

Enclosure 1

This enclosure requests information about the cement production facility, facility equipment and processes regulated under 40 CFR part 63 subpart LLL, facility processing rates and air pollution control devices used, and information on control device performance.

Portland Cement 114 Request Form

National Emission Standards for Hazardous Air Pollutants (NESHAP) from the Portland Cement Manufacturing Industry (40 CFR part 63, subpart LLL)

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National Emission Standards for Hazardous Air Pollutants (NESHAP) from the Portland Cement Manufacturing Industry (40 CFR part 63, subpart LLL)

General Instructions

1. Please complete one copy of this workbook for each portland cement manufacturing plant owned or operated by your company.
2. If any of the data requested is considered confidential business information (CBI), please prepare an additional version of this work book containing only non-confidential information.
3. Please direct any questions to Brian Storey at (919) 541-1103 or storey.brian@epa.gov

This survey contains the following tabs after the cover sheet:

Instructions (this tab). Instructions for completing this survey.

Terms. Definitions and acronyms of certain technical terms that are mentioned throughout this survey.

Part A (01-14). Facility Information

Part B (01). Facility Equipment Regulated under Subpart LLL

Part C (01-04). Processing Rates and Controls Used for Kilns Regulated under Subpart LLL

Part D (01-03). Detailed Control Device and Emission Release Information for Sources Regulated under Subpart LLL

To submit your survey, the following instructions are referenced from the Section 114 transmittal letter.

All required non-confidential business information (non-CBI) must be sent electronically to:

Brian Storey
Office of Air Quality Planning and Standards
Sector Policies and Programs Division
Research Triangle Park, NC 27711
storey.brian@epa.gov

For confidential business information (CBI), remove those portions from your response and submit them separately to the appropriate email address below. For any confidential information, the CBI may be sent in either of the following two manners:

1. **Preferred method to receive CBI:** transmitted to OAQPS CBI Office electronically using email attachments, File Transfer Protocol (FTP), or other online file sharing services (e.g., Dropbox, OneDrive, Google Drive) using the email address, oaqpscibi@epa.gov, and should include clear CBI markings. If assistance is needed with submitting large electronic files, please email oaqpscibi@epa.gov to request a file transfer link.
2. Sent to the OAQPS Document Control Officer through a postal service (U.S. Mail, United Parcel Service (UPS), Federal Express (FedEx)). CBI material should be double wrapped and clearly marked. CBI markings should not show through the outer envelope.

Please use the street address below for U.S. Postal Service Express Mail, registered mail, or private courier for submitting your CBI:

Ms. Tiffany Purifoy, OAQPS DCO
ATTN: Portland Cement NESHAP
U.S. Environmental Protection Agency
Mail Code C404-02
109 T.W. Alexander Drive
Research Triangle Park, NC 27711

Please use the street address below for commercial package carriers, such as FedEx and UPS for submitting your CBI:

Ms. Tiffany Purifoy, OAQPS DCO
ATTN: Portland Cement NESHAP
U.S. Environmental Protection Agency
Mail Code C404-02
109 T.W. Alexander Drive

Research Triangle Park, NC 27711

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Please copy this Microsoft Excel workbook as needed, and complete one file for each Portland Cement Manufacturing facility operated by your company.

| Definitions | |
|-------------------------|--|
| Term | Definition |
| Alkali bypass | A duct between the feed end of the kiln and the preheater tower through which a portion of the kiln exit gas stream is withdrawn and quickly cooled by air or water to avoid excessive buildup of alkali, chloride and/or sulfur on the raw feed. This may also be referred to as the "kiln exhaust gas bypass". |
| Bypass stack | The stack that vents exhaust gases to the atmosphere from the bypass control device. |
| Clinker cooler | Equipment into which clinker product leaving the kiln is placed to be cooled by air supplied by a forced draft or natural draft supply system. |
| Conveyor transfer point | A point where any material including but not limited to feed material, fuel, clinker or product, is transferred to or from a conveying system, or between separate parts of a conveying system. |
| Finish mill | A roll crusher, ball and tube mill, or other size reduction equipment used to grind clinker to a fine powder. Gypsum and other materials may be added to and blended with clinker in a finish mill. The finish mill also includes the air separator associated with the finish mill. |
| In-line coal mills | A coal mill using kiln exhaust gases in their process. A coal mill with a heat source other than the kiln or a coal mill using exhaust gases from the clinker cooler is not an in-line coal mill. |
| Kiln | A device, including any associated preheater or precalciner devices, inline raw mills, inline coal mills or alkali bypasses that produces clinker by heating limestone and other materials for subsequent production of portland cement. Because the inline raw mill and inline coal mill are considered an integral part of the kiln, for purposes of determining the appropriate emissions limit, the term kiln also applies to the exhaust of the inline raw mill and the inline coal mill. |
| Monovent | An exhaust configuration of a building or emission control device (e.g., positive-pressure fabric filter) that extends the length of the structure and has a width very small in relation to its length (i.e., length to width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features. |
| Open clinker pile | A clinker storage pile on the ground for more than three days that is not completely enclosed in a building or structure. |
| Raw material dryer | An impact dryer, drum dryer, paddle-equipped rapid dryer, air separator, or other equipment used to reduce the moisture content of feed or other materials. |
| Raw mill | A ball and tube mill, vertical roller mill or other size reduction equipment, that is not part of an inline kiln/raw mill, used to grind feed to the appropriate size. Moisture may be added or removed from the feed during the grinding operation. If the raw mill is used to remove moisture from feed materials, it is also, by definition, a raw material dryer. The raw mill also includes the air separator associated with the raw mill. |
| Sorbent | Activated carbon, lime, or any other type of material injected into kiln exhaust for the purposes of capturing and removing any hazardous air pollutant. |

| Acronyms | |
|----------|---|
| Acronym | Term |
| APCD | add-on air pollution control device |
| CBI | Confidential Business Information |
| ID | identifier |
| NAICS | North American Industrial Classification System |
| OPC | ordinary portland cement |
| PLC | portland-limestone cement |
| SCFM | standard cubic feet per minute |

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Please copy this Microsoft Excel workbook as needed, and complete one file for each Portland Cement Manufacturing facility operated by your company.

Part A. Facility Information

A-01. Name and address of legal OWNER of the facility (if more than one owner, provide the name, address, and percent ownership for each owner using the additional columns to right):

| | | | |
|-------------------|------------------------------|--|--|
| Name | Ash Grove Cement Company | | |
| Address | 11011 Cody Street, Suite 300 | | |
| City | Overland Park | | |
| State | KS | | |
| Zip | 66210 | | |
| Percent Ownership | 100% | | |

A-02. Name and address of legal OPERATOR of the facility, if different than the legal OWNER:

| | |
|---------|--|
| Name | |
| Address | |
| City | |
| State | |
| Zip | |

A-03. Name and complete street address of facility (physical location):

| | |
|---------------|----------------------------------|
| Facility Name | Ash Grove Cement Company Seattle |
| Address | 3801 E Marginal Way S |
| City | Seattle |
| State | Washington |
| Zip | 98134 |
| County | King |

A-04. Provide mailing address of the facility if different than physical location:

| | |
|---------|--|
| Address | |
| City | |
| State | |
| Zip | |
| County | |

A-05. Facility contact able to answer technical questions about the completed survey:

| | |
|--------------------------------|--|
| Name (first name, last name) | Marty Johnson |
| Title | Environmental Manager |
| Telephone number and extension | 206-694-6232 |
| E-mail | marty.johnson@ashgrove.com |

A-06. What is the facility size classification for hazardous air pollutant (HAP) emissions? (Enter "Yes" or "No")

| | |
|---|-----|
| EPA Major Source of Hazardous Air Pollutants (HAP) | No |
| EPA Area source (based on potential to emit) of HAP | Yes |
| EPA Area source (Synthetic Minor) of HAP | No |

A-07. Facility NAICS codes. Note: The primary NAICS code represents the line of business that generates the most income for the facility.

| | |
|----------------------------|--------|
| Primary NAICS code | 327310 |
| Other facility NAICS codes | |

A-08. Company Size (Enter "Yes" for all that apply) Note: Approximate number of all employees (worldwide) of the business enterprise that owns this facility, including where applicable, the parent company and all subsidiaries, branches, and unrelated establishments owned by the parent company.

| | |
|-------------------|-----|
| < 1,000 employees | |
| ≥ 1,000 employees | Yes |

A-09 Parent Company Annual Revenue

Please provide the estimated annual revenue (\$) generated by the parent company (identified in A-01) in FY2021.

| | |
|---|-----|
| FY2021 Annual Revenue of Parent Company | N/A |
|---|-----|

A-10. Federal and State rule/permit coverage. (Enter "Yes" for all that apply to this facility).

| | | |
|---|-----|---|
| Subpart LLL (Portland Cement Manufacturing) | Yes | 40 CFR 63 Subpart ZZZZ, RICE |
| Other NESHAP (SPECIFY rule name and subpart) | Yes | |
| Other (SPECIFY rule name and subpart) | No | |
| New Source Performance Standards (NSPS): | | |
| 40 CFR 60 subpart F (Portland Cement Plants) | Yes | 40 CFR 60 Subpart Y - Coal Preparation Plants |
| Other NSPS (SPECIFY rule name and subpart) | Yes | |
| Other NSPS (SPECIFY rule name and subpart) | | |
| Title V: | | |
| (SPECIFY rule that led to title V permit requirement) | Yes | 40 CFR Part 70, Major Source Requirements |
| State Air Toxics: | | |
| (SPECIFY rule name and subpart) | Yes | Puget Sound Clean Air Agency Reg. I: 9.10(a) (State Only). Ash Grove shall not emit HCl in excess of 100 ppm (dry) corrected to 7% O2 for combustion sources |
| (SPECIFY rule name and subpart) | | |
| Other: (SPECIFY emission unit and rule) | | |
| Other: (SPECIFY emission unit and rule) | | |

A-11. Normal Facility Production Hours

| | |
|-------------|----|
| Hours/day: | 24 |
| Shifts/day: | 3 |
| Days/week: | 7 |
| Weeks/year: | 52 |

A-12. Clinker Production. Amount of clinker produced the most recent year of normal operation. Total capacity of clinker production.

| | | |
|---|---------|---------------|
| Tons of clinker produced in last normal operating year: | | |
| Maximum tons of clinker able to be produced in one year (plant capacity): | 750,000 | 2200 tons/day |

Air Operating
Permit -
Administrative
Amendment 4
Issued 6/13/2018

A-13. Please provide a copy of a schematic or process flow diagram of the plant portland cement manufacturing operations. Include identifying labels for equipment to be used for the remainder of this questionnaire.

| | |
|--|-----------|
| Schematic or Process Flow Diagram File Name* | Exhibit A |
|--|-----------|

*Please include Unit ID No., APCD ID No., Controlled Emissions Point ID No., and Un-controlled Emissions Point ID No. where applicable in the Schematic or Process Flow Diagram (PFD). It is assumed the PFD will be submitted electronically, as a separate file.

A-14. Please provide all of the pertinent information listed below. Please provide electronic copies, if available, and indicate items provided below. (Enter "Yes" for all that apply).

| | | |
|---|-----|-----------|
| Title V Permit or State Air Operating Permit* | Yes | Exhibit B |
|---|-----|-----------|

*If the permit is available online, please provide the URL for the file location.

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Please copy this Microsoft Excel workbook as needed, and complete one file for each Portland Cement Manufacturing facility operated by your company.

Part B. Facility Equipment Regulated under Subpart LLL (Portland Cement Manufacturing NESHAP)

Please enter information for units subject to Subpart LLL, excluding any fugitive dust sources, material handling/conveying sources of emissions, or the emissions controls associated with these sources. See “Terms” Tab for an explanation of terms.

Please insert Rows as needed.

| B-01. Related Equipment List | | | | | | | | |
|--|---|---|------------------------------------|---|--------------------------------|-------------------------------|--|---|
| Unit Identification Numbers(s) (Unit ID No.) (Matches Unit ID on Schematic or Process Flow Diagram) | Unit ID No. as designated in Title V or State Operating Permit (Complete if ID numbers used in this form are different from those in permit) | Subpart LLL Affected Source/Equipment Type | New, Existing, or Reconstructed | Source Classification Code (See Validation Sheet for description of codes) | Add-on Controls (Y or N) | When were controls installed? | Operating in 2021? (Y or N) If "No," list last year of operation | Additional Notes/Comments |
| Main Baghouse | EU-1 / Kiln / 413.BF1 | Kiln (incl. alkali bypass and inline coal mill) | Existing | 30500623 | Yes | Baghouse= 2018, SNCR = 2016 | Yes | Kiln - Coal, Natural Gas, Tire derived fuels |
| #1 Coal Mill | EU-1 / #1 Coal Mill / 41B.BF3 | Kiln (incl. alkali bypass and inline coal mill) | Existing | 30500623 | Yes | Baghouse= 1992 | No - Last operated in 2016 | Plant operating on Natural Gas - Coal Mill last operated in 2016 |
| #2 Coal Mill | EU-1 / #2 Coal Mill / 41B.BF4 | Kiln (incl. alkali bypass and inline coal mill) | Existing | 30500623 | Yes | Baghouse= 1992 | No - Last operated in 2016 | Plant operating on Natural Gas - Coal Mills last operated in 2016 |
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Part C. Processing Rates and Controls Used for Kilns Regulated under Subpart LLL

Please provide information below for all kilns/clinker coolers at your facility; provide information for 2021 if available, or other year (please specify):
Please insert Rows as needed.
Please use the Notes/Comments column for any additional clarification, or APCDs if sufficient columns are not available. Additionally, Tab E provides space for additional comments.

Calendar Year (CY) 2021

C-01. For Kiln/Clinker Cooler With Common Exhaust

| Unit ID No. (Use Same ID as Provided in Section 8-01, Column A) | Maximum Capacity of Unit (tons/yr) | Actual Production of Unit (tons/yr) | Actual Unit Operating Hours (Should be no more than 8,760) (hr/yr) | Primary Fuel | Additional Fuels | Process Modifications* (list all applicable) | APCD Control Device Type No. 1 | APCD Control Device ID No. 1 | APCD Control Device Type No. 2 (where applicable) | APCD Control Device ID No. 2 (where applicable) | APCD Control Device Type No. 3 (where applicable) | APCD Control Device ID No. 3 (where applicable) | APCD Control Device Type No. 4 (where applicable) | APCD Control Device ID No. 4 (where applicable) | Controlled Emissions Point ID No. (Details provided in Section D) | Un-controlled Emissions Point ID No. (Details provided in Section D) | Additional Notes/Comments |
|---|--|---|--|--------------|------------------|---|-----------------------------------|---------------------------------|---|---|---|---|---|---|---|--|---------------------------|
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* For example, dust shuttling, PLC, overfire air, etc. For PLC, indicate what percentage of production is PLC vs. OPC. Use Part E tab of this workbook to provide the information if additional space is needed.

C-01.1 Common Exhaust Kilns: Additional Fuels List

| Unit ID No. (from C-01) | | | | | |
|-------------------------|--|--|--|--|--|
| Additional Fuels | | | | | |
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C-02. For Each Kiln With Separate Exhaust

| Unit ID No. (Use Same ID as Provided in Section 8-01, Column A) | Maximum Capacity of Unit (tons/yr) | Actual Production of Unit (tons/yr) | Actual Unit Operating Hours (Should be no more than 8,760) (hr/yr) | Primary Fuel | Additional Fuels | Process Modifications* (list all applicable) | APCD Control Device Type No. 1 | APCD Control Device ID No. 1 | APCD Control Device Type No. 2 (where applicable) | APCD Control Device ID No. 2 (where applicable) | APCD Control Device Type No. 3 (where applicable) | APCD Control Device ID No. 3 (where applicable) | APCD Control Device Type No. 4 (where applicable) | APCD Control Device ID No. 4 (where applicable) | Controlled Emissions Point ID No. (Details provided in Section D) | Un-controlled Emissions Point ID No. (Details provided in Section D) | Additional Notes/Comments |
|---|--|---|--|--------------|---|---|-----------------------------------|---------------------------------|---|---|---|---|---|---|---|--|---------------------------|
| EU-1 / Kiln / 413.BF1 | 750000 | | | Natural Gas | Coal, Tire-derived Fuels, Waste oils and greases | N/A | Baghouse | 413.BF1 | SNCR | 413.LP1 | | | | | Main Kiln Stack | | |
| | | | | | | | | | | | | | | | | | |
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* For example, dust shuttling, PLC, overfire air, etc. For PLC, indicate what percentage of production is PLC vs. OPC. Use Part E tab of this workbook to provide the information if additional space is needed.

C-02.1 Separate Exhaust Kilns: Additional Fuels List

| Unit ID No. (from C-02) | | | | | |
|-------------------------|--|--|--|--|--|
| Additional Fuels | | | | | |
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C-03. For Each Idled Kiln, Not in Operation

| Unit ID No. (Use Same ID as Provided in Section 8-01, Column A) | Maximum Capacity of Unit (tons/yr) | Actual Production of Unit (tons/yr) | Current Idle Period (days/months/years) | Primary Fuel | Additional Fuels | Process Modifications* (list all applicable) | APCD Control Device Type No. 1 | APCD Control Device ID No. 1 | APCD Control Device Type No. 2 (where applicable) | APCD Control Device ID No. 2 (where applicable) | APCD Control Device Type No. 3 (where applicable) | APCD Control Device ID No. 3 (where applicable) | APCD Control Device Type No. 4 (where applicable) | APCD Control Device ID No. 4 (where applicable) | Controlled Emissions Point ID No. (Details provided in Section D) | Un-controlled Emissions Point ID No. (Details provided in Section D) | Additional Notes/Comments |
|---|--|---|--|--------------|--|---|-----------------------------------|---------------------------------|---|---|---|---|---|---|---|--|---------------------------|
| | | | | | Use the space in C-03.1 to list any additional fuels, permitted or otherwise, burned by the Unit identified in this table. | | | | | | | | | | | | |
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* For example, dust shuttling, PLC, overfire air, etc. For PLC, indicate what percentage of production is PLC vs. OPC. Use Part E tab of this workbook to provide the information if additional space is needed.

C-03.1 Separate Exhaust Kilns: Additional Fuels List

| Unit ID No. (from C-03) | | | | | |
|-------------------------|--|--|--|--|--|
| Additional Fuels | | | | | |
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C-04. For Each Clinker Cooler with Separate Exhaust

| Unit ID No. <small>(Use Same ID as Provided in Section B-01, Column A)</small> | Maximum Capacity of Unit <small>(tons/yr)</small> | Actual Production of Unit <small>(tons/yr)</small> | Actual Unit Operating Hours <small>(Should be no more than 8,760) <small>(hr/yr)</small></small> | APCD Control Device Type No. 1 | APCD Control Device ID No. 1 | APCD Control Device Type No. 2 <small>(where applicable)</small> | APCD Control Device ID No. 2 <small>(where applicable)</small> | APCD Control Device Type No. 3 <small>(where applicable)</small> | APCD Control Device ID No. 3 <small>(where applicable)</small> | APCD Control Device Type No. 4 <small>(where applicable)</small> | APCD Control Device ID No. 4 <small>(where applicable)</small> | Controlled Emissions Point ID No. <small>(Details provided in Section D)</small> | Un-controlled Emissions Point ID No. <small>(Details provided in Section D)</small> | Additional Notes/Comments |
|---|---|--|--|-----------------------------------|---------------------------------|--|--|--|--|--|--|--|---|---------------------------|
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Please copy this Microsoft Excel workbook as needed, and complete one file for each Portland Cement Manufacturing facility operated by your company.

Part D. Detailed Control Device and Emission Release Information for Sources Regulated under Subpart LLL

Please provide information below for all air pollution control devices at your facility; provide information for 2021 if available, or other year (please specify):

CY 2021

Please insert Rows as needed.

D-01. Add-on air pollution control devices (APCD)

| APCD ID No. (This should match the ID's provided in Section C) | Device Type* | Pollutant Controlled (separate pollutants with comma) | Capture Efficiency, if known (percent) | Control Device Efficiency, if known (percent) | Methods Used for Determining Capture & Control Efficiencies** | What process units are vented through this point? Unit ID No. (Use Same IDs as Provided in Section B-01 (column A), and Section C) (separate IDs with comma) |
|---|--------------|--|---|--|---|--|
| 413.BF1 | Baghouse | PM-FIL, PM10-FIL, PM2.5-FIL | 100 | | b | Kiln |
| 413.LP1 | SNCR | NOX | | | | Kiln |
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* For example, fabric filter, wet scrubber etc.

** Control & Capture Efficiency; a = Testing (specify method); b = Manufacturer's Specifications; c = Engineering Estimate

Please provide any additional information concerning the Control Devices identified in D-01, as needed, using the Part E tab of this workbook.

D-02. For each exhaust point/stack with a control device, please provide the following information, if known.

| Controlled Emissions Point ID No. (This should match the ID's provided in Section C) | What control devices are vented at this point? (APCD ID No. from Section D-01) | Latitude* | Longitude* | Flow Rate (SCFM) |
|---|---|------------|--------------|---------------------|
| Main Kiln Stack | 413.BF1 | 47.567857° | -122.343358° | 144684 |
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9/9/2021 Stack Test. Mill On Average

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* Longitude and Latitude should be specified to 6 decimal places. If coordinates are not known, please provide a scaled site diagram, with a latitude/longitude reference point, indicating stack locations.

D-03. For each exhaust point/stack not associated with a control device, please provide the following information, if known.

| Un-controlled Emissions Point ID No. (This should match the ID's provided in Section C) | What process units are vented though this point? Unit ID No. (Use Same IDs as Provided in Section B-01 (column A), and Section C) (separate IDs with comma) | Latitude* | Longitude* | Flow Rate, if known (SCFM) |
|--|--|-----------|------------|-------------------------------|
| | | | | |
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* Longitude and Latitude should be specified to 6 decimal places. If coordinates are not known, please provide a scaled site diagram, with a latitude/longitude reference point, indicating stack locations.

