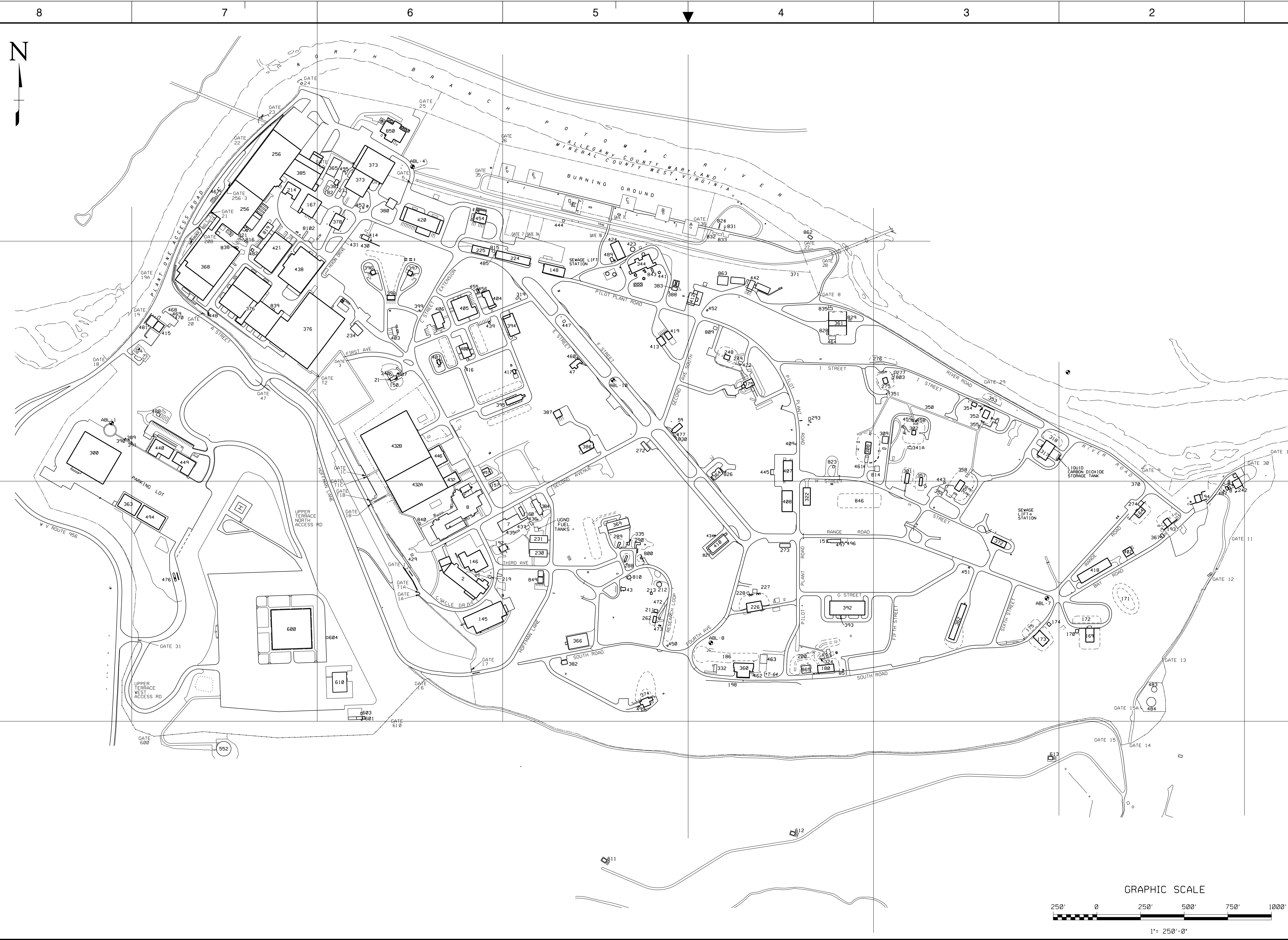
Criteria pollutants updated to reflect updates of permit limits from R13-3334B and R13-3186D and addition of R13-3534A and R13-3561.

Updated Actuals to 2023 actuals (based on AEI and CES)

Metal species updated with boiler changes in R13-3186D.

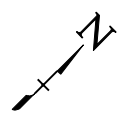
| Insignificant Activities (Check all that apply) | |
|---|--|
| <input type="checkbox"/> | <p>20. Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27.</p> <p>Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> |
| <input checked="" type="checkbox"/> | 21. Environmental chambers not using hazardous air pollutant (HAP) gases. |
| <input checked="" type="checkbox"/> | 22. Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption. |
| <input type="checkbox"/> | 23. Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment. |
| <input checked="" type="checkbox"/> | 24. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis. |
| <input checked="" type="checkbox"/> | 25. Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP. |
| <input checked="" type="checkbox"/> | 26. Fire suppression systems. |
| <input checked="" type="checkbox"/> | 27. Firefighting equipment and the equipment used to train firefighters. |
| <input type="checkbox"/> | 28. Flares used solely to indicate danger to the public. |
| <input checked="" type="checkbox"/> | 29. Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted. |
| <input checked="" type="checkbox"/> | 30. Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation. |
| <input checked="" type="checkbox"/> | 31. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic. |
| <input checked="" type="checkbox"/> | 32. Humidity chambers. |
| <input checked="" type="checkbox"/> | 33. Hydraulic and hydrostatic testing equipment. |
| <input type="checkbox"/> | 34. Indoor or outdoor kerosene heaters. |
| <input checked="" type="checkbox"/> | 35. Internal combustion engines used for landscaping purposes. |
| <input checked="" type="checkbox"/> | 36. Laser trimmers using dust collection to prevent fugitive emissions. |
| <input checked="" type="checkbox"/> | 37. Laundry activities, except for dry-cleaning and steam boilers. |
| <input checked="" type="checkbox"/> | 38. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities. |
| <input checked="" type="checkbox"/> | 39. Oxygen scavenging (de-aeration) of water. |

| Insignificant Activities (Check all that apply) | |
|--|--|
| <input type="checkbox"/> | 40. Ozone generators. |
| <input checked="" type="checkbox"/> | 41. Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.) |
| <input checked="" type="checkbox"/> | 42. Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device. |
| <input checked="" type="checkbox"/> | 43. Process water filtration systems and demineralizers. |
| <input checked="" type="checkbox"/> | 44. Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification. |
| <input checked="" type="checkbox"/> | 45. Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified. |
| <input checked="" type="checkbox"/> | 46. Routing calibration and maintenance of laboratory equipment or other analytical instruments. |
| <input type="checkbox"/> | 47. Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers. |
| <input type="checkbox"/> | 48. Shock chambers. |
| <input type="checkbox"/> | 49. Solar simulators. |
| <input checked="" type="checkbox"/> | 50. Space heaters operating by direct heat transfer. |
| <input checked="" type="checkbox"/> | 51. Steam cleaning operations. |
| <input checked="" type="checkbox"/> | 52. Steam leaks. |
| <input checked="" type="checkbox"/> | 53. Steam sterilizers. |
| <input checked="" type="checkbox"/> | 54. Steam vents and safety relief valves. |
| <input type="checkbox"/> | 55. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized. |
| <input checked="" type="checkbox"/> | 56. Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list. |
| <input type="checkbox"/> | 57. Such other sources or activities as the Director may determine. |
| <input checked="" type="checkbox"/> | 58. Tobacco smoking rooms and areas. |
| <input type="checkbox"/> | 59. Vents from continuous emissions monitors and other analyzers. |



| | | |
|---|---|---|
| SCALE: 1" = 250'-0" PROJ. NO. DRAWING PKG BUILDING NO. PLT1 BASE CONTRACTOR DRAWING NO. SIZE: D 1-112-AB | PLANT 1 GENERAL MAP PLAN AND BUILDING LIST | 210 STATE ROUTE 956 ROCKET CENTER, WV 26726 Orbital ATK DRAFTER: DRB CHECKER: ENGR: DES SUPV: AREA SUPV: SAFETY: |
| INTERPRET THIS DRAWING IN ACCORDANCE WITH DOD-STD-100 | | |
| REVISIONS BY DATE CHK APPR APPR | | |

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POTOMAC RIVER

POTOMAC DRIVE

817

2004
2003
2034
8691
2030

LIMIT OF TERRACE

- 4012 - TEST - 500 LB HD 1.1 (REMOTE)
- 4016 - TEST - 500 LB HD 1.1 (REMOTE)
- 4020 - AUR - 18,000 LB HD 1.1
- 4030 - MAGAZINE - 65,000 LB HD 1.3 (AGM)
- 4042 - STORAGE
- 4046 - STORAGE
- 4052 - MAGAZINE - 12,000 LB HD 1.1 (ECM)
- 4054 - MAGAZINE - 5,000 LB HD 1.1 (ECM)
- 4056 - MAGAZINE - 5,000 LB HD 1.1 (ECM)
- 4058 - MAGAZINE - 5,000 LB HD 1.1 (ECM)
- 4060 - MAGAZINE - 65,000 LB HD 1.3 (AGM)
- 4070 - STORAGE
- 4080 - STORAGE
- 4105 - SECURITY
- 4110 - OPERATIONS CENTER

4070
BARRIAGE

4070
BARRIAGE

ROAD 40

4020

ROAD 42

4042

4030

ROAD 44

ROAD 43

4046

ROAD 41

PARKING

ROAD 45

4060

PARKING

ROAD 48

4070

4110

LIMIT OF TERRACE

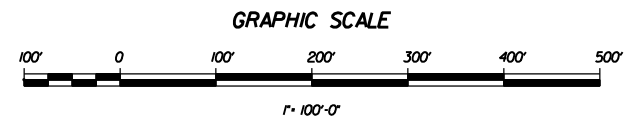
WV ROUTE 956

WV ROUTE 956

534
535
535A

528

543



| |
|---------------------------------|
| ALLEGHANY BALLISTICS LABORATORY |
| 710 STATE ROUTE 956 |
| ROCKET CENTER, WV 26726 |
| DRAWN BY: |
| CHECKED BY: |
| ENGR.: |
| DES. SUPV.: |
| AREA SUPV.: |
| SAFETY: |

PLANT 4
SITING PLAN

| |
|-------------------|
| SCALE: 1" = 100' |
| PROJ. NO. X |
| DRAWING PKG |
| BUILDING NO. PL 4 |
| DRAWING NO. X |
| SIZE: D |
| XS101 |

INTERPRET THIS DRAWING IN ACCORDANCE WITH DOD-STD-100

\$\$\$time\$\$\$ A \$\$\$dgn\$\$\$

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Mink, Stephanie R <stephanie.r.mink@wv.gov>

WV DAQ Title V Permit Application Status for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory

3 messages

Mink, Stephanie R <stephanie.r.mink@wv.gov>

Mon, Mar 4, 2024 at 9:40 AM

To: bill.hixon@ngc.com, "Clayton, Jill W [US] (DS)" <jill.clayton@ngc.com>

Cc: Carrie McCumbers <carrie.mccumbers@wv.gov>, Natalya V Chertkovsky <natalya.v.chertkovsky@wv.gov>

RE: Application Status

Alliant Techsystems Operations LLC

Allegany Ballistics Laboratory

Facility ID No. 057-00011

Application No. R30-05700011-2019 (3 of 3) (SM02)

Dear Mr. Hixon,

Your application for a Title V Significant Modification Permit for Alliant Techsystems Operations LLC's Allegany Ballistics Laboratory was received by this Division on February 28, 2024, and was assigned to Natalya Chertkovsky-Veselova.

Should you have any questions, please contact the assigned permit writer, Natalya Chertkovsky-Veselova, at 304-926-0499, extension 41250, or Natalya.V.Chertkovsy@wv.gov.

--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281

McCumbers, Carrie <carrie.mccumbers@wv.gov>

Mon, Mar 4, 2024 at 9:52 AM

To: stephanie.r.mink@wv.gov

Your message

To: McCumbers, Carrie

Subject: WV DAQ Title V Permit Application Status for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory

Sent: 3/4/24, 9:40:26 AM EST

was read on 3/4/24, 9:52:35 AM EST

Chertkovsky, Natalya V <natalya.v.chertkovsky@wv.gov>
To: stephanie.r.mink@wv.gov

Mon, Mar 4, 2024 at 9:53 AM

Your message

To: Chertkovsky, Natalya V
Subject: WV DAQ Title V Permit Application Status for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory
Sent: 3/4/24, 9:40:26 AM EST

was read on 3/4/24, 9:53:27 AM EST

Division of Air Quality Permit Application Submittal

Please find attached a permit application for :

[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only):
 - Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only):

 - Type of NSR Application (check all that apply):
 - Construction
 - Modification
 - Class I Administrative Update
 - Class II Administrative Update
 - Relocation
 - Temporary
 - Permit Determination

 - Type of 45CSR30 (TITLE V) Revision (if any)**:
 - Title V Initial
 - Title V Renewal
 - Administrative Update
 - Minor Modification
 - Significant Modification
 - Off Permit Change
- **If any box above is checked, include the Title V revision information as ATTACHMENT S to this application.**
- Payment Type:
 - Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
 - Check (Make checks payable to: WVDEP – Division of Air Quality)
Mail checks to:
WVDEP – DAQ – Permitting
Attn: NSR Permitting Secretary
601 57th Street, SE
Charleston, WV 25304
- Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.**
- If the permit writer has any questions, please contact (all that apply):
 - Responsible Official/Authorized Representative
 - Name:
 - Email:
 - Phone Number:
 - Company Contact
 - Name:
 - Email:
 - Phone Number:
 - Consultant
 - Name:
 - Email:
 - Phone Number:

Table of Contents

| Document | Paper or Electronic Submittal? |
|--|---------------------------------------|
| Cover Letter | Electronic |
| Application for General Permit Registration | Electronic |
| Attachment A: Current Business Certificate | Electronic |
| Attachment B: Map | Electronic |
| Attachment C: Installation and Start-up Schedule | Electronic |
| Attachment D: Regulatory Discussion | Electronic |
| Attachment E: Plot Plan | Electronic |
| Attachment F: Process Flow Diagram | Electronic |
| Attachment G: Process Description | Electronic |
| Attachment I: Emissions Units Table | Electronic |
| Attachment J: Emission Points Data Summary Sheet (Table 1 and Table 2) | Electronic |
| Attachment L: Emission Unit Data Sheet | Electronic |
| Attachment N: Supporting Emissions Calculations | Electronic |
| Attachment O: Monitoring, Recordkeeping, Reporting and Test Plans | Electronic |
| Attachment P: Public Notice | Electronic |
| Attachment S: Title V Revision Information | Electronic |
| Application Fee | Paper/Visa |
| | |

Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center, WV 26726

February 27, 2024

Laura Crowder, Director
WV Department of Environmental Protection
Division of Air Quality
601 – 57th Street
Charleston, WV 25304

Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory
WVDAQ ID# 057-00011

SUBJECT: R13-3186 Modification Update Application

Dear Director Crowder:

Northrop Grumman – Allegany Ballistics Laboratory hereby submits the enclosed application for a Class II Administrative Update to increase the emissions limits in R13-3186 by 10765.53 tons/year. We believe the enclosed application contains the appropriate elements as indicated by the DAQ's checklist for the NSR (45CSR13) Application. The permit fee for the application will be \$1000. The permit fee has been paid by Visa over the phone and a receipt will be submitted once received. Should you have additional questions regarding this submittal please contact me at 240-727-1790 or jill.clayton@ngc.com.

Sincerely,



Jill Clayton
Environmental Engineer
Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory

cc: Chris Scanlan



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

**APPLICATION FOR NSR PERMIT
AND
TITLE V PERMIT REVISION
(OPTIONAL)**

PLEASE CHECK ALL THAT APPLY TO NSR (45CSR13) (IF KNOWN):

- CONSTRUCTION MODIFICATION RELOCATION
 CLASS I ADMINISTRATIVE UPDATE TEMPORARY
 CLASS II ADMINISTRATIVE UPDATE AFTER-THE-FACT

PLEASE CHECK TYPE OF 45CSR30 (TITLE V) REVISION (IF ANY):

- ADMINISTRATIVE AMENDMENT MINOR MODIFICATION
 SIGNIFICANT MODIFICATION

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS ATTACHMENT S TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant (as registered with the WV Secretary of State's Office):
Alliant Techsystems Operations LLC

2. Federal Employer ID No. (FEIN):
27 - 4026908

3. Name of facility (if different from above):
Northrop Grumman – Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory (ABL)

4. The applicant is the:
 OWNER OPERATOR BOTH

5A. Applicant's mailing address:
Allegany Ballistics Laboratory
210 State Route 956
Rocket Center, WV 26726

5B. Facility's present physical address:
Same as mailing address

6. West Virginia Business Registration. Is the applicant a resident of the State of West Virginia? YES NO

- If YES, provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A**.
- If NO, provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A**.

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the proposed site? YES NO

- If YES, please explain: Facility is leased from the Navy and operated by Northrop Grummar
- If NO, you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be constructed, **modified**, relocated, administratively updated or temporarily permitted (e.g., coal preparation plant, primary crusher, etc.): Adding a new facility for winding composite rocket motor cases and applying adhesive systems and insulators to the interior of the cases prior to loading them with propellant.

10. North American Industry Classification System (NAICS) code for the facility:
336415

11A. DAQ Plant ID No. (for existing facilities only):
057-00011

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R30-05700011-2019 Part 3 (for this process only).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits**, please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

Turn left off of WV State Route 956 onto plant access road just after crossing bridge into West Virginia.

12.B. New site address (if applicable):

12C. Nearest city or town:

12D. County:

Short Gap, WV

Mineral

12.E. UTM Northing (KM): 4381

12F. UTM Easting (KM): 686

12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:

Install two (2) new process heaters servicing B4020 on Plant 4 and one (1) emergency generator supplying B429 on Plant 1.

14A. Provide the date of anticipated installation or change:

- If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen:

14B. Date of anticipated Start-Up if a permit is granted:
04/01/2024

14C. Provide a **Schedule** of the planned **Installation of/Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:

Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? YES NO

17. **Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18. **Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process (*if known*). A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance (*if known*). Provide this information as **Attachment D**.

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to **Plot Plan Guidance**).

- Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F**.

23. Provide a **Process Description** as **Attachment G**.

- Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H**.

- For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I**.

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J**.

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K**.

28. Check all applicable **Emissions Unit Data Sheets** listed below:

- | | | |
|---|---|--|
| <input type="checkbox"/> Bulk Liquid Transfer Operations | <input type="checkbox"/> Haul Road Emissions | <input type="checkbox"/> Quarry |
| <input type="checkbox"/> Chemical Processes | <input type="checkbox"/> Hot Mix Asphalt Plant | <input type="checkbox"/> Solid Materials Sizing, Handling and Storage Facilities |
| <input type="checkbox"/> Concrete Batch Plant | <input type="checkbox"/> Incinerator | <input type="checkbox"/> Storage Tanks |
| <input type="checkbox"/> Grey Iron and Steel Foundry | <input checked="" type="checkbox"/> Indirect Heat Exchanger | |
| <input type="checkbox"/> General Emission Unit, specify Spray booths, exhaust hoods | | |

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L**.

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

- | | | |
|--|---|--|
| <input type="checkbox"/> Absorption Systems | <input type="checkbox"/> Baghouse | <input type="checkbox"/> Flare |
| <input type="checkbox"/> Adsorption Systems | <input type="checkbox"/> Condenser | <input type="checkbox"/> Mechanical Collector |
| <input type="checkbox"/> Afterburner | <input type="checkbox"/> Electrostatic Precipitator | <input type="checkbox"/> Wet Collecting System |
| <input type="checkbox"/> Other Collectors, specify | | |

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M**.

30. Provide all **Supporting Emissions Calculations** as **Attachment N**, or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O**.

- Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and **Example Legal Advertisement** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

- YES NO

- If **YES**, identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's "**Precautionary Notice – Claims of Confidentiality**" guidance found in the **General Instructions** as **Attachment Q**.

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

- | | |
|--|---|
| <input type="checkbox"/> Authority of Corporation or Other Business Entity | <input type="checkbox"/> Authority of Partnership |
| <input type="checkbox"/> Authority of Governmental Agency | <input type="checkbox"/> Authority of Limited Partnership |

Submit completed and signed **Authority Form** as **Attachment R**.

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone

**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**ALLIANT TECHSYSTEMS OPERATIONS LLC
210 STATE ROUTE 956
KEYSER, WV 26726-9219**

BUSINESS REGISTRATION ACCOUNT NUMBER: 2247-4467

This certificate is issued on: **06/1/2011**

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

ATTACHMENT C

Process Heaters

EQUIPMENT INSTALLATION AND START-UP SCHEDULE

| Proposed Installation Date | Proposed Start-Up Date | Emissions Unit (Source) | |
|----------------------------|------------------------|-------------------------|----------------|
| | | ID No. ¹ | Source |
| 1/2/24 | 4/1/24 | P4-5S | Process Heater |
| 1/2/24 | 4/1/24 | P4-6S | Process Heater |
| | | | |
| | | | |

ATTACHMENT D REGULATORY DISCUSSION

A description of all state and federal regulations that affect the entire Northrop Grumman Alliant Techsystems Operations LLC facility is included in the facility's Title V permits. The operations addressed in this application will be included in Part 1 of the facility's Title V permit. The following discussions include only regulations that pertain to the operations which are proposed in this permit application.