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Part E. Additional Information

E-01. Provide any additional information in the space below as needed. Please identify the associated part of the workbook (e.g., C-01), as applicable.

| Identify Questionnaire Part Associated with the Information Provided (e.g., C-01) | Identify Information Being Requested (e.g., "Process Modification") | Additional Information |
|---|---|------------------------|
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Validation
This sheets provides the names and values that should be used when filling out the sheet.

| POLLUTANT CODE | POLLUTANT CODE DESC | HAP CATEGORY NAME1 |
|---------------------------------|--|--|
| Particulate Matter | | |
| PM10-FIL | Primary PM10, Filterable Portion Only | |
| PM10-PRI | Primary PM10 (Includes Filterables + Condensibles) | |
| PM25-FIL | Primary PM2.5, Filterable Portion Only | |
| PM25-PRI | Primary PM2.5 (Includes Filterables + Condensibles) | |
| PM-CON | Primary PM Condensible Portion Only (All Less Than 1 Micron) | |
| PM-FIL | Primary PM, Filterable Portion Only | |
| PM-PRI | Primary PM (Includes Filterables + Condensibles) | |
| Criteria Air Pollutants and VOC | | |
| CO | Carbon Monoxide | |
| 195 | Lead & Compounds | Lead Compounds |
| NOX | Nitrogen Oxides | |
| SO2 | Sulfur Dioxide | |
| VOC | Volatile Organic Compounds | |
| HAP Metals | | |
| 7440360 | Antimony | Antimony Compounds |
| 7440382 | Arsenic | Arsenic Compounds |
| 7440417 | Beryllium | Beryllium Compounds |
| 7440439 | Cadmium | Cadmium Compounds |
| 7440473 | Chromium (Total) | Chromium Compounds |
| 16065 | Chromium (III) | Chromium Compounds |
| 18540 | Chromium (VI) | Chromium Compounds |
| 7440484 | Cobalt | Cobalt Compounds |
| 7439921 | Lead | Lead Compounds |
| 7439965 | Manganese | Manganese Compounds |
| 7440020 | Nickel | Nickel Compounds |
| 7782492 | Selenium | Selenium Compounds |
| 7439976 | Mercury (Total) | Mercury Compounds |
| 200 | Elemental Gaseous Mercury | Mercury Compounds |
| 201 | Gaseous Divalent Mercury | Mercury Compounds |
| 202 | Particulate Divalent Mercury | Mercury Compounds |
| Dioxin Furan | | |
| 600 | 2,3,7,8-TCDD TEQ (Total) | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 67562394 | 1,2,3,4,6,7,8-Heptachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 35822469 | 1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 55673897 | 1,2,3,4,7,8,9-Heptachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 70648269 | 1,2,3,4,7,8-Hexachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 39227286 | 1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 57117449 | 1,2,3,6,7,8-Hexachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 57653857 | 1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 72918219 | 1,2,3,7,8,9-Hexachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 19408743 | 1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 57117416 | 1,2,3,7,8-Pentachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 40321764 | 1,2,3,7,8-Pentachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 60851345 | 2,3,4,6,7,8-Hexachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 57117314 | 2,3,4,7,8-Pentachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 51207319 | 2,3,7,8-Tetrachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 1746016 | 2,3,7,8-Tetrachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 39001020 | Octachlorodibenzofuran | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| 3268879 | Octachlorodibenzo-p-Dioxin | Dioxins/Furans as 2,3,7,8-TCDD TEQs |
| Organic HAP and Acid Gasses. | | |
| 6189419 | (25,35)-2,3-Epoxybutane | |
| 79345 | 1,1,2,2-Tetrachloroethane | 1,1,2,2-Tetrachloroethane |
| 79005 | 1,1,2-Trichloroethane | 1,1,2-Trichloroethane |
| 57147 | 1,1-Dimethyl Hydrazine | 1,1-Dimethylhydrazine |
| 5124301 | 1,1-Methylene bis(4-isocyanatocyclohexane) | |
| 26447405 | 1,1'-Methylenediphenyl Diisocyanate | |
| 58899 | 1,2,3,4,5,6-Hexachlorocyclyhexane | 1,2,3,4,5,6-Hexachlorocyclyhexane (All Stereo Isomers, |
| 120821 | 1,2,4-Trichlorobenzene | 1,2,4-Trichlorobenzene |
| 95636 | 1,2,4-Trimethylbenzene | |
| 590192 | 1,2-Butadiene | |
| 96128 | 1,2-Dibromo-3-Chloropropane | 1,2-Dibromo-3-Chloropropane |
| 540498 | 1,2-Dibromoethylene | |
| 540590 | 1,2-Dichloroethylene | |
| 110714 | 1,2-Dimethoxyethane | Glycol Ethers |
| 122667 | 1,2-Diphenylhydrazine | 1,2-Diphenylhydrazine |
| 106887 | 1,2-Epoxybutane | 1,2-Epoxybutane |
| 75558 | 1,2-Propylenimine | 1,2-Propylenimine (2-Methylaziridine) |
| 646060 | 1,3 Dioxolane | Glycol Ethers |
| 108678 | 1,3,5 Trimethylbenzene | |
| 106990 | 1,3-Butadiene | 1,3-Butadiene |
| 542756 | 1,3-Dichloropropene | 1,3-Dichloropropene |
| 102067 | 1,3-Diphenylguanidine | |
| 2004708 | 1,3-Pentadiene, (3E)- | |
| 1574410 | 1,3-Pentadiene, (3Z)- | |
| 108452 | 1,3-Phenylenediamine | |
| 1120714 | 1,3-Propanesultone | 1,3-Propane Sultone |
| 106467 | 1,4-Dichlorobenzene | 1,4-Dichlorobenzene |
| 591935 | 1,4-Pentadiene | |
| 42397648 | 1,6-Dinitropyrene | Polycyclic Organic Matter |
| 42397659 | 1,8-Dinitropyrene | Polycyclic Organic Matter |
| 2422799 | 12-Methylbenz(a)Anthracene | Polycyclic Organic Matter |
| 71363 | 1-Butanol | |
| 106989 | 1-Butene | |
| 106898 | 1-Chloro-2,3-Epoxypropane | Epichlorohydrin (1-Chloro-2,3-Epoxypropane) |
| 98566 | 1-Chloro-4-(Trifluoromethyl)-Benzene | |
| 23436193 | 1-Isobutoxy-2-Propanol | Glycol Ethers |
| 90120 | 1-Methylnaphthalene | Polycyclic Organic Matter |
| 832699 | 1-Methylphenanthrene | Polycyclic Organic Matter |
| 2381217 | 1-Methylpyrene | Polycyclic Organic Matter |

| SCC Code | Units | SCC Level One | SCC Level Two | SCC Level Three | SCC Level Four | Description | Short Name | Category | Fuel | EI Sector | Last Inventory Year Valid | Map To | Usage Notes |
|----------|-------|---------------|---------------|------------------------------------|------------------------------------|-------------|------------|----------|------|------------|---------------------------|--------|-------------|
| 30500606 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Kilns | CEMENT | Cement | | | Industrial | | | |
| 30500607 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Material Unloading | CEMENT | Cement | | | Industrial | | | |
| 30500608 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Material Piles | CEMENT | Cement | | | Industrial | | | |
| 30500609 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Primary Crushing | CEMENT | Cement | | | Industrial | | | |
| 30500610 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Secondary Crushing | CEMENT | Cement | | | Industrial | | | |
| 30500611 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Screening | MINERAL | Cement | | | Industrial | | | |
| 30500612 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Material Transfer | CEMENT | Cement | | | Industrial | | | |
| 30500613 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Material Grinding and Drying | MINERAL | Cement | | | Industrial | | | |
| 30500614 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Clinker Cooler | MINERAL | Cement | | | Industrial | | | |
| 30500615 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Clinker Piles | MINERAL | Cement | | | Industrial | | | |
| 30500616 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Clinker Transfer | MINERAL | Cement | | | Industrial | | | |
| 30500617 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Clinker Grinding | MINERAL | Cement | | | Industrial | | | |
| 30500618 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Cement Silos | MINERAL | Cement | | | Industrial | | | |
| 30500619 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Cement Load Out | CEMENT | Cement | | | Industrial | | | |
| 30500620 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Predryer | Cement | Cement | | | Industrial | | | |
| 30500621 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Pulverized Coal Kiln Feed Units | Cement | Cement | | | Industrial | | | |
| 30500622 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Preheater Kiln | Cement | Cement | | | Industrial | | | |
| 30500623 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Preheater/Precalciner Kiln | Cement | Cement | | | Industrial | | | |
| 30500624 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Mill Feed Belt | Cement | Cement | | | Industrial | | | |
| 30500625 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Mill Weigh Hopper | Cement | Cement | | | Industrial | | | |
| 30500626 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Raw Mill Air Separator | Cement | Cement | | | Industrial | | | |
| 30500627 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Finish Grinding Mill Feed Belt | Cement | Cement | | | Industrial | | | |
| 30500628 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Finish Grinding Mill Weigh Hopper | Cement | Cement | | | Industrial | | | |
| 30500629 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Finish Grinding Mill Air Separator | Cement | Cement | | | Industrial | | | |
| 30500699 | TON | Industrial | Mineral | Cement Manufacturing (Dry Process) | Other Not Classified | MINERAL | Cement | | | Industrial | | | |
| 30500706 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Kilns | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500707 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Raw Material Unloading | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500708 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Raw Material Piles | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500709 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Primary Crushing | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500710 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Secondary Crushing | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500711 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Screening | MINERAL | Cement | | | Industrial | | | |
| 30500712 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Raw Material Transfer | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500714 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Clinker Cooler | MINERAL | Cement | | | Industrial | | | |
| 30500715 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Clinker Piles | MINERAL | Cement | | | Industrial | | | |
| 30500716 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Clinker Transfer | MINERAL | Cement | | | Industrial | | | |
| 30500717 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Clinker Grinding | MINERAL | Cement | | | Industrial | | | |
| 30500718 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Cement Silos | MINERAL | Cement | | | Industrial | | | |
| 30500719 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Cement Load Out | CEMENT MFG- | Cement | | | Industrial | | | |
| 30500727 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Finish Grinding Mill Feed Belt | Cement | Cement | | | Industrial | | | |
| 30500728 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Finish Grinding Mill Weigh Hopper | Cement | Cement | | | Industrial | | | |
| 30500729 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Finish Grinding Mill Air Separator | Cement | Cement | | | Industrial | | | |
| 30500799 | TON | Industrial | Mineral | Cement Manufacturing (Wet Process) | Other Not Classified | MINERAL | Cement | | | Industrial | | | |

| | Equipment Type (40 CFR 63.1340 (b)) | |
|---------------|---|-----|
| New | Kiln (incl. alkali bypass and inline coal mill) | Yes |
| Existing | Clinker Cooler | No |
| Reconstructed | Raw Mill | |
| | Finish Mill | |
| | Raw Material Dryer | |
| | Raw Material Storage Bin | |
| | Clinker Storage Bin | |
| | Finished Product Storage Bin | |
| | Conveyor Transfer Point | |
| | Bagging/Bulk Loading | |
| | Open Clinker Pile | |
| | Other (specify in notes/comments column) | |

| | | |
|----------|--|--|
| 5522430 | 1-Nitropyrene | Polycyclic Organic Matter |
| 124118 | 1-Nonene | |
| 71238 | 1-Propanol | |
| 1569013 | 1-Propoxy-2-propanol | |
| 27310210 | 2-(2,4-Hexadienyloxy)Ethanol | Glycol Ethers |
| 112254 | 2-(Hexyloxy)Ethanol | Glycol Ethers |
| 540841 | 2,2,4-Trimethylpentane | 2,2,4-Trimethylpentane |
| 75832 | 2,2-Dimethylbutane | |
| 39635319 | 2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB-189) | Polychlorinated Biphenyls (Aroclors) |
| 38380084 | 2,3,3',4,4',5/2,3,3',4,4',5-Hexachlorobiphenyl (PCBs156/157) | Polychlorinated Biphenyls (Aroclors) |
| 32598144 | 2,3,3',4,4'-Pentachlorobiphenyl (PCB-105) | Polychlorinated Biphenyls (Aroclors) |
| 52663726 | 2,3',4,4',5,5'-Hexachlorobiphenyl (PCB-167) | Polychlorinated Biphenyls (Aroclors) |
| 74472370 | 2,3,4,4',5-Pentachlorobiphenyl (PCB-114) | Polychlorinated Biphenyls (Aroclors) |
| 31508006 | 2,3',4,4',5-Pentachlorobiphenyl (PCB118) | Polychlorinated Biphenyls (Aroclors) |
| 65510443 | 2,3',4,4',5'-Pentachlorobiphenyl (PCB-123) | Polychlorinated Biphenyls (Aroclors) |
| 79298 | 2,3-Dimethylbutane | |
| 591968 | 2,3-Pentadiene | |
| 7012375 | 2,4,4'-Trichlorobiphenyl (PCB-28) | Polychlorinated Biphenyls (Aroclors) |
| 95954 | 2,4,5-Trichlorophenol | 2,4,5-Trichlorophenol |
| 88062 | 2,4,6-Trichlorophenol | 2,4,6-Trichlorophenol |
| 90722 | 2,4,6-Tris(Dimethylaminomethyl)Phenol | |
| 120832 | 2,4-Dichlorophenol | |
| 94757 | 2,4-Dichlorophenoxy Acetic Acid | 2,4-D (2,4-Dichlorophenoxyacetic Acid)(Including Salts |
| 108087 | 2,4-Dimethylpentane | |
| 105679 | 2,4-Dimethylphenol | |
| 51285 | 2,4-Dinitrophenol | 2,4-Dinitrophenol |
| 121142 | 2,4-Dinitrotoluene | 2,4-Dinitrotoluene |
| 584849 | 2,4-Toluene Diisocyanate | 2,4-Toluene Diisocyanate |
| 5779942 | 2,5-Dimethyl Benzaldehyde | |
| 638028 | 2,5-Dimethyl Thiophene | |
| 53963 | 2-Acetylaminofluorene | 2-Acetylaminofluorene |
| 78922 | 2-Butanol | |
| 107017 | 2-Butene | |
| 112072 | 2-Butoxyethyl Acetate | Glycol Ethers |
| 532274 | 2-Chloroacetophenone | 2-Chloroacetophenone |
| 2051607 | 2-Chlorobiphenyl (PCB-1) | Polychlorinated Biphenyls (Aroclors) |
| 91587 | 2-Chloronaphthalene | Polycyclic Organic Matter |
| 872559 | 2-Ethyl Thiophene | |
| 1241947 | 2-Ethylhexyl Diphenyl Phosphate | |
| 75854 | 2-Methyl-2-Butanol | |
| 78784 | 2-Methylbutane | |
| 592278 | 2-Methylheptane | |
| 591764 | 2-Methylhexane | |
| 91576 | 2-Methylnaphthalene | Polycyclic Organic Matter |
| 78820 | 2-Methyl-Propanenitrile | Cyanide Compounds |
| 607578 | 2-Nitrofluorene | Polycyclic Organic Matter |
| 88755 | 2-Nitrophenol | |
| 79469 | 2-Nitropropane | 2-Nitropropane |
| 107879 | 2-Pentanone | |
| 20706256 | 2-Propoxyethyl Acetate | Glycol Ethers |
| 10343552 | 3-[(1-(Anilinoacetyl)-2-oxopropyl)azo]-2-hydroxy-5-nitrobenzene-1- | Chromium Compounds |
| 2530838 | 3-(Trimethoxysilyl)Propyl Glycidyl Ether | |
| 32774166 | 3,3',4,4',5,5'-Hexachlorobiphenyl (PCB-169) | Polychlorinated Biphenyls (Aroclors) |
| 57465288 | 3,3',4,4',5-Pentachlorobiphenyl (PCB-126) | Polychlorinated Biphenyls (Aroclors) |
| 32598133 | 3,3',4,4'-Tetrachlorobiphenyl (PCB-77) | Polychlorinated Biphenyls (Aroclors) |
| 54827177 | 3,3',5,5'-Tetramethylbenzidine | |
| 91941 | 3,3'-Dichlorobenzidene | 3,3'-Dichlorobenzidene |
| 119904 | 3,3'-Dimethoxybenzidine | 3,3'-Dimethoxybenzidine |
| 119937 | 3,3'-Dimethylbenzidine | 3,3'-Dimethylbenzidine |
| 70362504 | 3,4,4',5-Tetrachlorobiphenyl 3,4,4',5-TCB (PCB-81) | Polychlorinated Biphenyls (Aroclors) |
| 10215335 | 3-Butoxy-1-Propanol | Glycol Ethers |
| 13466789 | 3-Carene | |
| 1589497 | 3-Methoxy-1-Propanol | Glycol Ethers |
| 5332730 | 3-Methoxypropylamine | |
| 56495 | 3-Methylcholanthrene | Polycyclic Organic Matter |
| 589344 | 3-Methylhexane | |
| 96140 | 3-Methylpentane | |
| 5026744 | 4-(Diglycidylamino)phenyl Glycidyl Ether | |
| 2050682 | 4,4'-Dichlorobiphenyl (PCB-15) | Polychlorinated Biphenyls (Aroclors) |
| 13680358 | 4,4'-Methylenebis(2,6-Diethylbenzenamine) | |
| 101144 | 4,4'-Methylenebis(2-Chloraniline) | 4,4'-Methylenebis(2-Chloroaniline) |
| 16298387 | 4,4'-Methylenebis(2-Methyl-6-{1-Methylethyl}-Benzenamine) | |
| 1761713 | 4,4'-Methylenebis(Cyclohexylamine) | |
| 101779 | 4,4'-Methylenedianiline | 4,4'-Methylenedianiline |
| 101688 | 4,4'-Methylenediphenyl Diisocyanate | 4,4'-Methylenediphenyl Diisocyanate (MDI) |
| 534521 | 4,6-Dinitro-o-Cresol | 4,6-Dinitro-o-Cresol (Including Salts) |
| 92671 | 4-Aminobiphenyl | 4-Aminobiphenyl |
| 60117 | 4-Dimethylaminoazobenzene | 4-Dimethylaminoazobenzene |
| 123422 | 4-Hydroxy-4-Methyl-2-Pentanone | |
| 70553 | 4-Methyl-Benzenesulfonamide | |
| 92933 | 4-Nitrobiphenyl | 4-Nitrobiphenyl |
| 100027 | 4-Nitrophenol | 4-Nitrophenol |
| 3697243 | 5-Methylchrysene | Polycyclic Organic Matter |
| 7496028 | 6-Nitrochrysene | Polycyclic Organic Matter |
| 57976 | 7,12-Dimethylbenz[a]Anthracene | Polycyclic Organic Matter |
| 779022 | 9-Methyl Anthracene | Polycyclic Organic Matter |
| 2381160 | 9-Methylbenz[a]Anthracene | Polycyclic Organic Matter |
| 83329 | Acenaphthene | Polycyclic Organic Matter |
| 208968 | Acenaphthylene | Polycyclic Organic Matter |
| 75070 | Acetaldehyde | Acetaldehyde |
| 60355 | Acetamide | Acetamide |
| 64197 | Acetic Acid | |
| 67641 | Acetone | |
| 75058 | Acetonitrile | Acetonitrile |
| 98862 | Acetophenone | Acetophenone |
| 74862 | Acetylene | |
| 107028 | Acrolein | Acrolein |
| 79061 | Acrylamide | Acrylamide |
| 79107 | Acrylic Acid | Acrylic Acid |
| 107131 | Acrylonitrile | Acrylonitrile |
| AMINEAL | Aliphatic Amine | |

| | | |
|-----------|---|---|
| 88 | Alkylated Lead | Lead Compounds |
| 107051 | Allyl Chloride | Allyl Chloride |
| 28470782 | Allyl Chloride Formaldehyde Phenol Polymer | |
| CELLULOSE | Alpha Cellulose Filler | |
| 80568 | Alpha-Pinene | |
| 98555 | Alpha-Terpineol | |
| 7429905 | Aluminum | |
| 1344281 | Aluminum Oxide | |
| NH3 | Ammonia | |
| 1341497 | Ammonium Bifluoride | |
| 7788989 | Ammonium Chromate | Chromium Compounds |
| 7789095 | Ammonium Dichromate | Chromium Compounds |
| 1336216 | Ammonium Hydroxide | |
| 624544 | Amyl Propionate | |
| 62533 | Aniline | Aniline |
| 120127 | Anthracene | Polycyclic Organic Matter |
| 92 | Antimony & Compounds | Antimony Compounds |
| 1327339 | Antimony Oxide | Antimony Compounds |
| 7783702 | Antimony Pentafluoride | Antimony Compounds |
| 1314609 | Antimony Pentoxide | Antimony Compounds |
| 10025919 | Antimony Trichloride | Antimony Compounds |
| 1309644 | Antimony Trioxide | Antimony Compounds |
| 15874483 | Antimony tris[O,O-dipropyl] tris(dithiophosphate) | Antimony Compounds |
| 1345046 | Antimony Trisulfide | Antimony Compounds |
| ANTISTAT | Anti-Static Agent Cal Stat 600 | |
| 93 | Arsenic & Compounds (Inorganic Including Arsine) | Arsenic Compounds |
| 7778394 | Arsenic Acid | Arsenic Compounds |
| 1303282 | Arsenic Pentoxide | Arsenic Compounds |
| 1327533 | Arsenic Trioxide | Arsenic Compounds |
| 3141126 | Arsenous Acid | Arsenic Compounds |
| 7784421 | Arsine | Arsenic Compounds |
| 1332214 | Asbestos | Asbestos |
| 144348878 | Asphaltenes (gilsonite) | |
| 205823 | B[[j]Fluoranthen | Polycyclic Organic Matter |
| 7440393 | Barium | |
| 10294403 | Barium Chromate | Chromium Compounds |
| 7727437 | Barium Sulfate | |
| 103 | Benz[a]Anthracene/Chrysene | Polycyclic Organic Matter |
| 56553 | Benz[a]Anthracene | Polycyclic Organic Matter |
| 100527 | Benzaldehyde | |
| 71432 | Benzene | Benzene (Including Benzene From Gasoline) |
| 141 | Benzene Soluble Organics (BSO) | Coke Oven Emissions |
| 92875 | Benzidine | Benzidine |
| 203338 | Benzo[a]fluoranthene | Polycyclic Organic Matter |
| 195197 | Benzo[c]phenanthrene | Polycyclic Organic Matter |
| 203123 | Benzo[g,h,i]Fluoranthene | Polycyclic Organic Matter |
| 50328 | Benzo[a]Pyrene | Polycyclic Organic Matter |
| 205992 | Benzo[b]Fluoranthene | Polycyclic Organic Matter |
| 102 | Benzo[b+k]Fluoranthene | Polycyclic Organic Matter |
| 192972 | Benzo[e]Pyrene | Polycyclic Organic Matter |
| 191242 | Benzo[g,h,i,j]Perylene | Polycyclic Organic Matter |
| 207089 | Benzo[k]Fluoranthene | Polycyclic Organic Matter |
| 56832736 | Benzo[fluoranthenes | Polycyclic Organic Matter |
| 65850 | Benzoic Acid | |
| 98077 | Benzotrichloride | Benzotrichloride |
| 94360 | Benzoyl Peroxide | |
| 16883833 | Benzyl 2,2-Dimethyl-1-isopropyl-3-(2-Methyl-1-Oxopropoxy)Propyl | |
| 100516 | Benzyl Alcohol | |
| 100447 | Benzyl Chloride | Benzyl Chloride |
| 140294 | Benzyl Cyanide | Cyanide Compounds |
| 109 | Beryllium & Compounds | Beryllium Compounds |
| 7787475 | Beryllium Chloride | Beryllium Compounds |
| 7787497 | Beryllium Fluoride | Beryllium Compounds |
| 13597994 | Beryllium Nitrate | Beryllium Compounds |
| 1304569 | Beryllium Oxide | Beryllium Compounds |
| 13510491 | Beryllium Sulfate | Beryllium Compounds |
| 127913 | Beta-Pinene | |
| 57578 | Beta-Propiolactone | Beta-Propiolactone |
| 92524 | Biphenyl | Biphenyl |
| 108601 | Bis(2-chloro-1-methylethyl) ether | |
| 117817 | Bis(2-Ethylhexyl)Phthalate | Bis(2-Ethylhexyl)Phthalate (Dehp) |
| 542881 | Bis(Chloromethyl)Ether | Bis(Chloromethyl) Ether |
| 7440699 | Bismuth | |
| 80057 | BisPhenol A | |
| 1675543 | Bisphenol A Diglycidyl Ether | |
| 25068386 | Bisphenol A Epichlorohydrin Polymer | |
| 37312337 | Bisphenol A Epichlorohydrin Polymer with Toluene Diisocyanate | |
| 2095036 | Bisphenol F Diglycidyl Ether | |
| 7440428 | Boron | |
| 75274 | Bromodichloromethane | |
| 75252 | Bromoform | Bromoform |
| 106978 | Butane | |
| 816682 | Butanedioic Acid, Hydroxy-Lead (2+) Salt | Lead Compounds |
| 35296721 | Butanol | |
| 85687 | Butyl Benzyl Phthalate | |
| 124174 | Butyl Carbitol Acetate | Glycol Ethers |
| 142961 | Butyl Ether | |
| 123728 | Butyraldehyde | |
| 68186914 | C.I. Pigment Black 28 | Chromium Compounds |
| 71631157 | C.I. Pigment Black 30 | Chromium Compounds |
| 147148 | C.I. Pigment Blue 15 | |
| 1103384 | C.I. Pigment Red 49, Barium Salt (2:1) | |
| 125 | Cadmium & Compounds | Cadmium Compounds |
| 543908 | Cadmium Acetate | Cadmium Compounds |
| 7789426 | Cadmium Bromide | Cadmium Compounds |
| 10108642 | Cadmium Chloride | Cadmium Compounds |
| 34330648 | Cadmium Chloride Monohydrate | Cadmium Compounds |
| 14486192 | Cadmium Fluoroborate | Cadmium Compounds |
| 7790809 | Cadmium Iodide | Cadmium Compounds |
| 10325947 | Cadmium Nitrate | Cadmium Compounds |
| 1306190 | Cadmium Oxide | Cadmium Compounds |

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| 1306247 | Cadmium Selenide | Cadmium Compounds |
| 12626367 | Cadmium Selenide Sulfide | Cadmium Compounds |
| 2223930 | Cadmium Stearate | Cadmium Compounds |
| 10124364 | Cadmium Sulfate | Cadmium Compounds |
| 1306236 | Cadmium Sulfide | Cadmium Compounds |
| 7440702 | Calcium | |
| 13765190 | Calcium Chromate | Chromium Compounds |
| 156627 | Calcium Cyanamide | Calcium Cyanamide |
| 1305620 | Calcium Hydroxide | |
| 79925 | Camphene | |
| 76222 | Camphor | |
| 105602 | Caprolactam | |
| 133062 | Captan | Captan |
| 63252 | Carbaryl | Carbaryl |
| 86748 | Carbazole | Polycyclic Organic Matter |
| 112152 | Carbitol Acetate | Glycol Ethers |
| CO2 | Carbon Dioxide | |
| 75150 | Carbon Disulfide | Carbon Disulfide |
| CO | Carbon Monoxide | |
| 56235 | Carbon Tetrachloride | Carbon Tetrachloride |
| 463796 | Carbonic Acid | |
| 463581 | Carbonyl Sulfide | Carbonyl Sulfide |
| 120809 | Catechol | Catechol |
| 111159 | Cellosolve Acetate | Glycol Ethers |
| 110805 | Cellosolve Solvent | Glycol Ethers |
| 9004346 | Cellulose | |
| 608 | Ceramic Fibers (Man-Made) | Fine Mineral Fibers |
| 133904 | Chloramben | Chloramben |
| 57749 | Chlordane | Chlordane |
| 16887006 | Chloride | |
| 7782505 | Chlorine | Chlorine |
| 10049044 | Chlorine Dioxide | |
| 107200 | Chloroacetaldehyde | |
| 79118 | Chloroacetic Acid | Chloroacetic Acid |
| 108907 | Chlorobenzene | Chlorobenzene |
| 510156 | Chlorobenzilate | Chlorobenzilate |
| 124481 | Chlorodibromomethane | |
| CFC | Chlorofluorocarbons | |
| 67663 | Chloroform | Chloroform |
| 107302 | Chloromethyl Methyl Ether | Chloromethyl Methyl Ether |
| 126998 | Chloroprene | Chloroprene |
| 68186903 | Chrome Antimony Titanium Buff | Chromium Compounds |
| 14307336 | Chromic Acid (H2Cr2O7), Calcium Salt (1:1) | Chromium Compounds |
| 7789120 | Chromic Acid (H2Cr2O7), Disodium Salt, Dyhydrate | Chromium Compounds |
| 14018952 | Chromic Acid (H2Cr2O7), Zinc Salt (1:1) | Chromium Compounds |
| 7738945 | Chromic Acid (VI) | Chromium Compounds |
| 24613896 | Chromic Acid Chromium (+3) Salt | Chromium Compounds |
| 1308389 | Chromic Oxide | Chromium Compounds |
| 10101538 | Chromic Sulfate | Chromium Compounds |
| 13530682 | Chromic Sulfuric Acid | Chromium Compounds |
| 7440473 | Chromium | Chromium Compounds |
| 136 | Chromium & Compounds | Chromium Compounds |
| 12012350 | Chromium (2) Carbide | Chromium Compounds |
| 10025737 | Chromium (III) Chloride | Chromium Compounds |
| 10060125 | Chromium Chloride, Hexahydrate | Chromium Compounds |
| 12018018 | Chromium Dioxide | Chromium Compounds |
| 1308141 | Chromium Hydroxide | Chromium Compounds |
| 1333820 | Chromium Trioxide | Chromium Compounds |
| 12018198 | Chromium Zinc Oxide | Chromium Compounds |
| 21679312 | Chromium(III) acetylacetonate | Chromium Compounds |
| 14977618 | Chromyl Chloride | Chromium Compounds |
| 7788967 | Chromyl Fluoride | Chromium Compounds |
| 218019 | Chrysene | Polycyclic Organic Matter |
| 8007452 | Coal Tar | Polycyclic Organic Matter |
| 139 | Cobalt & Compounds | Cobalt Compounds |
| 1345160 | Cobalt Aluminate | Cobalt Compounds |
| 68186867 | Cobalt Aluminate Spinel (C.I. Pigment Blue 28) | Cobalt Compounds |
| 7542098 | Cobalt Carbonate | Cobalt Compounds |
| 68187495 | Cobalt Chromite Green Spinel | Chromium Compounds |
| 16842038 | Cobalt Hydrocarbonyl | Cobalt Compounds |
| 61789513 | Cobalt Naphthenate | Cobalt Compounds |
| 27253312 | Cobalt Neodecanoate | Cobalt Compounds |
| 10026229 | Cobalt Nitrate Hexahydrate | Cobalt Compounds |
| 1307966 | Cobalt Oxide | Cobalt Compounds |
| 1308061 | Cobalt Oxide (II,III) | Cobalt Compounds |
| 10124433 | Cobalt Sulfate | Cobalt Compounds |
| 1317426 | Cobalt Sulfide | Cobalt Compounds |
| 68186856 | Cobalt Titanate Green Spinel | Nickel Compounds |
| 10141056 | Cobalt(II) Nitrate | Cobalt Compounds |
| 10294505 | Cobalt(II) Phosphate Octahydrate | Cobalt Compounds |
| 140 | Coke Oven Emissions | Coke Oven Emissions |
| 7440508 | Copper | |
| 544923 | Copper Cyanide | Cyanide Compounds |
| 191071 | Coronene | Polycyclic Organic Matter |
| 1319773 | Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 14464461 | Cristobalite | |
| 98828 | Cumene | Cumene |
| 80159 | Cumene Hydroperoxide | |
| 57125 | Cyanide | Cyanide Compounds |
| 144 | Cyanide & Compounds | Cyanide Compounds |
| 108918 | Cyclohexanamine | |
| 110827 | Cyclohexane | |
| 53880050 | Cyclohexane, 5-Isocyanato-1-(Isocyanatomethyl)-1,3,3-Trimethyl-, | |
| 108941 | Cyclohexanone | |
| 542927 | Cyclopentadiene | |
| 287923 | Cyclopentane | |
| 72559 | Dde (1,1-Dichloro-2,2-Bis(p-Chlorophenyl) Ethylene) | Dde (1,1-Dichloro-2,2-Bis(p- Chlorophenyl) Ethylene) |
| 2051243 | Decachlorobiphenyl (PCB-209) | Polychlorinated Biphenyls (Aroclors) |
| 16672392 | Di[Ethylene Glycol Monobutyl Ether] Phthalate | Glycol Ethers |
| 68855549 | Diatomaceous Earth, Flux-Calclined | |
| 334883 | Diazomethane | Diazomethane |

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| 95481622 | Dibasic Esters | |
| 15845520 | Dibasic Lead Phosphate | Lead Compounds |
| 192654 | Dibenzo[a,e]Pyrene | Polycyclic Organic Matter |
| 53703 | Dibenzo[a,h]Anthracene | Polycyclic Organic Matter |
| 189640 | Dibenzo[a,h]Pyrene | Polycyclic Organic Matter |
| 189559 | Dibenzo[a,j]Pyrene | Polycyclic Organic Matter |
| 224420 | Dibenzo[a,j]Acridine | Polycyclic Organic Matter |
| 191300 | Dibenzo[a,j]Pyrene | Polycyclic Organic Matter |
| 132649 | Dibenzofuran | Dibenzofuran |
| 84742 | Dibutyl Phthalate | Dibutyl Phthalate |
| 111444 | Dichloroethyl Ether | Dichloroethyl Ether (Bis[2-Chloroethyl]Ether) |
| 62737 | Dichlorvos | Dichlorvos |
| 77736 | Dicyclopentadiene | |
| 111422 | Diethanolamine | Diethanolamine |
| 110816 | Diethyl Disulfide | |
| 84662 | Diethyl Phthalate | |
| 64675 | Diethyl Sulfate | Diethyl Sulfate |
| 352932 | Diethyl Sulfide | |
| 111466 | Diethylene Glycol | |
| 4246519 | Diethylene Glycol Diamino Propyl Ether | Glycol Ethers |
| 120558 | Diethylene Glycol Dibenzoate | Glycol Ethers |
| 112367 | Diethylene Glycol Diethyl ether | Glycol Ethers |
| 4206615 | Diethylene Glycol Diglycidyl Ether | Glycol Ethers |
| 111966 | Diethylene Glycol Dimethyl Ether | Glycol Ethers |
| 693210 | Diethylene Glycol Dinitrate | Glycol Ethers |
| 764998 | Diethylene Glycol Divinyl Ether | Glycol Ethers |
| 1002671 | Diethylene Glycol Ethyl Methyl Ether | Glycol Ethers |
| 10143530 | Diethylene Glycol Ethylvinyl Ether | Glycol Ethers |
| 10143541 | Diethylene Glycol Mono-2-Cyanoethyl Ether | Glycol Ethers |
| 112345 | Diethylene Glycol Monobutyl Ether | Glycol Ethers |
| 111900 | Diethylene Glycol Monoethyl Ether | Glycol Ethers |
| 18912806 | Diethylene Glycol Monoisobutyl Ether | Glycol Ethers |
| 111773 | Diethylene Glycol Monomethyl Ether | Glycol Ethers |
| 929373 | Diethylene Glycol Monovinyl Ether | Glycol Ethers |
| 10143563 | Diethyleneglycol-Mono-2-Methyl-Pentyl Ether | Glycol Ethers |
| DIISOCYAN | Diisocyanates | |
| 624920 | Dimethyl Disulfide | |
| 115106 | Dimethyl Ether | |
| 131113 | Dimethyl Phthalate | Dimethyl Phthalate |
| 77781 | Dimethyl Sulfate | Dimethyl Sulfate |
| 75183 | Dimethyl Sulfide | |
| 79447 | Dimethylcarbamoyl Chloride | Dimethylcarbamoyl Chloride |
| 117840 | Di-n-octyl phthalate | |
| 29911282 | Dipropylene Glycol Butyl Ether | |
| 34590948 | Dipropylene Glycol Methyl Ether | |
| 64742525 | Distillates (petroleum), Hydrotreated Heavy Naphtenic | |
| 64742478 | Distillates (petroleum), Hydrotreated Light | |
| 5989275 | d-Limonene | |
| 27176870 | Dodecylbenzenesulfonic Acid | |
| EPOXYRES | Epoxy Resins | |
| 74840 | Ethane | |
| 64175 | Ethanol | |
| 141435 | Ethanolamine | |
| 112505 | Ethoxytriglycol | Glycol Ethers |
| 7085850 | Ethyl 2-Cyanoacrylate | |
| 141786 | Ethyl Acetate | |
| 140885 | Ethyl Acrylate | Ethyl Acrylate |
| 100414 | Ethyl Benzene | Ethylbenzene |
| 51796 | Ethyl Carbamate Chloride | Ethyl Carbamate (Urethane) Chloride (Chloroethane) |
| 75003 | Ethyl Chloride | Ethyl Chloride |
| 75081 | Ethyl Mercaptan | |
| 624895 | Ethyl Methyl Sulfide | |
| 74851 | Ethylene | |
| 106934 | Ethylene Dibromide | Ethylene Dibromide (Dibromoethane) |
| 107062 | Ethylene Dichloride | Ethylene Dichloride (1,2-Dichloroethane) |
| 107211 | Ethylene Glycol | Ethylene Glycol |
| 1559359 | Ethylene Glycol 2-Ethylhexyl Ether | Glycol Ethers |
| 3775857 | Ethylene Glycol Bis(2,3-Epoxy-2-Methylpropyl) Ether | Glycol Ethers |
| 7529273 | Ethylene Glycol Diallyl Ether | Glycol Ethers |
| 629141 | Ethylene Glycol Diethyl Ether | Glycol Ethers |
| 109864 | Ethylene Glycol Methyl Ether | Glycol Ethers |
| 622082 | Ethylene Glycol Monobenzyl Ether | Glycol Ethers |
| 111762 | Ethylene Glycol Monobutyl Ether | |
| 110496 | Ethylene Glycol Monomethyl Ether Acetate | Glycol Ethers |
| 7795917 | Ethylene Glycol Mono-Sec-Butyl Ether | Glycol Ethers |
| 764487 | Ethylene Glycol Monovinyl Ether | Glycol Ethers |
| 75218 | Ethylene Oxide | Ethylene Oxide |
| 96457 | Ethylene Thiourea | Ethylene Thiourea |
| 67425 | Ethylenebis(Oxyethylenenitrilo)) Tetraacetic Acid | Glycol Ethers |
| 10137969 | Ethyleneglycol Mono-2-Methylpentyl Ether | Glycol Ethers |
| 23495127 | Ethyleneglycol Monophenyl Ether Propionate | Glycol Ethers |
| 10137981 | Ethyleneglycolmono-2,6,8-Trimethyl-4-Nonyl Ether | Glycol Ethers |
| 151564 | Ethyleneimine | Ethyleneimine (Aziridine) |
| 75343 | Ethylidene Dichloride (1,1-Dichloroethane) | Ethylidene Dichloride (1,1-Dichloroethane) |
| 68409814 | Fatty acids, C6-C19, branched, cobalt (2+) salts | Cobalt Compounds |
| 13408623 | Ferricyanide | Cyanide Compounds |
| 1308312 | Ferrochromite III | Chromium Compounds |
| 383 | Fine Mineral Fibers | Fine Mineral Fibers |
| 16872110 | Fluoboric acid | |
| 206440 | Fluoranthene | Polycyclic Organic Matter |
| 86737 | Fluorene | Polycyclic Organic Matter |
| 7782414 | Fluorine | |
| 50000 | Formaldehyde | Formaldehyde |
| 110009 | Furan | |
| 99854 | gamma-Terpinene | |
| 65997173 | Glass, Oxide | |
| 613 | Glasswool (Man-Made Fibers) | Fine Mineral Fibers |
| 171 | Glycol Ethers | Glycol Ethers |
| 13967505 | Gold (I) Potassium Cyanide | Cyanide Compounds |
| 37187647 | Gold Cyanide | Cyanide Compounds |
| 64742945 | Heavy Aromatic Solvent Naphtha (Petroleum) | |

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| 76448 | Heptachlor | Heptachlor |
| 28655712 | Heptachlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 142825 | Heptane | |
| 118741 | Hexachlorobenzene | Hexachlorobenzene |
| 26601649 | Hexachlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 87683 | Hexachlorobutadiene | Hexachlorobutadiene |
| 77474 | Hexachlorocyclopentadiene | Hexachlorocyclopentadiene |
| 67721 | Hexachloroethane | Hexachloroethane |
| 66251 | Hexaldehyde | |
| 822060 | Hexamethylene Diisocyanate | Hexamethylene Diisocyanate |
| 28182812 | Hexamethylene Diisocyanate Homopolymer | |
| 680319 | Hexamethylphosphoramide | Hexamethylphosphoramide |
| 110543 | Hexane | Hexane |
| 107835 | Hexane Isomers (except n-Hexane) | |
| 13586828 | Hexanoic acid, 2-ethyl-, cobalt salt | Cobalt Compounds |
| 136527 | Hexanoic acid, 2-ethyl-, cobalt(2+) salt | Cobalt Compounds |
| 302012 | Hydrazine | Hydrazine |
| HC | Hydrocarbons | |
| 7647010 | Hydrochloric Acid | Hydrochloric Acid (Hydrogen Chloride (Gas Only)) |
| 7664393 | Hydrogen Fluoride | Hydrogen Fluoride (Hydrofluoric Acid) |
| HFC | Hydrofluorocarbons | |
| 12021953 | Hydrofluozirconic Acid | |
| 74908 | Hydrogen Cyanide | Cyanide Compounds |
| 7783075 | Hydrogen Selenide | Selenium Compounds |
| 7783064 | Hydrogen Sulfide | |
| 61788327 | Hydrogenated Terphenyl | |
| 123319 | Hydroquinone | Hydroquinone |
| 95136 | Indene | Polycyclic Organic Matter |
| 193395 | Indeno[1,2,3-c,d]Pyrene | Polycyclic Organic Matter |
| 10043660 | Iodine 131 | Radionuclides (Including Radon) |
| 7439896 | Iron | |
| 68187097 | Iron Chromite Brown Spinel (C.I. Pigment Brown 35) | Chromium Compounds |
| 12645497 | Iron Manganese Zinc Oxide | Manganese Compounds |
| 14038438 | Iron(iii) Ferrocyanide | Cyanide Compounds |
| 75285 | Isobutane | |
| 78831 | Isobutanol | |
| 115117 | Isobutene | |
| 110190 | Isobutyl Acetate | |
| 4439241 | Isobutyl Cellosolve | Glycol Ethers |
| 513440 | Isobutyl Mercaptan | |
| 78842 | Isobutyraldehyde | |
| ISOCYAN | Isocyanates | |
| 78591 | Isophorone | Isophorone |
| 4098719 | Isophorone Diisocyanate | |
| 78795 | Isoprene | |
| 67630 | Isopropanol | |
| 75332 | Isopropyl Mercaptan | |
| 590863 | Isovaleraldehyde | |
| 8008206 | Kerosene | |
| 1302767 | Kyanite | |
| 1317368 | Lead (II) Oxide | Lead Compounds |
| 1314416 | Lead (II, IV) Oxide | Lead Compounds |
| 301042 | Lead Acetate | Lead Compounds |
| 7784409 | Lead Arsenate | Lead Compounds |
| 10031137 | Lead Arsenite | Lead Compounds |
| 65997184 | Lead Bisilicate (Frits) | Lead Compounds |
| 598630 | Lead Carbonate | Lead Compounds |
| 7758976 | Lead Chromate | Lead Compounds |
| 12656858 | Lead Chromate Molybdate Sulfate (C.I. Pigment Red 104) | Lead Compounds |
| 18454121 | Lead Chromate Oxide | Lead Compounds |
| 602 | Lead Compounds (Inorganic) | Lead Compounds |
| 603 | Lead Compounds (Other Than Inorganic) | Lead Compounds |
| 1309600 | Lead Dioxide | Lead Compounds |
| 13814965 | Lead Fluoroborate | Lead Compounds |
| 61790145 | Lead Naphthenate | Lead Compounds |
| 27253287 | Lead Neodecanoate | Lead Compounds |
| 10099748 | Lead Nitrate | Lead Compounds |
| 1335257 | Lead Oxide | Lead Compounds |
| 12141207 | Lead Oxide Phosphonate | Lead Compounds |
| 7446277 | Lead Phosphate | Lead Compounds |
| 7428480 | Lead Stearate | Lead Compounds |
| 1335326 | Lead Subacetate | Lead Compounds |
| 7446142 | Lead Sulfate | Lead Compounds |
| 12060003 | Lead Titanate | Lead Compounds |
| 12626812 | Lead Titanate Zircon | Lead Compounds |
| 64742898 | Light Aliphatic Solvent Naphtha (Petroleum) | |
| 7439932 | Lithium | |
| 14307358 | Lithium Chromate | Chromium Compounds |
| 1334787 | m,p-Tolualdehyde | |
| 7439954 | Magnesium | |
| 13423615 | Magnesium Chromate | Chromium Compounds |
| 14104859 | Magnesium Dichromate | Chromium Compounds |
| 1335268 | Magnesium Peroxide | |
| 108316 | Maleic Anhydride | Maleic Anhydride |
| 198 | Manganese & Compounds | Manganese Compounds |
| 598629 | Manganese Carbonate | Manganese Compounds |
| 1313139 | Manganese Dioxide | Manganese Compounds |
| 68186947 | Manganese Ferrite Black Spinel (C.I. Pigment Black 26) | Manganese Compounds |
| 1336932 | Manganese Napthenate | Manganese Compounds |
| 10377669 | Manganese Nitrate | Manganese Compounds |
| 7785877 | Manganese Sulfate | Manganese Compounds |
| 8030704 | Manganese Tallate | Manganese Compounds |
| 1317357 | Manganese Tetroxide | Manganese Compounds |
| 1317346 | Manganese Trioxide | Manganese Compounds |
| 7783166 | Manganese(II) Hypophosphite Monohydrate | Manganese Compounds |
| 12079651 | Manganese, Tricarbonyl (.eta.5-2,4-cyclopentadien-1-yl)- | Manganese Compounds |
| 108394 | m-Cresol | Cresol/Cresylic Acid (Mixed isomers) |
| 64742887 | Medium Aliphatic Solvent Naphtha (Petroleum) | |
| 149304 | Mercaptobenzothiazole | |
| 7487947 | Mercuric Chloride | Mercury Compounds |
| 21908532 | Mercuric Oxide | Mercury Compounds |

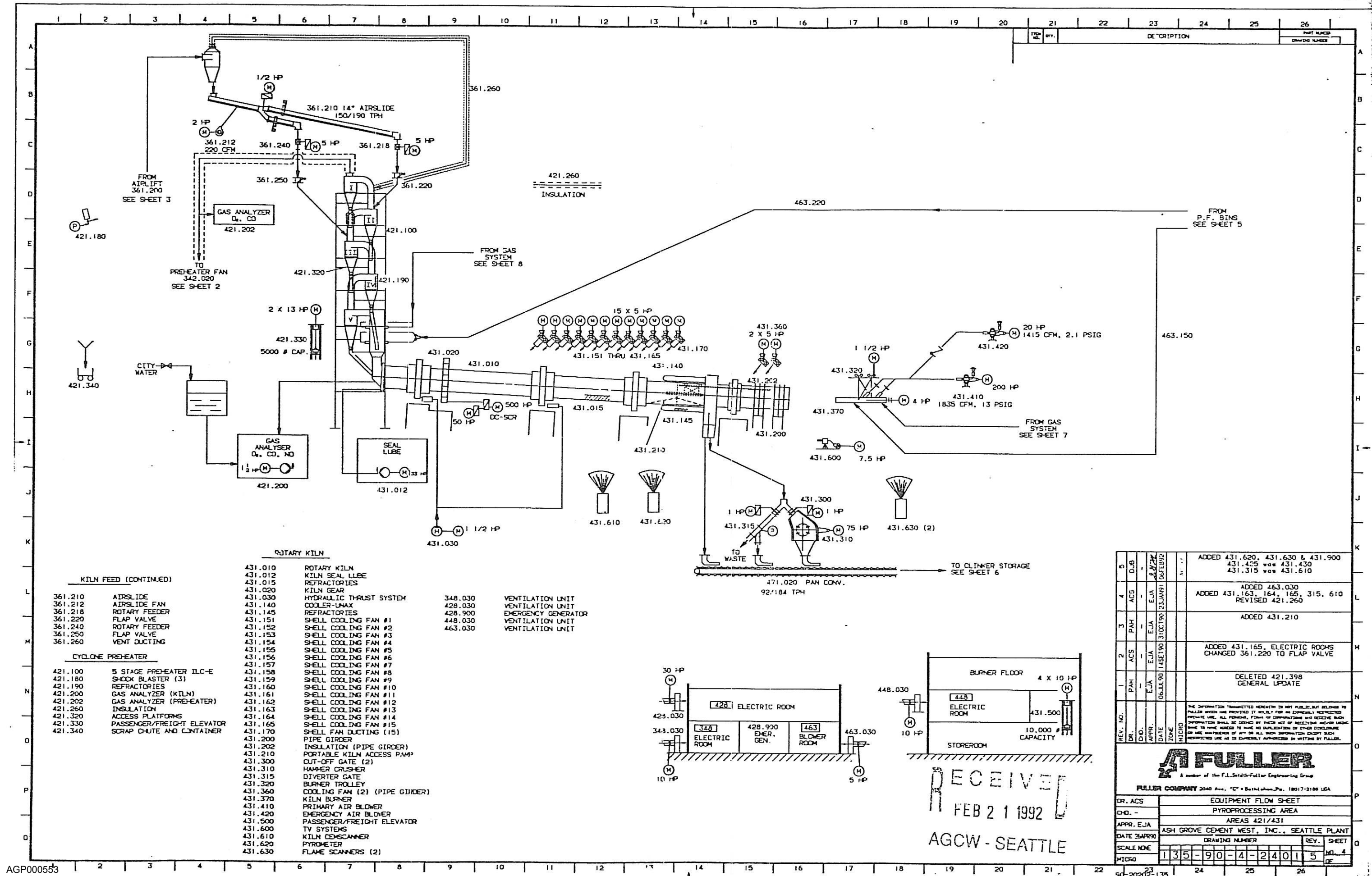
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|-----------|---|---|
| 199 | Mercury & Compounds | Mercury Compounds |
| 22967926 | Mercury (Organic) | Mercury Compounds |
| 62384 | Mercury Acetato Phen | Mercury Compounds |
| CH4 | Methane | |
| 75718 | Methane, Dichlorodifluoro- | |
| 67561 | Methanol | Methanol |
| 72435 | Methoxychlor | Methoxychlor |
| 111104 | Methoxyethyl Oleate | Glycol Ethers |
| 112356 | Methoxytriglycol | Glycol Ethers |
| 137053 | Methyl 2-Cyanoacrylate | |
| 110430 | Methyl Amyl Ketone | |
| 74839 | Methyl Bromide | Methyl Bromide (Bromomethane) |
| 140056 | Methyl Cellosolve Acetylricinoleate | Glycol Ethers |
| 3121617 | Methyl Cellosolve Acrylate | Glycol Ethers |
| 74873 | Methyl Chloride | Methyl Chloride (Chloromethane) |
| 71556 | Methyl Chloroform | Methyl Chloroform (1,1,1-Trichloroethane) |
| 78933 | Methyl Ethyl Ketone | |
| 74884 | Methyl Iodide | Methyl Iodide (Iodomethane) |
| 108101 | Methyl Isobutyl Ketone | Methyl Isobutyl Ketone (Hexone) |
| 624839 | Methyl Isocyanate | Methyl Isocyanate |
| 593759 | Methyl Isocyanide | Cyanide Compounds |
| 74931 | Methyl Mercaptan | |
| 593748 | Methyl Mercury | Mercury Compounds |
| 80626 | Methyl Methacrylate | Methyl Methacrylate |
| 1634044 | Methyl Tert-Butyl Ether | Methyl Tert-Butyl Ether |
| 616444 | Methyl Thiophene | |
| 26914181 | Methylantracene | Polycyclic Organic Matter |
| 65357699 | Methylbenzopyrene | Polycyclic Organic Matter |
| 41637905 | Methylchrysene | Polycyclic Organic Matter |
| 108872 | Methylcyclohexane | |
| 96377 | Methylcyclopentane | |
| 74953 | Methylene Bromide | |
| 75092 | Methylene Chloride | Methylene Chloride (Dichloromethane) |
| 142 | Methylene Chloride Soluble Organics (MCSO) | Coke Oven Emissions |
| 60344 | Methylhydrazine | Methylhydrazine |
| 7439987 | Molybdenum | |
| 1313275 | Molybdenum Oxide | |
| 27323188 | Monochlorobiphenyl | |
| MONO | Monoterpenes | |
| 108383 | m-Xylene | Xylenes (Mixed Isomers) |
| 121697 | N,N-Dimethylaniline | N,N-Dimethylaniline |
| 68122 | N,N-Dimethylformamide | N,N-Dimethylformamide |
| 8030306 | Naphtha | |
| 91203 | Naphthalene | Napthalene |
| 123864 | n-Butyl Acetate | |
| 2426086 | n-Butyl Glycidyl Ether | |
| 109795 | n-Butyl Mercaptan | |
| 37244965 | Nepheline Syenite | |
| 2201152 | N-Ethyl-1-Phenyl-Cyclohexanamine | |
| 112594 | N-Hexyl Carbitol | Glycol Ethers |
| 226 | Nickel & Compounds | Nickel Compounds |
| 10101970 | Nickel (II) Sulfate Hexahydrate | Nickel Compounds |
| 14336700 | Nickel 59 | Nickel Compounds |
| 373024 | Nickel Acetate | Nickel Compounds |
| 8007189 | Nickel Antimony Titanium Oxide (C.I. Pigment Yellow 53) | Nickel Compounds |
| 13462889 | Nickel Bromide | Nickel Compounds |
| 12710360 | Nickel Carbide | Nickel Compounds |
| 3333673 | Nickel Carbonate | Nickel Compounds |
| 13463393 | Nickel Carbonyl | Nickel Compounds |
| 7718549 | Nickel Chloride | Nickel Compounds |
| 6018899 | Nickel Diacetate TET | Nickel Compounds |
| 12054487 | Nickel Hydroxide | Nickel Compounds |
| 13138459 | Nickel Nitrate | Nickel Compounds |
| 604 | Nickel Refinery Dust | Nickel Compounds |
| 12035722 | Nickel Subulfide | Nickel Compounds |
| 13770893 | Nickel Sulfamate | Nickel Compounds |
| 7786814 | Nickel Sulfate | Nickel Compounds |
| 15751005 | Nickel(2+), hexakis[1H-imidazole- κ 3-N3]-, dichloride, (OC-6-11)- | Nickel Compounds |
| 1313991 | Nickel(II) Oxide | Nickel Compounds |
| 1314063 | Nickel(III) Oxide | Nickel Compounds |
| 1271289 | Nickelocene | Nickel Compounds |
| Nitrate | Nitrate Compounds | |
| 7697372 | Nitric Acid | |
| 98953 | Nitrobenzene | Nitrobenzene |
| 10102440 | Nitrogen Dioxide | |
| NOX | Nitrogen Oxides | |
| N2O | Nitrous Oxide | |
| 872504 | N-Methyl-2-Pyrrolidone | |
| 62759 | N-Nitrosodimethylamine | N-Nitrosodimethylamine |
| 59892 | N-Nitrosomorpholine | N-Nitrosomorpholine |
| 684935 | N-Nitroso-N-Methylurea | N-Nitroso-N-Methylurea |
| 53742077 | Nonachlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 111842 | Nonane | |
| 106945 | n-Propyl Bromide | |
| 107039 | n-Propyl Mercaptan | |
| 103651 | n-Propylbenzene | |
| 90040 | o-Anisidine | o-Anisidine |
| 95578 | o-Chlorophenol | |
| 95487 | o-Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 55722264 | Octachlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 111659 | Octane | |
| 112801 | Oleic Acid | |
| 529204 | o-Tolualdehyde | |
| 95534 | o-Toluidine | o-Toluidine |
| 2768323 | Oxiranemethanamine, N,N'-(methylenedi-4,1-phenylene)bis[N- | |
| 95476 | o-Xylene | Xylenes (Mixed Isomers) |
| 130498292 | PAH, total | Polycyclic Organic Matter |
| 56382 | Parathion | Parathion |
| 106445 | p-Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 99876 | p-Cymene | |
| 105055 | p-Diethylbenzene | |