--Facility Level Applicable Regulations and Compliance Statements:

---WVDAQ Regulation 4 - Objectionable odors are not a normal occurrence. However, facility will comply with applicable prohibition from emitting objectionable odors by taking all reasonable measures to minimize objectionable odors if such a situation occurs.

---WVDAQ Regulation 7 - Facility will comply with applicable opacity limits (Sections 3.1 and 3.2) by maintaining trained opacity observer personnel to notify plant supervision if a non-compliance condition occurs or by calculations.

---WVDAQ Regulation 11 - Facility will comply with all applicable requirements of this regulation as requested by the West Virginia Air Pollution Control Commission during declared air pollution emergency episodes.

---WVDAQ Regulation 22 - Facility will comply with all applicable requirements of this regulation regarding payment of processing fees for permit applications by prompt payment of all applicable fees.

---WVDAQ Regulation 27 - Facility is complying with all applicable requirements of this regulation regarding the prevention and control of discharges of toxic air pollutants (TAPS) by application of technology or operational changes as defined in CO-R27-91-20 issued June 25, 1991 (superceded by CO-R27-99-23-A(91) issued June 14, 1999) (see below for a detailed explanation of the plant's compliance status on CO-R27-91-20). R13-0898B replaced the consent order. The sparging system in the permit is the only significant TAP source remaining on the facility (other sources are lab use).

---WVDAQ Regulation 29 - Facility will comply with all applicable requirements of this regulation regarding any requested submission of air emissions inventory data by timely submission of the required emission inventory.

---WVDAQ Regulation 30 - Facility will comply with all applicable requirements of this regulation regarding its Title V Operating Permit.

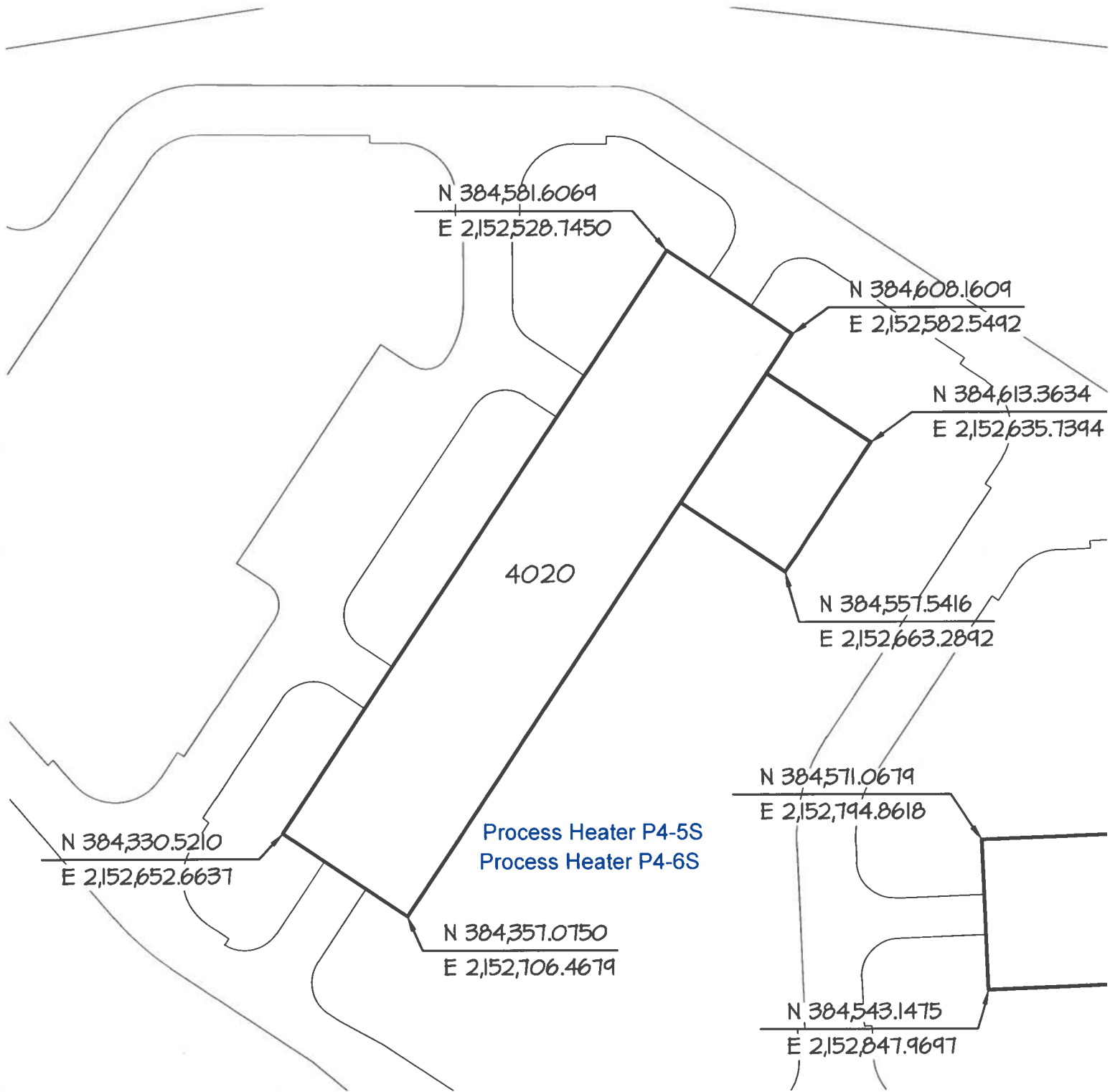
---WVDAQ Regulation 31 - Facility will comply with all applicable requirements of this regulation regarding confidential information.

--Existing Permits and Consent Orders:

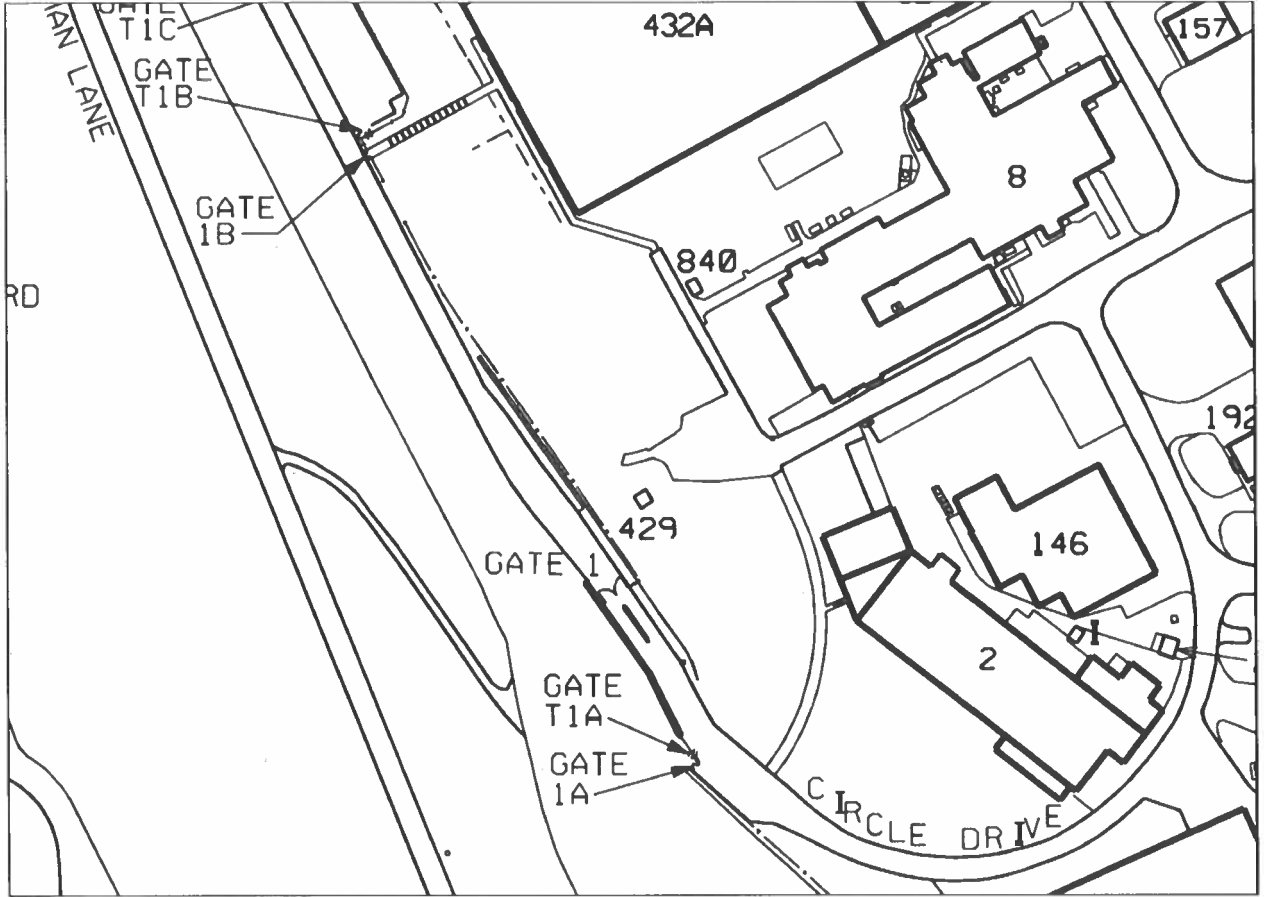
1. Reg. 13-401 issued 1978. Superceded by 13-0401A issued in 1999. Superceded by 13-0401B issued in May, 2001.

2. Reg. 13-573 issued 1980. Deemed inactive by 13-573A issued in May, 2001.
3. Reg. 13-621 issued 1981. Deemed inactive by 13-621A issued in May, 2001.
4. Reg. 13-898 issued 1986. Superseded by 13-898C issued in May, 2016.
5. Reg. 13-974 issued 1988. Superseded by 13-974A issued in May, 2001. This permit is obsolete and is requested to be cancelled. Boilers under this permit have been shut down, disconnected and replaced by natural gas boilers under Reg. 13-3186 issued August, 2014.
6. Reg. 13-1047 issued 1988. Superseded by 13-1047A issued in July, 2001. Superseded by 13-1047B issued in March, 2002.
7. Reg. 13-1307 issued 1991. Deemed inactive in 1997.
8. Reg. 13-1403 issued 1991. Superseded by 13-1642 issued 1994. Superseded by 13-1694 issued in 1994. Superseded by 13-1694A issued in July, 2001.
9. Reg. 13-1455 issued 1992. Superseded by 13-1455A issued in July, 2001.
10. Reg. 13-1771 issued 1995. Superseded by 13-1771A issued in April, 2003.
11. Reg. 13-1782 issued 1995. Superseded by 13-1782A issued in July, 2001.
12. Reg. 13-1797 issued 1995. Superseded by 13-1797A issued in January, 2002.
13. Reg. 13-1798 issued 1995. Superseded by 13-1798A issued in July, 2001.
14. Reg. 13-2023 issued 1996. Superseded by 13-2023C issued in May, 2014.
15. Reg. 13-2037 issued 1996. Superseded by 13-2037A issued in July, 2001.
16. Reg. 13-2246 issued 1999.
17. Reg. 13-2301 issued 1999. Superseded by 13-2301A issued in July, 2001. Superseded by 13-2606B in April, 2009.
18. Reg. 13-2579A issued in October, 2005.
19. Reg. 13-2606 issued in February, 2005. Superseded by 13-2023C in May, 2014.
20. Reg 13-2680 issued January, 2007 is obsolete and is requested to be cancelled. Program has ended and equipment has been disconnected.
21. Reg. 13-2754 issued August, 2008 is obsolete and is requested to be cancelled. Program has ended and all equipment has been removed from the facility.
22. CO-R6,13,25-99-35A(95) issued January 5, 2000 (Open Burning). (This amended and updated CO-R6,13,25-95-8 issued November 8, 1995).
23. Reg 30-05700011-2019 Part 1 issued July, 2019.
24. Reg. 30-05700011-2019 Part 2 issued September, 2019.
25. Reg. 30-05700011-2019 Part 3 issued November, 2019.
26. Reg. 13-3186 issued 2014. Superseded by 13-3186D issued in July, 2022.
27. Reg. 13-3334 issued 2017. Superseded by 13-3334A issued in September, 2020.
28. Reg. 13-3408 issued 2018. Superseded by 13-3408A issued in May, 2020.
29. Reg. 13-3534 issued January 2022. Superseded by 13-3534A issued in November, 2023.

ATTACHMENT E - PLOT PLAN
B4020 Process Heaters

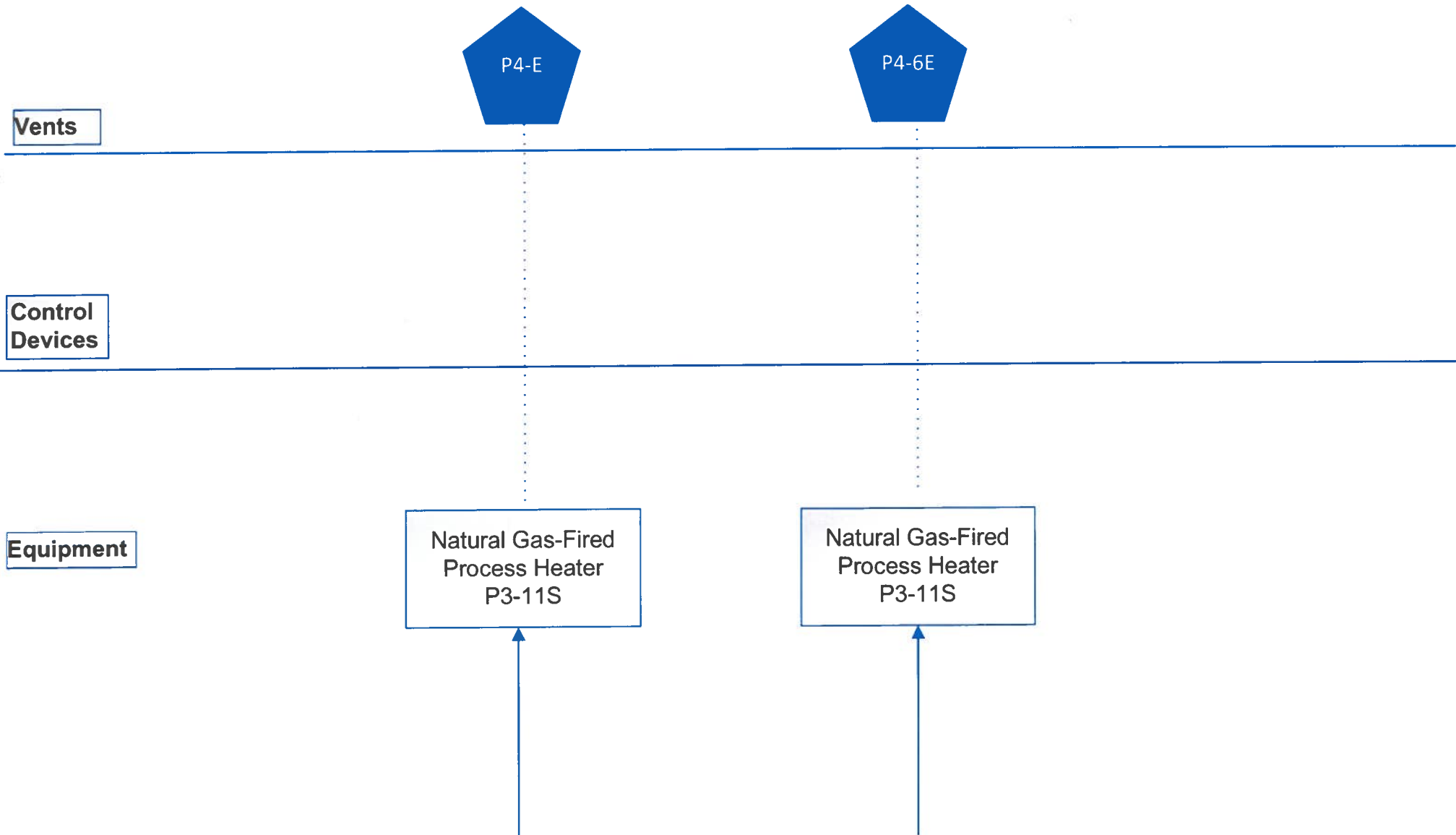


ATTACHMENT E – PLOT PLAN FOR EG-19

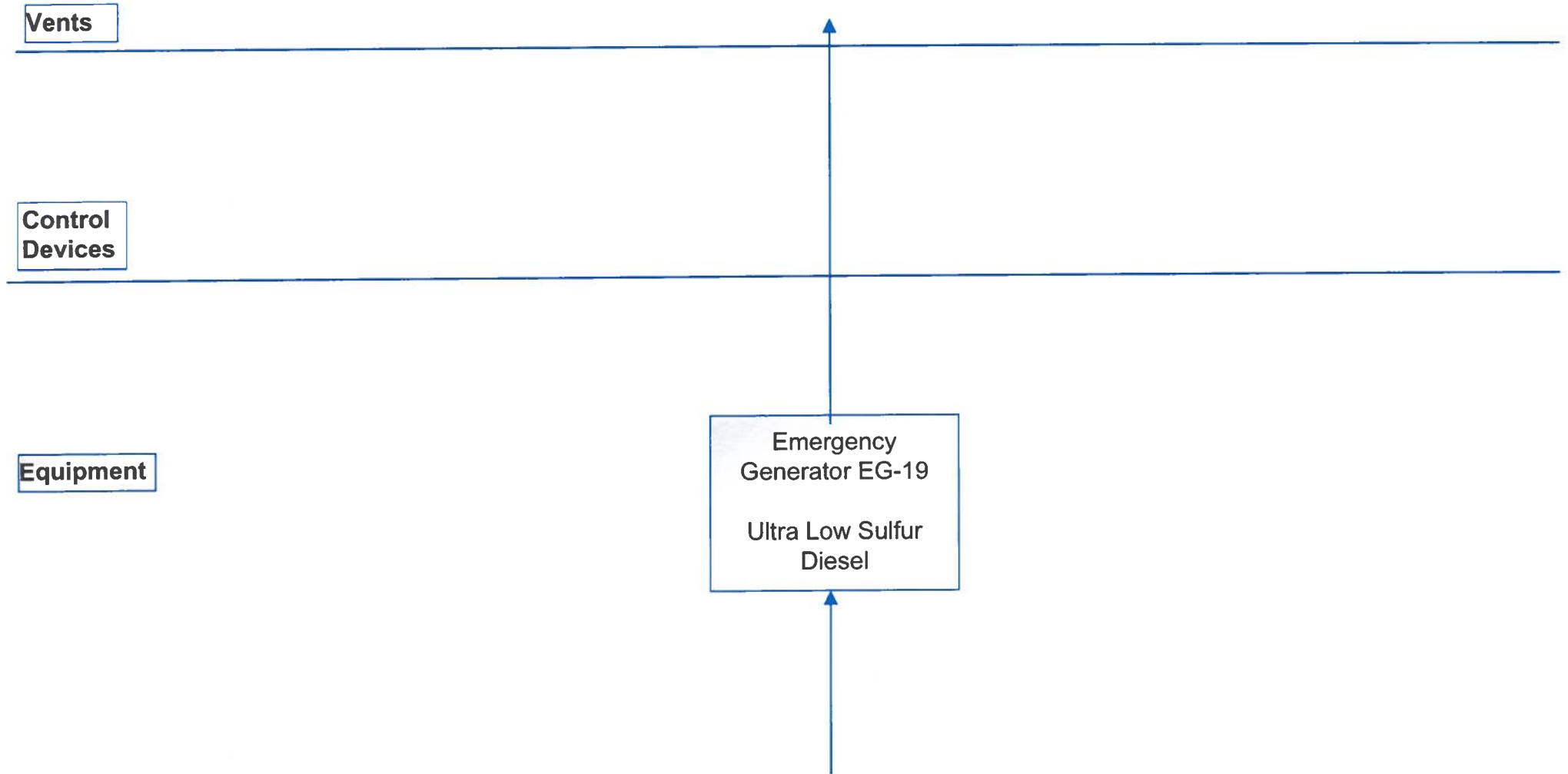


Attach F—Process Flow

**Building 4020 Process Flow
Plant 4 Process Heaters**



Building 429 Process Flow
EG-19



Vents

Control
Devices

Equipment

Emergency
Generator EG-19

Ultra Low Sulfur
Diesel

ATTACHMENT G PROCESS DESCRIPTION

Two (2) natural gas-fired process heaters (P4-5S and P4-6S) will supply heat in the form of hot water to Building 4020 for comfort. Each process heater has a maximum capacity of 10.2 MMBtu/hr with a combined maximum capacity of 20.4 MMBtu/hr.

ATTACHMENT G
PROCESS DESCRIPTION

EMERGENCY GENERATOR (EG-19)

A Kohler 30REOZK emergency generator (EG-19) Model KDI2504TM/G18 will supply emergency power to Building 429 (Telecommunications) on Plant 1. EG-19 is rated at 36.4 kilowatts (kW) and 48.8 horsepower (hp) and will fire ULSD as fuel. This emergency generator will operate without a time limit during emergency situations and will limit the number of annual hours of operation to 500 hours for periodic maintenance and testing.

Safety Data Sheet

| | |
|---|--------------|
| Section 1: Identification of the substance or mixture and of the supplier | Rev: 01/2016 |
|---|--------------|

| | |
|---|---|
| Product Name: | Natural Gas |
| Synonyms/Other Means of Identification: | Residue Gas Processed Gas Natural Gas, Dry Compressed Natural Gas |
| Intended Use: | Fuel |
| Supplier: | Piedmont Natural Gas Company, Inc. 4720 Piedmont Row Drive Charlotte, NC 28210 |
| Emergency Health and Safety Number: | Chemtrec: 800-424-9300 (24 Hours) |
| SDS Information: Phone: | 800-752-7504 Safety Department [8:00 am-5:00 pm]: 704-731-4610 |
| Email: | incidentreporting@piedmontng.com |
| URL: | http://www.piedmontng.com/files/pdfs/safety/ |
| CASRN: | 68410-63-9 |

| | |
|-------------------------------------|--------------|
| Section 2: Hazard(s) Identification | Rev: 01/2016 |
|-------------------------------------|--------------|

GHS Classification

Flammable gases -- Category 1
Gases under pressure -- Compressed gas
Specific Target Organ Systemic Toxicity (STOT) – Single Exposure Category 2

GHS Label Elements





Signal Word

DANGER

Hazard Statements

Extremely flammable gas
Contains gas under pressure. May explode if heated
Gas may reduce oxygen in confined spaces.

Precautionary Statement(s):

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
Protect from sunlight. If containerized, store in a well ventilated place.
Do not eat, drink or smoke when using this product.

Response:

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage:

Protect from containerized natural gas from sunlight. Store well in a well-ventilated place.
Store locked-up

| | |
|---|--------------|
| Section 3: Composition / Information on Ingredients | Rev: 01/2016 |
|---|--------------|

| Component | CAS No. | Concentration (mole%) |
|--------------------|------------|-----------------------|
| Natural gas, dried | 68410-63-9 | 100 |
| Methane | 78-82-8 | 87.0-96% |
| Ethane | 78-98-6 | 1.8-5.1% |
| Propane | 74-98-6 | 0.1-1.5% |
| Nitrogen | 7727-37-9 | 1.3-5.6% |
| Carbon Dioxide | 124-38-9 | 0.1-1.0% |

Composition can vary greatly. Generally a complex mixture of light gases separated from raw natural gas consisting of aliphatic hydrocarbons having carbon numbers in the range of C1 through C4, predominantly (C1), ethane (C2), and propane (C3). May contain carbon dioxide (CO₂). Odorized with trace amounts of odorant (see Section 9).

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: First aid is not normally required. However, it is good practice to wash any chemical from the skin.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

Ingestion (Swallowing): This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Most important symptoms and effects

Acute: Anesthetic effects at high concentrations.

Delayed: None known or anticipated. See Section 11 for information on effects from chronic exposure, if any.

Notes to Physician: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

General Fire Hazards:

Dangerous fire and explosion hazard when exposed to heat, sparks, or flame. Natural gas is lighter than air and may travel long distances to a point of ignition and flash back. Container may explode in heat or fire.

NFPA 704 Hazard Class



Health: 1 Flammability: 4 Instability: 0

(0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: Extremely flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment,



and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Contents under pressure.

Extinguishing Media: Class B fire extinguishers are preferred but a dry chemical or carbon dioxide extinguisher could be used. If using a carbon dioxide extinguisher in a confined space, use caution because a carbon dioxide can displace oxygen.

Fire Fighting Instructions: Fire should NOT be extinguished unless flow of gas can be immediately stopped. Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area, particularly around ends of storage vessels.

Let vessel, tank car or container burn unless leak can be stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion (smoke). Oxides of nitrogen and sulfur may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

| |
|--|
| Section 6: Accidental Release Measures |
|--|

| |
|--------------|
| Rev: 01/2016 |
|--------------|

Recovery and Neutralization

Stop the source of the release, if safe to do so.

Materials and Methods for Clean-Up

Do not flush down sewer or drainage systems. Do not touch spilled liquid (frostbite/freeze burn hazard!). Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

Emergency Measures

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction, stay upwind and uphill, if possible. Evaluate the direction of product travel. Vapor cloud may be white, but color will dissipate as cloud disperses - fire and explosion hazard is still present!



Personal Precautions and Protective Equipment

Extremely flammable. During releases / holes in pipe, pipe may become cold and cause (frostbite/freeze burn hazard!).

Environmental Precautions

Do not flush down sewer or drainage systems. Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

Methods for Containment and Clean-Up

Notify relevant authorities in accordance with all applicable regulations including reporting quantities to Emergency Response Centers as necessary. Recommended measures are based on the most likely release scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

| | |
|---------------------------------|--------------|
| Section 7: Handling and Storage | Rev: 01/2016 |
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Precautions for safe handling

Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Contents under pressure. Gas can accumulate in confined spaces and limit oxygen available for breathing. Use only with adequate ventilation. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes).

Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Cold burns may occur during filling operations. Containers and delivery lines may become cold enough to present cold burn hazard.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Conditions for safe storage

Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers.



Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Avoid exposing any part of a compressed-gas cylinder to temperatures above 125°F(51.6°C). Gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

| | |
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| Section 8: Exposure Controls / Personal Protection | Rev: 01/2016 |
|--|--------------|

| Component | ACGIH | OSHA PEL (ppm) | Other |
|--|--|----------------|-------|
| Natural gas, dried | 1000 ppm TWA as Aliphatic Hydrocarbons C1-4 | --- | --- |
| Natural Gas is comprised of the following gases and associated compounds | | | |
| Methane | 1000 ppm TWA as Aliphatic Hydrocarbons C1-C4 | --- | --- |
| Ethane | 1000 ppm TWA as Aliphatic Hydrocarbons C1-C4 | --- | --- |
| Propane | 1000 ppm TWA as Aliphatic Hydrocarbons C1-C4 | 2500 | --- |
| Nitrogen | 1000 ppm TWA | --- | --- |
| Carbon Dioxide | 5000 ppm TWA | 5000 | --- |

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls

If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection

The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection

The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals.

Respiratory Protection

A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen



content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH).

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

| |
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| Section 9: Physical and Chemical Properties |
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| Rev: 01/2016 |
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Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

| | |
|--|---------------------------------|
| Appearance: | Colorless |
| Physical Form: | Compressed Gas |
| Odor: | Slight hydrocarbon ¹ |
| Odor Threshold: | No data |
| pH: | Not applicable |
| Vapor Density (air=1): | 0.5 |
| Initial Boiling Point/Range: | No data |
| Melting/Freezing Point: | No data |
| Solubility in Water: | Slight |
| Partition Coefficient (n-octanol/water) (Kow): | No data |
| Percent Volatile: | 100% |
| Flammability (solid, gas): | Gas, Extremely Flammable |
| Evaporation Rate (nBuAc=1): | No data |
| Flash Point: | -299 °F / -184 °C |
| Test Method: | (estimate) |
| Lower Explosive Limits (vol % in air): | 2.0 |
| Upper Explosive Limits (vol % in air): | 10.0 |
| Auto-ignition Temperature: | 999 °F / 537 °C |

¹ Mercaptan (an odorant) is added to natural gas. Mercaptan is typically in the range of 0.5% to 1%

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| Section 10: Stability and Reactivity |
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| Rev: 01/2016 |
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Chemical Stability

Stable under normal ambient and anticipated conditions of use.

Conditions to Avoid

Avoid all possible sources of ignition. Heat will increase pressure in a storage tank or pipe.



Materials to Avoid (Incompatible Materials)

Avoid contact with acids, aluminum chloride, chlorine, chlorine dioxide, halogens and oxidizing agents.

Hazardous Decomposition Products

Not anticipated under normal conditions of use.

Hazardous Polymerization

Not known to occur.

| | |
|---------------------------------------|--------------|
| Section 11: Toxicological Information | Rev: 01/2016 |
|---------------------------------------|--------------|

Information on Toxicological Effects of Substance/Mixture

| Acute Toxicity | Hazard | LC50/LD50 Data | Additional Information |
|---------------------------------------|------------------------------------|---|------------------------|
| Methane (74-82-8) Ethane (74-84-0) | Inhalation Inhalation | LC50 Mouse 326 g/m ³ 2h LC50 Rate 658 mg / L 4h | |
| Skin Absorption | Skin absorption is not anticipated | | Not Applicable |
| Ingestion (Swallowing) | Ingestion is not anticipated | | Not Applicable |

Aspiration Hazard

Not applicable

Skin Corrosion/Irritation

Skin exposure is not anticipated.

Serious Eye Damage/Irritation

Not expected to be irritating.

Signs and Symptoms

Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.



Skin Sensitization

Skin contact is not anticipated.

Respiratory Sensitization

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a "chilly" feeling, and vomiting have been reported from accidental exposures to high concentrations. This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death. Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure)

Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure)

Not expected to cause organ effects from repeated exposure.

Carcinogenicity

Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.

Germ Cell Mutagenicity

Not expected to cause heritable genetic effects.

Reproductive Toxicity

Not expected to cause reproductive toxicity.

Other Comments

High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

Toxicity

Petroleum gases will readily evaporate from the surface and would not be expected to have significant adverse effects in the aquatic environment. Classification: No classified hazards.

Persistence and Degradability

The hydrocarbons in this material are expected to be inherently biodegradable. In practice, hydrocarbon gases are not likely to remain in solution long enough for biodegradation to be a significant loss process. Hydrogen sulfide, if present in refinery gas streams, will be rapidly oxidized in water and insoluble sulfides precipitated from water when metallic radicals are present.

Bioaccumulative Potential

Not regarded as having the potential to bioaccumulate.

Mobility in Soil

Due to the extreme volatility of petroleum gases, air is the only environmental compartment in which they will be found. In air, these hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half-lives ranging from 3.2 days for n-butane to 7 days for propane.

Other Adverse Effects: None anticipated.

This material is a gas and would not typically be managed as a waste.

U.S. Department of Transportation (DOT)
Shipping Description:

UN1971, Natural gas, compressed, 2.1


Non-Bulk Package Marking:

Natural gas, compressed, UN1971

Non-Bulk Package Labeling:

Flammable gas

Bulk Package/Placard Marking:

Flammable gas / 1971

Packaging - References:

49 CFR 173.306; 173.302; 173.302
(Exceptions; Non-bulk; Bulk)

Hazardous Substance:

None

Emergency Response Guide:

115

Note: Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable



International Maritime Dangerous Goods (IMDG)

Shipping Description: UN1971, Natural gas, compressed, 2.1
Non-Bulk Package Marking: Natural gas, compressed, UN1971
Labels: Flammable gas
Placards/Marking (Bulk): Flammable gas / 1971
Packaging - Non-Bulk: P200
EMS: F-D, S-U

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #: UN1971
Proper Shipping Name: Natural gas, compressed
Hazard Class/Division: 2.1
Subsidiary risk: None
Packing Group: None
Non-Bulk Package Marking: Natural gas, compressed, UN1971
Labels: Flammable gas, Cargo Aircraft Only
ERG Code: 10L

| | Limited Quantity | Passenger Aircraft | Cargo Aircraft Only |
|---|------------------|--------------------|---------------------|
| Packaging Instruction #: | Forbidden | Forbidden | 200 |
| Maximum Net Quantity Per Package | Forbidden | Forbidden | 150 kg |

| | |
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| Section 15: Regulatory Information | Rev: 01/2016 |
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CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

Acute Health: Yes
Chronic Health: No
Fire Hazard: Yes
Pressure Hazard: Yes
Reactive Hazard: No

CERCLA/SARA - Section 313 and 40 CFR 372:

This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).



| | |
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| Section 16: Other Information | Rev: 01/2016 |
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Date of Issue: January 25, 2016
Status: FINAL
Previous Issue Date: April 2, 2012
Revised Sections or Basis for Revision: Identified Hazards (Section 2) Precautionary Statement(s) (Section 2) First Aid (Section 4) Shipping information (Section 14) Regulatory information (Section 15)

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists;
CASRN = Chemical Abstracts Service Registry Number;
CEILING = Ceiling Limit (15 minutes);
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act;
EPA = Environmental Protection Agency;
GHS = Globally Harmonized System;
IARC = International Agency for Research on Cancer;
INSHT = National Institute for Health and Safety at Work;
IOPC = International Oil Pollution Compensation;
LEL = Lower Explosive Limit;
NE = Not Established;
NFPA = National Fire Protection Association;
NTP = National Toxicology Program;
OSHA = Occupational Safety and Health Administration;
PEL = Permissible Exposure Limit (OSHA);
SARA = Superfund Amendments and Reauthorization Act;
STEL = Short Term Exposure Limit (15 minutes);
TLV = Threshold Limit Value (ACGIH);
TWA = Time Weighted Average (8 hours);
UEL = Upper Explosive Limit;

Disclaimer:

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BUCKEYE PARTNERS, L.P.
SPECIFICATIONS FOR FUNGIBLE ULTRA LOW SULFUR DIESEL (MOTOR VEHICLE)
GRADE 190

| PRODUCT PROPERTY | ASTM TEST METHODS | TEST RESULTS | | NOTE |
|-------------------------------------|-----------------------------------|--------------|-----------------|-------|
| | | MINIMUM | MAXIMUM | |
| Gravity, API @ 60°F | D287, D4052, D1298 | 30 | | |
| Flash Point, °F (at Origin) | D93 or D56 | 130 | | 1 |
| (Maine only - Dec thru March 14) | | 120 | | 6 |
| Color, ASTM | D1500 | | 2.5 | |
| Viscosity, cst @ 104°F | D445 | 1.9 | 4.1 | |
| (Maine only - Dec thru March 14) | | 1.7 | | 6 |
| Cloud Point, °F (Sept thru March) | D2500, D5771, D5772, | | +15 °F / -9 °C | |
| (April thru August) | D5773, D3117 | | +20 °F / -7 °C | |
| (Maine only - Dec thru March 14) | | | -16 °F / -26 °C | 6 |
| Pour Point, °F (Sept thru March) | D5985, D5949, D5950, D97 | | 0 °F / -18 °C | |
| (April thru August) | | | +10 °F / -12 °C | |
| Total Sulfur, ppm (at receipt) | D5453, D3120, D2622, D7039, D4294 | | 11 | 3.7.8 |
| Corrosion, 3 hrs. @ 122°F | D130 | | 1 | |
| Oxidation Stability, mg/100 ml OR | D2274 | | 2.5 | |
| Thermal Stability, 90 minutes | | | | |
| 150°C Pad rating OR | DuPont | | 7 | |
| Thermal Stability, Y/Green | D6468 | 73% | | |
| W Unit | | 65% | | |
| Carbon Residue, wt. % on 10% bottom | D524 or D4530 | | 0.35 | |
| Ash, wt. % | D482 | | 0.01 | |
| Sediment and Water, % by volume | D2709 | | 0.05 | |
| Cetane Number or Index | D4737, D613, D6890, D7170 | 40 | | |
| Aromatics (Vol%) | D1319 | | 35.0 | |
| or Aromatics by Cetane Index | D976 | 40 | | |
| Distillation, °F | D86 | | | |
| 50% recovered | | Report | | |
| 90% recovered | | 540 | 640 | |
| End Point | | | 690 | |
| or Simulated Distillation, °C(°F) | D2887 | | | |
| 50% recovered | | | Report | |
| 90% recovered | | 300(572) | 356(673) | |
| End Point | | | 421(790) | |
| Haze Rating @ 77°F | D4176 | | 2 | |
| Procedure 2 | | | | |
| Biodiesel (FAME) % | D7371, EN14078 | | 0.0 | 10 11 |
| Color Visual | | Undyed | | 4 |
| Additives | | | | 5 |
| NACE | TM0172-2001 | B+ | | 9 |

NOTES:

1. Test method D-56 may be used as an alternate to D-93 with the same limits. Test method D-93 is the referee method. Minimum flash at delivery is 125 °F.
2. Intended to be consistent with ASTM D975 Grade No. 2 middle distillate fuels, unless otherwise noted.
3. Receipts from Wolverine Pipe Line will be accepted at a maximum of 12.0 ppm sulfur.
4. Product must exhibit no visible evidence of dye.
5. Use of static dissipater additive or conductivity improver or lubricity improver additive is prohibited.
6. For winter (December 1 through March 14) receipt of ULSD in State of Maine only.
7. This product is for Motor Vehicle use and designated as such in EPA's Designate and Track reporting system: DMV015.
8. Sulfur level at delivery will vary depending upon the origin and delivery location.
9. All products (except aviation grades 152, 153, 155 and 182) must meet a minimum level of corrosion protection, indicated by a minimum rating of B+ as determined by NACE Standard Test Method TM0172-2001 (Determining Corrosive Properties of Cargoes in Petroleum Product Pipelines).
10. Biofuel Components (e.g. biodiesel, FAME) are not permitted in this product. Results must be <LDL of the test method (i.e. <1.0% per D7371, or <0.50% per EN14078). FAME limits go into effect at Linden, NJ; Booth, PA; Macungie, PA, and New Haven, CT on June 1, 2014. FAME Limits will apply to all other receipt locations on September 5, 2014.
11. Shipments of this Grade Code are limited to less than 5.0% renewable diesel. Renewable diesel is a liquid fuel derived from 100% hydrotreated biomass that meets the registration requirements for fuels and fuel additives established by the EPA under Section 211 of the Clean Air Act and the requirements of ASTM D975. Fuel containing fatty acid esters (FAME, FAEE, or other esters) is prohibited.



Petroleum Products Corporation

No. 2 Diesel Fuel

Material Safety Data Sheet

Section 1: Identification of the substance or mixture and of the supplier

| | |
|--|---|
| Product Name: | No. 2 Diesel Fuel |
| Synonyms/Other Means of Identification: | Low Sulfur Diesel Fuel – Dyed No. 2 Diesel Fuel Oil No. 2 Low Sulfur Distillate No. 2 Diesel with Renewable Diesel No. 2 Ultra Low Sulfur Diesel – Dyed No. 2 Ultra Low Sulfur Diesel – Undyed No. 2 Distillate ULSD |
| MARPOL Annex I Category: | Gas Oils, Including Ship's Bunkers |
| Intended Use: | Fuel |
| Manufacturer/Supplier Information: | Petroleum Products Corporation 900 S. Eisenhower Blvd. Middletown, Pa. 17057 |
| MSDS Information: | Phone: 1-800-692-6016 Email: msds@ppcterminals.com |
| Emergency Phone Number: | Spills, Leaks or Accidents Call PERS North America (24 Hours) 1-800-633-8253 |

Section 2: Hazard(s) Identification

DANGER

Flammable liquid and vapor. (H226)*
Causes skin irritation. (H315)*
May be fatal if swallowed and enters airways. (H304)*
Harmful if inhaled. (H332)*
May cause damage to organs through prolonged or repeated exposure. (H373)*
Suspected of causing cancer. (H351)*
Very toxic to aquatic life with long lasting effects. (H410)*

Precautionary Statement(s):

Obtain special instructions before use. (P201)* Keep away from heat/sparks/
open flames/hot surfaces. - No smoking. (P210)* Do not breathe vapors or
mists. (P260)*
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. (P301+P310)*
Do NOT induce vomiting. (P331)*
Dispose of contents/container to approved disposal facility. (P501)*
* (Applicable GHS hazard/precautionary code)



Section 3: Composition / Information on Ingredients

| Component | CASRN | Concentration ¹ |
|-------------------|-------------|----------------------------|
| Diesel Fuel No. 2 | 68476-34-6 | 95-100 |
| Renewable Diesel | Proprietary | 0-5 |
| Naphthalene | 91-20-3 | <1 |

Total Sulfur: < 0.1 wt%

¹ All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Section 4: First Aid Measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash

contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Notes to Physician: When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Medical Conditions Aggravated by Exposure: Conditions which may be aggravated by exposure include skin disorders, blood disorders, liver disorders and immune system disorders.