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| 123911 | p-Dioxane | p-Dioxane |
| 25429292 | Pentachlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 82688 | Pentachloronitrobenzene | Pentachloronitrobenzene (Quintobenzene) |
| 87865 | Pentachlorophenol | Pentachlorophenol |
| 109660 | Pentane | |
| 590352 | Pentane, 2,2-dimethyl- | |
| 562492 | Pentane, 3,3-dimethyl- | |
| PFC | Perfluorocarbons | |
| 10101505 | Permanganic acid | Manganese Compounds |
| 198550 | Perylene | Polycyclic Organic Matter |
| 85018 | Phenanthrene | Polycyclic Organic Matter |
| 108952 | Phenol | Phenol |
| PFHEXARESIN | Phenol Formaldehyde Resin with Hexamethylenetetramine | |
| 28064144 | Phenol, Polymer with Formaldehyde, Glycidyl Ether | |
| 122996 | Phenyl Cellosolve | Glycol Ethers |
| 103719 | Phenyl Isocyanate | |
| 75445 | Phosgene | Phosgene |
| 7803512 | Phosphine | Phosphine |
| 7789040 | Phosphoric Acid Chromium (+3) Salt | Chromium Compounds |
| 13455362 | Phosphoric acid, cobalt(2+) salt (2:3) | Cobalt Compounds |
| 13011546 | Phosphoric acid, monoammonium monosodium salt | |
| 92203026 | Phosphoric Acid, Reaction Products with Aluminum Hydroxide and | Chromium Compounds |
| 7723140 | Phosphorus | Phosphorus |
| 398 | Phosphorus & Compounds | |
| 85449 | Phthalic Anhydride | Phthalic Anhydride |
| 1336363 | Polychlorinated Biphenyls | Polychlorinated Biphenyls (Aroclors) |
| 246 | Polycyclic Organic Matter | Polycyclic Organic Matter |
| RESINCURAG | PolyEpoxy Resin AminophenylFluorene Curing Agent | |
| 27252875 | Polyethylene Glycol Allyl Ether Acetate | |
| 25852475 | Polyglycol Dimethylacrylates | |
| ISOCYANP | Polyisocyanates | |
| 9016879 | Polymeric Diphenylmethane Diisocyanate | |
| 9003081 | Polymerized Melamine Molding Compound | |
| 7440097 | Potassium | |
| 7789006 | Potassium Chromate | Chromium Compounds |
| 151508 | Potassium Cyanide | Cyanide Compounds |
| 7778509 | Potassium Dichromate | Chromium Compounds |
| 13746662 | Potassium Ferricyanide | Cyanide Compounds |
| 13943583 | Potassium Ferrocyanide | Cyanide Compounds |
| 1310583 | Potassium Hydroxide | |
| 14220178 | Potassium Nickel Cyanide | Nickel Compounds |
| 7722647 | Potassium permanganate | Manganese Compounds |
| 506616 | Potassium Silver Cyanide | Cyanide Compounds |
| 106503 | p-Phenylenediamine | p-Phenylenediamine |
| 463490 | Propadiene | |
| 74986 | Propane | |
| 123386 | Propionaldehyde | Propionaldehyde |
| 114261 | Propoxur | Propoxur (Baygon) |
| 2807309 | Propyl Cellosolve | Glycol Ethers |
| 115071 | Propylene | |
| 78875 | Propylene Dichloride | Propylene Dichloride (1,2-Dichloropropane) |
| 107982 | Propylene Glycol 1-Methyl Ether | |
| 108656 | Propylene Glycol Monomethyl Ether Acetate (1-Methoxy-2-Propyl | |
| 5131668 | Propylene Glycol n-Butyl Ether | |
| 57018527 | Propylene Glycol Tert-Butyl Ether | |
| 75569 | Propylene Oxide | Propylene Oxide |
| 106423 | p-Xylene | Xylenes (Mixed Isomers) |
| 129000 | Pyrene | Polycyclic Organic Matter |
| 110861 | Pyridine | |
| 14808607 | Quartz | |
| 91225 | Quinoline | Quinoline |
| 106514 | Quinone | Quinone (p-Benzoquinone) |
| 605 | Radionuclides | Radionuclides (Including Radon) |
| 400 | Radionuclides (Including Radon) | Radionuclides (Including Radon) |
| 606 | Radon And Its Decay Products | Radionuclides (Including Radon) |
| 142844006 | Refractory Ceramic Fiber | |
| 483658 | Retene | Polycyclic Organic Matter |
| 1314289 | Rhenium Oxide | |
| 617 | Rockwool (Man-Made Fibers) | Fine Mineral Fibers |
| 81072 | Saccharin | |
| 253 | Selenium & Compounds | Selenium Compounds |
| 7446084 | Selenium Dioxide | Selenium Compounds |
| 7488564 | Selenium Disulfide | Selenium Compounds |
| 7783791 | Selenium Hexafluoride | Selenium Compounds |
| 7446346 | Selenium Monosulfide | Selenium Compounds |
| 12640890 | Selenium Oxide | Selenium Compounds |
| 7783008 | Selenous Acid | Selenium Compounds |
| 7631869 | Silica | |
| 7440213 | Silicon | |
| 112945525 | Silicon Dioxide | |
| 7440224 | Silver | |
| 506649 | Silver Cyanide | Cyanide Compounds |
| 616 | Slagwool (Man-Made Fibers) | Fine Mineral Fibers |
| 7440235 | Sodium | |
| 1333831 | Sodium Bifluoride | |
| 7775113 | Sodium Chromate | Chromium Compounds |
| 10034829 | Sodium Chromate(VI) | Chromium Compounds |
| 143339 | Sodium Cyanide | Cyanide Compounds |
| 10588019 | Sodium Dichromate | Chromium Compounds |
| 16925250 | Sodium Hexafluoroantimonate | Antimony Compounds |
| 1310732 | Sodium Hydroxide | |
| 7631994 | Sodium Nitrate | |
| STLITE | Staurolite | |
| 8052413 | Stoddard Solvent | |
| 7440246 | Strontium | |
| 7789062 | Strontium Chromate | Chromium Compounds |
| 100425 | Styrene | Styrene |
| 96093 | Styrene Oxide | Styrene Oxide |
| 14808798 | Sulfate | |
| 18496258 | Sulfide | |
| 7704349 | Sulfur | |

| | | |
|-----------|---|--|
| SO2 | Sulfur Dioxide | |
| SF6 | Sulfur Hexafluoride | |
| 7664939 | Sulfuric Acid | |
| 26140603 | Terphenyl | |
| 994058 | tert-Amyl Methyl Ether | |
| 75650 | tert-Butanol (2-Propanol, 2-Methyl-) | |
| 540885 | tert-Butyl Acetate | |
| 75661 | tert-Butyl Mercaptan | |
| 26914330 | Tetrachlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 127184 | Tetrachloroethylene | Tetrachloroethylene (Perchloroethylene) |
| 78002 | Tetraethyl Lead | Lead Compounds |
| 110010 | Tetrahydrothiophene | |
| 7440280 | Thallium | Radionuclides (Including Radon) |
| 110021 | Thiophene | |
| 7440291 | Thorium-232 | Radionuclides (Including Radon) |
| 7440315 | Tin | |
| 7440326 | Titanium | |
| 13463677 | Titanium Dioxide | |
| 7550450 | Titanium Tetrachloride | Titanium Tetrachloride |
| 108883 | Toluene | Toluene |
| 26471625 | Toluene Diisocyanates (mixture) | |
| 95807 | Toluene-2,4-Diamine | Toluene-2,4-Diamine |
| TF | Total Fluorides | |
| TRS | Total Reduced Sulfur | |
| TRS (H2S) | Total Reduced Sulfur (as H2S) | |
| TRS as S | Total Reduced Sulfur (as S) | |
| 8001352 | Toxaphene | Toxaphene (Chlorinated Camphene) |
| 123739 | trans-Crotonaldehyde | |
| 37680685 | Trichlorobiphenyl | Polychlorinated Biphenyls (Aroclors) |
| 79016 | Trichloroethylene | Trichloroethylene |
| 75694 | Trichlorofluoromethane | |
| 121448 | Triethylamine | Triethylamine |
| 112276 | Triethylene glycol | Glycol Ethers |
| 112492 | Triethylene Glycol Dimethyl Ether | Glycol Ethers |
| 1582098 | Trifluralin | Trifluralin |
| 143226 | Triglycol Monobutyl Ether | Glycol Ethers |
| 7756947 | Triisobutylene | |
| 25551137 | Trimethylbenzene | |
| 15625895 | Trimethylolpropane Triacrylate | |
| 7440611 | Uranium | Radionuclides (Including Radon) |
| 1344576 | Uranium Dioxide | Radionuclides (Including Radon) |
| 7783815 | Uranium Hexafluoride | Radionuclides (Including Radon) |
| 1344598 | Uranium Oxide | Radionuclides (Including Radon) |
| 541093 | Uranyl Acetate | Radionuclides (Including Radon) |
| 110623 | Valeraldehyde | |
| 7440622 | Vanadium | |
| 108054 | Vinyl Acetate | Vinyl Acetate |
| 593602 | Vinyl Bromide | Vinyl Bromide |
| 75014 | Vinyl Chloride | Vinyl Chloride |
| 75354 | Vinylidene Chloride | Vinylidene Chloride (1,1-Dichloroethylene) |
| VOC | Volatile Organic Compounds | |
| 1330207 | Xylenes (Mixture of o, m, and p Isomers) | Xylenes (Mixed Isomers) |
| 7440655 | Yttrium | |
| 7440666 | Zinc | |
| 13530659 | Zinc Chromate | Chromium Compounds |
| 50922297 | Zinc Chromite | Chromium Compounds |
| 557211 | Zinc Cyanide | Cyanide Compounds |
| 68186889 | Zinc Iron Chromite Brown Spinel (C.I. Pigment Brown 33) | Chromium Compounds |
| 7779900 | Zinc Phosphate | |
| 37224570 | Zinc Potassium Chromate | Chromium Compounds |
| 11103869 | Zinc Potassium Chromate Hydroxide | Chromium Compounds |
| 14940682 | Zircon | |

| | |
|-----|----------------|
| CO2 | Carbon Dioxide |
| CH4 | Methane |
| N2O | Nitrous Oxide |

Exhibit A



RECEIVED
FEB 21 1992
AGCW - SEATTLE



| | |
|-------------|--|
| DR. ACS | EQUIPMENT FLOW SHEET |
| CH. - | PYROPROCESSING AREA |
| APPR. EJA | AREAS 421/431 |
| DATE 2/2/92 | ASH GROVE CEMENT WEST, INC., SEATTLE PLANT |
| SCALE NONE | DRAWING NUMBER |
| MICRO | REV. SHEET |
| | 135-90-4-24015 |
| | NO. 4 |
| | DE |

RAW FEED ANALYSIS % BY WEIGHT

| SiO ₂ | Al ₂ O ₃ | Fe ₂ O ₃ | CaO | MgO | K ₂ O | Na ₂ O | SO ₃ | LOSS | TOTAL |
|------------------|--------------------------------|--------------------------------|------|------|------------------|-------------------|-----------------|------|-------|
| 13.5 | 2.5 | 2.4 | 43.2 | 1.97 | 0.31 | 0.13 | 0.40 | 35.1 | 99.51 |

ANALYSIS BASED ON SAMPLES SUPPLIED BY CUSTOMER AND ANALYZED BY FL SMITH - COPENHAGEN.

GAS % BY VOLUME

| CH ₄ | C ₂ H ₆ | N ₂ | O ₂ |
|-----------------|-------------------------------|----------------|----------------|
| 76.6 | 16.4 | 4.0 | 3.0 |

NOTES:

1. PLANT AT SEA LEVEL
2. AMBIENT TEMP. 59°F OR 15°C
3. FUEL LHV 18540 BTU/LB OR 10300 KCAL/KG
4. CLINKER (RAW FEED, LOSS FREE RATIO)
SILICA RATIO 2.7 C3S 60.0
ALUMINA RATIO 1.3 C2S 17.6
LIME SATURATION 0.93 C3A 6.0
NA₂O - EQ. 0.56

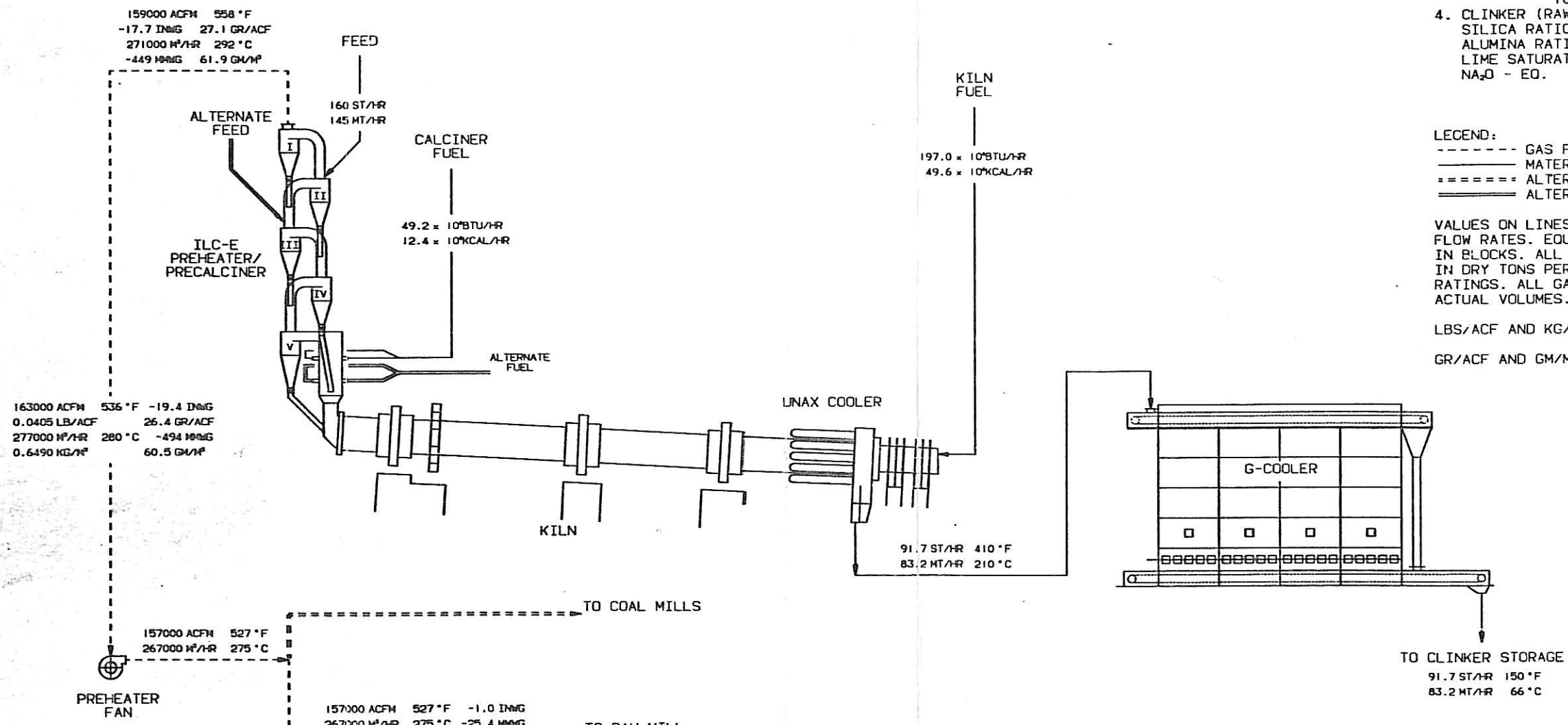
LEGEND:

- GAS FLOW
- MATERIAL FLOW
- ===== ALTERNATE GAS FLOW
- ===== ALTERNATE MATERIAL FLOW

VALUES ON LINES REPRESENT THEORETICAL FLOW RATES. EQUIPMENT RATINGS ARE SHOWN IN BLOCKS. ALL MATERIAL FLOW RATES ARE IN DRY TONS PER HOUR EXCEPT FOR WEIGHFEEDER RATINGS. ALL GAS FLOW RATES ARE SHOWN AS ACTUAL VOLUMES.