Section 5: Fire-Fighting Measures

NFPA 704 Hazard Class

Health: 1 Flammability: 2 Instability: 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Unusual Fire & Explosion Hazards: Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of nitrogen and sulfur may also be formed.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

| Section | 6: | Accidental | Release | Measures |
|---------|----|------------|---------|----------|
|---------|----|------------|---------|----------|

Personal Precautions: Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use foam on spills to minimize vapors. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods for Containment and Clean-Up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or

vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations. Recommended measures are based on the most likely spillage scenarios for this material, however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

Section 7: Handling and Storage

Precautions for safe handling: Keep away from ignition sources such as heat/sparks/open flame - No smoking. Take precautionary measures against static discharge. Nonsparking tools should be used. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors or mists. Use only outdoors or in well-ventilated area. Wear protective gloves/clothing and eye/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment. Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic

charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

For use as a motor fuel only. Do not use as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Diesel engine exhaust contains hazardous combustion products and has been classified as a probable cancer hazard in humans.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Section 8: Exposure Controls / Personal Protection

| Component | ACGIH | OSHA | Other |
|-------------------|-------------------------------------|--|--|
| Diesel Fuel No. 2 | TWA: 100 mg/m ³ Skin | --- | --- |
| Naphthalene | STEL: 15 ppm TWA: 10 ppm Skin | TWA: 10 ppm TWA: 50 mg/m ³ | TWA: 0.2 mg/m ³ (as total of 17 PNA's measured by NIOSH Method 5506) (ConocoPhillips Guidelines) |

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

Section 9: Physical and Chemical Properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

| | |
|-------------------------------------|---------------------------|
| Appearance: | Straw colored to dyed red |
| Physical Form: | Liquid |
| Odor: | Diesel fuel |
| Odor Threshold: | No data |
| pH: | Not applicable |
| Vapor Pressure: | 0.40 mm Hg |
| Vapor Density (air=1): | > 3 |
| Initial Boiling Point/Range: | 300-690°F / 149-366°C |

| | |
|---|--|
| Melting/Freezing Point: | No data |
| Solubility in Water: | Negligible |
| Partition Coefficient (n-octanol/water) (Kow): | No data |
| Specific Gravity (water=1): | 0.81-0.88 @ 60°F (15.6°C) |
| Bulk Density: | 7.08 lbs/gal |
| Percent Volatile: | Negligible @ ambient conditions |
| Evaporation Rate (nBuAc=1): | <1 |
| Flash Point: | 125 -180°F / 52 - 82°C |
| Test Method: | Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010 |
| Lower Explosive Limits (vol % in air): | 0.3 |
| Upper Explosive Limits (vol % in air): | 10.0 |
| Auto-ignition Temperature: | 500°F //260°C |

Section 10: Stability and Reactivity

Stability: Stable under normal ambient and anticipated conditions of use. **Conditions to Avoid:** Avoid high temperatures and all sources of ignition. Prevent vapor accumulation. **Materials to Avoid (Incompatible Materials):** Avoid contact with strong oxidizing agents and strong reducing agents. **Hazardous Decomposition Products:** Not anticipated under normal conditions of use.

Hazardous Polymerization: Not known to occur.

Section 11: Toxicological Information

Information on Toxicological Effects of Substance/Mixture

| <u>Acute Toxicity</u> | <u>Hazard</u> | <u>Additional Information</u> | <u>LC50/LD50 Data</u> |
|------------------------|------------------------|-------------------------------|-----------------------|
| Inhalation | Harmful if inhaled | | > 4.65 mg/L (mist) |
| Skin Absorption | Unlikely to be harmful | | > 4.1 g/kg |
| Ingestion (Swallowing) | Unlikely to be harmful | | > 5 g/kg |

Aspiration Hazard: May be fatal if swallowed and enters airways.

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Signs and Symptoms: While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure. Dermal application of a distillate fuel component at doses > 125 mg/kg, 5 d/wk, for 13 weeks resulted in decreased liver, thymus, and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy and necrosis, decreased hematopoiesis and lymphocyte depletion.

Carcinogenicity: Suspected of causing cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation. Middle distillates with low polynuclear aromatic hydrocarbon content have not been identified as a carcinogen by IARC.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Inadequate information available.

Information on Toxicological Effects of Components

Naphthalene

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

| Section | 12: | Ecological | Information |
|---------|-----|------------|-------------|
|---------|-----|------------|-------------|

Toxicity: Experimental studies of gas oils show that acute aquatic toxicity values are typically in the range 2-20 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. They should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment. Classification: H411: Chronic Cat 2.

Persistence and Degradability: Gas oils are complex combinations of individual hydrocarbon species. Based on the known or expected properties of individual constituents, category members are not predicted to be readily biodegradable. Some hydrocarbon constituents of gas oils are predicted to meet the criteria for persistence; on the other hand, some components can be easily degraded by microorganisms under aerobic conditions.

Persistence per IOPC Fund definition: Non-Persistent **Bioaccumulative Potential:** Gas oil components have measured or calculated Log Kow values in the range of 3.9 to 6 which indicates a high potential to bioaccumulate. Lower molecular weight compounds are readily metabolized and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

Mobility in Soil: Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilization is an important loss process and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapors react readily with hydroxyl radicals with half-lives of less than one day. Photooxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water, the majority of components will be adsorbed on sediment. Adsorption is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

Other Adverse Effects: None anticipated.

| Section | 13: | Disposal | Considerations |
|---------|-----|----------|----------------|
|---------|-----|----------|----------------|

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

EPA Waste Number(s)

- D001 - Ignitability characteristic

| Section 14: Transport Information |
|-----------------------------------|
|-----------------------------------|

U.S. Department of Transportation (DOT)

| | |
|--------------------------------------|--|
| Shipping Description: | <i>Aquatic toxicity studies indicate material may be classified as a Marine Pollutant. This classification impacts bulk and water shipments.</i> NA1993, Diesel fuel, Combustible liquid, III |
| Non-Bulk Package Marking: | Not Regulated [49 CFR 173.150(f)(2)] |
| Non-Bulk Package Labeling: | Not Regulated [49 CFR 173.150(f)(2)] |
| Bulk Package/Placard Marking: | Combustible / 1993 |
| Packaging - References: | None; None; 49 CFR 173.241 (Exceptions; Non-bulk; Bulk) |
| Emergency Response Guide: | 128 |

Section 14: Transport Information

Note: *May also be shipped as: Diesel fuel, Combustible liquid, UN1202, III
 Bulk Package/Placard Marking would also be changed to: 1202
 Container(s) greater than 5 liters (liquids) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(l)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].
 The following alternate shipping description order may be used until January 1, 2013:
 Proper Shipping name, Hazard Class or Division, (Subsidiary Hazard if any), UN or NA number, Packing Group
 Other shipping description elements may be required for DOT compliance.*

International Maritime Dangerous Goods (IMDG)

Shipping Description: *If flashpoint is >60° C closed-cup and the material meets the IMDG definition of a Marine Pollutant, an alternate shipping name such as "Environmentally hazardous substance, n.o.s." with hazard class 9 and PG III must be used.
 UN1202, Diesel fuel, 3, III, (FP °C cc), [where FP is the material's flash point in degrees Celsius closed cup]*

Non-Bulk Package Marking: Diesel fuel, UN1202

Labels: Flammable liquid

Placards/Marking (Bulk): Flammable / 1202

Packaging - Non-Bulk: P001, LP01

EMS: F-E, S-E

Note: *Proper Shipping name can be: Gas Oil or Diesel fuel or Heating Oil, light If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.
 If container(s) is greater than 5 liters (liquids) or 5 kilograms (solids), shipment may require the shipping description to contain the "Marine Pollutant" description [IMDG 5.4.1.4.3.5] and the container(s) to display the Marine Pollutant mark [IMDG 5.2.1.6].*

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

UN/ID #: *Not regulated if flashpoint is >60° C closed-cup
 UN1202*

Proper Shipping Name: Diesel fuel

Hazard Class/Division: 3

Packing Group: III

Non-Bulk Package Marking: Diesel fuel, UN1202

Labels: Flammable liquid

ERG Code: 3L

Note: *If container(s) is greater than 5 liters (liquids) or 5 kilograms (solids), shipment may require the container to display the "Environmentally hazardous substance" mark [IATA 7.1.6.3].*

| | LTD. QTY | Passenger Aircraft | Cargo Aircraft Only |
|---|----------|--------------------|---------------------|
| Packaging Instruction #: | Y309 | 309 310 | |
| Max. Net Qty. Per Package: | 10 L | 60 L | 2 |
| Packaging Instruction # after 12/31/2010: | Y344 355 | | 0366 |

Section 15: Regulatory Information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)

| | |
|------------------|-----|
| Acute Health: | Yes |
| Chronic Health: | Yes |
| Fire Hazard: | Yes |
| Pressure Hazard: | No |
| Reactive Hazard: | No |

CERCLA/SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

| Component | Concentration ¹ | de minimis |
|-------------|----------------------------|------------|
| Naphthalene | <1 | 0.1% |

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65:

Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

| Component | Type of Toxicity |
|-------------|------------------|
| Naphthalene | Cancer |

International Hazard Classification

GHS Classification:

- H226 -- Flammable Liquids -- Category 3
- H315 -- Skin corrosion/irritation -- Category 2
- H304 -- Aspiration Hazard -- Category 1
- H332 -- Acute toxicity, Inhalation -- Category 4
- H373 -- Specific target organ toxicity (repeated exposure) -- Category 2
- H351 -- Carcinogenicity -- Category 2
- H410 -- Hazardous to the aquatic environment, chronic toxicity -- Category 1

Canada:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the Regulations.

WHMIS Hazard Class
B3 - Combustible Liquids
D1B
D2A
D2B

National Chemical Inventories:

All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

U.S. Export Control Classification Number: EAR99

Section 16: Other Information

Date of Issue: 21-Dec-2010
Status:
Previous Issue Date: 23-Aug-2010
Revised Sections or Basis for Revision: Format change
Toxicological (Section 11)
MARPOL information (Sections 1, 3 and 12)
SDS Number: 001847

Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; IARC = International Agency for Research on Cancer; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data

| Emission Point ID No. (Must match Emission Units Table & Plot Plan) | Emission Point Type ¹ | Emission Unit Vented Through This Point (Must match Emission Units Table & Plot Plan) | | Air Pollution Control Device (Must match Emission Units Table & Plot Plan) | | Vent Time for Emission Unit (chemical processes only) | | All Regulated Pollutants - Chemical Name/CAS ³ (Speciate VOCs & HAPS) | Maximum Potential Uncontrolled Emissions ⁴ | | Maximum Potential Controlled Emissions ⁵ | | Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor) | Est. Method Used ⁶ | Emission Concentration ⁷ (ppmv or mg/m ⁴) |
|--|----------------------------------|--|----------------|---|-------------|--|-------------|---|---|---------|---|---------|--|-------------------------------|---|
| | | ID No. | Source | ID No. | Device Type | Short Term ² | Max (hr/yr) | | lb/hr | ton/yr | lb/hr | ton/yr | | | |
| P4-5E | Vertical stack | P4-5S | Process heater | NA | NA | | | PM | 0.00 | 0.00 | 0.00 | 0.00 | Gas | AP-42 | |
| | | | | | | | | SO2 | 3.1E-03 | 0.027 | 3.1E-03 | 0.027 | | | |
| | | | | | | | | NOx | 0.255 | 2.24 | 0.255 | 2.24 | | | |
| | | | | | | | | CO | 0.429 | 3.75 | 0.429 | 3.75 | | | |
| | | | | | | | | VOCnm | 0.056 | 0.492 | 0.056 | 0.492 | | | |
| | | | | | | | | Methane | 0.023 | 0.206 | 0.023 | 0.206 | | | |
| | | | | | | | | Lead | 2.6E-06 | 2.2E-05 | 2.6E-06 | 2.2E-05 | | | |
| | | | | | | | | Mercury | 1.3E-06 | 1.2E-05 | 1.3E-06 | 1.2E-05 | | | |
| CO2 | 612 | 5364 | 612 | 5364 | | | | | | | | | | | |
| P4-6E | Vertical stack | P4-6S | Process heater | NA | NA | | | PM | 0.00 | 0.00 | 0.00 | 0.00 | Gas | AP-42 | |
| | | | | | | | | SO2 | 3.1E-03 | 0.027 | 3.1E-03 | 0.027 | | | |
| | | | | | | | | NOx | 0.255 | 2.24 | 0.255 | 2.24 | | | |
| | | | | | | | | CO | 0.429 | 3.75 | 0.429 | 3.75 | | | |
| | | | | | | | | VOCnm | 0.056 | 0.492 | 0.056 | 0.492 | | | |
| | | | | | | | | Methane | 0.023 | 0.206 | 0.023 | 0.206 | | | |
| | | | | | | | | Lead | 2.6E-06 | 2.2E-05 | 2.6E-06 | 2.2E-05 | | | |
| | | | | | | | | Mercury | 1.3E-06 | 1.2E-05 | 1.3E-06 | 1.2E-05 | | | |
| CO2 | 612 | 5364 | 612 | 5364 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the

source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- ¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- ² Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- ³ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. **DO NOT LIST** H₂, H₂O, N₂, O₂, and Noble Gases.
- ⁴ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁵ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁶ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- ⁷ Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10).

Attachment J

EMISSION POINTS DATA SUMMARY SHEET

| Table 2: Release Parameter Data | | | | | | | | |
|---|----------------------|------------|---|----------------|--|--|----------------------|---------|
| Emission Point ID No. <i>(Must match Emission Units Table)</i> | Inner Diameter (ft.) | Exit Gas | | | Emission Point Elevation (ft) | | UTM Coordinates (km) | |
| | | Temp. (°F) | Volumetric Flow ¹ (acfm) <i>at operating conditions</i> | Velocity (fps) | Ground Level <i>(Height above mean sea level)</i> | Stack Height ² <i>(Release height of emissions above ground level)</i> | Northing | Easting |
| P4-5E | 1.7 | 250 | 170.1 | 14 | 690 | 20 | 4381 | 686 |
| P4-6E | 1.7 | 250 | 170.1 | 14 | 690 | 20 | 4381 | 686 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Give at operating conditions. Include inerts.
² Release height of emissions above ground level.

**Attachment J
EMISSION POINTS DATA SUMMARY SHEET**

Table 1: Emissions Data

| Emission Point ID No. <i>(Must match Emission Units Table & Plot Plan)</i> | Emission Point Type ¹ | Emission Unit Vented Through This Point <i>(Must match Emission Units Table & Plot Plan)</i> | | Air Pollution Control Device <i>(Must match Emission Units Table & Plot Plan)</i> | | Vent Time for Emission Unit <i>(chemical processes only)</i> | | All Regulated Pollutants - Chemical Name/CAS ³ <i>(Speciate VOCs & HAPS)</i> | Maximum Potential Uncontrolled Emissions ⁴ | | Maximum Potential Controlled Emissions ⁵ | | Emission Form or Phase <i>(At exit conditions, Solid, Liquid or Gas/Vapor)</i> | Est. Method Used ⁶ | Emission Concentration ⁷ <i>(ppmv or mg/m⁴)</i> | |
|---|----------------------------------|---|--------|--|-------------|---|-------------|--|---|----------|---|-----------|---|-------------------------------|--|--|
| | | ID No. | Source | ID No. | Device Type | Short Term ² | Max (hr/yr) | | lb/hr | ton/yr** | lb/hr | ton/yr ** | | | | |
| EG-19 | Vert stack | EG-19 | | N/A | | N/A | | NOx | 0.74 | 0.19 | 0.74 | 0.19 | Gas | AP-42 | | |
| | | | | | | | | CO | 0.23 | 0.06 | 0.23 | 0.06 | | | | |
| | | | | | | | | SO2 | 1.50E-04 | 3.75E-05 | 1.50E-04 | 3.75E-05 | | | | |
| | | | | | | | | PM | 0.17 | 0.04 | 0.17 | 0.04 | | | | |
| | | | | | | | | VOC | 0.16 | 0.04 | 0.16 | 0.04 | | | | |
| | | | | | | | | CO2 | 90.4 | 22.60 | 90.4 | 22.60 | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the

source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

- ¹ Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.
- ² Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).
- ³ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. **DO NOT LIST** H₂, H₂O, N₂, O₂, and Noble Gases.
- ⁴ Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁵ Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).
- ⁶ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).
- ⁷ Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m³) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO₂, use units of ppmv (See 45CSR10

Attachment J EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data

| Emission Point ID No. <i>(Must match Emission Units Table)</i> | Inner Diameter (ft.) | Exit Gas | | | Emission Point Elevation (ft) | | UTM Coordinates (km) | |
|---|----------------------|------------|---|----------------|--|--|----------------------|---------|
| | | Temp. (°F) | Volumetric Flow ¹ (acfm) <i>at operating conditions</i> | Velocity (fps) | Ground Level <i>(Height above mean sea level)</i> | Stack Height ² <i>(Release height of emissions above ground level)</i> | Northing | Easting |
| EG-19 | 0.5 | 543 | 7.8 | NA | 662 | 8 | 4381 | 685 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Give at operating conditions. Include inerts.
² Release height of emissions above ground level.

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

| APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS |
|---|
| 1.) Will there be haul road activities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET. |
| 2.) Will there be Storage Piles? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET. |
| 3.) Will there be Liquid Loading/Unloading Operations? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET. |
| 4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET. |
| 5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET. |
| 6.) Will there be General Clean-up VOC Operations? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET. |
| 7.) Will there be any other activities that generate fugitive emissions? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form. |
| If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary." |

| FUGITIVE EMISSIONS SUMMARY | All Regulated Pollutants - Chemical Name/CAS ¹ | Maximum Potential Uncontrolled Emissions ² | | Maximum Potential Controlled Emissions ³ | | Est. Method Used ⁴ |
|---|--|--|--------|--|--------|-------------------------------------|
| | | lb/hr | ton/yr | lb/hr | ton/yr | |
| Haul Road/Road Dust Emissions Paved Haul Roads | NA | | | | | |
| Unpaved Haul Roads | NA | | | | | |
| Storage Pile Emissions | NA | | | | | |
| Loading/Unloading Operations | NA | | | | | |
| Wastewater Treatment Evaporation & Operations | NA | | | | | |
| Equipment Leaks | NA | | | | | |
| General Clean-up VOC Emissions | NA | | | | | |
| Other | NA | | | | | |

¹ List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS₂, VOCs, H₂S, Inorganics, Lead, Organics, O₃, NO, NO₂, SO₂, SO₃, all applicable Greenhouse Gases (including CO₂ and methane), etc. DO NOT LIST H₂, H₂O, N₂, O₂, and Noble Gases.

² Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

³ Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

⁴ Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

Attachment L
Emission Unit Data Sheet
(INDIRECT HEAT EXCHANGER)

Control Device ID No. (must match List Form): P4-5S & P4-6S (no control device)

Equipment Information

| | |
|--|---|
| 1. Manufacturer: Cleaver Brooks | 2. Model No. CBLE-4D 700-250-125HW Serial No. T9692-1-1 & T9692-2-1 |
| 3. Number of units: 2 (venting separate) | 4. Use: No steam generation, units are process heaters |
| 5. Rated Boiler Horsepower: 250 hp | 6. Boiler Serial No.: T9692-1-1 & T9692-2-1 |
| 7. Date constructed: 2023 | 8. Date of last modification and explain: N/A |
| 9. Maximum design heat input per unit: 10.2 ×10 ⁶ BTU/hr | 10. Peak heat input per unit: 10.2 ×10 ⁶ BTU/hr |
| 11. Steam produced at maximum design output: Not producing steam. LB/hr psig | 12. Projected Operating Schedule: Hours/Day 24 Days/Week 7 Weeks/Year 52 |
| 13. Type of firing equipment to be used: <input type="checkbox"/> Pulverized coal <input type="checkbox"/> Spreader stoker <input type="checkbox"/> Oil burners <input checked="" type="checkbox"/> Natural Gas Burner <input type="checkbox"/> Others, specify | 14. Proposed type of burners and orientation: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Front Wall <input type="checkbox"/> Opposed <input type="checkbox"/> Tangential <input type="checkbox"/> Others, specify |
| 15. Type of draft: <input checked="" type="checkbox"/> Forced <input type="checkbox"/> Induced | 16. Percent of ash retained in furnace: NA % |
| 17. Will flyash be reinjected? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 18. Percent of carbon in flyash: NA % |

Stack or Vent Data

| | |
|--|--|
| 19. Inside diameter or dimensions: 1.7 ft. | 20. Gas exit temperature: 300 °F |
| 21. Height: 2 (horizontal vent) ft. | 22. Stack serves: <input checked="" type="checkbox"/> This equipment only <input type="checkbox"/> Other equipment also (submit type and rating of all other equipment exhausted through this stack or vent) |
| 23. Gas flow rate: 170.1 (Each) ft ³ /min | |
| 24. Estimated percent of moisture: TBD % | |

Emissions Stream

37. What quantities of pollutants will be emitted from the boiler before controls?

| Pollutant | Pounds per Hour lb/hr | grain/ACF | @ °F | PSIA |
|--------------------|--------------------------|-----------|------|------|
| CO | 0.857 | 0.588 | | |
| Hydrocarbons | N/A | N/A | | |
| NO _x | 0.510 | 0.350 | | |
| Pb | 5.10E-06 | 3.50E-06 | | |
| PM ₁₀ | N/A | N/A | | |
| SO ₂ | 6.10E-03 | 4.20E-03 | | |
| VOCs | 0.112 | 0.077 | | |
| Other (specify) Hg | 2.65E-06 | 1.82E-06 | | |
| CO ₂ | 1.22E+03 | 8.40E+02 | | |
| | | | | |
| | | | | |

38. What quantities of pollutants will be emitted from the boiler after controls?

| Pollutant | Pounds per Hour lb/hr | grain/ACF | @ °F | PSIA |
|--------------------|--------------------------|-----------|------|------|
| CO | 0.857 | 0.588 | | |
| Hydrocarbons | N/A | N/A | | |
| NO _x | 0.510 | 0.350 | | |
| Pb | 5.10E-06 | 3.50E-06 | | |
| PM ₁₀ | N/A | N/A | | |
| SO ₂ | 6.10E-03 | 4.20E-03 | | |
| VOCs | 0.112 | 0.077 | | |
| Other (specify) Hg | 2.65E-06 | 1.82E-06 | | |
| CO ₂ | 1.22E+03 | 8.40E+02 | | |
| | | | | |
| | | | | |

39. How will waste material from the process and control equipment be disposed of?

No waste material will be generated from the process.