LBS/ACF AND KG/M³ - GAS DENSITY

GR/ACF AND GM/M³ - DUST DENSITY



EQUIPMENT RATINGS

| PREHEATER FAN | | | | | |
|--------------------------------|------------------------|--------------------------------|------------------------|---------------------------------------|------------------------|
| OPERATING CONDITION | | DESIGN CONDITION | | OPERATING CONDITION | |
| COAL FIRING | | GAS FIRING | | GAS FIRING | |
| 155000 ACFM | 522 °F -18.7 INWG | 181000 ACFM | 531 °F -23.1 INWG | 161000 ACFM | 522 °F -19.1 INWG |
| 0.0427 LB/ACF | 27.4 GR/ACF | 0.0401 LB/ACF | 28.6 GR/ACF | 0.0409 LB/ACF | 26.7 GR/ACF |
| 263000 M ³ /HR | 272 °C -474 MMWG | 308000 M ³ /HR | 277 °C -586 MMWG | 274000 M ³ /HR | 272 °C -484 MMWG |
| 0.6850 KG/M ³ | 62.8 GM/M ³ | 0.6430 KG/M ³ | 65.4 GM/M ³ | 0.6560 KG/M ³ | 61.1 GM/M ³ |
| KILN FUEL SYSTEM | | CALCINER FUEL SYSTEM | | KILN PRIMARY AIR FAN | |
| 265.0 x 10 ⁶ BTU/HR | | 74.1 x 10 ⁶ BTU/HR | | 1835 SCFM 68 °F 13.0 PSIG | |
| 66.7 x 10 ⁶ KCAL/HR | | 18.7 x 10 ⁶ KCAL/HR | | 2895 M ³ /HR 20 °C 191 KPA | |
| FEED CONVEYING SYSTEM | | PREHEATER | | | |
| 190.0 ST/HR | | | | | |
| 172.0 MT/HR | | | | | |

GAS-FIRED 2200 STPD PYROPROCESSING SYSTEM, COAL MILL DOWN.

| | | | | | | | | | |
|-------------------------------|-----|--|-------|-------|--|--|--|---|--|
| REV. NO. | | DATE | | ZONE | | MICRO | | REVISED FULLER AIR-LIFT AIR. CHANGED PRIMARY AIR DESIGN RATING. | |
| 1 | ACS | 07/09/92 | AC 92 | | | | | | |
| DR. BPK | | CHD. | | APPR. | | <p>THE INFORMATION TRANSMITTED HEREON IS NOT PUBLICLY BELONGS TO FULLER WHICH HAS PROVIDED IT SOLELY FOR AN EXCLUSIVELY RESTRICTED PURPOSE. ALL PERSONS, FIRMS OR COMPANIES WHO RECEIVE SUCH INFORMATION SHALL BE DEEMED TO HAVE AGREED TO MAKE NO DISSEMINATION OR USE THEREOF OF ANY OF ALL SUCH INFORMATION EXCEPT SUCH RESTRICTED USE AS IS EXPRESSLY AUTHORIZED IN WRITING BY FULLER.</p> | | | |
| | | <p>A member of the F.L. Smith-Fuller Engineering Group</p> <p>FULLER COMPANY 2040 Ave. "C" Bethlehem, Pa. 18017-2188 USA</p> | | | | | | | |
| CONTRACT PROCESS FLOW DIAGRAM | | 2200 STPD PYROPROCESSING SYSTEM | | | | | | | |
| SEATTLE, WASHINGTON, U.S.A. | | DRAWING NUMBER | | | | | | | |
| DATE 04/90 | | REV. SHEET | | | | | | | |
| SCALE NONE | | NO. 5 OF 5 | | | | | | | |
| MICRO | | 135-90-4-24021 | | | | | | | |

| RAW FEED ANALYSIS % BY WEIGHT | | | | | | | | | | COAL % BY WEIGHT | | | | |
|-------------------------------|--------------------------------|--------------------------------|------|------|------------------|-------------------|-----------------|------|-------|------------------|------|------|------------------|------|
| SiO ₂ | Al ₂ O ₃ | Fe ₂ O ₃ | CaO | MgO | K ₂ O | Na ₂ O | SO ₃ | LOSS | TOTAL | VOL. | F.C. | S | H ₂ O | ASH |
| 13.5 | 2.5 | 2.4 | 43.2 | 1.97 | 0.31 | 0.13 | 0.40 | 35.1 | 99.51 | 36.8 | 49.9 | 1.48 | 3.1 | 10.2 |

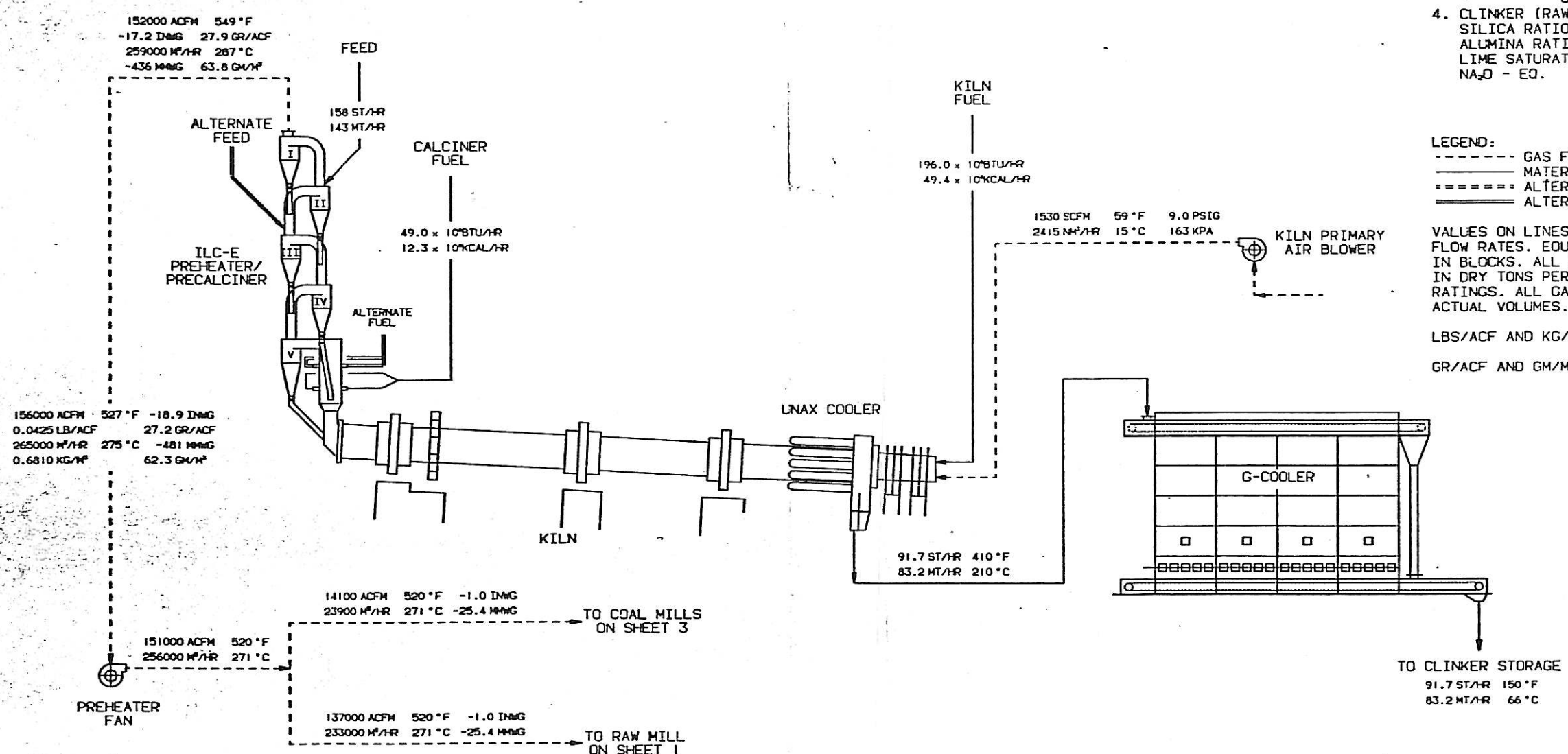
ANALYSIS BASED ON SAMPLES SUPPLIED BY CUSTOMER AND ANALYZED BY FL SKIDITH - COPENHAGEN.

- NOTES:
1. PLANT AT SEA LEVEL
 2. AMBIENT TEMP. 59°F OR 15°C
 3. FUEL LHV 12082 BTU/LB OR 6712 KCAL/KG
 4. CLINKER (RAW FEED, LOSS FREE RATIO)
 SILICA RATIO 2.7 C3S 60.0
 ALUMINA RATIO 1.3 C2S 17.6
 LIME SATURATION 0.93 C3A 6.0
 NA₂O - EQ. 0.56

- LEGEND:
- GAS FLOW
 - MATERIAL FLOW
 - ===== ALTERNATE GAS FLOW
 - ===== ALTERNATE MATERIAL FLOW

VALUES ON LINES REPRESENT THEORETICAL FLOW RATES. EQUIPMENT RATINGS ARE SHOWN IN BLOCKS. ALL MATERIAL FLOW RATES ARE IN DRY TONS PER HOUR EXCEPT FOR WEIGHFEEDER RATINGS. ALL GAS FLOW RATES ARE SHOWN AS ACTUAL VOLUMES.

LBS/ACF AND KG/M³ - GAS DENSITY
 GR/ACF AND GM/M³ - DUST DENSITY



EQUIPMENT RATINGS

| PREHEATER FAN | | | |
|---------------------------|-------------------|-----------------------|-------------------|
| OPERATING CONDITION | | DESIGN CONDITION | |
| COAL FIRING | | GAS FIRING | |
| 155000 ACFM | 522 °F -18.7 INWG | 181000 ACFM | 531 °F -23.1 INWG |
| 0.0427 LB/ACF | 27.4 GR/ACF | 0.0401 LB/ACF | 26.6 GR/ACF |
| 263000 M³/hr | 272 °C -474 MMWG | 308000 M³/hr | 277 °C -586 MMWG |
| 0.6850 KG/M³ | 62.8 GM/M³ | 0.6430 KG/M³ | 65.4 GM/M³ |
| KILN FUEL SYSTEM | | CALCINER FUEL SYSTEM | |
| 265.0 x 10⁹ BTU/hr | | 74.1 x 10⁹ BTU/hr | |
| 66.7 x 10⁹ KCAL/hr | | 18.7 x 10⁹ KCAL/hr | |
| KILN PRIMARY AIR BLOWER | | FEED CONVEYING SYSTEM | |
| 1835 SCFM 68 °F 13.0 PSIG | | 190.0 ST/hr | |
| 2895 M³/hr 20 °C 191 KPa | | 172.0 MT/hr | |

COAL-FIRED 2200 STPD PYROPROCESSING SYSTEM, COAL MILL RUNNING.

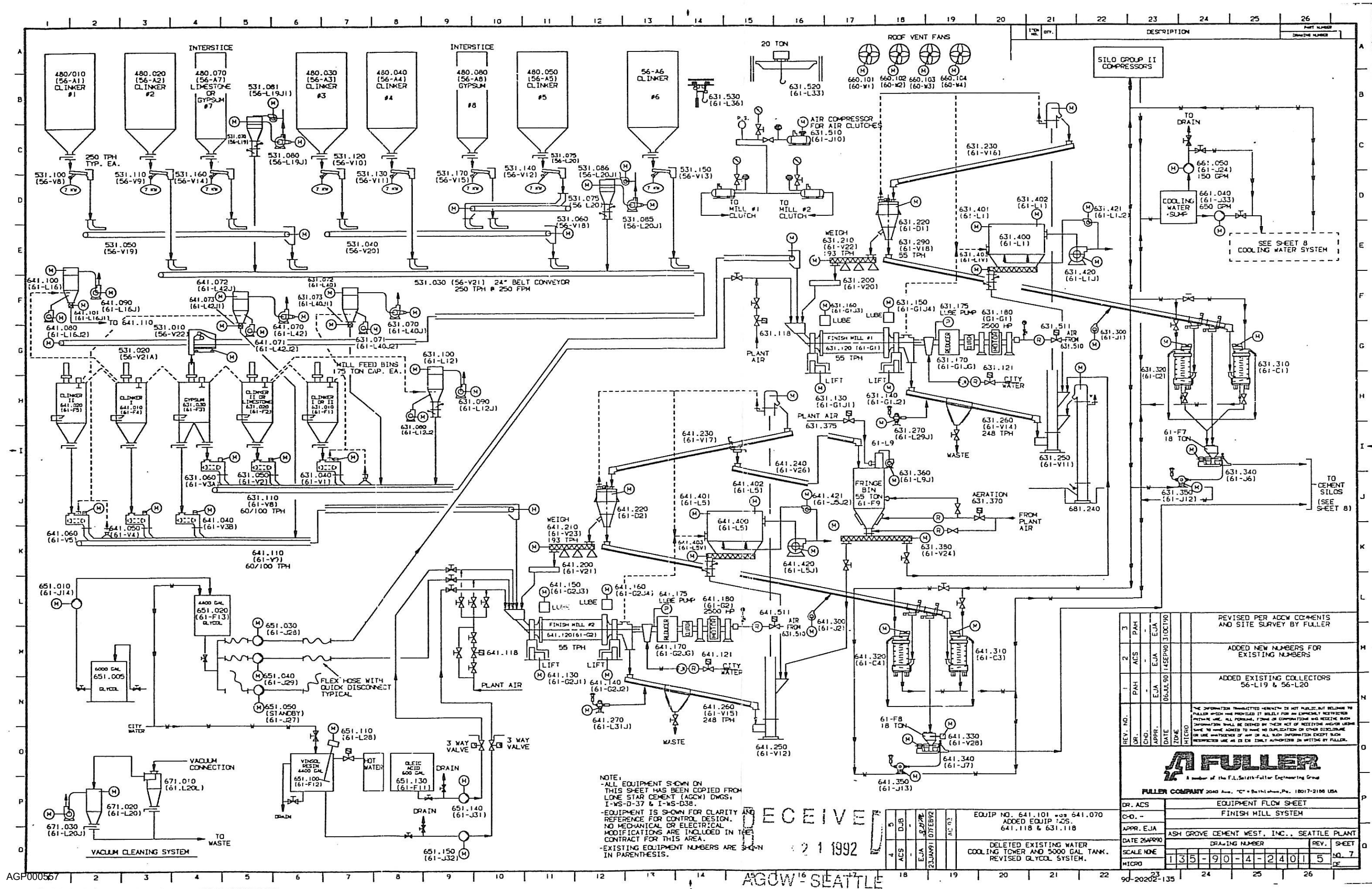
REVISED FULLER AIR-LIFT AIR, CHANGED PRIMARY AIR FAN TO BLOWER

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FULLER
 A member of the F.L. Skidith-Fuller Engineering Group

FULLER COMPANY 2040 Ave. "C" Bethlehem, Pa. 18017-2188 USA

| | |
|---------------|---------------------------------|
| DR. BPK | CONTRACT PROCESS FLOW DIAGRAM |
| CHO. | 2200 STPD PYROPROCESSING SYSTEM |
| APPR. KPL | ASH GROVE CEMENT WEST, INC. |
| DATE 05/90 | SEATTLE, WASHINGTON, U.S.A. |
| SCALE NONE | DRAWING NUMBER |
| MICRO | REV. SHEET |
| 135-90-4-2402 | NO. 2 OF 5 |



| REVISED PER AGOW COMMENTS AND SITE SURVEY BY FULLER | | | |
|---|-----|--|---------|
| 3 | PAH | EJA | 1300190 |
| 2 | ACS | EJA | 1450490 |
| 1 | PAH | EJA | 0608190 |
| ADDED NEW NUMBERS FOR EXISTING NUMBERS | | | |
| ADDED EXISTING COLLECTORS 56-L19 & 56-L20 | | | |
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| A member of the F.L. Smith-Fuller Engineering Group | | | |
| FULLER COMPANY 2040 Ave. "C" - Seattle, Wa. 98107-2106 USA | | | |
| DR. ACS | | EQUIPMENT FLOW SHEET | |
| C.O. - | | FINISH MILL SYSTEM | |
| APPR. EJA | | ASH GROVE CEMENT WEST, INC., SEATTLE PLANT | |
| DATE 26APR90 | | DRAWING NUMBER | |
| SCALE NONE | | REV. SHEET | |
| MICRO | | 135-90-4-24015 | |
| | | NO. 7 | |

EQUIP NO. 641.101 - 641.070
ADDED EQUIP NOS. 641.118 & 641.118
DELETED EXISTING WATER COOLING TOWER AND 5000 GAL TANK. REVISED GLYCOL SYSTEM.

Exhibit B



AIR OPERATING PERMIT

Puget Sound Clean Air Agency
1904 3rd Avenue, Suite 98101-3317
Seattle, Washington 98101

Issued in accordance with the provisions of Puget Sound Clean Air Agency (previously known as Puget Sound Air Pollution Control Agency) Regulation I, Article 7 and Chapter 173-401 WAC.

Ash Grove Cement Company, Inc. is authorized to operate subject to the terms and conditions in this permit.

| | |
|--|---|
| PERMIT NO.: 11339 | DATE OF ISSUANCE: May 15, 2004 Significant Modification 1 – May 17, 2007 Administrative Amendment 1 – July 13, 2007 Administrative Amendment 2 – December 2, 2010 Administrative Amendment 3 – December 23, 2013 Administrative Amendment 4 – June 13, 2018 |
| ISSUED TO: Ash Grove Cement Company, Inc. | |
| PERMIT EXPIRATION DATE: May 15, 2009 | |

SIC Code, Primary: 3241 Hydraulic Cement Manufacturing
NAICS Code 32731 Hydraulic Cement Manufacturing
Nature of Business: Hydraulic Cement Manufacturing
Mailing Address: 3801 E Marginal Way South, Seattle WA, 98106-1599
Facility Address: 3801 E Marginal Way South, Seattle WA, 98106-1599
Responsible Official: Laura McAnany, Plant Manager
Telephone No.: (206) 623-5596
FAX No.: (206) 623-5355
Site Contact: Gerry Brown, Safety/Environmental Manager
Telephone No.: (206) 623-5596
FAX No.: (206) 623-5355

Puget Sound Clean Air Agency Approval:


Sara Conley
Permit Engineer


Carole Cenci
Compliance Manager

TABLE OF CONTENTS

| | |
|--|----|
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I. EMISSION LIMITS AND PERFORMANCE STANDARDS

The following tables list the citation for the “applicable requirement” in the second column. The third column (Date) contains the adoption or effective date of the requirement. In some cases, the effective dates of the Federally Enforceable Requirement and the State Only Requirement are different because only rules approved by EPA through Sections 110, 111, and 112 of the federal Clean Air Act are federally enforceable and either the state has not submitted the regulation to the EPA or the EPA has not approved it.

The first column is used as an identifier for the requirement, and the fourth (Requirement Paraphrase) column paraphrases the requirement. The first and fourth columns are for information only and are not enforceable conditions of this permit. The actual enforceable requirement is embodied in the requirement cited in the second and third columns.

The fifth column (Monitoring, Maintenance & Recordkeeping Method) identifies the methods described in Section II of the permit. Following these methods is an enforceable requirement of this permit. The sixth (Emission Standard Period) column identifies the averaging time for the reference test method. The last column (Reference Test Method) identifies the reference method associated with an applicable emission limit that is to be used if and when a source test is required. In some cases where the applicable requirement does not cite a test method, one has been added.

In the event of conflict or omission between the information contained in the fourth and sixth columns and the actual statute or regulation cited in the second column, the requirements and language of the actual statute or regulation cited shall govern. For more information regarding any of the requirements cited in the second and third columns, refer to the actual requirements cited.

A. FACILITY-WIDE APPLICABLE REQUIREMENTS

The requirements in this section apply facility-wide to all the emission units regulated by this permit, except as otherwise stated in a permit condition.

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------------------------|---|----------------------------|---|---|------------------------------|---|
| Opacity Standards | | | | | | |
| I.A.1 | Puget Sound Clean Air Agency Reg I: 9.03(a)-(c) | 3/11/99 | Ash Grove shall not emit more than 20% opacity for a period or periods aggregating more than 3 minutes in any 1-hour period | II.A.1 General Opacity Monitoring | More than 3 min. in any 1 hr | Ecology Method 9A 7/12/1990 (See Section X) |
| I.A.2 | WAC 173-400-040(1) | 9/20/93 | Ash Grove shall not emit more than 20% opacity for more than 3 minutes in any 1-hour period. | II.A.1 General Opacity Monitoring | More than 3 min. in any 1 hr | Ecology Method 9A 7/12/1990 (See Section X) |
| Particulate Standards | | | | | | |
| I.A.3 | Puget Sound Clean Air Agency Reg. I: 9.09 | 4/09/98 | Ash Grove shall not emit particulate matter in excess of 0.05 gr/dscf from equipment used in a manufacturing process uncorrected for excess air | II.A.1 General Opacity Monitoring | (3) 1-hour runs | Puget Sound Clean Air Agency Method 5 (See Section X) |
| I.A.4 | WAC 173-400-060 <i>This requirement shall be superseded by the 9/15/01 version of WAC 173-400-060 upon its adoption into the SIP</i> | 3/22/91 | Ash Grove shall not emit particulate matter in excess of 0.10 gr/dscf from general process units, uncorrected for excess air | II.A.1 General Opacity Monitoring | (3) 1-hour runs | EPA Method 5 (40 CFR Part 60, Appendix A, July 1, 2002) |
| | WAC 173-400-060 (State Only) <i>This requirement will become federally enforceable upon adoption into the SIP and will replace the 3/22/91 version of WAC 173-400-060.</i> | 9/15/01 | | | | |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|---------------------------------|--|---|--|--|--------------------------|--|
| I.A.5 | Puget Sound Clean Air Agency Order of Approval No. 7381, Condition 4 | 6/6/01 | PM-10 emissions from each baghouse except the main stack baghouse, shall not exceed 0.005 grains /dscf over a 24 hour period. | II.A.1 General Opacity Monitoring | 24 hours | EPA Methods 5 or 201A (40 CFR Part 60, Appendix A, July 1, 2002; 40 CFR Part 51, Appendix M, July 1, 2001) |
| SO₂ Standards | | | | | | |
| I.A.6 | Puget Sound Clean Air Agency Reg I: 9.07 WAC 173-400-040(6) first paragraph only. | 04/14/94 09/20/93 | Ash Grove shall not emit SO ₂ in excess of 1,000 ppmv (dry) corrected to 7% O ₂ for fuel burning equipment | No monitoring required | (3) 1-hour runs | EPA Method 6C (40 CFR Part 60, Appendix A, July 1, 2002) |
| Nuisance Standards | | | | | | |
| I.A.7 | Puget Sound Clean Air Agency Reg I: 9.11(a) (<i>State Only</i>) WAC 173-400-040(5) RCW 70.94.040 (<i>State Only</i>) WAC 173-400-040(2) (<i>State Only</i>) | 03/11/99 09/20/93 1996 9/15/01 | Ash Grove shall not emit air contaminants in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property Ash Grove shall not deposit particulate matter beyond property boundary in sufficient quantity to interfere unreasonably with the use and enjoyment of the property | II.A.2 Complaint Response II.A.3 Rooftop Inspections II.A.4 O&M Plan Inspections | NA | NA |
| I.A.8 | WAC 173-400-040(4) (<i>State Only</i>) | 9/15/01 | Ash Grove shall use recognized good practice and procedures to reduce odors which may unreasonably interfere with any other property owners' use and enjoyment of their property | II.A.2 Complaint Response II.A.3 Rooftop Inspections | NA | NA |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--------------------------------|--|--|---|---|--------------------------|-----------------------|
| Fugitive Dust Standards | | | | | | |
| I.A.9 | RESERVED | | | | | |
| I.A.10 | RESERVED | | | | | |
| I.A.11 | WAC 173-400-040(3)(a) WAC 173-400-040(8)(a) <i>These requirements shall be superseded by the 9/15/02 versions of SIP WAC 173-400-040(3)&(8) upon adoption into the SIP</i> WAC 173-400-040(3)(a) (State Only) WAC 173-400-040(8)(a) (State Only) <i>These requirements will become federally enforceable upon adoption into the SIP and will replace the 9/20/93 versions of WAC 173-400-040(3)&(8)</i> | 9/20/93 9/20/93 9/15/01 9/15/01 | Ash Grove shall take reasonable precautions to prevent the release of fugitive emissions and to minimize emissions of fugitive dust. | II.A.3 Rooftop Inspections II.A.4 O&M Plan Inspections | NA | NA |
| I.A.12 | RESERVED | | | | | |
| I.A.13 | Puget Sound Clean Air Agency Reg. I: 9.15(a) | 3/11/99 | Ash Grove shall not cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. | II.A.3 Rooftop Inspections II.A.4 O&M Plan Inspections | NA | NA |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|---|----------------------------|--|---|--------------------------|---|
| Operation and Maintenance Standards | | | | | | |
| I.A.14 | Puget Sound Clean Air Agency Reg. I: 9:20 RCW 70.94.152(7) (<i>State Only</i>) | 6/09/88 1996 | Ash Grove shall maintain equipment in good working order Equipment described in plans, specifications or other information submitted in support of a notice of construction application shall be maintained and operate in good working order | II.A.4 O&M Plan Inspections | NA | NA |
| I.A.15 | Puget Sound Clean Air Agency Reg. I: 7.09(b) | 9/12/96 | Ash Grove shall develop and implement an O&M Plan to assure continuous compliance with Puget Sound Clean Air Agency Regulations I, II and III NOTE: See EU 1.31 for 40 CFR Part 63 O&M plan requirements for the kiln | II.A.4 O&M Plan Inspections | NA | NA |
| Emissions from common stack | | | | | | |
| I.A.16 | WAC 173-400-040 | 09/20/93 | Emissions from a common stack must meet the most restrictive standard of any of the connected emissions units | No monitoring required | NA | NA |
| HCl Standards | | | | | | |
| I.A.17 | Puget Sound Clean Air Agency Reg. I: 9.10(a) (<i>State Only</i>) | 06/09/88 | Ash Grove shall not emit HCl in excess of 100 ppm (dry) corrected to 7% O ₂ for combustion sources | No monitoring required | (3) 1-hour runs | EPA Method 26 or 26A (40 CFR Part 60, Appendix A; July 1, 2002) |
| I.A.18 | RESERVED | | | | | |

NA = Not Applicable

B. EMISSION UNIT SPECIFIC APPLICABLE REQUIREMENTS

The requirements in Section I.B. apply only to the specific emission units cited; however, the requirements in Section I.A. also apply to those units, except as otherwise provided in this section.

1. Emission Unit #1 (EU-1): Rotary Cement Kiln, Main Stack and Coal Mills

This emission unit consists of a nominal 2400 ton/day capacity rotary Portland cement kiln, primarily fired with coal and natural gas, and controlled by a nominal 177,000 acfm baghouse. The main stack emissions are monitored for opacity, carbon monoxide, nitrogen oxides and sulfur dioxide emissions by a continuous emission monitoring system. Fuels include bituminous coal, whole tires, a small amount of internally generated waste lubricating oils and greases, and natural gas. Dust entrained in the flue gases is collected in the Fuller Baghouse.

Although most of the kiln emissions exit from the kiln/raw mill through the main stack, a small portion of the hot kiln exhaust gases are routed directly from the kiln exhaust to the coal mills for use in thermally drying coal prior to grinding. Each coal mill is controlled by a nominal 10,400 acfm baghouse. This emission unit includes the coal mills because a small portion of kiln exhaust gases vent to the atmosphere through the coal mill baghouse stacks.