40. Have you completed an *Air Pollution Control Device Sheet(s)* for the control(s) used on this Emission Unit. N/A

41. Have you included the *air pollution rates* on the Emissions Points Data Summary Sheet? Yes

42. Proposed Monitoring, Recordkeeping, Reporting, and Testing

Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING PLAN: Please list (1) describe the process parameters and how they were chosen (2) the ranges and how they were established for monitoring to demonstrate compliance with the operation of this process equipment operation or air pollution control device.

1. Fuel use records
2. Maximum fuel use of 10206 cf/hr and 178.8 million cf/yr of natural gas.

TESTING PLAN: Please describe any proposed emissions testing for this process equipment or air pollution control device.

1. If the director would require it, stack testing will be conducted in accordance with appropriate EPA methods. But due to the size of the process heaters (P4-5S, P4-6S) are each rated 10.2 MMBtu/hr, testing should not be required.
2. Since the process heaters (P4-5S, P4-6S) are new emission units and each have a heat input capacity greater than 10 MMBtu/hr, tune-ups will be conducted every year as according to 40 CFR §63.7540.

RECORDKEEPING: Please describe the proposed recordkeeping that will accompany the monitoring.

1. Stack testing records shall be maintained on site for five years.
2. Tune-up records shall be maintained on site for five years.

REPORTING: Please describe the proposed frequency of reporting of the recordkeeping.

1. Excess emissions or opacity shall be reported as required in Reg 2.9.3.a and 9.3.b.
2. All emissions shall be included in the annual emissions inventory and certified emission statements.

- 43. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.**
Unknown

**Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL**

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): EG-19

1. Name or type and model of proposed affected source:

Building 429 EG-19 --Emergency generator (Kohler 30REOZK Tier 3 rated)
Engine Model: KDI2504TM/G18
Engine Family: PKHXL02.5EST
Cert # PKHXL02.5EST-010

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

N/A

4. Name(s) and maximum amount of proposed material(s) produced per hour:

36.4 kilowatts (kW) per hour; 48.8 hp.

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

Combustion of ultra low sulfur diesel (ULSD, #2 oil).

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

2.6 gallons per hour of ULSD.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

15 parts per million (ppm) of sulfur in fuel; negligible ash content.

(c) Theoretical combustion air requirement (ACF/unit of fuel):

N/A @ °F and psia.

(d) Percent excess air: N/A

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

N/A

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

N/A

(g) Proposed maximum design heat input: 0.351 × 10⁶ BTU/hr.

7. Projected operating schedule:

| | | | | | |
|-----------|----------------|-----------|----------------|------------|----------------|
| Hours/Day | 500 hours/year | Days/Week | 500 hours/year | Weeks/Year | 500 hours/year |
|-----------|----------------|-----------|----------------|------------|----------------|

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

| @ | STP | °F and | STP | psia |
|---------------------|-----|----------|-------|------------|
| a. NO _x | | 0.74 | lb/hr | grains/ACF |
| b. SO ₂ | | 1.50E-04 | lb/hr | grains/ACF |
| c. CO | | 0.23 | lb/hr | grains/ACF |
| d. PM ₁₀ | | 0.17 | lb/hr | grains/ACF |
| e. Hydrocarbons | | N/A | lb/hr | grains/ACF |
| f. VOCs | | 0.16 | lb/hr | grains/ACF |
| g. Pb | | N/A | lb/hr | grains/ACF |
| h. Specify other(s) | | | | |
| CO ₂ | | 90.4 | lb/hr | grains/ACF |
| | | | lb/hr | grains/ACF |
| | | | lb/hr | grains/ACF |
| | | | lb/hr | grains/ACF |

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

9. Proposed Monitoring, Recordkeeping, Reporting, and Testing
 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING

1. The emergency generator will have an installed non-resettable hour meter prior to startup of the engine (40 CFR 60.4209);
2. The emergency generator, via the non-resettable hour meter, will monitor the number of hours it operates during a non-emergency event per calendar year; and,
3. The fuel combusted will be monitored by supplier certification that it has no more than 15ppm of sulfur content (40 CFR 60.4207(b)).

RECORDKEEPING

1. Hours of operation per calendar year will be noted for the emergency generator;
2. The manufacturer specifications guaranteeing that the emergency generator meets the emission standards will be kept onsite (40 CFR 60.6405(b)); and,
3. Fuel supply records will be kept (45 CSR 10-8).

REPORTING

- An initial notification (40 CFR 63.6645(f)) will be submitted and will include the information in 40 CFR 63.9(b)(2)(i) through (v), a statement that the stationary RICE has no additional requirements, and an explanation of the basis for the exclusion;
2. Annual reporting will be submitted, meeting the requirements under 40 CFR 60.4214(d); and,
 3. A report for any deviation from sulfur dioxide emission limit or fuel content sampling and analysis will be submitted (45 CSR 10-8.3).

TESTING

None.

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty
 Not applicable.

CY 2024 CALCULATIONS FOR PLANT 4 B4020 PROCESS HEATERS

Maximum PTE for use of NG

Max hourly #2 FO rate 0 gal/hr
 Max hourly NG rate 10206 cf/hr

1 gal FO = 135 cf of NG

Gas flow rate: 170.1 ft³/min

| Boiler # | Fuel | S% | mmBTU/hr | Max hr/yr | max feed (gal or cf/hr) | Max feed (gal or cf/yr) |
|---------------------|---------|----|----------|-----------|-------------------------|-------------------------|
| PH Plant 4- #1 & #2 | Nat Gas | | 20.4 | 17520 | 10206.0 | 178809120 |
| Boiler (FO2) | FO #2 | | | | | 0 |

BTU 10¹² BTU for calculating Pb and Hg
 (based upon 75 gal/hr)
 Yr 0 0
 Hr 0 0

Max NG based on 24 hours x 365 days

| Boiler # | Total PM | | PM10 | | SO2 | | NOx | | CO | | Methane | | VOCnm | | Lead | | Mercury | | CO2 | |
|--------------------|-----------|--------|-----------|------|-----------|------------|-----------|----------|-----------|----------|-----------|---------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|
| | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY | ave lb/hr | TPY |
| PH #1 & #2 | 0.078 | 0.68 | | | 0.0061 | 0.05 | 0.510 | 4.47 | 0.857 | 7.51 | 0.047 | 0.41 | 0.112 | 0.98 | 5.10E-06 | 4.47E-05 | 2.65E-06 | 2.32E-05 | 1.22E+03 | 10728.55 |
| Boiler (FO2) | 0.000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.0000 | 0.00E+00 | 0.0000 |
| Grains | 0.0532 | | | | 0.0042 | | 0.350 | | 0.588 | | | | 0.077 | | 3.50E-06 | | 1.82E-06 | | 8.40E+02 | |
| Max Emissions Each | 0.038783 | 0.3397 | | | 0.0030618 | 0.02682137 | 0.25515 | 2.235114 | 0.428652 | 3.754992 | 0.023474 | 0.20563 | 0.056133 | 0.491725 | 2.55E-06 | 2.24E-05 | 1.33E-06 | 1.16E-05 | 6.12E+02 | 5364.2736 |

Emission factors from AP-42 (Fifth Edition), Chapter 1.3 [Rev 9/98]

Number 2 fuel oil

Total PM = Filterable PM + Condensable PM

Filterable PM = 2 / 1000 gal

Condensable PM = 1.3 / 1000 gal

PM10 = 1 # / K gal

SO2: 142*(%S)#/1K gal

NOx: 20#/1K gal

Methane: 0.052#/1K gal

VOCnm: 0.2#/1K gal

CO: 5#/1K gal

Pb: 9 # / 10¹² BTU Ave. BTU/gal 140,000

Hg: 3 # / 10¹² BTU

Natural Gas

Total PM NOx = 50 lb / 10E6 scf

Filterable PM = 1.9 lb / 10E6 scf

Condensable PM = 5.7 lb / 10E6 scf

PM10 = no factor

SO2 = 0.6 lb / 10E6 scf

NOx = 50 lb / 10E6 scf

Methane = 2.3 lb / 10E6 scf

VOCnm = 5.5 lb / 10E6 scf

CO = 84 lb / 10E6 scf

Pb = 0.0005 lb / 10E6 scf

Hg = 0.00026 lb / 10E6 scf

CO2 = 120,000 lb / 10E6 scf

1.00E+07
 lb/hr to grains/ACF

$$\frac{\text{lbs}}{\text{hr}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times \frac{\text{min}}{\text{ft}^3} \times \frac{7000 \text{ grains}}{\text{lb}} = \frac{\text{grains}}{\text{ft}^3}$$

Where ft³ is a face velocity of 100 ft³/min

Emergency Generator Emissions Analysis (EG-19)

Alliant Techsystems Operations LLC, Allegany Ballistics Laboratory
210 State Road 956
Rocket Center, WV 26726

Criteria Pollutants

| Source | Make | Model | Mft Date | Fuel | kW | hp | (gph) | (mmBtu/hr) | lb/hr | | | | | | Hours | ton/yr | | | | | | | | |
|-----------------------|----------------|--|----------|--------|------|---------|-------|------------|---------------|--------------|-------------|--------------|--------------|-----------------|-------|--------------|-------------|-------------|-------------|-------------|----------------|--|--|--|
| | | | | | | | | | NOx | CO | SO2 | PM | VOC | CO2 | | NOx | CO | SO2 | PM | VOC | CO2 | | | |
| Building 415--EG-3 | Kohler | 180ROZT | 1999 | Diesel | 180 | 241.4 | 14.4 | 1.94 | 7.48 | 1.61 | 0.49 | 0.53 | 0.60 | 100 | 0.37 | 0.08 | 0.02 | 0.03 | 0.03 | | | | | |
| Building 440--EG-4 | Kohler | 300ROEZD71 | 1995 | Diesel | 300 | 490.0 | 23.5 | 3.17 | 15.19 | 3.27 | 1.00 | 1.08 | 1.21 | 100 | 0.76 | 0.16 | 0.05 | 0.05 | 0.06 | | | | | |
| Building 440--EG-5 | Kohler | 300ROEZD72 | 1998 | Diesel | 300 | 490.0 | 23.5 | 3.17 | 15.19 | 3.27 | 1.00 | 1.08 | 1.21 | 100 | 0.76 | 0.16 | 0.05 | 0.05 | 0.06 | | | | | |
| Building 449--EG-6 | Kohler | 800REOZM | 2004 | Diesel | 810 | 1207.0 | 62.2 | 8.40 | 28.97 | 6.64 | 0.49 | 0.84 | 0.85 | 1400.1 | 1.45 | 0.33 | 0.02 | 0.04 | 0.04 | | | | | |
| Building 494--EG-7 | Kohler | 500REOZVB-I2C2 (Tier 2 rated) | 2008 | Diesel | 505 | 757.0 | 36.8 | 4.97 | 0.21 | 0.20 | 0.31 | 1.99 | 0.53 | 878.1 | 100 | 0.01 | 0.01 | 0.02 | 0.10 | 0.03 | | | | |
| Building 488--EG-9 | MTU | 1250RXC6DT2 (Tier 2 rated) | 2010 | Diesel | 1250 | 1676.25 | 100.0 | 13.50 | 0.47 | 0.44 | 0.68 | 4.41 | 1.18 | 1944.5 | 100 | 0.02 | 0.02 | 0.03 | 0.22 | 0.06 | | | | |
| Building 385--EG-10 | Caterpillar | D100-4 (Tier 2 rated) | 2006 | Diesel | 100 | 157.5 | 8.0 | 1.080 | 1.70 | 1.28 | 0.06 | 0.08 | 0.39 | 100 | 0.09 | 0.06 | 0.00 | 0.00 | 0.02 | | | | | |
| Building 2006--EG 11 | Caterpillar | C3456 (Tier 2 rated) | 2007 | Diesel | 500 | 670.5 | 40.0 | 5.400 | 0.19 | 0.18 | 0.27 | 0.33 | 0.47 | 777.8 | 100 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 38.89 | | | |
| Building 600--EG 12 | MTU | 2250-RXC6DT2 (Tier 2 rated) | 2009 | Diesel | 2250 | 3017.3 | 180.0 | 24.300 | 0.84 | 0.79 | 1.22 | 1.46 | 2.13 | 3500.1 | 100 | 0.04 | 0.04 | 0.06 | 0.07 | 0.11 | 175.00 | | | |
| Building 850--EG 13 | Onsite/MTU | 750-XC6DT2 (Tier 2 rated) Engine Model: MTU 12V 2000 G85TB | 2015 | Diesel | 890 | 1193.0 | 57.8 | 7.803 | 10.45 | 3.14 | 0.48 | 0.31 | 0.33 | 1364.8 | 500 | 2.61 | 0.78 | 0.12 | 0.08 | 0.08 | 341.20 | | | |
| Building 3030--EG14 | Kohler | Model: John Deere 6135HGG755 | 2019 | Diesel | 563 | 755.0 | 56.7 | 7.655 | 6.95 | 0.74 | 9.16E-03 | 0.05 | 0.15 | 687.19 | 500 | 1.74 | 0.19 | 2.29E-03 | 0.01 | 0.04 | 171.80 | | | |
| Building 362--EG15 | Kohler | Model: Kohler Diesel KDI 3404TM | 2019 | Diesel | 50 | 67.0 | 3.7 | 0.500 | 0.72 | 0.33 | 2.06E-04 | 0.24 | 0.21 | 130.4 | 500 | 0.18 | 0.08 | 5.15E-05 | 0.06 | 0.05 | 32.61 | | | |
| Building 372--EG16 | Kohler | Model: John Deere 6068HF285 | 2019 | Diesel | 177 | 237.0 | 11.7 | 1.580 | 2.18 | 0.19 | 7.29E-04 | 0.03 | 0.05 | 268.0 | 500 | 0.54 | 0.05 | 1.82E-04 | 0.01 | 0.01 | 67.01 | | | |
| Building 8501--EG-17 | Kohler | Model: John Deere 6135HFG75 | 2020 | Diesel | 563 | 755.0 | 47.7 | 6.440 | 6.95 | 0.74 | 9.16E-03 | 0.05 | 0.15 | 687.19 | 500 | 1.74 | 0.19 | 2.29E-03 | 0.01 | 0.04 | 171.80 | | | |
| Building 2007--EG-18 | Kohler | Model: John Deere 6090HFG86 | 2022 | Diesel | 300 | 463.0 | 63.4 | 8.559 | 5.25 | 2.29 | 1.42E-03 | 1.48 | 1.49 | 702.8 | 500 | 1.31 | 0.57 | 3.56E-04 | 0.37 | 0.37 | 175.70 | | | |
| Building 429--EG-19 | Kohler 30REOZK | KDI2504TM/G18 | 2023 | Diesel | 36.4 | 48.8 | 2.6 | 0.351 | 0.74 | 0.23 | 1.50E-04 | 0.17 | 0.16 | 90.4 | 500 | 0.19 | 0.06 | 3.75E-05 | 0.04 | 0.04 | 22.60 | | | |
| Delta in Emiss | | | | | | | | | 103.49 | 25.36 | 6.04 | 14.13 | 11.11 | 12431.39 | | 11.82 | 2.80 | 0.40 | 1.17 | 1.06 | 1196.61 | | | |

Notes:
 Emergency Generator Fuel Use estimated as 0.08*kW except for Buildings 440, 494, and 449 (Engine Specifications Used). Estimated Heat Input = gal/hr * 135,000 Btu/gal
 Except for Buildings 440, 449, 4`
 Engine at Building 344 in Title V Permit as 600 hp engine, so presume it is permitted.
 Engine at Building 8501 in Title V Permit as 90 hp engine, so presume it is permitted.

Emission Factors:

| Emergency Generator | | Source: EPA AP-42, Fifth Edition, October, 1996 | |
|---------------------|---|---|----------|
| > 600 hp | lb/hp-hr | < 600 hp | lb/hp-hr |
| NOx | 0.024 | NOx | 0.031 |
| VOC | 7.05E-04 | VOC | 2.47E-03 |
| CO | 5.50E-03 | CO | 6.68E-03 |
| PM | 0.0007 | PM | 2.20E-03 |
| SOx | 0.0004045 Assumes .05% sulfur (8.09E-3*S) | SOx | 2.05E-03 |
| CO2 | 1.16 | CO2 | |

| Tier 2 Emission Rate for 100 kW Engine (Building 385) | | | |
|---|-----|---------|---------|
| g/hp-hr | VOC | g/kw-hr | g/hp-hr |
| 4.9 (NOx + NMHC) | | 0.17 | 0.13 |
| | NOx | 5.33 | 3.97 |
| | PM | 0.16 | 0.12 |
| | CO | 1.6 | 1.19 |
| | CO2 | 695.85 | 518.90 |

Tier 2 Emission Rate for 505 kW Engine (Bldg 494), 1250 kW Engine (Bldg 449), 500 kW Engine (Bldg 2006), 2250 kW Engine (Bldg 600), 890 kW (Bldg 850), and 755 kW (Bldg 3030)

Tier 3 Emission Rate for 36.4 kW 48.8 hp Engine (Bldg 492)--30REOZK

| | g/kw-hr | g/hp-hr |
|----------|---------|----------|
| VOC | 0.11 | 1.451 |
| Nox | 5.58 | 6.921 |
| Nox+NMHC | 0.15 | 1.491 |
| PM | 0.21 | 1.551 |
| CO | 0.8 | 2.1 |
| CO2 | 839 | 840.341 |
| SOx | | 3.08E-06 |

(Assumes 0.0015% sulfur (2.05E-3*S))

Toxic Pollutants

| Source | Make | Model | Heat Input (mmBtu/hr) | lb/hr | | | | |
|----------------------|--------------|---------------------------------|-----------------------|----------|----------|----------|--------------|--|
| | | | | Benzene | Toluene | Xylenes | Formaldehyde | |
| Building 372 | Onan | DGEA-4493456 (Portable Unit) | #REF! | #REF! | #REF! | #REF! | #REF! | |
| Building 344 | Cummins Onan | 400DFEB | #REF! | #REF! | #REF! | #REF! | #REF! | |
| Building 415 | Kohler | 180ROZT | 1.94 | 1.81E-03 | 7.95E-04 | 5.54E-04 | 2.20E-03 | |
| Building 440 | Kohler | 300ROEZD71 | 3.17 | 2.96E-03 | 1.30E-03 | 9.04E-04 | 3.58E-03 | |
| Building 440 | Kohler | 300ROEZD72 | 3.17 | 2.96E-03 | 1.30E-03 | 9.04E-04 | 3.58E-03 | |
| Building 449 | Kohler | 800REOZM | 8.40 | 6.52E-03 | 2.36E-03 | 1.62E-03 | 6.63E-04 | |
| Building 494 | Kohler | 500REOZVB-I2C2 (Tier 2) | 4.97 | 3.86E-03 | 1.40E-03 | 9.59E-04 | 3.92E-04 | |
| Building 8501 | Stamford | D5847/1 | #REF! | #REF! | #REF! | #REF! | #REF! | |
| Building 449 | MTU | 1250RXC6DT2 (Tier 2) | 13.50 | 1.05E-02 | 3.79E-03 | 2.61E-03 | 1.07E-03 | |
| Building 385 | Caterpillar | D100-4 (Tier 2 rated) | 1.08 | 1.01E-03 | 4.42E-04 | 3.08E-04 | 1.22E-03 | |
| Building 2006--EG 11 | Caterpillar | C3456 | 5.40 | 4.19E-03 | 1.52E-03 | 1.04E-03 | 4.26E-04 | |
| Building 600--EG 12 | MTU | 2250-RXC6DT2 (Tier 2 rated) | 24.30 | 1.89E-02 | 6.83E-03 | 4.69E-03 | 1.92E-03 | |
| Building 850--EG 13 | MTU | Engine Model: MTU 12V 2000 | 7.80 | 6.06E-03 | 2.19E-03 | 1.51E-03 | 6.16E-04 | |
| Building 3030--EG14 | Kohler | Model: John Deere 6135HGG755 | 7.65 | 5.94E-03 | 2.15E-03 | 1.48E-03 | 6.04E-04 | |
| Building 362--EG15 | Kohler | Model: Kohler Diesel KDI 3404TM | 0.50 | 4.66E-04 | 2.04E-04 | 1.42E-04 | 5.64E-04 | |
| Building 372--EG16 | Kohler | Model: John Deere 6068HF285 | 1.58 | 1.47E-03 | 6.46E-04 | 4.50E-04 | 1.78E-03 | |
| Building 8501--EG17 | Kohler | Model: John Deere 6135HFG75 | 6.44 | 6.01E-03 | 2.63E-03 | 1.84E-03 | 7.28E-03 | |
| Building 2007--EG18 | Kohler | Model: John Deere 6090HFG86A | 8.56 | 7.99E-03 | 3.50E-03 | 2.44E-03 | 9.67E-03 | |

Tier 3 Emission Rate for 563 kW 755 hp Engine (Bldg 3030 & 8501)--500REOZJB

| | g/kw-hr | g/hp-hr |
|----------|---------|-----------|
| VOC | 0.12 | 0.0894855 |
| Nox | 5.6 | 4.1759881 |
| Nox+NMHC | | 0 |
| PM | 0.04 | 0.0298285 |
| CO | 0.6 | 0.4474273 |
| CO2 | 687.19 | 512.44594 |
| SOx | | 1.21E-05 |

(Assumes 0.0015% sulfur (8.09E-3*S))

Tier 3 Emission Rate for 177 kW 237 hp Engine (Bldg 372)--150REOZJF

| | g/kw-hr | g/hp-hr |
|----------|---------|-----------|
| VOC | 0.12 | 0.0894855 |
| Nox | 5.59 | 4.1685309 |
| Nox+NMHC | 5.7 | 4.2505593 |
| PM | 0.07 | 0.0521999 |
| CO | 0.5 | 0.3728561 |
| CO2 | 687.19 | 512.98285 |
| SOx | | 3.08E-06 |

(Assumes 0.0015% sulfur (2.05E-3*S))

Tier 3 Emission Rate for 50 kW 67 hp Engine (Bldg 362)--40REOZK,

| | g/kw-hr | g/hp-hr |
|----------|---------|----------|
| VOC | 0.11 | 1.451 |
| Nox | 3.55 | 4.891 |
| Nox+NMHC | 3.7 | 5.041 |
| PM | 0.31 | 1.651 |
| CO | 0.9 | 2.2 |
| CO2 | 881.7 | 883.041 |
| SOx | | 3.08E-06 |

(Assumes 0.0015% sulfur (2.05E-3*S))

Tier 3 Emission Rate for 300 kW 463 hp Engine (Bldg 2007)--300REOZJ

| | g/kw-hr | g/hp-hr |
|----------|---------|----------|
| VOC | 0.12 | 1.461 |
| Nox | 3.8 | 5.141 |
| Nox+NMHC | 3.85 | 5.191 |
| PM | 0.11 | 1.451 |
| CO | 0.9 | 2.2 |
| CO2 | 687.19 | 688.531 |
| SOx | | 3.08E-06 |

(Assumes 0.0015% sulfur (2.05E-3*S))

| Source: EPA AP-42, Fifth Edition, October, 1996 | > 600 hp | < 600 hp |
|---|----------|----------|
| lb/mmBtu | | |
| Benzene | 7.76E-04 | 9.33E-04 |
| Toluene | 2.81E-04 | 4.09E-04 |
| Xylenes | 1.93E-04 | 2.85E-04 |
| Formaldehyde | 7.89E-05 | 1.13E-03 |



TECHNICAL SUBMITTAL

Job Name: ATK (ABL)
Keyser, WV 26726

Equipment: Cleaver-Brooks Firetube Boiler
(2) Model: CBLE-4D-700-250-125HW

Submitted By: Tom Spowart
Delval Equipment Corporation
West Norriton, PA

Purchased By: John Yoder
Walter N. Yoder & Sons
16200 McMullen Hwy. SW
Cumberland, MD 21502

Date Submitted: May 16, 2023



ELECTRICAL NOMENCLATURE

| MNEMONIC | DESCRIPTION |
|----------|--|
| A | |
| A | Amber (Color Of Pilot Light) |
| AAFL | Atomizing Air Failure Light |
| AAFR | Atomizing Air Failure Relay |
| AAPL | Atomizing Air Proven Light |
| AAPS | Atomizing Air Proving Switch |
| AAPS-B | Atomizing Air Proving Switch- Burner |
| AAPS-C | Atomizing Air Proving Switch- Compressor |
| AASS | Atomizing Air Selector Switch |
| AB | Alarm Bell |
| ACCR | Air Compressor Control Relay |
| ACM | Air Compressor Motor |
| ACMCB | Air Compressor Motor Circuit Breaker |
| ACMF | Air Compressor Motor Fuses |
| ACMRR | Air Compressor Motor Relay Reset |
| ACMS | Air Compressor Motor Starter |
| ACMSI | Air Compressor Motor Starter Interlock |
| AH | Alarm Horn |
| AI | Analog Input |
| ALFCO | Assured Low Fire Cutoff |
| ALFR | Assured Low Fire Relay |
| AUWCO | Auxiliary Low Water Cutoff |
| AM | Ammeter |
| AMS | Atomizing Media Switch |
| ANLG COM | Analog Common |
| AO | Analog Output |
| AOV | Auxiliary Oil Valve |
| APR | Air Purge Relay |
| APV | Air Purge Valve |
| AR | Alarm Relay |
| AS | Auxiliary Switch (Suffix) |
| ASR | Alarm Silencing Relay |
| ASS | Alarm Silencing Switch |
| ASV | Atomizing Steam Valve |
| AT | Annunciator Transformer |
| AWCBDS | Auxiliary Water Column Blowdown Switch |
| B | |
| B | Blue (Color of Pilot Light) |
| BC | Bias Control |
| BDCS | Breeching Damper Closed Switch |
| BDOS | Breeching Damper Open Switch |
| BDRS | Blowdown/Reset Switch |
| BFPL | Boiler Feed Pump Light |
| BFPM | Boiler Feed Pump Motor |
| BFPMCB | Boiler Feed Pump Motor Circuit Breaker |
| BFPMF | Boiler Feed Pump Motor Fuses |
| BFPMS | Boiler Feed Pump Motor Starter |
| BFPS | Boiler Feed Pump Switch |
| BFTS | Back Flow Temperature Switch |
| BHS | Boiler - Header Switch |
| BIOL | Boiler in Operation Light |
| BIOR | Boiler In Operation Relay |
| BM | Blower Motor |
| BMCB | Blower Motor Circuit Breaker |
| BMCR | Blower Motor Control Relay |
| BMF | Blower Motor Fuses |
| BMPR | Blower Motor Power Relay |
| BMPS | Blower Motor Purge Switch |

| MNEMONIC | DESCRIPTION |
|----------|--|
| BMR | Blower Motor Relay |
| BMRR | Blower Motor Relay Reset |
| BMS | Blower Motor Starter |
| BMSI | Blower Motor Starter Interlock |
| BMSS | Boiler Master Selector Switch |
| BMTB | Blower Motor Terminal Block |
| BR | BY-Pass Relay |
| BS | Burner Switch |
| BSR | Burner Start Switch |
| BSS | Boiler Selector Switch |
| BWPM | Booster Water Pump Motor |
| BWT | Booster Water Thermostat |
| C | |
| CAFL | Combustion Air Failure Light |
| CAFR | Combustion Air Failure Relay |
| CAP | Capacitor |
| CAPS | Combustion Air Proving Switch |
| CBPT | Cleaver Brooks Protocol Translator |
| CB-WS | Cleaver Brooks Webserver |
| CCCB | Control Circuit - Circuit Breaker |
| CCF | Control Circuit Fuse |
| CCRS | Control Circuit Reset Switch |
| CCT | Control Circuit Transformer |
| CFR | Chemical Feed Relay |
| CIPL | Changeover In Progress Light |
| CL | Canopy Light |
| CLS | Canopy Light Switch |
| COPS | Changeover Pressure Switch |
| COR | Changeover Relay |
| COTD | Changeover Time Delay |
| CPDS | Control Panel Door Switch |
| CPOL | Control Power on Light |
| CR | Control Relay |
| CRV | Condensate Routing Valve |
| CS | Current Switch |
| CSR | Current Switch Relay |
| CSSS | Control System Selector Switch |
| CWPM | Circulating Water Pump Motor |
| CWPMCB | Circulating Water Pump Motor Circuit Breaker |
| CWPMF | Circulating Water Pump Motor Fuses |
| CWPMS | Circulating Water Pump Motor Starter |
| CWPMSI | Circulating Water Pump Motor Starter Interlock |
| CWPR | Circulating Water Pump Relay |
| CWPS | Circulating Water Pump Switch |
| CWSV | Cooling Water Solenoid Valve |
| D | |
| D | Denotes Digester Gas Equipment (Prefix) |
| DARR | Deaerator Automatic Recirc Relay |
| DCVM | Direct Current Voltmeter |
| DER | Drive Energized Relay |
| DG | Draft Gauge |
| DGHPV | Digester Gas Housing Purge Valve |
| DGR | Digester Gas Relay |
| DHWC | Deaerator High Water Control |
| DHWL | Deaerator High Water Light |
| DHWR | Deaerator High Water Relay |
| DI | Digital Input |

| MNEMONIC | DESCRIPTION |
|----------|--|
| DISC | Disconnect (Entrance Switch) |
| DMT | Damper Motor Transformer |
| DNS | Day-Night Switch |
| DO | Digital Output |
| DODE | Delay on Deenergization (Timer) |
| DOE | Delay on Energization (Timer) |
| DSR | Drive status Relay |
| DPS | Damper Positioning Switch |
| DS | Door Switch |
| E | |
| EDS | Emergency Door Switch |
| EPSS | Emergency Power Shutdown |
| ESB | Emergency Stop Button |
| ESS | Emergency Stop Switch |
| ETM | Elapsed Time Meter |
| F | |
| FADM | Fresh Air Damper Motor |
| FARC | Fuel Air Ratio Controller |
| FADR | Fresh Air Damper Relay |
| FD | Flame Detector |
| FDJB | Flame Detector Junction Box |
| FDPS | Flow Differential Pressure Switch |
| FFA | Flame Failure Alarm |
| FFL | Flame Failure Light |
| FFR | Flame Failure Relay |
| FGR | Flue Gas Recirculation |
| FGRCDTD | Flue Gas Recirculation Cool Down Time Delay |
| FGRCPSS | Flue Gas Recirculation Cam Position Switch |
| FGRFM | Flue Gas Recirculation Fan Motor |
| FGRFMS | Flue Gas Recirculation Fan Motor Starter |
| FGRFMSI | Flue Gas Recirculation Manual Valve Limit Switch |
| FGRTD | Flue Gas Recirculation Time Delay |
| FORS | First Out Reset Switch |
| FPM | Feed Pump Motor |
| FPMS | Feed Pump Motor Starter |
| FPR | Feed Pump Relay |
| FPS | Feed Pump Switch |
| FRI | Firing Rate Interface |
| FRP | Firing Rate Potentiometer (O2 Trim) |
| FS | Flow Switch |
| FSG | Flame Safeguard |
| FSS | Fuel Selector Switch |
| FSSM | Flame Signal Strength Meter |
| FVEL | Fuel Valve Energized Light |
| FVL | Fuel Valve Light |
| FVR | Fuel Valve Relay |
| VWC | Feed Water Control |
| FWVT | Feed Water Valve Transformer |
| G | |
| G | Green (Color Of Pilot Light) |
| GBR | Gas Booster Relay |
| GGL | Gauge Glass Light |
| GLFS | Gas Low Fire Switch |
| GOL | Gas Operation Light |
| GOR | Gas-Oil Relay |
| GOS | Gas-Oil Switch |
| GPS | Gas Pressure Sensor |
| GPV | Gas Pilot Valve |
| GPVV | Gas Pilot Vent Valve |
| GR | Gas Relay |
| GSL | Green Gas Light |
| GSSV | Gas Sensor Solenoid Valve |
| GVEL | Gas Valve Energized Light |
| GVTS | Gas Valve Test Light |

| MNEMONIC | DESCRIPTION |
|----------|---------------------------------------|
| H | |
| HAPS | High Ambient Air Proving Switch |
| HATS | High Ambient Temperature Switch |
| HATC | High Ambient Temperature Control |
| HBWTC | High Boiler Water Temperature Control |
| HBWTL | High Boiler Water Temperature Light |
| HFAV | High Fire Air Valve |
| HFGV | High Fire Gas Valve |
| HFL | High Fire Light |
| HFOV | High Fire Oil Valve |
| HFPS | High Furnace Pressure Switch |
| HFS | High Fire Switch |
| HFS-A | High Fire Switch - Air |
| HGPL | High Gas Pressure Light |
| HGPR | High Gas Pressure Relay |
| HGPS | High Gas Pressure Switch |
| HHFL | Header High Fire Light |
| H/LWA | High Low Water Alarm |
| HLC | High Limit Control |
| HLFC | High-Low Fire Control |
| HLPC | High Limit Pressure Control |
| HLTC | High Limit Temperature Control |
| HMC | Header Modulating Control |
| HOI | Heavy Oil Isolation |
| HOPL | High Oil Pressure Light |
| HOPR | High Oil Pressure Relay |
| HOPS | High Oil Pressure Switch |
| HOLC | Header Operating Limit Control |
| HOTL | High Oil Temperature Light |
| HOTR | High Oil Temperature Relay |
| HOTS | High Oil Temperature Switch |
| HPCO | High Pressure Cutoff |
| HPV | Head Purge Valve |
| HSPC | High Steam Pressure Control |
| HSPL | High Steam Pressure Light |
| HSPR | High Steam Pressure Relay |
| HSTC | High Stack Temperature Control |
| HSTL | High Stack Temperature Light |
| HSTS | High Stack Temperature Switch |
| HWA | High Water Alarm |
| HWAR | High Water Alarm Relay |
| HWC | High Water Control |
| HWCO | High Water Cutoff |
| HWL | High Water Light |
| HWR | High Water Relay |
| I | |
| (I.C.) | Instantaneously Closed |
| (I.O.) | Instantaneously Open |
| ICF | Internal Cooling Fan |
| IL | Ignition Light |
| INT | Interval (Timer) |
| I-P | Current to Pressure Positioner |
| IR | Ignition Relay |
| IT | Ignition Transformer |
| IVPR | Isolation Valve Proximity Relay |
| IVPS | Isolation Valve Proximity Switch |
| J | |
| JPP | Jackshaft Position Potentiometer |
| K | |
| LAMPS | Low Atomizing Media Pressure Switch |
| LAPR | Low Air Pressure Relay |
| LAPS | Low Air Pressure Switch |
| LASPS | Low Atomizing Steam Pressure Switch |
| LDL | Load Demand Light |
| LDPS | Low Differential Pressure Switch |

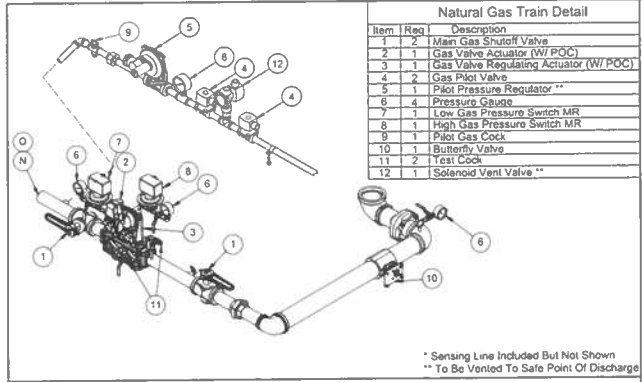
| MNEMONIC | DESCRIPTION |
|----------|---|
| LDS | Low Draft Switch |
| LFAV | Low Fire Air Valve |
| LFGV | Low Fire Gas Valve |
| LFHTD | Low Fire Hold Time Delay |
| LFL | Low Fire Light |
| LFOV | Low Fire Oil Valve |
| LFPS | Low Fire Pressure Switch |
| LFR | Low Fire Relay |
| LFS | Low Fire Switch |
| LFS-A | Low Fire Switch - Air |
| LFS-F | Low Fire Switch -Fuel |
| LFS-G | Low Fire Switch – Gas |
| LFS-O | Low Fire Switch - Oil |
| LFTC | Low Fire Temperature Control |
| LGPL | Low Gas Pressure Light |
| LGPR | Low Gas Pressure Relay |
| LGPS | Low Gas Pressure Switch |
| LIAPS | Low Instrument Air Pressure |
| LLPC | Low Limit Pressure Control |
| LLPR | Low Limit Pressure Relay |
| LLR | Lead Lag Relay |
| LLTC | Low Limit Temperature Control |
| LLTR | Low Limit Temperature Relay |
| LOPL | Low Oil Pressure Light |
| LOPR | Low Oil Pressure Relay |
| LOPS | Low Oil Pressure Switch |
| LOTL | Low Oil Temperature Light |
| LOTR | Low Oil Temperature Relay |
| LOTS | Low Oil Temperature Switch |
| LPAPS | Low Plant Air Pressure Switch |
| LPCO | Low Pressure Cutoff |
| LPS | Low Pressure Switch |
| LPSR | Limit Proximity Switch Relay |
| LSPAR | Low Steam Pressure Alarm Relay |
| LSPC | Low Steam Pressure Control |
| LSPL | Low Steam Pressure Light |
| LSPR | Low Steam Pressure Relay |
| LSPS | Low Steam Pressure Switch |
| LTS | Lamp Test Switch |
| LWA | Low Water Alarm |
| LWAR | Low Water Alarm Relay |
| LWCO | Low Water Alarm Cutoff |
| LWFL | Low Water Flow Light |
| LWL | Low Water Light |
| LWR | Low Water Relay |
| LWRR | Low Water Reset Relay |
| M | |
| MA | Milli-amp |
| MAS | Manual - Automatic Switch |
| MAM | Micrometer |
| MFC | Manual Flame Control(Potentiometer) |
| MFR | Main Fuel Relay |
| MFGRTS | Minimum Flue Gas Recirculation Temperature Switch |
| MFVL | Main Fuel Valve Light |
| MFVV | Motorized Feed Water Valve |
| MGV | Main Gas Valve |
| MGVAS | Main Gas Valve Auxiliary Switch |
| MGVEL | Main Gas Valve Energized Light |
| MGVV | Main Gas Vent Valve |
| MLC | Modulation Level Control |
| (MOM) | Momentary |
| MOP | Main Oil Pump |
| MOPS | Main Oil Pump Starter |
| MOV | Main Oil Valve |

| MNEMONIC | DESCRIPTION |
|----------|--|
| MOVAS | Main Oil Valve Auxiliary Switch |
| MOVEL | Main Oil Valve Energized Light |
| MPC | Modulating Pressure Control |
| MPCB | Main Power Circuit Breaker |
| MPP | Manual Positioning Potentiometer |
| (MR) | Manual Reset |
| MTC | Modulating Temperature Control |
| MUV | Make-Up Water Valve |
| MV | Motorized Valve |
| MVA | Make-Up Valve Actuator |
| N | |
| N | Denotes Natural Gas Equipment(Prefix) |
| NAT | Network address Translator |
| (N.C.) | Normally Closed |
| (N.O.) | Normally Open |
| NFL | No Flow Light |
| NFR | No Flow Relay |
| NGHPV | Natural Gas Housing Purge Valve |
| NGR | Natural Gas Relay |
| NRLR | Non-recycle Limit Relay |
| O | |
| ODA | Outlet Damper Actuator |
| ODAS | Outlet Damper Auxiliary Switch |
| ODM | Outlet Damper Motor |
| ODMAS | Outlet Damper Motor Auxiliary Switch |
| ODMT | Outlet Damper Motor Transformer |
| ODS | Oil Drawer Switch |
| OH | Oil Heater |
| OHCB | Oil Heater Circuit Breaker |
| OHF | Oil Heater Fuses |
| OHR | Oil Heater Relay |
| OHS | Oil Heater Switch |
| OHT | Oil Heater Thermostat |
| OLC | Operating Limit Control |
| OLFS | Oil Low Fire Switch |
| OLPC | Operating Limit Pressure Control |
| OL'S | Thermal Overloads |
| OLRS | Overload Reset |
| OLTC | Operating Limit Temperature Control |
| OMPM | Oil Metering Pump Motor |
| OMPMF | Oil Metering Pump Motor Fuse |
| OOL | Oil Operation Light |
| OPM | Oil Pump Motor |
| OPMCB | Oil Pump Motor Circuit Breaker |
| OPMF | Oil Pump Motor Fuse |
| OPMRR | Oil Pump Motor Relay Reset |
| OPMS | Oil Pump Motor Starter |
| OPPM | Oil Purge Pump Motor |
| OPV | Oil Purge Valve |
| OR | Oil Relay |
| ORV | Oil Return Valve |
| OSOV | Oil Shutoff Valve |
| OSPS | O2 Set Point Switch |
| OSS | Oil Selector Switch |
| OT | Outdoor Thermostat |
| OTPR | Oil Transfer Pump Relay |
| OTS | Oil Temperature Sensor |
| OV | Oil Valve |
| OVAS | Oil Valve Auxiliary switch |
| OVEL | Oil Valve Energized Light |
| P | |
| P | Denotes Propane Gas Equipment (prefix) |
| PAASV | Plant Air Atomizing Solenoid Valve |
| PAFS | Purge Air Flow Switch |
| PAPS | Purge Air Proving Switch |