Emission Unit (EU-1)

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--------------------------|---|-----------------------------------|--|--|---------------------------------|--|
| Opacity Standards | | | | | | |
| EU 1.1 | RESERVED | | | | | |
| EU 1.2 | Puget Sound Clean Air Agency Reg. I: 9.04(c)(2) | 04/09/98 | Ash Grove shall not cause or allow the emission of any air contaminant (as determined by the COMS) from the kiln stack during any hour that contains any consecutive 6-minute period averaging greater than 20% opacity. | II.B.1 Continuous Opacity Monitoring System | 6-minute period | EPA Performance Specification 1 (40 CFR 60, Appendix B, July 1, 1997) EPA Method 9 (40 CFR 60, Appendix A, July 1, 2002). |
| EU 1.3 | RESERVED | | | | | |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|---|----------------------------|--|---|--------------------------|--|
| EU 1. 4 | Puget Sound Clean Air Agency Reg. I: 9.04(c)(1) | 04/09/98 | Ash Grove shall not cause or allow the emission of any air contaminant (as determined by the COMS) from the kiln stack during any hour that averages greater than 5% opacity for a one hour average. | II.B.1 Continuous Opacity Monitoring System | 1-hour average | EPA Performance Specification 1 (40 CFR 60, Appendix B, July 1, 1997) EPA Method 9 (40 CFR 60, Appendix A, July 1, 2002). |
| EU 1. 5 | RESERVED | | | | | |
| EU 1. 6 | RESERVED | | | | | |
| Puget Sound Clean Air Agency Orders of Approval NOC 5755 – Tire Derived Fuel | | | | | | |
| EU 1. 7 | Puget Sound Clean Air Agency Order of Approval No. 5755, Condition 4 | 3/30/95 | Tire derived fuel substitutes shall be nonhazardous as defined by WAC 173-303-515 or WAC 173-303-090, as appropriate. | No monitoring required. | NA | NA |
| EU 1. 8 | Puget Sound Clean Air Agency Order of Approval No. 5755, Condition 5 | 3/30/95 | Daily weight of whole tires burned in the kiln shall not exceed 30 % of the total weight of fuels consumed in the kiln. | II.B.6 Tire Derived Fuel Consumption | Daily | NA |
| Puget Sound Clean Air Agency Order of Approval NOC 7381 and PSD Permit 90-03 -- Kiln BACT limits. | | | | | | |
| EU 1. 9 | Puget Sound Clean Air Agency Order of Approval No. 7381 Condition 5(a). | 6/06/01 | CO emissions shall not exceed 1045 ppm at 10% O ₂ for an 8-hour average. | II.B.2 SO ₂ , CO and NO _x CEMS | 8 hours and annual | EPA Method 10 (40 CFR Part 60, Appendix A, July 1, 2002) |
| | PSD Permit 90-03, Amendment 3, Condition 3 | 10/08/01 | CO emissions shall not exceed 538 lbs/hour for an 8-hour average. CO shall not exceed 2353 tons per year including startup, shut down and malfunction periods. | II.B.3 SO ₂ , CO and NO _x Mass Emission Rate Monitoring | | EPA Performance Specification 4 (40 CFR Part 60, Appendix B, July 1, 1997) |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|---|----------------------------|---|---|--------------------------|---|
| EU 1. 10 | Puget Sound Clean Air Agency Order of Approval No. 7381 Condition 5(b). | 6/06/01 | NO _x emissions shall not exceed 650 ppm at 10% O ₂ as a 24-hour rolling average. | II.B.2 SO ₂ , CO and NO _x CEMS | 24-hours and annual | EPA Method 7E (40 CFR Part 60, Appendix A, July 1, 2002) |
| | PSD Permit 90-03, Amendment 3, Condition 1 | 10/08/01 | NO _x emissions shall not exceed 1846 tons as a 12-month running total including startup, shut down and malfunction periods. If NO _x emissions exceed 1400 tons as a 12-month running total, Ash Grove shall notify the Puget Sound Clean Air Agency (Attn. Permit Certification) describing actions that will be implemented to assure compliance with the annual NO _x limit. | II.B.3 SO ₂ , CO and NO _x Mass Emission Rate Monitoring | | EPA Performance Specification 2 (40 CFR 60, Appendix B, July 1, 1997) |
| EU 1. 11 | Puget Sound Clean Air Agency Order of Approval No. 7381 Condition 5(c). | 6/06/01 | Except during startup and shutdown of the kiln and scheduled maintenance SO ₂ emissions from the main stack shall not exceed 180 ppm at 10% O ₂ for a one-hr average. | II.B.2 SO ₂ , CO and NO _x CEMS | One hour & annual | EPA Method 6C (40 CFR Part 60, Appendix A, July 1, 2002) |
| | PSD Permit 90-03, Amendment 3, Condition 2 | 10/08/01 | During startup following the introduction of feed to the kiln, SO ₂ emissions from the main stack shall not exceed 200 ppm at 10% O ₂ for a one-hr average. SO ₂ emissions shall not exceed 176 tons per year including startup, shut down and malfunction periods. | II.B.3 SO ₂ , CO and NO _x Mass Emission Rate Monitoring | | EPA Performance Specification 2 (40 CFR 60, Appendix B, July 1, 1997) |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|---|----------------------------|--|--|--------------------------|--|
| EU 1. 12 | Puget Sound Clean Air Agency Order of Approval No. 7381 Condition 6(a). PSD Permit 90-03, Amendment 3, Condition 2(c) | 06/06/01 10/08/01 | During kiln startup-preheat periods prior to feed introduction, shutdown and scheduled maintenance on the main baghouse the SO ₂ emission limit for the main baghouse shall consist of compliance with the following work practices and fuel restrictions: (i) Only natural gas shall be used as fuel. (ii) Sulfur rings shall be removed from the Kiln prior to startup if sulfur rings formation had required the kiln to be shut down. (iii) Ash Grove shall follow the kiln startup and shutdown procedures in Appendix A to Order of Approval No. 7381. | II.B.8 Kiln Work Practice Monitoring | NA | NA |
| EU 1. 13 | Puget Sound Clean Air Agency Order of Approval No. 7381 Condition 5(d). | 06/06/01 | Except during startup and shutdown of the kiln, scheduled maintenance and emissions considered unavoidable under WAC 173-400-107, PM emissions shall not exceed 10.6 pounds per hour. | II.B.9 PM Monitoring Main Baghouse | (3) 1-hour runs | Puget Sound Clean Air Agency Method 5 (See Section X) |
| EU 1. 14 | Puget Sound Clean Air Agency Order of Approval No. 7381 Condition 5(d). | 06/06/01 | PM emissions shall not exceed 46 tons per year including startup, shut down and malfunction periods. | II.B.9 PM Monitoring Main Baghouse II.B.10 Production Rate Monitoring | annual | NA |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|--|----------------------------|---|--|-------------------------------|---|
| 40 CFR Part 60 Subpart F Standards of Performance for Portland Cement Plants | | | | | | |
| EU 1. 15 | 40 CFR §60.62(a)(1) 40 CFR §60.8(c) | 10/6/75 2/12/99 | Kiln exhaust shall not exceed 0.30 lb of particulate per ton of feed (dry basis), except during SSM periods. | II.B.9 PM Monitoring Main Baghouse II.B.10 Production Rate Monitoring | (3) 1-hour runs | EPA Method 5 (40 CFR 60, Appendix A, July 1, 2002) |
| EU 1. 16 | 40 CFR §60.62(a)(2) 40 CFR 60.11(c) | 10/6/75 10/17/00 | Kiln exhaust shall not exceed 20 percent opacity, except during startup, shutdown and malfunction periods. | II.B.1 Opacity COMS | 6 min. average | EPA Method 9 (40 CFR 60, Appendix A, July 1, 2002). |
| EU 1. 17 | 40 CFR §60.63(a) | 12/14/88 | Ash Grove shall record the daily production rates and kiln feed rates. | II.B.10 Production Rate Monitoring | NA | NA |
| 40 CFR Part 60 Subpart Y Standards of Performance for Coal Preparation Facilities | | | | | | |
| EU 1. 18 | 40 CFR 60.252(a)(1) 40 CFR §60.8(c) | 10/17/00 2/12/99 | Coal mill exhaust shall not exceed 0.031 gr/dscf, except during SSM periods. | II.A.1 General Opacity Monitoring | 3 one-hour runs | EPA Method 5 (40 CFR 60, Appendix A, July 1, 2002) |
| EU 1. 19 | 40 CFR 60.252(a)(2) 40 CFR 60.11(c) | 10/17/00 10/17/00 | Coal mill exhaust shall not exceed 20 percent opacity except during SSM periods | II.A.1 General Opacity Monitoring | More than 6 min. in any 1 hr. | EPA Method 9 (40 CFR 60, Appendix A, July 1, 2002) |
| EU 1. 20 | 40 CFR 60.253(a)(1) and (b) | 10/17/00 | Ash Grove shall calibrate, maintain and continuously operate a temperature monitor at the inlet to each coal mill baghouse. | II.B.13 Temperature CMS | N/A | N/A/ |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|---|-------------------------|----------------------------|--|--|--------------------------|-----------------------|
| 40 CFR Part 63, Subparts A and LLL | | | | | | |
| EU 1. 21 | 40 CFR §63.6(e)(1) | 5/30/03 | At all times, including periods of startup, shutdown, and malfunction, Ash Grove shall operate and maintain the kiln and raw mill, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. During an SSM period this general duty to minimize emissions requires that Ash Grove reduce emissions from the kiln and raw mill to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during an SSM event does not require Ash Grove to achieve emission levels required by Conditions EU 1.26 through 1.29 at other times if this is not consistent with safety and good air pollution control practices, nor does it require Ash Grove to make any further efforts to reduce emissions if levels required by Conditions EU 1.26 through 1.29 have been achieved. | II.B.14 Kiln Combustion System Inspections | N/A | N/A |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|--|----------------------------|--|---|--------------------------|-----------------------|
| EU 1. 22 | 40 CFR §63.6(e)(3)(i) | 5/30/03 | Ash Grove shall develop and implement a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the kiln and raw mill during SSM periods, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with Subpart LLL standards. The SSM plan shall include the elements set forth in 40 CFR 63.6(e)(3). | II.D.8 NESHAP Subpart LLL Recordkeeping II.C.3 Immediate SSM Plan Deviation Report II.C.7 Semi-annual Subpart LLL SSM Plan Report | N/A | N/A |
| EU 1. 23 | 40 CFR 63.6(e)(3)(ii) 40 CFR 63.6(e)(1)(ii) | 5/30/03 5/30/03 | During SSM periods Ash Grove shall operate and maintain the kiln and raw mill (including associated air pollution control equipment) in accordance with the SSM plan. Malfunctions shall be corrected as soon as possible after their occurrence in accordance with the SSM plan | II.D.8 NESHAP Subpart LLL Recordkeeping II.C.3 Immediate SSM Plan Deviation Report II.C.7 Semi-annual Subpart LLL SSM Plan Report | N/A | N/A |
| EU 1. 24 | 40 CFR §63.6(e)(3)(vii) | 5/30/03 | Ash Grove shall change the SSM plan if required by the Puget Sound Clean Air Agency if it is determined to be unacceptable under §63.6(e)(2). | No monitoring required | N/A | N/A |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|---------------------------------------|----------------------------|---|--|--------------------------|---|
| EU 1. 25 | 40 CFR §63.6(e)(3)(viii) | 5/30/03 | Ash Grove shall update the SSM plan within 45 days of an SSM event that the plan failed to address or inadequately addressed. If Ash Grove makes SSM plan revisions which alter the scope of activities which are deemed a SSM or modifies the applicability of any limit or requirement under Subpart(s) A and LLL, the revisions shall not take effect until Ash Grove has provided written notification describing the revision to the Puget Sound Clean Air Agency. | No monitoring required | N/A | N/A |
| EU 1. 26 | 40 CFR §63.1343(d) 40 CFR §63.6(f) | 6/14/99 5/30/03 | Ash Grove shall not cause to be discharged into the atmosphere from the kiln exhaust Dioxin/furan (D/F) exceeding 0.20 ng/dscm (8.7×10^{-11} gr/dscf)(TEQ) @ 7% O ₂ when the baghouse inlet temperature is greater than 400° F, and 0.40 ng/dscm (8.7×10^{-11} gr/dscf)(TEQ) @ 7% O ₂ when the baghouse inlet temperature is equal to or less than 400° F. Standards apply at all times except during SSM periods. | II.B.13 Temperature CMS | (3) 3-hour runs | EPA Method 23 (40 CFR 60, Appendix A, July 1, 2002) |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|--|----------------------------|---|---|--------------------------|---|
| EU 1. 27 | 40 CFR §63.1343(d) 40 CFR §63.6(f) | 6/14/99 5/30/03 | Ash Grove shall not cause to be discharged into the atmosphere from either coal mill stack Dioxin/furan (D/F) exceeding 0.40 ng/dscm (8.7×10^{-11} gr/dscf)(TEQ) @ 7% O ₂ . Standards apply at all times except during SSM periods. | II.B.13 Temperature CMS | (3) 3-hour runs | EPA Method 23 (40 CFR 60, Appendix A, July 1, 2002) |
| EU 1. 28 | 40 CFR §63.1344(a) 40 CFR 63.6(f) | 12/6/02 5/30/03 | Ash Grove shall operate the kiln such that the temperature of the gas inlet to the kiln/raw mill baghouse does not exceed the applicable temperature limits established during a performance test for periods when the raw mill does and does not operate. (§63.1349(b)). Standards apply at all times except during SSM periods. | II.B.13 Temperature CMS | 3-Hour Rolling Average | NIST Calibrated Reference Thermocouple – Potentiometer system |
| EU 1. 29 | 40 CFR §63.1344(a), as modified by 10/18/02 letter from Puget Sound Clean Air Agency to Robert Vantuyl establishing alternative monitoring methods for the coal mill 40 CFR 63.6(f) | 12/6/02 5/30/03 | Ash Grove shall operate the kiln such that the inlet temperature to each coal mill baghouse does not exceed 200 degrees F. Standards apply at all times except during SSM periods. | II.B.13 Temperature CMS | 3-Hour Rolling Average | NIST Calibrated Reference Thermocouple – Potentiometer system |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|--|----------------------------|---|--|--------------------------|---|
| EU 1. 30 | 40 CFR 63.1349(b)(3) and (d); 10/18/02 letter from Puget Sound Clean Air Agency to Robert Vantuyl establishing alternative monitoring methods for the coal mill | 12/6/02 | Except as waived or modified pursuant to 40 CFR 63.7 or 63.8, every 30 months Ash Grove shall conduct a performance test on the kiln and the two coal mill baghouse exhaust vents for dioxin/furans, using test methods described in 40 CFR 63.1349(b)(3). In any performance test conducted on the coal mills, Ash Grove may measure dioxin/furan emissions from one of the two coal mills, but the flow rate shall be measured from both coal mills. The first such test shall occur no later than 30 months after the initial performance test performed on October 22-24, 2002. | II.C.8 Subpart LLL Performance Test Reporting II.D.8 NESHAP Subpart LLL Recordkeeping | (3) 3-hour runs | EPA Method 23 (40 CFR 60, Appendix A, July 1, 2002) |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|-------------------------|----------------------------|---|--|--------------------------|-----------------------|
| EU 1. 31 | 40 CFR 63.1349(e)(3)(i) | 12/6/02 | Provide Puget Sound Clean Air Agency written notice at least 60 days prior to undertaking any operational change that may adversely affect compliance with the D/F emission standards in Conditions EU 1.26 and 1.27, or as soon as practicable where 60 days advance notice is not feasible. Notice shall include a description of the planned change, the emissions standards that may be affected by the change, and a schedule for completion of the performance test required by Condition EU 1.32, including when the planned operational change would begin. | N/A | N/A | N/A |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|------------------------------|----------------------------|--|--|--------------------------|---|
| EU 1. 32 | 40 CFR 63.1349(b)(3) and (e) | 12/6/02 | Conduct a dioxin/furan performance test whenever Ash Grove plans to undertake a change in operations that may adversely affect compliance with the D/F emission standards in Conditions EU 1.26 or 1.27. In preparation for and while conducting the performance test, the kiln and raw mill may operate under the planned operational change conditions for a period not to exceed 360 hours, provided that Ash Grove notifies Puget Sound Clean Air Agency as described in Condition EU 1.31, that the performance test results are documented in a test report containing the information listed in 40 CFR 63.1349(a), and that a test plan is made available for Puget Sound Clean Air Agency review prior to testing, if requested. The performance test must be completed within 360 hours after the planned operational change begins. Ash Grove shall submit to Puget Sound Clean Air Agency temperature and other monitoring data recorded during any period of pretest operations. | II.C.8 Subpart LLL Performance Test Reporting II.D.8 NESHAP Subpart LLL Recordkeeping | (3) 3-hour runs | EPA Method 23 (40 CFR 60, Appendix A, July 1, 2002) |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|---|---|--|--|--------------------------|-----------------------|
| EU 1. 33 | 40 CFR 63.1349(e)(1) | 12/6/02 | Data collected during a performance test under Condition EU 1.32 shall be used to establish new temperature limits for the kiln, supplanting the limits established under 40 CFR 63.1349(b). | N/A | N/A | N/A |
| EU 1. 34 | 40 CFR 63.8(e); 40 CFR 63.9(g) 40 CFR 63.1353(b)(4) 40 CFR 63.10(e)(2) 40 CFR 63.1354(b)(6) | 4/5/02 5/30/03 6/14/99 5/30/03 4/5/02 | Ash Grove shall conduct a performance evaluation of the temperature CMS required by Conditions EU 1.29 and 1.30 whenever requested by EPA under Clean Air Act Section 114. Any performance evaluation shall be conducted in accordance with the requirements of 40 CFR 63.8(e). Notification of the performance evaluation shall be provided as required in 40 CFR 63.1353(b)(4). Results of the performance evaluation shall be reported as provided in 40 CFR 63.1354(b)(6). | N/A | N/A | N/A |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|------------|-------------------------|----------------------------|---|---|--------------------------|-----------------------|
| EU 1. 35 | 40 CFR §63.1350(a)-(b) | 12/6/02 | <p>Ash Grove shall prepare for the kiln and raw mill an O&M plan including the following provisions:</p> <p>(a) Procedures for proper operation and maintenance of the kiln and associated air pollution control equipment to meet the dioxin/furan emission limits and parametric limits in conditions EU 1.26, 1.27 and 1.28;</p> <p>(b) Procedures to be used during an inspection of the components of the kiln and raw mill at least once per year.</p> <p>Failure to comply with those procedures shall be a violation of Subpart LLL.</p> <p>Ash Grove submitted the O&M plan for this requirement to the Puget Sound Clean Air Agency for approval on May 24, 2002.</p> <p>Ash Grove shall submit updates of the O & M Plan to the Agency upon adoption.</p> <p>Ash Grove may elect to integrate the Subpart LLL O&M Plan into the general O&M plan required by Condition I.A.15. If so the general O&M plan shall specifically identify those provisions required by this condition.</p> | <p>II.B.14 Kiln Combustion System Inspection</p> <p>II.D.8 NESHAP Subpart LLL Recordkeeping</p> | NA | NA |

| Reqmt. No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|---|----------------------------|--|--|--------------------------|-----------------------|
| Puget Sound Clean Air Agency Order of Approval NOC 9229 <u>Burn Used Oils in Kiln</u> | | | | | | |
| EU 1.36 | Puget Sound Clean Air Agency Order of Approval No. 9229 Condition 3 | 05/17/2007 | 3. Ash Grove shall limit used oil to non-hazardous as defined by WAC 173-303-515, Special Requirements for Used Oil Burned for Energy Recovery, or by WAC 173-303-090, Dangerous Waste Characteristics. Ash Grove is authorized to burn used oils meeting the material specifications in EU 1.38. | II.B.5 Used Oil Monitoring | Daily | NA |
| EU 1.37 | Puget Sound Clean Air Agency Order of Approval No. 9229 Condition 4 | 05/17/2007 | 4. Ash Grove shall limit the total amount of used oil injected into the kiln to 8640 gal/calendar day. | II.B.5 Used Oil Monitoring | Daily | NA |
| EU 1.38 | Puget Sound Clean Air Agency Order of Approval No. 9229 Condition 5 | 05/17/2007 | 5. Ash Grove shall only burn used oils meeting the following limits as delivered: (a) As less than or equal to 5 ppm; (b) Cd less than or equal to 2 ppm; (c) Cr less than or equal to 10 ppm; (d) Pb less than or equal to 100 ppm; (e) PCB less than or equal to 50 ppm; (f) Total Halogens less than 1000 ppm; (g) Flash Point greater than or equal to 100°F; (h) Heat content between 5,000 Btu/lb & 19,000 Btu/lb. | II.B.5 Used Oil Monitoring | Daily | NA |

N/A = Not Applicable. A specific reference test method and/or emission standard period is specified in the requirement. A test method is neither needed nor appropriate.

2. Emission Unit Group #2 (EU-2): Coal Processing, Storage and Transfer Facilities

This group consists of four coal storage, processing and transfer and loading systems that are subject to NSPS Subpart Y, Standards of Performance For Coal Preparation Plants. The affected facilities are Equipment Numbers 41B.FN1 (Coal Feeder #1), 41B.FN2 (Coal Feeder #2), 41A.BF3 (Raw Coal Silo), and 41C.BF1 (PF Bin). Subpart Y also regulates the #1 and #2 coal mills, but the applicable requirements for those units appear in Section I.B.1 above.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|-----------|-------------------------------------|----------------------------|--|--|--------------------------|---|
| EU 2. 1 | 40 CFR §60.11(d) | 10/17/00 | At all times, including SSM periods Ash Grove shall to the extent practicable maintain and operate Subpart Y affected facilities including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. | I.A.4 O&M Plan Inspections | N/A | N/A |
| EU 2. 2 | 40 CFR 60.252(c) 40 CFR 60.11(c) | 10/17/00 10/17/00 | Exhaust gases shall not exceed 20 percent opacity except during SSM periods. | II.A.1 General Opacity Monitoring | 6 minute average | EPA Method 9 (40 CFR 60, Appendix A, July 1, 2002) 40 CFR 60.254, 2/14/89 |

3. Emission Unit Group #3 (EU-3): Portland Cement NSPS Affected Facilities

This group consists of certain equipment subject to 40 CFR Part 60, Subpart F, the New Source Performance Standards for Portland Cement Plants. The affected facilities included in this group are Transfer Towers 2, 3, 5, 6, 7, 8 and 10A, Equipment Numbers 311.ST1 (Stacker), 311.RE1 (Reclaimer), 315.BN1 (Limestone Storage Bin), P11.TD (Truck Dump), 41B.SX1 (Raw Coal Storage Silos), 312.FA1 (Feeder), 312.7G1 (Clay Storage Shed), 315.BN2 (Clay Storage Bin), 315.BN3 (Silica Storage Bin), 315.BN4 (Slag Storage Bin), 315.FA1 (Clay Apron Feeder), 411.SX1, 411.SX 2 (Raw Meal Blending), 411.SX3, 411.SX4 (Raw Meal Storage Silos), 612.DM1 (Cement Storage Dome), 419.BC6 (Clinker Shed Tripper), 41G (Clinker Loadout Railcar) and 611.BK1 (Cement Loadout Bulk Bag). Subpart F also regulates the kiln and raw mill, but the Subpart F requirements for those units are set forth in Conditions EU 1.15, 1.16 and 1.17.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|-----------|------------------------------------|----------------------------|--|--|--------------------------|--|
| EU 3. 1 | 40 CFR §60.11(d) | 10/17/00 | At all times, including SSM periods Ash Grove shall to the extent practicable maintain and operate Subpart F affected facilities including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. | I.A.4 O&M Plan Inspections | N/A | N/A |
| EU 3. 2 | 40 CFR 60.62(c) 40 CFR 60.11(c) | 10/17/00 10/17/00 | Exhaust gases shall not equal or exceed 10 percent opacity except during SSM periods. | II.A.1 General Opacity Monitoring | 6 minute average | EPA Method 9 (40 CFR 60, Appendix A, July 1, 2002) |

4. Emission Unit #4 (EU-4): Finish Mills

The two finish mills are each rated at 55 tons per hour, installed in 1968 and controlled by two nominal 77,000 acfm high efficiency separator baghouses and two nominal 20,000 acfm mill sweep baghouses..

The clinker from the kiln that is passed through the G-Cooler becomes processed in the ball mills by grinding with gypsum to form cement and sent to the cement silos for storage.