| MNEMONIC | DESCRIPTION |
|----------|--|
| PC | Pump Control |
| PCL | Purge Complete Light |
| PCR | Pump Control Relay |
| PFCC | Power Factor Correction Capacitor |
| PFFL | Pilot Flame Failure Light |
| PFFR | Pilot Flame Failure Relay |
| PFPS | Positive Furnace Pressure Switch |
| PGHPV | Propane Gas Housing Purge Valve |
| PHGPS | Pilot High Gas Pressure Switch |
| PIPL | Purge In Progress Light |
| PIS | Pilot Ignition Switch |
| PLC | Programmable Logic Controller |
| PLGPS | Pilot Low Gas Pressure Switch |
| POL | Power On Light |
| POV | Pilot Oil Valve |
| PPL | Pre-Purging Light |
| PPR | Post Purge Relay |
| PPTD | Post Purge Time Delay |
| PR | Program Relay |
| PRL | Purge Ready Light |
| PRPTD | Pre-Purge Time Delay |
| PS | Power Supply |
| PSF | Power Supply Fuse |
| PSS | Pump Selector Switch |
| PSV | Purge Solenoid Valve |
| PT | Purge Timer |
| PTS | Pump Transfer Switch |
| PUCR | Purge Complete Relay |
| PUR | Purge Relay |
| PV | Panelview |
| R | |
| R | Red(Color of Pilot Light) |
| RAR | Remote Alarm Relay |
| RATD | Remote Alarm Time Delay |
| RBSR | Remote Boiler Start Relay |
| REMFS | Remote Emergency Master Fuel Shutdown |
| RES | Resistor |
| RLR | Recycle Limit Relay |
| RML | Run Mode Light |
| RMR | Release to Modulate Relay |
| RS | Range Switch |
| RSL | Red Stack Light |
| RSR | Remote Start Relay |
| RTD | Resistance Temperature Detector |
| S | |
| SBFPL | Stand By Feed Pump Light |
| SBFPM | Stand By Feed Pump Motor |
| SBFPMCB | Stand By Feed Pump Motor Circuit Breaker |
| SBFPMF | Stand By Feed Pump Motor Fuses |
| SBFPMS | Stand by Feed Pump Motor Starter |
| SBOV | Surface Blow-off Valve |
| SBPS | Soot Blower Pressure Switch |
| SBS | Surface Blow-down System |
| SBR | Soot Blower Relay |
| SC | Scanner |
| SCADA | Scalable Control & Data Supply |
| SCCR | Short Circuit Current Rating |
| SCTS | Supervisor Cock-Test Switch |
| SDHPS | Stack Damper High Pressure Switch |
| SDL | Stack Damper Light |
| SDOPS | Stack Damper Open Proving Switch |
| SER | Serial |
| SHT | Steam Heater Thermostat |
| SHV | Steam Heater Valve |

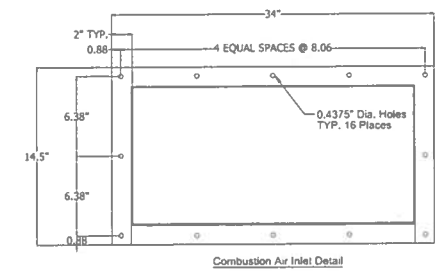
| MNEMONIC | DESCRIPTION |
|----------|--|
| SLCL | Safety Limits Complete Light |
| SPIR | System Pump Interlock Relay |
| SPS | Steam Pressure Sensor |
| SS | Selector Switch |
| SSC | Sequencing Step Controller |
| SSL | Safety Shutdown Light |
| SSOV | Safety Shut-Off Valve |
| SSR | Solid State Relay |
| SSV | Span Solenoid Relay |
| STHWC | Surge Tank High Water Control |
| STHWL | Surge Tank High Water Light |
| STHWR | Surge Tank High Water Relay |
| STLWC | Surge Tank Low Water Control |
| STLWL | Surge Tank Low Water Light |
| STLWR | Surge Tank Low Water Relay |
| STPDPS | Surge Tank Pump Differential Pressure Switch |
| T | |
| (T.C.) | Timed Closed |
| (T.O.) | Timed Open |
| TB | Terminal Block |
| T/C | Thermocouple |
| TC | Time Clock |
| TCR | Time Clock Relay |
| TD | Time Delay |
| TDAS | Time Delay Auxiliary Switch |
| TFWR | Transistorized Feedwater Relay |
| TI | Thermocouple Input |
| TPCR | Transfer Pump Control Relay |
| TPL | Transfer Pump Light |
| TPM | Transfer Pump Motor |
| TPMCB | Transfer Pump Motor Circuit Breaker |
| TPMF | Transfer Pump Motor Fuses |
| TPMS | Transfer Pump Motor Starter |
| TPS | Transfer Pump Switch |
| TRX | Transformer |
| U | |
| UPS | Uninterruptable Power Supply |
| UVFD | Ultra-Violet Flame Detector |
| V | |
| V | Voltmeter |
| VDR | Voltage Differential Relay |
| VFD | Variable Frequency Drive |
| VPS | Valve Proving Switch |
| VSR | Variable Speed Drive Relay |
| VSD | Variable Speed Drive |
| W | |
| W | White (Color of Pilot Light) |
| WC | Water Column |
| WCBDS | Water Column Blow Down Switch |
| WF | Water Feeder |
| WFNL | Water Flow Normal Light |
| WLC | Water Level Control |
| WO | Denotes Waste Oil Equipment (Prefix) |
| WTS | Water Temperature Sensor |
| W | White (Color of Pilot Light) |
| WC | Water Column |
| WCBDS | Water Column Blow Down Switch |
| WF | Water Feeder |
| WFNL | Water Flow Normal Light |
| WLC | Water Level Control |
| WO | Denotes Waste Oil Equipment (Prefix) |
| WTS | Water Temperature Sensor |
| X | |
| XFMR | Transformer |
| XTMR | Transmitter |
| Y | |
| YSL | Yellow Stack Light |
| Y | Yellow (Color of Pilot Light) |

7 | 6 | 5 | 4 | 3 | 2 | 1



| Item | Req | Description |
|------|-----|--|
| 1 | 2 | Main Gas Shutoff Valve |
| 2 | 1 | Gas Valve Actuator (W/ POC) |
| 3 | 1 | Gas Valve Regulating Actuator (W/ POC) |
| 4 | 2 | Gas Pilot Valve |
| 5 | 1 | Pilot Pressure Regulator ** |
| 6 | 4 | Pressure Gauge |
| 7 | 1 | Low Gas Pressure Switch MR |
| 8 | 1 | High Gas Pressure Switch MR |
| 9 | 1 | Pilot Gas Cock |
| 10 | 1 | Butterfly Valve |
| 11 | 2 | Test Cock |
| 12 | 1 | Solenoid Vent Valve ** |

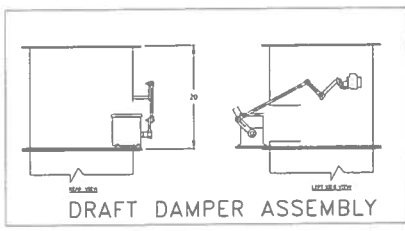
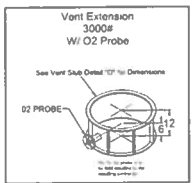
* Sensing Line Included But Not Shown
 ** To Be Vented To Safe Point Of Discharge



Combustion Air Inlet Detail

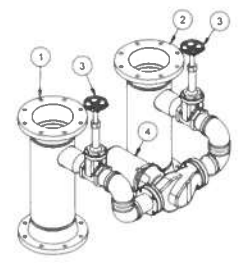
Ship Loose
 These Items Are Shipped Loose For Installation By Others

- Safety Valve - (1) Set At 125#
- Vent Extension - 3000# W/ Connection for Yokogawa O2 Probe
- Yokogawa O2 Probe
- Platform & Ladder Assembly
- Stack Thermometer - 5" Dial
- Two Position Motorized Damper - 20" Dia.
- RC Panel
- Gas Pressure Monitor Set Regulator (2) - Sensus 121-8 2.0 NPT
- Header Temperature Transmitter
- Hot Water Return Temperature Transmitter
- Blend Pump
- Combustion Air Preheater 25kW



DRAFT DAMPER ASSEMBLY

| Item | Req | Description |
|------|-----|----------------|
| 1 | 1 | Return Fitting |
| 2 | 1 | Outlet Fitting |
| 3 | 2 | Gate Valve |
| 4 | 1 | Blend Pump |



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ATK KEYSER, WV
 T9692
 DIMENSIONAL DIAGRAM
 SHT 02 OF 02

| | | |
|--|--|---|
| CleaverBrooks N.Y.S. 04/19/23 DEM V-6043 P-1 | | CBL-4D 700 250 125HW 460 3 60 3" PHO/GAP |
| T9692-1-1 D | | DRWG. NO. T9692-1-1DD 00 |

| MAJOR COMPONENTS | | |
|------------------|---|---|
| 1 | Control Panel | 21 N/A |
| 2 | Entrance Panel | 22 Handholes (6) 3.25" x 4.5" |
| 3 | Blower Motor - 10 HP | 23 Front Sight Port |
| 4 | N/A | 24 Rear Sight Port |
| 5 | Combustion Safeguard Control - CB-780E | 25 Burner |
| 6 | Flame Scanner - Infrared | 26 Alarm - Electric Sounder W/ Silencing Function |
| 7 | Temperature Control - Operating Limit | 27 N/A |
| 8 | Temperature Control - High Limit (Manual Reset) | 28 Main Power Disconnect - Mounted Fused |
| 9 | Temperature Transmitter | 29 Combustion Air Temperature Transmitter |
| 10 | Main Low Water Column - McDonnell Miller 150_MR | 30 Front Head Junction Box |
| 11 | Auxiliary Low Water Cutoff - McDonnell Miller 93_MR | 31 Drain Valve |
| 12 | Pressure Gauge | 32 N/A |
| 13 | Water Thermometer | 33 N/A |
| 14 | Stack Temperature Transmitter | 34 N/A |
| 15 | Safety Valve (1) Set At 125# (Shipped Loose) | 35 Air Vent Valve |
| 16 | Gas Train | 36 N/A |
| 17 | N/A | 37 N/A |
| 18 | N/A | 38 N/A |
| 19 | Manway 12" x 16" | 39 Blend Pump (Shipped Loose) |
| 20 | Variable Speed Drive | 40 Ladder & Platform Assembly (Shipped Loose) |

| SERVICE CONNECTIONS | |
|---------------------|---|
| A | Electric - Main Power Supply - 460 / 3 / 60 |
| B | N/A |
| C | Exhaust Vent Pipe - 20" OD |
| D | Vent Flange (See Detail) |
| E | Water Outlet - 8" 150# R.F. Flange |
| F | Water Return - 8" 150# R.F. Flange |
| G | Air Vent - 1.5 NPT |
| H | N/A |
| I | Drain (Front & Rear) - 2.0 NPT |
| J | Water Column Blowdown - 0.75 NPT |
| K | N/A |
| L | N/A |
| M | N/A |
| N | Main Gas - 2.0 NPT |
| O | Min.-Max. Inlet Gas Pressure is 1.6-3.7 PSI @ Altitude Approx. Regulator Setpoint 22" W.C. Maximum Gas Flowrate - 10,206 SCFH |
| P | N/A |
| Q | N/A |
| R | N/A |
| S | Safety Valve - (1) Kunkle 537G 1.5 x 2.0 FPT (Outlet) |
| T | N/A |

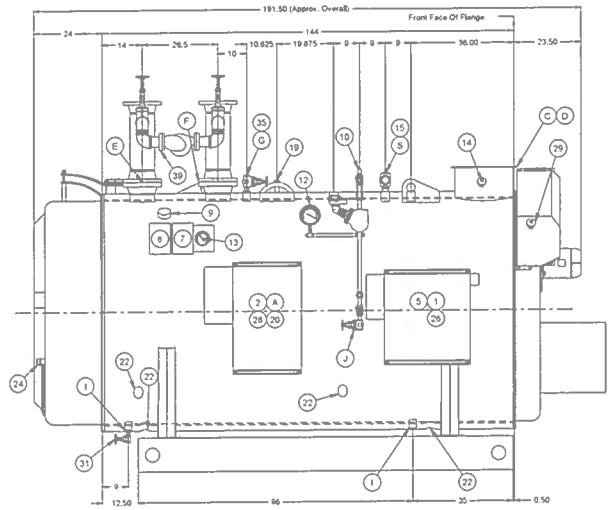
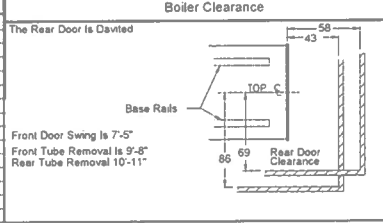
Notes

- Boiler is Designed and Constructed in Accordance with the ASME Boiler and Pressure Vessel Code - Section IV Heating Boiler
- This Unit Complies with Insurance Underwriters Requirement for Factory Mutual & GE Global Asset Protection
- The Boiler Package is painted with High Temperature Light Blue Enamel
- The Burner Operation is Full Modulating

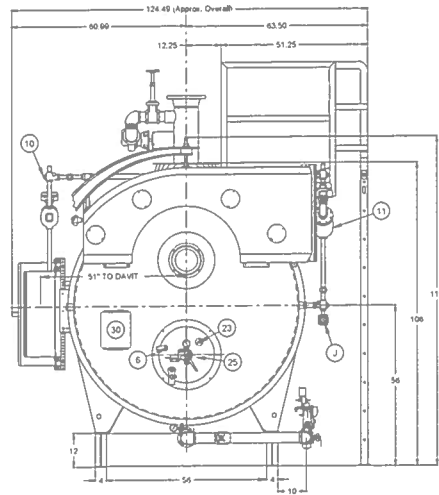
This Boiler is Provided with:

- Control Circuit Transformer
- Welded End Caps on Basecasts
- All Panels Included Contain U.L. Label
- Altitude Correction @ 807'
- Jacketing - Insulation & Lagging Underside of Boiler
- Test & Check Valves on All Float Type External Water Columns
- Hawk 4000 Package
- TEFC Rated Blower Motor
- Left Hand Front Door Arrangement - Swing and Trm
- Right Hand Rear Door Swing

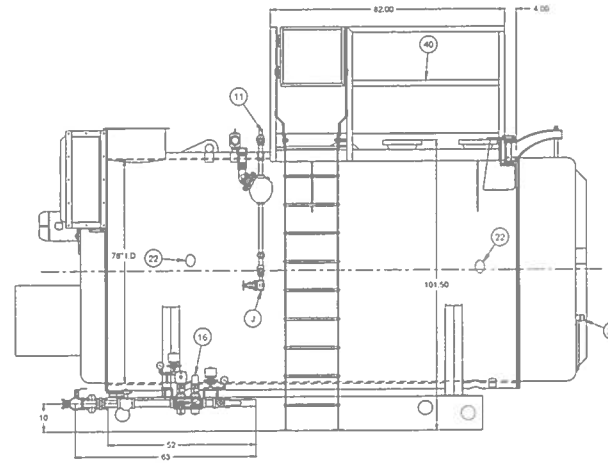
| BOILER SPECIFICATIONS | |
|---|--|
| Boiler Designation - CBLE-4D 700 250 | |
| Design Pressure - 125 HW | |
| Design Rating - 250 HP | |
| Emissions - 30 ppm | |
| Fuel(s) - Natural Gas | |
| BTU Output - 8,369 (1,000 Btu/Hr) | |
| Fire-side Heating Surface - 1,250 Sq. Ft. | |
| Dry Weight - 22,200 LB | |
| Water Weight - 13,880 LB | |
| Gallons (Operating) - 1,664 | |
| Code Compliance - FM, GE-GAP, (CSD-1) | |



Left Hand View



Front View



Right Hand View

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| | | | | |
|-----------|----|---|---|---|
| REVISIONS | 00 | 1 | 1 | 1 |
|-----------|----|---|---|---|

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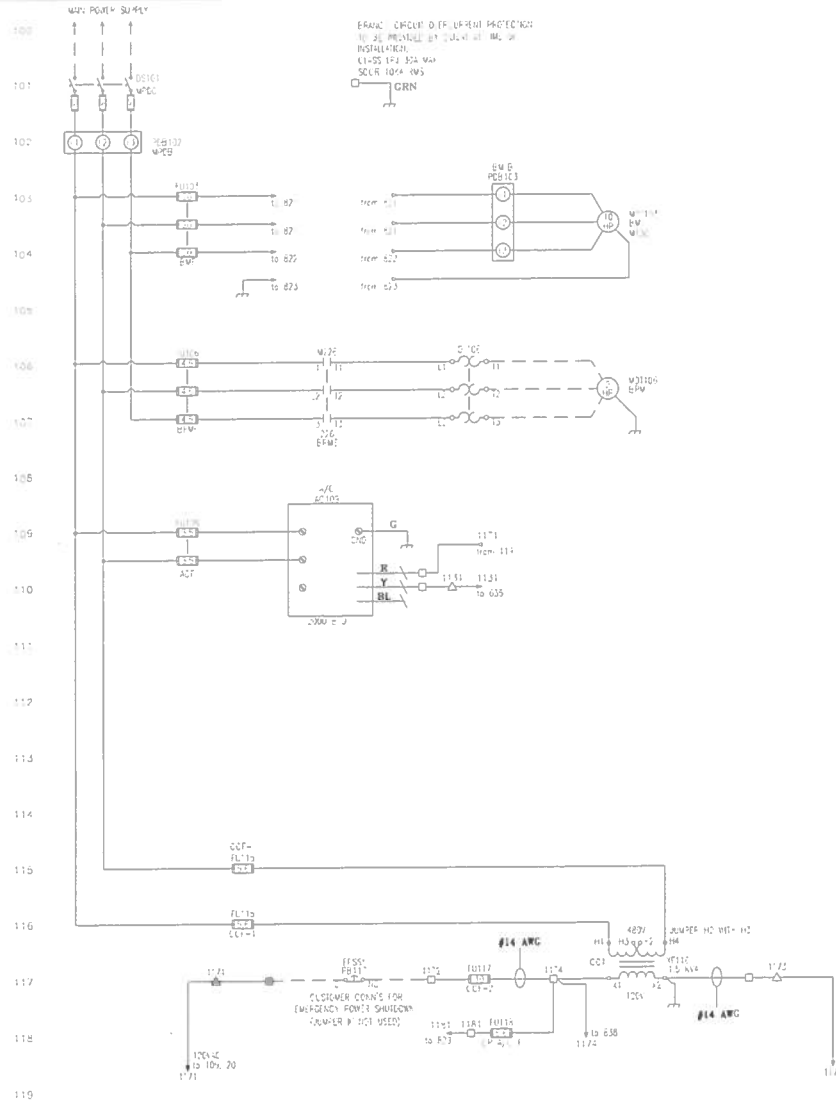
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ATK
KEYSER WW
T9692
DIMENSIONAL DIAGRAM