In addition to the applicable requirements listed in this section, the finish mills are subject to the plant-wide requirements in Section I.A.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|---|--|----------------------------|---|--|------------------------------|--|
| Puget Sound Clean Air Agency Orders of Approval NOC 5276 | | | | | | |
| EU 4. 1 | Puget Sound Clean Air Agency Order of Approval No. 5276 Condition 4. | 1/19/94 | Ash Grove shall not allow particulate emissions from the (2) mill sweep baghouses to exceed 0.01 gr/dscf. | II.B.4 Finish Mill Baghouse Monitoring. | Average of 3 three-hour runs | Puget Sound Clean Air Agency Method 5 (See Section X) |
| EU 4. 2 | Puget Sound Clean Air Agency Order of Approval No. 5276 Condition 6. | 1/19/94 | Ash Grove shall not allow particulate emissions from the (2) mill sweep baghouses to exceed 10% opacity. | II.B.4 Finish Mill Baghouse Monitoring. | More than 3 min. in any 1 hr | Ecology Method 9A (See Section X) |

5. Emission Unit #5 (EU-5): Cement Dome & Steel Scale Tanks

The Cement Storage Dome is a 45,000 ton finished product storage facility controlled by a 6000 acfm Alanco baghouse. The Dome was installed in 1998. The four steel scale tanks are finished product loading facilities, used to load cement into trucks or railcars. The tanks were installed prior to 1971, but in 1998 Ash Grove replaced one of two baghouses that control emissions from the tanks with a new 6000 acfm Alanco baghouse. NOC 7242 approves construction of the Cement Storage Dome and the two Alanco baghouses.

In addition to the applicable requirements listed in this section, the Cement Storage Dome is subject to the plant-wide requirements listed in Section I.A and to the NSPS Subpart F requirements listed in Section I.B.3 of the permit. The Steel Scale Tanks are not Subpart F affected facilities.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|---|--|----------------------------|--|--|--------------------------------|--|
| Puget Sound Clean Air Agency Orders of Approval NOC 7242 - Cement Storage Dome | | | | | | |
| EU 5. 1 | Puget Sound Clean Air Agency Order of Approval No. 7242, Condition 7 | 1/06/98 | Ash Grove shall not allow PM-10 emissions from the Alanco baghouses mounted on the cement storage dome and the steel scale tanks to exceed 0.005 grains/dscf over a twenty-four hour period. | II.A.1 General Opacity Monitoring II.B.7 Cement Storage Dome Monitoring | Source test for a 24 hr period | Particulate by EPA Method 5 or EPA Method 201A (40 CFR Part 60, Appendix A, July 1, 2002; 40 CFR Part 51, Appendix M, July 1, 2001) |

6. Emission Unit #6 (EU-6): Bulk Bag Loading Station

Bulk Bag Loading Station controlled with a 500 cfm baghouse. In addition to the applicable requirements listed in this section, the Bulk Bag Loading Station is subject to the plant-wide requirements listed in Section I.A and to the NSPS Subpart F requirements listed in Section I.B.3 of the permit.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|--|----------------------------|--|--|--------------------------|-----------------------|
| Puget Sound Clean Air Agency Orders of Approval NOC 8318 – Bulk Loading Station | | | | | | |
| EU-6.1 | Puget Sound Clean Air Agency Order of Approval No. 8318 Condition 3. | 1/8/01 | Ash Grove shall allow no visible emissions or fallout from the 500 cfm baghouse controlling the bulk bag loading station. | II.B.11 Bulk Bag Loading Station Monitoring | NA | NA |
| EU 6. 2 | Puget Sound Clean Air Agency Order of Approval No. 8318 Condition 5. | 1/8/01 | If visible emissions, abnormal pressure drop or fallout are observed Ash Grove shall investigate the cause and either initiate repairs or shut down the equipment vented to the baghouse within 24 hours of the observation. | II.B.11 Bulk Bag Loading Station Monitoring | NA | NA |

7. Emission Unit #7 (EU-7): Clinker Storage Shed

In addition to the applicable requirements listed in this section, the Clinker Storage Shed is subject to the plant-wide requirements listed in Section I.A.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|--|----------------------------|--|--|--------------------------------|---|
| Puget Sound Clean Air Agency Orders of Approval NOC 8600 – Clinker Storage Shed | | | | | | |
| EU-7.1 | Puget Sound Clean Air Agency Order of Approval No. 8600 Condition 3. | 2/8/02 | Ash Grove shall not allow the PM-10 emissions from the Pulse Jet R-08-88-81 baghouse to exceed 0.005 grains/dscf over a twenty-four hour period. | II.A1 General Opacity Monitoring | Source test for a 24 hr period | Particulate by EPA Method 5 or EPA Method 201A (40 CFR Part 60, Appendix A, July 1, 2002; 40 CFR Part 51, Appendix M, July 1, 2001) |

8. Emission Unit #8 (EU-8): Group II Cement Silos

In addition to the applicable requirements listed in this section, the Group II Silos are subject to the plant-wide requirements listed in Section I.A.

APPLICABLE REQUIREMENTS

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method (See Section II) | Emission Standard Period | Reference Test Method |
|--|--|----------------------------|--|--|--------------------------------|---|
| Puget Sound Clean Air Agency Orders of Approval NOC 8643 – Group II Silos | | | | | | |
| EU-8.1 | Puget Sound Clean Air Agency Order of Approval No. 8643 Condition 3. | 2/8/02 | Ash Grove shall not allow the PM-10 emissions from each of the Pulse Jet Dust Collectors to exceed 0.005 grains/dscf over a twenty-four hour period. | II.A.1 General Opacity Monitoring | Source test for a 24 hr period | Particulate by EPA Method 5 or EPA Method 201A (40 CFR Part 60, Appendix A, July 1, 2002; 40 CFR Part 51, Appendix M, July 1, 2001) |

II. MONITORING, REPORTING AND RECORDKEEPING METHODS

A. Facility Wide Monitoring Methods

1. General Opacity Monitoring

Ash Grove shall conduct monthly inspections of the facility for visible emissions. Inspections are to be performed while the equipment is in operation during daylight hours. If, during the scheduled inspection or at any other time, visible emissions other than uncombined water are observed, Ash Grove shall, as soon as possible, but no later than 24 hours after the initial observation, take corrective action until there are no visible emissions, shut down the unit or activity until it can be repaired or conduct a reference method opacity observation. If a reference method opacity observation reveals an exceedance of the applicable visible emissions limit, report the observation as a deviation and shut the unit down until repairs are complete and a non-reference method visible emissions observation reveals no visible emissions. Report deviations as provided in Condition II.C.2. Maintain records as provided in Conditions II.D.1 and II.D.5.

[Order of Approval No. 7381, Condition 4 (6/6/01); WAC 173-401-615(1), 10/17/02]

2. Complaint Response

Ash Grove shall develop and implement an Air Pollution Complaint Response Program as part of the O&M Plan required by Regulation I Section 7.09(b). The Complaint Response Program shall be annually reviewed and updated along with the O&M Plan. This Program shall include:

- An Ash Grove local contact person and a 24-hour telephone number;
- Complaint forms available to the public;
- Criteria and methods for establishing whether Ash Grove may be the source of fugitive dust or other air contaminant impacts on neighboring property;
- Format of communicating results of investigations and advising complainants of Ash Grove's corrective actions and preventive maintenance;
- Ash Grove shall record air pollution complaints (including those forwarded to Ash Grove from this Agency) and findings of investigations as provided in Condition II.D.6. Investigations shall be initiated within 1 day of receipt of a complaint on Ash Grove's 24 hour complaint reporting phone line. Ash Grove's Complaint Response Program shall describe the procedures for investigating complaints. Complaint investigation procedures shall include efforts to contact the complainant, to inspect the conditions described in the complaint, to determine whether Seattle plant sustained a malfunction or other operating or site conditions that might have generated abnormal levels of fugitive emissions, and to determine the wind speed, direction and/or other meteorological conditions during relevant times preceding receipt of the complaint.

If Ash Grove determines that emissions from its plant unreasonably impacted neighboring properties Ash Grove shall either eliminate the problem within 24 hours of identification or report a deviation as provided in Condition II.C.2. Ash Grove also shall report as a deviation any failure to initiate investigation of a complaint within 1 day of receipt of the complaint. Results

of complaint investigations shall be reported monthly as provided in Condition II.C.10. Maintain records as provided in Condition II.D.6.

[WAC 173-401-615(1), 10/17/02]

3. Roof Top Inspections

Ash Grove shall conduct a roof-top¹ inspection at least weekly. These inspections shall include inspection for odor-bearing contaminants and for fugitive emissions from any part of the facility. In the event any fugitive emission release is discovered by an inspection, Ash Grove shall as soon as possible, but no later than 24 hours after discovered, begin corrective action, shut the operation down until the problem can be corrected, or report the release as a deviation as provided in Condition II.C.2. Ash Grove shall document each inspection as provided in Condition II.D.5.

[WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02]

4. O & M Plan Inspections

Ash Grove shall conduct a facility wide equipment inspection at least monthly. These inspections shall include:

- checking for prohibited activities under Section III of the permit and activities that require additional approval under Section IV of the permit
- inspection for proper operation of equipment and control equipment
- inspection for evidence that fugitive dust control measures required by Section 9.15 of Regulation I are being implemented
- inspection for odor bearing contaminant emissions from the facility.

In the event any violation of the underlying applicable requirement(s) are discovered by an inspection, Ash Grove shall as soon as possible, but no later than 24 hours after discovered, begin corrective action, shut the operation down until the problem can be corrected, or report the violation as a deviation under Condition II.C.2.

Ash Grove shall document all inspections required by this condition as provided in Condition II.D.5.

[Puget Sound Clean Air Agency Regulation I, Section 7.09(b) (9/10/1998); WAC 173-401-615(1) (10/17/02)].

¹ A “roof-top inspection” is a visual inspection of the overall facility from a sufficient height to allow the determination of the point(s) of origin and possibly the cause(s) of fugitive emissions.

B. Source Specific Monitoring Methods

1. Continuous Opacity Monitoring System

- i. Continuous Monitoring. Ash Grove shall install, calibrate, maintain and operate, in accordance with 40 CFR 60.13, a continuous opacity monitoring system (COMS) on the main kiln stack.
 - ii. Data Recovery. Ash Grove shall recover valid hourly monitoring data for at least 95% of the hours that the kiln operates during each calendar month except for periods of monitoring system downtime, provided that Ash Grove demonstrates to the Control Officer that the downtime was not a result of inadequate design, operation, or maintenance, or any other reasonably preventable condition, and any necessary repairs to the monitoring system are conducted in a timely manner.
 - iii. Quality Assurance. The COMS shall meet Performance Specification 1 in 40 CFR Part 60, Appendix B (1992), and Ash Grove shall operate this monitoring system in accordance with the U.S. Environmental Protection Agency's "Recommended Quality Assurance Procedures for Opacity Continuous Monitoring Systems" (EPA 340/1-86-010).
 - iv. Data Recording. Monitoring data commencing on the clock hour and containing at least 45 minutes of monitoring data shall be reduced to 1-hour averages. Monitoring data for opacity shall also be reduced to 6-minute averages. All monitoring data shall be included in these averages except for data collected during calibration drift tests and for data collected subsequent to a failed quality assurance test or audit.
 - v. Relative Accuracy Tests. All relative accuracy tests shall be subject to the provisions of Regulation I, Section 3.07 (2/9/95).
 - vi. Reporting and Recordkeeping. Report as provided in Conditions II.C.4, II.C.5, II.C.11 and/or II.C.12 (where applicable) each occasion on which the COMS records a violation of applicable opacity limit(s), or on which the COMS sustains an unexcused failure to meet the data recovery requirements of this condition. Maintain records as required in Section II.D.
- [WAC 173-401-615(1) (10/17/02); 40 CFR 60.63(b) (12/14/88); 40 CFR 60.13(a), (d) - (f) and (h) (8/27/01); Order of Approval 7381, Condition 7 (6/6/01); Puget Sound Clean Air Agency Regulation I, Section 12.01 & 12.03 (4/9/98)]

2. SO₂, CO and NO_x Continuous Emissions Monitoring System

- i. Continuous Monitoring. Ash Grove shall operate a continuous emission monitoring system (CEMS) for SO₂, CO and NO_x for the kiln main stack.
- ii. Data Recovery. Ash Grove shall recover valid hourly monitoring data for at least 95% of the hours that the kiln is operated during each calendar month except for periods of monitoring system downtime, provided that Ash Grove demonstrates to the Control Officer that the downtime was not a result of inadequate design, operation, or maintenance, or any other reasonably preventable condition, and any necessary repairs to the monitoring system are conducted in a timely manner.

iii. Quality Assurance. The CEMS for each pollutant shall meet the relevant performance specification in 40 CFR Part 60, Appendix B (1990), and Ash Grove shall operate this monitoring system in accordance with the quality assurance procedures in 40 CFR Part 60, Appendix F in effect July 1, 1992.

iv. Data Recording. Monitoring data commencing on the clock hour and containing at least 45 minutes of monitoring data shall be reduced to 1-hour averages. All monitoring data shall be included in these averages except for data collected during calibration drift tests and for data collected subsequent to a failed quality assurance test or audit.

v. Relative Accuracy Tests. All relative accuracy tests shall be subject to the provisions of Regulation I, Section 3.07 (2/9/95).

vi. Reporting. Report as provided in Condition II.C.4 each occasion on which the CEMS records a violation of applicable emission limit(s), or on which the CEMS sustains an unexcused failure to meet the data recovery requirements of this condition. Maintain records as provided in Condition II.D.1.

vii. Data Retention. See Condition II.D.3.

[WAC 173-401-615(1) (10/17/02); Order of Approval 7381, Condition 7 (6/6/01); PSD Permit 90-03, Amendment 3, Condition 7 (10/8/01); Puget Sound Clean Air Agency Regulation I, Section 12.01 & 12.03 (4/9/98)]

3. SO₂, CO, and NO_x Mass Emission Rate Monitoring

Ash Grove shall calculate emissions of SO₂ and CO from the cement kiln operation on a calendar year basis, and NO_x emissions from the cement kiln operation on a 12-month rolling total basis, using the CEMS data collected under the requirements of Section II.B.2 of this permit. Additionally, Ash Grove shall calculate the 8-hour block average mass emission rate for CO using CEMS data collected under the requirements of Section II.B.2 of this permit. Each day shall consist of three 8-hour CO compliance intervals, the first interval commencing at 12:00 AM. When CEM data is not available or not required to be collected as identified by this permit, other information available to Ash Grove shall be used to compile the emission rate values. Report deviations as provided in Condition II.C.4. Maintain records as provided in Condition II.D.10.

[WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02] [Order of Approval No. 7381, Condition 7, 6/6/01; PSD Permit 90-03, Amendment 3, Conditions 1-3, 10/8/01]

4. Finish Mill Baghouse Monitoring

Ash Grove shall monthly measure and record the pressure drop across the 20,000 cfm mill sweep baghouses. If a measurement reveals a pressure drop reading outside the range of 3 to 6 inches, take corrective action as soon as possible, but no later than 24 hours after the initial observation. If, following corrective action, the pressure drop remains outside the range of 3 to 6 inches, either shut down the unit until it can be repaired, or report the reading as a deviation. Keep a log of pressure drop readings, and of any corrective action taken. Document all measurements and

actions required by this condition as provided in Condition II.D.1. Report any deviation as provided in Condition II.C.2.

[Order of Approval 5276, Condition No. 7 (1/19/94); WAC 173-401-615(1) and WAC 173-401-615(2), (10/17/02)]

5. Used Oil Monitoring

- (a) Ash Grove shall monitor and maintain daily records of the volume of used oil injected into the kiln. Ash Grove shall submit these records on a monthly basis with the required CEMS reports as provided in Condition II.C.4. Examples of used oil include:
 - (i) Used oils;
 - (ii) Refined oil tank bottoms;
 - (iii) Raw crude tank bottoms;
 - (iv) Heavy vacuum gas oil waste;
 - (v) Off specification fuel oil.
- (b) Ash Grove shall:
 - (i) Authorize the person receiving and reviewing used oil shipments the authority to reject materials exceeding limits in EU 1.36 and EU 1.38.
 - (ii) Obtain a signed laboratory report from the oil supplier verifying each shipment of used oil received meets the limits in EU 1.38.
 - (iii) Maintain a used oil delivery log and record in this log the name of the supplier, the delivery date, the volume of used oil and a signed laboratory report of each shipment of used oil received.
- (c) Ash Grove shall calibrate the used oil flow meter at least once per calendar year. and maintain records for that calibration.
- (d) Ash Grove shall report any deviation as provided in Condition II.C.2 and shall maintain records described above in accordance with Condition II.D.3ast once per calendar year. and maintain records for that calibration in accordance with Condition II.D.3.

[Order of Approval No.9229, Conditions No. 4, 6, and 7 (05/17/2007)]

6. Tire Derived Fuel Consumption

Ash Grove shall monitor the weight of whole tires injected into the kiln following the Fuel Monitoring Plan required by Order of Approval 5755, Condition 6. Report a deviation per Condition II.C.2 if the daily weight of whole tires injected during each calendar day (7 am to 7 am) exceeds 30 percent of the weight of all fuels consumed in the kiln during that day. Report the daily weight of whole tires injected per Condition II.C.11.

[Order of Approval 5755, Condition No. 6 (1/11/95); WAC 173-401-615(1) and WAC 173-401-615(2) (10/17/02)]

7. Cement Storage Dome Monitoring

Ash Grove shall install and maintain gauges to monitor the pressure drop across each of the two Alanco Baghouse exhaust filters. The acceptable ranges for the gauges shall be clearly marked on or near the gauges. Once during each shift that either Alanco baghouse is used, record the pressure drop across the exhaust filter of that baghouse. If the pressure drop falls outside the acceptable range, take corrective action as specified in the facility's O & M plan. If, following corrective action, the pressure drop remains outside the acceptable range, either shut down the unit until it can be repaired, or report the reading as a deviation. Keep a log of pressure drop readings, and of any corrective action taken. Report deviations as provided in Condition II.C.2.

[Order of Approval 7242, Condition No. 4 - 6 (1/06/98); WAC 173-401-615(1) and WAC 173-401-615(2) (10/17/02)]

8. Kiln Work Practice Monitoring

Ash Grove shall log as part of the O & M Plan the following activities:

- (i) The date, start and end times, and the fuels used for kiln startup-preheat periods prior to feed introduction;
- (ii) The date and time of sulfur ring removal from the kiln, if the ring formation required the kiln to be shut down;
- (iii) The date, start and end times for kiln startup-feed introduction periods; and
- (iv) The cause for kiln shut down, the duration of kiln cool down and the kiln rotation schedule in kiln cool down.

Report as provided in Condition II.C.4 the information described above. Report as a deviation any unexcused departure from the startup and shutdown work practice requirements of Order of Approval 7381, Conditions 6(a) and (c) Maintain records as provided in Condition II.D.5.

[Order of Approval 7381, Condition 6 (6/06/01); WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02]

9. PM Monitoring Main Baghouse

- (a) Conduct a Puget Sound Clean Air Agency Method 5 source test at least once per permit cycle, no later than 12 months prior to the expiration date of this permit. Report per Condition II.C.1 any exceedance of the underlying PM limit. Maintain records as provided in Condition II.D.1.
- (b) Multiply the calendar year tonnage of clinker production by an emission factor of 0.0414 kg/Mg to determine annual PM10 emissions. Revise this emission factor using data from the most recent PM source test, provided that the test yields data deemed representative of the kiln baghouse emission rate. Use the revised emission factor to calculate annual emissions for years subsequent to the date of the source test. Record in a log the annual tonnage of clinker production. Report per Condition II.C.2 if calendar year PM emissions exceed 46 tons per year.

[Order of Approval 7381, Condition 5 (6/06/01); WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02]

10. Production Rate Monitoring

Record on a daily basis kiln production rate and kiln feed rate. Records may be maintained in electronic format. Report per Condition II.C.2 any failure to maintain the records required by this condition.

[40 CFR 60.63(a) (12/14/88); WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02]

11. Bulk Bag Loading Station Monitoring

At least once a week when the bulk loading station is in operation, Ash Grove shall inspect the dust collector for visible emissions, fallout and pressure drop across the filters. Record the time and results of each inspection. If visible emissions, fallout or abnormal pressure drop are observed, initiate corrective action within 24 hours or shut down the equipment vented to the baghouse within 24 hours. If, following corrective action, the problem remains, either shut down the unit until it can be repaired, or report the observation as a deviation as provided in Condition II.C.2. Keep a log of inspections and of any corrective action taken.

[Order of Approval 8318, Conditions 4-6 (1/08/01); WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02]

12. Used Oil Source Testing

- (a) Ash Grove shall submit a source test plan no later than 30 days after the completion date specified in the Notice of Completion submitted for Order of Approval 9229. The source test plan shall meet the requirements of Puget Sound Clean Air Agency Regulation I, Section 3.07 for test parameters specified below. For the dioxin/furan testing, Ash Grove shall also follow 40 CFR 63, Subparts A and Subpart LLL, including determining the average inlet temperature of the particulate matter control device following. Alternative test methods to those identified in II.B.12(b) may be used only after review and approval by the Agency.
- (b) Ash Grove shall complete performance source testing while operating with and without the injection of used oil. These tests shall be conducted while burning coal but not injecting tires and with the raw mill both operating and not operating. All tests shall be performed no later than 90 days after the completion date specified in the Notice of Completion submitted for Order of Approval No. 9229 and shall use the following methods:
 - (i) Opacity (CEMS);
 - (ii) SO₂ (CEMS);
 - (iii) NO_x (CEMS);
 - (iv) CO (CEMS);
 - (v) Formaldehyde (Method 0011/SW-8315);
 - (vi) HCl (EPA Method 26A);
 - (vii) Metals (EPA Method 29);

- (viii) Dioxin/Furan (EPA Method 23).
- (c) During the performance source testing, Ash Grove shall record the following data:
 - (i) Main Baghouse inlet temperature following 40 CFR 63.1349(b)(3);
 - (ii) Type and quantity of clinker manufactured for cement;
 - (iii) Type and quantity of raw materials added to kiln;
 - (iv) Type, quantity and fuel Btu added to the kiln (including used oil);
 - (v) Burnability Index; and
 - (vi) Variability of raw mix.
- (d) Ash Grove shall report the results of the performance source test per Conditions II.C.8 and V.N.

[Order of Approval No. 9229, Conditions 8, 9, and 10 (05/17/2007)]

13. Temperature CMS

Ash Grove shall install, calibrate, maintain and continuously operate a continuous temperature monitor system (CMS) at the kiln baghouse inlet and at the inlet to each coal mill baghouse. Each CMS shall meet performance specifications in 40 CFR 63.1350(f) (4/5/02). Each CMS shall meet the O & M and data availability requirements of 40 CFR 63.8(c), (d) and (e). The calibration of the CMS shall be verified at least once every three months. Ash Grove shall continuously record inlet temperatures at the kiln and coal mill baghouses as provided in § 63.1350(f). Maintain records as provided in Conditions II.D.7 and II.D.8. Report as provided in Conditions II.C.6 and/or II.C.12 .

[40 CFR 60.253(a)(1) and (b) (10/17/00); 40 CFR 63.1350(f) (12/6/02); 40 CFR 63.8 (4/5/02); 40 CFR 63.10(b)(2)(vi) (5/30/03); WAC 173-401-615(1) (10/17/02)].

14. Kiln Combustion System Inspections

Ash Grove shall inspect the components of the kiln combustion system once per year for compliance with those provisions of the O&M Plan that ensure compliance with the dioxin/furan emission limits in Conditions EU 1.27 and 1.28. Maintain records as provided in Condition II.D.8. Report as provided in Condition II.C.6.

[40 CFR 63.1350(i) (12/6/02); 40 CFR 63.1354(a)(9)(iv) (6/14/99); WAC 173-401-615(1) and WAC 173-401-615(2), 10/17/02]

C. Reporting

Ash Grove shall file the following reports with the Puget Sound Clean Air Agency on the schedules provided herein.

1. General Reporting

Any monitoring reports required by this permit shall be submitted to Puget Sound Clean Air Agency Operating Permit Certification at least once every six months, or more frequently where specified in the permit. All instances of deviations from permit requirements must be clearly

identified in such reports. All reports must be certified by the responsible official consistent with Condition V.Q. Where an applicable requirement requires reporting more frequently than once every six months, the responsible official's certification needs to only be submitted once every six months, covering all required reporting since the date of the last certification, provided that the certification specifically identifies all documents subject to certification.