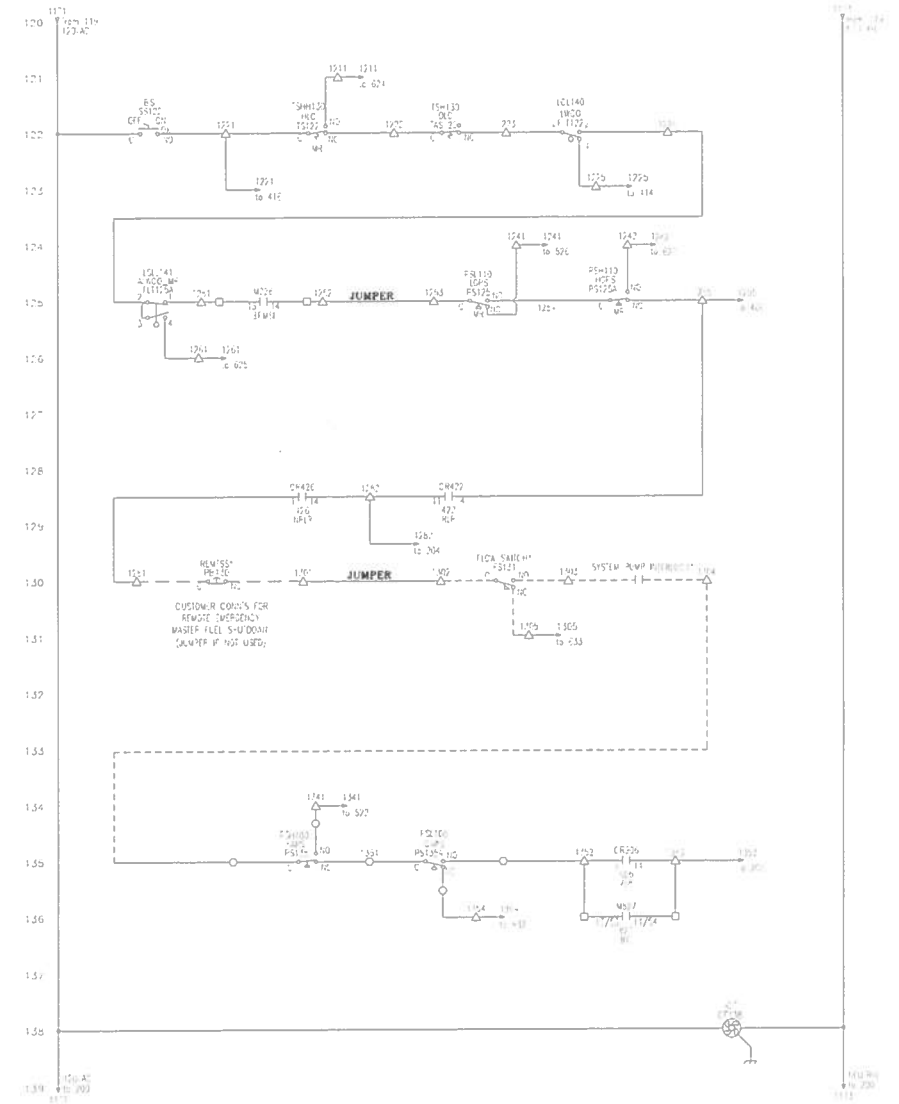
SHT 01 OF 02

| | |
|--------------------------------------|--|
| | |
| N.T.S. 04/19/23 DEM 18M0004 | CBLE-4D 700 250 125HW 460 3 60 3 FM&GAP |
| T9692-1-1 GAL D | DRWG NO. T9692-1-1DD 00 |

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ERRATA: CIRCUIT DIFFERENTIAL PROTECTION TO BE PROVIDED AT INSTALLATION (L-55 1P3 32A W/ SOLAR 10A RMS)



REVISED
FINAL PAGE

| | | | | | | | | |
|--------------|-----------------|--------------|---------|------------|----------|----------------------|---------------|-----------|
| HAWK 4000 V2 | | WIRE COLOR | SYMBOL | ATK | SCALE | CleaverBrooks | | |
| HMI | 98500671_005_12 | YELLOW | OMN | KEYSER, WW | N.T.S. | MODEL | FUEL | FM&GAP |
| PLC: | 98500553_000_13 | GREEN | R | T9692 | DATE | CBLE-4D | 700 250 125HW | INSURANCE |
| CHECKED BY: | JMP | RED | R | | 04/11/23 | SIZE | 3 60 3 | |
| | | BLUE | BL | | | PRESSURE | 26.5 | |
| | | WHITE | W | | | DRAGN | BDC | |
| | | BLACK | B | | | VOLTS | 480 | |
| | | BROWN | BR | | | PHASE | 3 | |
| | | YELLOW/GREEN | BLUWHIT | | | HERTZ | 60 | |
| | | GREEN/YELLOW | WHYEL | | | WIRE | 3 | |
| | | | | | | SIZE | 26.5 | |
| | | | | | | DRWG NO | T9692-1-1WD | 00 |



30REOZK
60 HZ. DIESEL INDUSTRIAL GENERATOR SET
EMISSION DATA SHEET

ENGINE INFORMATION

| | | | |
|---------------------------|-------------------------|---------------------------|------------------|
| Model: | KDI2504TM/G18 | Bore, mm (in.) | 88 (3.46) |
| Nameplate BHP @ 1800 RPM: | 48.8 | Stroke, mm (in.) | 102 (4.02) |
| Type: | 4-Cycle, 4 Cyl., Inline | Displacement, L (cu. In.) | 2.5 (158) |
| Aspiration: | Turbocharged | EPA Family: | PKHXL02.5EST |
| Compression Ratio: | 18:1 | EPA Certificate: | PKHXL02.5EST-010 |

PERFORMANCE DATA:

| | |
|--|------|
| Engine bkW @ 1800 RPM | 36.4 |
| Fuel Consumption (Lph) @ 100% Load (Standby) | 9.8 |
| Exhaust Gas Flow (m ³ /min) | 7.8 |
| Exhaust Temperature (°C) | 543 |

EXHAUST EMISSION DATA:

| | EPA D2 Cycle 5-mode Weighted |
|--|------------------------------|
| NMHC | 0.15 |
| CO ₂ | 839 |
| NO _x (Oxides of Nitrogen as NO ₂) | 5.58 |
| CO (Carbon Monoxide) | 0.77 |
| PM (Particulate Matter) | 0.21 |

Values are in g/kWh unless otherwise noted

TEST METHODS AND CONDITIONS

The emission data listed is measured from a laboratory test engine according to the test procedures of 40 CFR 89 or 40 CFR 1039, as applicable. The test engine is intended to represent nominal production hardware, and there is no guarantee that every production engine will have identical test results. Emission results may vary due to engine manufacturing tolerances, engine operating conditions, fuels used, alternate test methods, or other conditions.

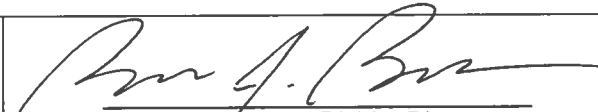


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2023 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Kohler Co.
(U.S. Manufacturer or Importer)
Certificate Number: PKHXL02.5EST-010

Effective Date:
12/06/2022
Expiration Date:
12/31/2023


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
12/06/2022
Revision Date:
N/A

Model Year: 2023
Manufacturer Type: Original Engine Manufacturer
Engine Family: PKHXL02.5EST

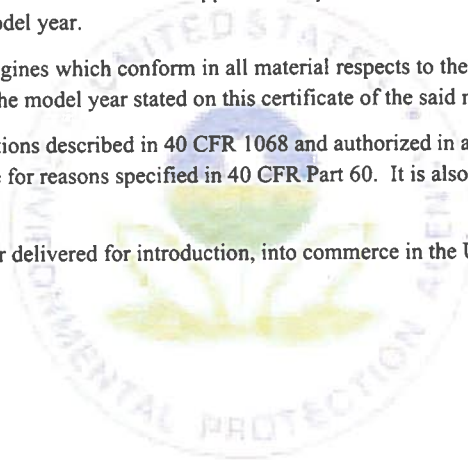
Mobile/Stationary Indicator: Stationary
Emissions Power Category: $19 \leq kW < 37$
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Engine Design Modification

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.



ATTACHMENT O MONITORING, RECORDKEEPING, REPORTING AND TESTING PLAN

Monitoring

Fuel records will be monitored on a monthly basis for process heaters P4-5S and P4-6S [Subpart Dc (Part 60) and Subpart DDDDD (Part 63)]

Recordkeeping

If required, stack testing records shall be maintained.

Tune-up records shall be maintained.

All records shall be maintained for a period of at least 5 years and shall be available upon request.

Reporting

Emissions from process heaters P4-5S and P4-6S shall be reported annually as part of the annual emissions inventory submitted by March 1 of each year per.

Testing

Should the director require it, stack testing will be conducted in accordance with appropriate EPA methods. The process heaters (P4-5S and P4-6S) are each rated 10.2 MMBtu/hr. Since the process heaters (P4-5S and P4-6S) are new natural gas-fired only (subcategory 1) emission units and each have a heat input capacity greater than 10 MMBtu/hr but less than 100 MMBtu/hr, tune-ups will be conducted every year (not to exceed 13 months from the last tuning) as according to Boiler MACT (Subpart DDDDD). Also, no visible emissions are expected from the process heaters due to their size and because they are fueled by natural gas. Under 45CSR§2A-3.1 natural gas boilers are exempt from visible emission testing unless required to do so by the Director.



Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center, WV 26726

February 27, 2024

Notice is given that Alliant Techsystems Operations LLC – ABL Operations (a division of Northrop Grumman) has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Construction Permit to add two (2) natural gas-fired process heaters and one (1) emergency generator to its facility located on 210 State Route, near Keyser in Mineral County, West Virginia. The latitude and longitude coordinates are: 39.561 degrees latitude, -78.833 degrees longitude.

The applicant estimates that the increased potential change to discharge the following Regulated Air Pollutants will be:

Nitrogen Oxides (NO_x) = 4.66 tpy

Carbon Monoxide (CO) = 7.57 tpy

Sulfur Dioxide (SO₂) = 0.05 tpy

Particulate Matter less than 10 microns in diameter (PM₁₀) = 0.72 tpy

Volatile Organic Compounds (VOC) = 1.02 tpy

Carbon Dioxide (CO₂) = 10751.51 tpy

Startup of operation is planned to begin on or about the 1st day of April, 2024. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, West Virginia, 25304, for a period of 30 days calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 27th day of February 2024.

By: Northrop Grumman

Alliant Techsystems Operations LLC – ABL Operations
William J Hixon
Director Manufacturing Operations – ABL Operations
210 State Route 956
Rocket Center, West Virginia 26726-3548



Northrop Grumman Corporation
Defense Systems Group
Alliant Techsystems Operations LLC
ABL Operations
210 State Route 956
Rocket Center, WV 26726

February 27, 2024

Mineral Daily News-Tribune
21 Shamrock Dr.
Keyser, WV 26726

Attn: Legal Ad Department

Please run the enclosed legal notice for 1 day as required by the WV Division of Air Quality and forward a copy of the affidavit of publication to me. If possible, could you please expedite its printing?

Thank you.

Sincerely,

Jill Clayton
Environmental Engineer
Alliant Techsystems Operations LLC
Allegany Ballistics Laboratory

cc: Chris Scanlan

Attachment S

Title V Permit Revision Information

| 1. New Applicable Requirements Summary | |
|---|---|
| Mark all applicable requirements associated with the changes involved with this permit revision: | |
| <input type="checkbox"/> SIP | <input type="checkbox"/> FIP |
| <input checked="" type="checkbox"/> Minor source NSR (45CSR13) | <input type="checkbox"/> PSD (45CSR14) |
| <input checked="" type="checkbox"/> NESHAP (45CSR15) | <input type="checkbox"/> Nonattainment NSR (45CSR19) |
| <input type="checkbox"/> Section 111 NSPS (Subpart(s) _____) | <input type="checkbox"/> Section 112(d) MACT standards (Subpart(s) _____) |
| <input type="checkbox"/> Section 112(g) Case-by-case MACT | <input type="checkbox"/> 112(r) RMP |
| <input type="checkbox"/> Section 112(i) Early reduction of HAP | <input type="checkbox"/> Consumer/commercial prod. reqts., section 183(e) |
| <input type="checkbox"/> Section 129 Standards/Reqts. | <input type="checkbox"/> Stratospheric ozone (Title VI) |
| <input type="checkbox"/> Tank vessel reqt., section 183(f) | <input type="checkbox"/> Emissions cap 45CSR§30-2.6.1 |
| <input type="checkbox"/> NAAQS, increments or visibility (temp. sources) | <input type="checkbox"/> 45CSR27 State enforceable only rule |
| <input type="checkbox"/> 45CSR4 State enforceable only rule | <input type="checkbox"/> Acid Rain (Title IV, 45CSR33) |
| <input type="checkbox"/> Emissions Trading and Banking (45CSR28) | <input type="checkbox"/> Compliance Assurance Monitoring (40CFR64) ⁽¹⁾ |
| <input type="checkbox"/> NO _x Budget Trading Program Non-EGUs (45CSR1) | <input type="checkbox"/> NO _x Budget Trading Program EGUs (45CSR26) |
| <p>⁽¹⁾ If this box is checked, please include Compliance Assurance Monitoring (CAM) Form(s) for each Pollutants Specific Emission Unit (PSEU) (See Attachment H to Title V Application). If this box is not checked, please explain why Compliance Assurance Monitoring is not applicable:</p> <p style="margin-left: 40px;">There are no CAM requirements associated with this process.</p> | |

2. Non Applicability Determinations

List all requirements, which the source has determined not applicable to this permit revision and for which a permit shield is requested. The listing shall also include the rule citation and a rationale for the determination.

45CSR21– Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds. The facility is not located in a county that is currently subject to 45CSR21, and is therefore currently exempt from this regulation.

40CFR63, Subpart GG, Section 63.745 – National Emission Standards for Aerospace Manufacturing Operations. The painting operations at this facility are exempted from Section 63.745 Primer and Topcoat operations because Specialty Coatings (definition per 63.742) are used for all painting operations. Specialty Coating applications are covered by Control Technology Guidelines (CTG) EPA-453/R-97-004 enacted under 45CSR21 for RACT control of VOCs. However, the facility is not located in an area that is subject to 45CSR21, and is therefore, not subject to any CTG guidelines for Specialty Coating application.

40CFR63, Subpart PPP – National Emission Standards for Polyether Polyol Production. The facility manufactures Terathane Polyethylene Glycol Block Copolymer (TPEG), which is a Polyether Polyol. However, the operation is exempted from this MACT because there are no HAPs used or generated during the manufacturing operation.

40CFR63, Subpart GGGGG – National Emission Standards for Site Remediation. The facility currently has one site under remediation for groundwater contamination. This site is a Superfund site and is thus exempt from the MACT requirements. The facility also has a second site, which will begin remediation as part of a RCRA corrective action program within the next year. This second site would also be exempted since it is being conducted under a RCRA corrective action permit. In addition, neither site would generate emissions of more than 1 megagram per year of HAPs.

40CFR63, Subpart PTTTT – National Emission Standards for Hazardous Air Pollutants from Engine Test Sells/Stands (05/27/03)- This rule applies to the X-Range Static Rocket Motor Firing facility (Group 00Q). However, per 40CFR63.9290(b) & (d)(2) it is exempt from the requirements of this Subpart due to facility was existing source on May 14, 2002 (partially modified in summer of 2002, Source Q-3S) and also, it is used exclusively for rocket motors testing.

40CFR63, Subpart WTTTTT – National Emission Standards for Reinforced Plastic Composites Manufacturing. the facility manufactures composite based rocket motor chambers and aircraft components. However, the facility is exempt from this MACT because none of the resin or fiber systems used, contain HAPs.

Permit Shield Requested (*not applicable to Minor Modifications*)

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

3. Suggested Title V Draft Permit Language

Are there any changes involved with this Title V Permit revision outside of the scope of the NSR Permit revision? Yes No If Yes, describe the changes below.

Also, please provide **Suggested Title V Draft Permit language** for the proposed Title V Permit revision (including all applicable requirements associated with the permit revision and any associated monitoring /recordkeeping/ reporting requirements), OR attach a marked up pages of current Title V Permit. Please include appropriate citations (Permit or Consent Order number, condition number and/or rule citation (e.g. 45CSR§7-4.1)) for those requirements being added / revised.

See Attachment L – The language in the Title V is the same as the language in the NSR permit R13-3186E.

4. Active NSR Permits/Permit Determinations/Consent Orders Associated With This Permit Revision

| Permit or Consent Order Number | Date of Issuance | Permit/Consent Order Condition Number |
|--------------------------------|------------------|---------------------------------------|
| R13-3186D | 07/16/2022 | |
| | / / | |
| | / / | |

5. Inactive NSR Permits/Obsolete Permit or Consent Orders Conditions Associated With This Revision

| Permit or Consent Order Number | Date of Issuance | Permit/Consent Order Condition Number |
|--------------------------------|------------------|---------------------------------------|
| | | |
| | / / | |
| | / / | |

6. Change in Potential Emissions

| Pollutant | Change in Potential Emissions (+ or -), TPY |
|----------------------------------|---|
| Nitrogen Oxide (NOx) | +4.66 TPY |
| Carbon Monoxide (CO) | +7.57 TPY |
| Sulfur Dioxide (SO2) | +0.05 TPY |
| Particulate Matter (PM10) | +0.72 TPY |
| Volatile Organic Compounds (VOC) | +1.02 TPY |
| Carbon Dioxide (CO2) | +10751.51 TPY |

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

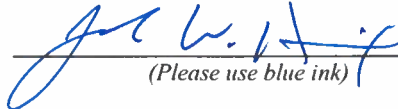
7. Certification For Use Of Minor Modification Procedures (Required Only for Minor Modification Requests)

Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete. The criteria for allowing the use of Minor Modification Procedures are as follows:

- i. Proposed changes do not violate any applicable requirement;
- ii. Proposed changes do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- iii. Proposed changes do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient air quality impacts, or a visibility increment analysis;
- iv. Proposed changes do not seek to establish or change a permit term or condition for which there is no underlying applicable requirement and which permit or condition has been used to avoid an applicable requirement to which the source would otherwise be subject (synthetic minor). Such terms and conditions include, but are not limited to a federally enforceable emissions cap used to avoid classification as a modification under any provision of Title I or any alternative emissions limit approved pursuant to regulations promulgated under § 112(j)(5) of the Clean Air Act;
- v. Proposed changes do not involve preconstruction review under Title I of the Clean Air Act or 45CSR14 and 45CSR19;
- vi. Proposed changes are not required under any rule of the Director to be processed as a significant modification;

Notwithstanding subparagraph 45CSR§30-6.5.a.1.A. (items i through vi above), minor permit modification procedures may be used for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that such minor permit modification procedures are explicitly provided for in rules of the Director which are approved by the U.S. EPA as a part of the State Implementation Plan under the Clean Air Act, or which may be otherwise provided for in the Title V operating permit issued under 45CSR30.

Pursuant to 45CSR§30-6.5.a.2.C., the proposed modification contained herein meets the criteria for use of Minor permit modification procedures as set forth in Section 45CSR§30-6.5.a.1.A. The use of Minor permit modification procedures are hereby requested for processing of this application.

| | | | |
|----------------|---|--------|---|
| (Signed): |  <i>(Please use blue ink)</i> | Date: | <u>02</u> / <u>27</u> / <u>2024</u> <i>(Please use blue ink)</i> |
| Named (typed): | William J Hixon | Title: | Director Manufacturing Operations |

Note: Please check if the following included (if applicable):

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | Compliance Assurance Monitoring Form(s) |
| <input checked="" type="checkbox"/> | Suggested Title V Draft Permit Language (See Attachment O) |

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

Authorized Representative of
as F

John Sibly

Maritza Rodriguez 12/15/2024

Maritza Rodriguez
Notary Public - State of New York
No. 01RO6292705
Qualified in Kings County
Certificate Filed in New York County
Commission Expires November 4, 2025



Mink, Stephanie R <stephanie.r.mink@wv.gov>

WV DAQ Title V Reminder Letter for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory (3 of 3)

2 messages

Mink, Stephanie R <stephanie.r.mink@wv.gov>
To: bill.hixon@ngc.com, sueellen.foor@ngc.com
Cc: Carrie McCumbers <carrie.mccumbers@wv.gov>

Wed, Jan 31, 2024 at 8:10 AM

RE: Title V Permit Renewal Application
Alliant Techsystems Operations, LLC
Allegany Ballistics Laboratory
Permit No.: R30-05700011-2019 (3 of 3)
Plant ID No.: 057-00011

Dear Mr. Hixon:

On November 19, 2019, the WV Department of Environmental Protection Division of Air Quality issued a Title V permit to Alliant Techsystems Operations, LLC's Allegany Ballistics Laboratory, part 3 of 3. Our records indicate that this Title V permit will expire on November 19, 2024, and a Title V permit renewal application is due for submittal on or before May 19, 2024.

In accordance with 45CSR§30-4.1.a.3, a permit renewal application is **timely** if it is submitted at least six (6) months prior to the date of permit expiration. Please bear in mind, the permit application must also be **complete** six (6) months prior to the permit expiration date. Refer to 45CSR§30-4.1.b for what constitutes a complete application. **Please note that as of March 16, 2020, the Division of Air Quality requests that all applications be submitted via email.** Instructions can be found at <https://dep.wv.gov/daq/permitting/Pages/TitleVGuidanceandForms.aspx>.

Please ensure the **timely** and **complete** submittal of the permit renewal application. An application shield will only be granted for an application which is **timely** and **complete**.

Should you have any questions, please contact me or Carrie McCumbers, Title V Program Manager, at 304-926-0499, ext. 41278.

--

Stephanie Mink

Environmental Resources Associate

West Virginia Department of Environmental Protection

Division of Air Quality, Title V & NSR Permitting

601 57th Street SE

Charleston, WV 25304

Phone: 304-926-0499 x41281

McCumbers, Carrie <carrie.mccumbers@wv.gov>
To: stephanie.r.mink@wv.gov

Wed, Jan 31, 2024 at 8:28 AM

Your message

To: McCumbers, Carrie

Subject: WV DAQ Title V Reminder Letter for Alliant Techsystems Operations LLC; Allegany Ballistics Laboratory (3 of 3)

Sent: 1/31/24, 8:10:05 AM EST

was read on 1/31/24, 8:28:41 AM EST