[WAC 173-401-615(3)(a) (10/17/02)]

2. General Deviation Reporting

Ash Grove shall report in writing to Puget Sound Clean Air Agency Operating Permit Certification all instances of deviations from permit requirements, including those attributable to upset conditions as defined in this permit, the probable cause of the deviations, and any corrective actions taken. Ash Grove shall maintain a contemporaneous record of all deviations. Ash Grove shall report any deviations that represent a potential threat to human health or safety by FAX (206 343-7522) as soon as possible but no later than 12 hours after such a deviation is discovered. Ash Grove shall report other deviations in writing to Puget Sound Clean Air Agency Operating Permit Certification no later than 30 days after the end of the month during which the deviation is discovered. Deviations revealed by a continuous monitoring system shall be reported as provided in Condition II.C.4 or Condition II.C.11

[WAC 173-401-615(3)(b) (10/17/02)]

3. Immediate Subpart LLL SSM Plan Deviation Report

Any time an action taken by Ash Grove during an SSM event (including actions taken to correct a malfunction) is not consistent with the procedures in Ash Grove's Subpart LLL SSM Plan, and the kiln exceeds an emission limit in Conditions EU1.26 or 1.28, Ash Grove shall report the actions taken for that event to Puget Sound Clean Air Agency by telephone or facsimile transmission within 2 working days after commencing actions inconsistent with the plan. That immediate report shall be followed by a letter delivered or postmarked within 7 working days after the end of the event, explaining the circumstances of the event, the reasons for not following the plan, and describing all Subpart LLL excess emissions and/or parameter monitoring exceedances are believed to have occurred. The letter must contain the name, title and signature of the responsible official who certifies its accuracy.

[40 CFR 63.10(d)(5)(ii) (5/30/03); 40 CFR 63.1354(b)(5) (6/14/99); WAC 173-401-615(3) (10/17/02)]

4. Monthly CEM Report

Ash Grove shall file with Puget Sound Clean Air Agency a monthly CEM report, which shall be delivered or postmarked within 30 days after the end of the month in which the data were recorded. This report shall include:

- a. The date, time period, magnitude and cause of each emission of opacity, CO, NO_x and SO₂ recorded by the kiln CEMS that exceeded applicable emission limits for that parameter;

- b. The date and time of all actions taken to correct the problem, including any actions taken to minimize emissions during the exceedance and any actions taken to prevent its recurrence;
- c. The number of hours that the kiln operated each month and the number of valid hours of monitoring data for each parameter that the respective CEMS recovered that month;
- d. The date, time period and cause of each failure to meet the data recovery requirements of Puget Sound Clean Air Agency Regulation I, § 12.03(b), and any actions taken to ensure adequate collection of such data;
- e. The date, time period and cause of each failure to recover valid hourly monitoring data for at least 90% of the hours that the kiln operated each day;
- f. The results of all cylinder gas audits conducted during the month.
- g. Demonstrations required under WAC 173-400-107 (4), (5) or (6) for exceedances deemed by Ash Grove to be "unavoidable."
- h. The date and time of commencement of each startup preheat, each introduction of feed to the kiln, the completion of startup and each shutdown of the kiln.
- i. The Complaint Response Report required by Condition II.C.10 shall be included as an attachment to the monthly CEM Report.
- j. The monthly CEM reports for June and December shall include, as attachments, the reports required by Conditions II.C.5, II.C.6, and II.C.7.
- k. The daily used oil consumption in gallons for each day of the month.

[PSD Permit 90-03, Amendment 3, Conditions 8 and 9 (10/8/01); Order of Approval 7381, Condition 7 (6/6/01); Puget Sound Clean Air Agency Reg. I: 12.03(f) (4/9/98); WAC 173-401-615(3) (10/17/02); Order of Approval No. 9229, Conditions No. 4 (05/17/2007)]

5. Semi-annual NSPS Report

The monthly CEM reports filed for the months of June and December shall include a semi-annual NSPS Subpart F excess emissions and monitoring system performance report, reporting data from the kiln COMS for the six month reporting periods ending June 30 and December 31. For purposes of those reports, "excess emissions" means all 6 minute periods during which the average opacity measured by the kiln COMS exceeds 20 percent. If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and COMS downtime for the reporting period is less than 5 percent of the total operating time for the period, Ash Grove need submit only a Summary Report in the format shown in Section X.E below. If the total duration of excess emissions for the reporting period equals 1 percent or greater of the total operating time for the reporting period or total COMS downtime for the reporting period is 5 percent or greater of the total operating time for the period, Ash Grove shall submit both the Summary Report and an Excess Emissions Report containing the following information for kiln opacity excess emissions:

- a. The magnitude of excess emissions, computed in accordance with 40 CFR 60.13(h), any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions.
- b. The process operating time during the reporting period;
- c. Specific identification of each period of excess emissions that occurs during startups, shutdowns and malfunctions of the kiln, the nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted;
- d. The date and time identifying each period during which the COMS was inoperative except for zero and span checks and the nature of the system repairs or adjustments;

When no excess emissions have occurred or the COMS has not been inoperative, repaired or adjusted, such information shall be stated in the report.

The semi-annual NSPS report shall be submitted to both the Puget Sound Clean Air Agency and EPA Region 10.

[40 CFR 60.7(c) and (d) (2/12/99); 40 CFR 60.65(a) (12/14/88); 40 CFR 60.63(d) 12/14/88); WAC 173-401-615(3) (10/17/02)]

6. Semi-annual NESHAP Subpart LLL Summary Report

The monthly CEM reports filed for the months of June and December shall include a semi-annual NESHAP Subpart LLL summary report for the six month reporting periods ending June 30 and December 31. The report shall be entitled: "Gaseous Excess Emission and Continuous Monitoring System Performance." It shall contain the following information:

- a. Company name and address of the Seattle plant;
- b. Statement that Ash Grove monitors kiln and coal mill baghouse inlet temperature as a parametric indicator of dioxin/furan emissions;
- c. Beginning and ending dates of the reporting period;
- d. Brief description of the kiln and in line raw mill;
- e. Description of the temperature limits in Conditions EU 1.29 and 1.30;
- f. Description of the manufacturer and model number(s) of the temperature monitor systems installed on the kiln and coal mills;
- g. Date of the most recent temperature CMS certification or audit;
- h. Total operating time of the kiln and raw mill during the reporting period;
- i. Performance summary, including each three hour period during the reporting period in which the average temperature of the kiln and/or each of the coal mills exceeded the respective temperature limits for those units as set forth in Conditions EU 1.29 and 1.30, the total duration of excess emissions expressed as a percent of the total kiln and/or coal mill operating time during the reporting period, and a breakdown of the total duration of excess emissions into those that are due to startup, shutdown, control equipment problems, process problems, other known causes and unknown causes;

- j. CMS performance summary for each temperature monitor, including the total number of hours of CMS downtime during the reporting period, total duration of CMS downtime expressed as a percent of the total kiln or coal mill operating hours during the reporting period, and a breakdown of total CMS downtime during the reporting period into periods that are due to monitoring equipment malfunctions, non-monitoring equipment malfunctions, QA/QC calibrations, other known causes, and unknown causes.
- k. Description of any changes in any CMS, processes or controls since the last reporting period;
- l. All failures to calibrate thermocouples and temperature sensors as required by Condition EU 1.20 and 40 CFR 63.1350(f)(6) (4/5/02)
- m. Results of any combustion system component inspections conducted in the reporting period as provided in Condition II.B.13;
- n. All failures to comply with any provision of the O&M plan developed in accordance with Condition EU 1.35;
- o. Name, title and signature of the responsible official who certifies the accuracy of the report;
- p. Date of the report.

If the total temperature CMS downtime for the reporting period for the kiln baghouse inlet CMS or either coal mill baghouse inlet CMS is ten percent or greater of the total operating time for the monitored unit during the reporting period, Ash Grove shall submit an excess emissions and continuous monitoring system report in addition to the summary report described in this condition.

[40 CFR 63.10(e)(3)(v)-(viii) (5/30/03); 40 CFR 63.1354(b)(8)-(10) (6/19/99); WAC 173-401-615(3) (10/17/02)]

7. Semi-annual Subpart LLL Startup Shutdown and Malfunction Report

The monthly CEM reports for June and December shall include, as an attachment, a semi-annual Subpart LLL SSM report. If actions taken by Ash Grove during SSM events occurring between January 1 and June 30 of each year were consistent with the procedures in Ash Grove's SSM plan, the SSM report for the month of June shall include a statement to that effect. If actions taken by Ash Grove during SSM events occurring between July 1 and December 31 of each year were consistent with the procedures in Ash Grove's SSM plan, the SSM report for the month of December shall include a statement to that effect. Each SSM report shall identify any instance where an action taken by Ash Grove during an SSM event (including actions taken to correct a malfunction) is not consistent with the SSM plan but the kiln and/or coal mill did not exceed an emission limit in Conditions EU 1.26 through 1.29. The report shall also include the number, duration and brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused an emission limit in Conditions EU 1.26 through 1.29 to be exceeded. For purposes of this report, a "malfunction" means any sudden, infrequent, and not reasonably preventable failure of kiln air pollution control equipment or the kiln process to operate in a normal or usual manner which causes, or has the potential to cause, any of the emission limitations in Conditions 1.26 through 1.29 to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 63.10(d)(5)(i) (5/30/03); 40 CFR 63.2 (5/30/03); 40 CFR 63.1354(b)(4) (6/14/99); WAC 173-401-615(3) (10/17/02)]

8. Subpart LLL Performance Test Reporting

Ash Grove shall report the results of each dioxin/furan performance test required by this permit. The report shall be postmarked or delivered to Puget Sound Clean Air Agency within 60 days following the completion of the performance test. With each report Ash Grove shall file a notification of compliance status as described in 40 CFR 63.9(h) (4/5/99).

[40 CFR 63.10(d)(2) (5/30/03); 40 CFR 63.9(h) (5/30/03); 40 CFR 63.1354(b)(1) (6/14/99); WAC 173-401-615(3) (10/17/02)]

9. Annual Emissions Reporting

Ash Grove shall report annually to the Puget Sound Clean Air Agency for those air contaminants during the previous calendar year that equal or exceed the following (tons per year):

| | |
|--|----|
| Carbon monoxide (CO) emissions | 25 |
| Facility combined total of all toxic air contaminants (TAC) emissions | 6 |
| Any single toxic air contaminant (TAC) emissions | 2 |
| Nitrogen oxide (NO _x) emissions | 25 |
| Particulate matter (PM ₁₀) emissions | 25 |
| Particulate matter (PM _{2.5}) emissions | 25 |
| Sulfur oxide (SO _x) emissions | 25 |
| Volatile organic compounds (VOC) emissions | 25 |

Annual emissions rates shall be reported to the nearest whole ton per year for only those contaminants that equal or exceed the thresholds above.

[Puget Sound Clean Air Agency Regulation I, Section 7.09(a), 10/6/97] [Puget Sound Clean Air Agency Regulation I, Section 7.09(a), 9/10/98 (*State Only*)]

10. Complaint Response Reporting

Ash Grove shall submit in writing to Puget Sound Clean Air Agency a report documenting all complaints received with a summary of the nature of the complaint, the conclusion of the investigation, and any corrective action taken in response. This report shall be submitted as an attachment to the CEM report required by Condition II.C.4. In the event there are no reportable events, the Complaint Response Report shall consist of a statement to that effect.

[WAC 173-401-615(3) (10/17/02)]

D. Recordkeeping

1. General Recordkeeping

Ash Grove shall maintain records of required monitoring information that include the following if applicable:

- a) The date, place as defined in the 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 such analyses; and
- f) The operating conditions existing at the time of sampling or measurement.

[WAC 173-401-615(2)(a), 10/17/02]

2. Changes made at the source

Ash Grove shall maintain records describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

[WAC 173-401-615(2)(b), (10/17/02)]

3. Record Retention

Records of all monitoring data and support information required by this permit shall be retained by Ash Grove for a period of five years from the date of the monitoring, sample, measurement, record, or application. 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.

[WAC 173-401-615(2)(c), (10/17/02); Puget Sound Clean Air Agency Regulation I, Section 12.03(e) (4/9/98)]

4. NESHAP Subpart LLL Record Retention

Ash Grove shall maintain files of all information (including all reports and notifications) required by 40 CFR Part 63, Subpart LLL in a form suitable and readily available for inspection for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report or record. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks or on microfiche.

Ash Grove shall keep the SSM Plan on record to be made available for inspection, upon request, by the Puget Sound Clean Air Agency or EPA, for the life of the kiln and raw mill, or until the kiln/raw mill are no longer subject to the provisions of 40 CFR Part 63. If the SSM Plan is revised, Ash Grove shall keep previous (i.e. superseded) versions of the Plan on record, to be

made available for inspection, upon request, by the Puget Sound Clean Air Agency or EPA, for five years following each revision of the Plan.

The provisions of this condition supplement, and do not supersede, the general record retention requirements set forth in Condition II.D.3 above.

[40 CFR 63.10(b)(1) (5/30/03); 40 CFR 63.6(e)(3)(v) (5/30/03); 40 CFR 63.1355(a) (6/14/99)]

5. O&M Plan Recordkeeping

Ash Grove shall document all inspections, tests and other actions required by the O&M Plan, including who conducted the inspection, tests or other actions; and the date and the results of the inspection, tests or other actions including corrective actions. Inspection records may be maintained in electronic format. Ash Grove shall maintain records of all inspections, tests, and other actions required by the O&M Plan on site and available for Puget Sound Clean Air Agency review.

[Puget Sound Clean Air Agency Regulation I, Section 7.09(b)(6), 9/10/98] [WAC 173-401-615(2)(a) (10/17/02), WAC 173-434-090, 10/18/90]

6. Complaint Response Recordkeeping

Records for complaints received concerning odor, fugitive emissions or nuisance conditions must contain the following information:

- a) Date and time of the complaint,
- b) Name and address of the person complaining, if known,
- c) Nature of the complaint,
- d) Investigation efforts and the basis for conclusions reached regarding the complaint, and
- e) Date, time and nature of any corrective action taken.

[Puget Sound Clean Air Agency Regulation I, Section 7.09(b)(6), 9/10/98] [WAC 173-401-615(2)(a) (10/17/02)]

7. NSPS Recordkeeping

Ash Grove shall maintain the following information for at least two years following the date of measurements, maintenance, reports and records:

- a) a file of all measurements recorded by the kiln COMS and by the continuous temperature monitors installed at the inlet to each coal mill baghouse;
- b) all reports of performance tests conducted under 40 CFR Part 60 and all applicable subparts;
- c) all reports of performance evaluations on the kiln COMS and the coal mill temperature monitors;
- d) all reports of CMS calibration checks on the kiln COMS and the coal mill temperature monitors;

- e) all records of adjustments and maintenance performed on the kiln COMS and the coal mill temperature monitors;
- f) all records required by Condition II.B.9 of the permit (kiln production rate and feed rate records);
- g) records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the kiln and coal mills, and of the additional NSPS affected units listed in Sections I.B.2 and I.B.3 of this permit;
- h) records of any malfunction any malfunction of the air pollution control equipment serving the kiln and coal mills, and of the additional NSPS affected units listed in Sections I.B.2 and I.B.3 of this permit;
- i) records of any period during which the kiln COMS or a coal mill temperature monitor is inoperative;

[40 CFR §60.7(b) and (f) (2/12/99); 40 CFR 60.63(a) (12/14/88); 40 CFR 60.253(a) (10/17/00); WAC 173-401-615(2)(a) (10/17/02)]

8. NESHAP Subpart LLL Recordkeeping

Ash Grove shall maintain relevant records for the kiln and raw mill of:

- a) The occurrence and duration of each startup, shutdown or malfunction of operation of the kiln and the raw mill;
- b) The occurrence and duration of each malfunction of the air pollution control equipment;
- c) All maintenance performed on the air pollution control equipment;
- d) Actions taken during SSM periods (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the kiln SSM Plan;
- e) All information necessary to demonstrate conformance with the kiln/raw mill SSM Plan when all actions taken during SSM periods (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in the SSM Plan. (The information needed to demonstrate conformance may be recorded using a checklist or other form designed to minimize the recordkeeping burden for conforming events);
- f) Each period during which the kiln temperature CMS or either of the coal mill temperature CMS is malfunctioning or inoperative (including out of control periods);
- g) All required measurements needed to demonstrate compliance with the dioxin/furan standards in 40 CFR 63.1343(d), as provided in 40 CFR 63.10(b)(2)(vii);

- h) All results of Subpart LLL performance tests and CMS performance evaluations;
- i) All measurements as may be necessary to determine the conditions of Subpart LLL performance tests and performance evaluations;
- j) All CMS calibration checks;
- k) All adjustments and maintenance performed on the kiln temperature CMS and on each coal mill temperature CMS;
- l) Any information demonstrating whether Ash Grove is meeting the requirements for a waiver of recordkeeping or reporting requirements under 40 CFR Part 63, if Ash Grove has been granted a waiver under 40 CFR 63.10(f);
- m) All emission levels relative to the criterion for obtaining permission to use an alternative to the relative accuracy test if Ash Grove has been granted such permission under 40 CFR 63.8(f)(6);
- n) All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9;
- o) All required temperature CMS measurements (including monitoring data recorded during unavoidable CMS breakdowns and out of control periods);
- p) The date and time identifying each period during which the kiln temperature CMS and each coal mill temperature CMS was inoperative except for zero (low level) and high level checks;
- q) The date and time identifying each period during which the kiln temperature CMS and each coal mill temperature CMS was out of control, as defined in 40 CFR 63.8(c)(7);
- r) The date and time of commencement and completion of each period of excess emissions and parameter monitoring exceedances of the dioxin/furan emission limits in Conditions EU 1.26 through 1.29 that occur during startups, shutdowns and malfunctions of the kiln/raw mill;
- s) The date and time of commencement and completion of each period of excess emissions and parameter monitoring exceedances of the dioxin/furan emission limits in Conditions EU 1.26 through 1.29 that occur during periods other than SSM periods;
- t) For each malfunction of the kiln, raw mill, or kiln air pollution control equipment, the nature and cause of the malfunction (if known) and the corrective action taken or preventive measures adopted
- u) For each occasion on which the temperature CMS on the kiln or either coal mill temperature CMS was inoperative or out of control, the nature of the repairs or adjustments to the CMS;
- v) The total kiln, raw mill and coal mill operating time during the reporting period.

[40 CFR 63.1355(b) (6/14/99); 40 CFR 63.10(b) and (c) (5/30/03)]

9. Subpart LLL Applicability Determination Recordkeeping

Ash Grove shall maintain on site records of its determination that the Seattle plant is not a Subpart LLL major source for at least five years after the determination, or until the facility changes its operations to become a major source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include the analysis that demonstrates the basis for the determination. The analysis shall be sufficiently detailed to allow EPA or the Puget Sound Clean Air Agency to make a finding about the source's applicability status with regard to the relevant standard or other requirement.

[40 CFR 63.10(b)(3) (5/30/03)]

10. SO₂, CO, and NO_x Mass Emission Rate Recordkeeping

Ash Grove shall maintain on site records which document the 12-month rolling total calculations for NO_x emissions from the kiln, the calendar year calculations for SO₂ and CO emissions from the kiln and summary 8-hour block average CO mass emission rates from the cement kiln. The records shall include the monthly calculations for each annual pollutant value, sufficient documentation to demonstrate the conversions from CEM data to mass emission rates, sufficient documentation to demonstrate the calculation methods used for mass emission rate data that is not CEM based, and documentation showing that all kiln operational time is included in the totals. The CEM data conversions used to generate mass emission rate values for these calculations shall be documented and retained with the record. Emission rate estimates used for operational periods lacking CEM data also shall be documented and retained.

[WAC 173-401-615(3), 10/17/02]

III. PROHIBITED ACTIVITIES

Ash Grove is prohibited from conducting, causing, or allowing the following activities:

A. Adjustment for Atmospheric Conditions

Varying the rate of emissions of a pollutant according to atmospheric conditions or ambient concentrations of that pollutant is prohibited, except as directed according to air pollution episode regulations. [WAC 173-400-205, 8/20/93]

B. Open Burning

Ash Grove shall not conduct open burning during any stage of an air pollution episode or period of impaired air quality and shall not conduct any open burning other than the following types:

1. Fires consisting solely of charcoal, propane, natural gas, or wood used solely for the preparation of food that comply with WAC 173-425-020(1) and WAC 173-425-030(21) and
2. Fires for instruction in the methods of fighting fires, provided that the person conducting the training fire complies with Puget Sound Clean Air Agency Regulation I, Section 8.07.

[Puget Sound Clean Air Agency Regulation I, Sections 8.04(a), 11/09/2000 and 8.07, 9/09/1999]
[WAC 173-425-020(1), 3/13/2000; WAC 173-425-030(21), 3/13/2000; RCW 70.94.743, 1998
c68 p1 and RCW 70.94.775(2), 1995 c362 p2 State/Puget Sound Clean Air Agency only]

C. Refuse Burning

Ash Grove shall not cause or allow the burning of combustible refuse except in a multiple chamber incinerator provided with control equipment. Ash Grove shall not operate refuse burning equipment any time other than daylight hours. [Puget Sound Clean Air Agency Regulation I, Section 9.05, 12/9/93]

D. Concealment

Ash Grove shall not cause or allow the installation or use of any device or use of any means which, without resulting in a reduction in the total amount of air contaminant emitted, conceals an emission of an air contaminant which would otherwise violate Puget Sound Clean Air Agency Regulation I, Article 9 or Chapter 173-400 WAC. [Puget Sound Clean Air Agency Regulation I, Section 9.13(a), 6/9/88; WAC 173-400-040(7), 8/20/93]

E. Masking

Ash Grove shall not cause or allow the installation or use of any device or use of any means designed to mask the emission of an air contaminant that causes detriment to health, safety or welfare of any person or conceals or masks an emission of an air contaminant that would otherwise violate Regulation I, Article 9 or Chapter 173-400 WAC. [Puget Sound Clean Air Agency Regulation I, Section 9.13(b), 6/9/88; and WAC 173-400-040(7), 8/20/93]

F. Ambient Standards

Ash Grove shall not cause or allow the emission of air contaminants in sufficient quantity as to exceed any ambient air quality standard in Puget Sound Clean Air Agency Regulation I Section 11.01. [Puget Sound Clean Air Agency Regulation I, Section 11.01(b), 4/14/94]

G. Tampering

Ash Grove shall not render inaccurate any monitoring device or method required under Chapter 70.94 RCW, or any ordinance, resolution, regulation, permit, or order in force pursuant thereto.

[WAC 173-400-105(8), 8/21/98 *STATE ONLY*]

H. False Statements

Ash Grove shall not make any false material statement, representation or certification in any form, notice, or report required under Chapter 70.94 RCW, or any ordinance, resolution, regulation, permit, or order in force pursuant thereto.

[WAC 173-400-105(7), 8/21/98 *STATE ONLY*]

IV. ACTIVITIES REQUIRING ADDITIONAL APPROVAL

Ash Grove shall file notification and obtain the necessary approval from Puget Sound Clean Air Agency before conducting any of the following:

A. New Source Review

Ash Grove shall not construct, install, establish, or modify an air contaminant source, except those sources that are excluded by Puget Sound Clean Air Agency Regulation I, Section 6.03(b), unless a “Notice of Construction and Application for Approval” has been filed with and approved by Puget Sound Clean Air Agency. [Puget Sound Clean Air Agency Regulation I, Section 6.03, 7/12/01] [WAC 173-460-040 State/Puget Sound Clean Air Agency only]

B. Replacement or Substantial Alteration of Emission Control Technology

Ash Grove shall file a Notice of Construction and Application for Approval according to WAC 173-400-114 with Puget Sound Clean Air Agency before replacing or substantially altering any emission control technology installed at the facility. [Puget Sound Clean Air Agency Regulation I, Section 6.01 (11/17/05) (State/Puget Sound Clean Air Agency Only)] [WAC 173-400-114, RCW 70.94.153 (1991) State/Puget Sound Clean Air Agency only]

C. Asbestos

Ash Grove shall comply with 40 CFR 61.145 and 61.150 when conducting renovation or demolition activities at the facility. [40 CFR 61.145, 4/7/1993 and 61.150, 1/16/1991]

Ash Grove shall comply with Puget Sound Clean Air Agency Regulation III, Article 4 when conducting any asbestos project, renovation, or demolition activities at the facility. [Puget Sound Clean Air Agency Regulation III, Article 4, 7/13/00 (*State Only*)]

D. Spray Coating

Ash Grove shall comply with Puget Sound Clean Air Agency Regulation I, Section 9.16(a) when conducting or allowing any operation that involves the use of spray equipment to apply any VOC-containing material.

[Puget Sound Clean Air Agency Reg. I: 9.16 (7/12/01), State/Puget Sound Clean Air Agency only; however, will become federally enforceable when EPA incorporates it into the SIP]

V. STANDARD TERMS AND CONDITIONS

A. Duty to comply

Ash Grove shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 70.94 RCW and, for federally enforceable provisions, a violation of the Federal Clean Air Act (FCAA). Such violations are grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

[Puget Sound Clean Air Agency Regulation I, Section 7.05, 10/28/93, WAC 173-401-620(2)(a), 11/4/93]

B. Permit actions

This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by Ash Grove for a permit modification, revocation and re-issuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

[WAC 173-401-620(2)(c), 11/4/93]

C. Property rights

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

[WAC 173-401-620(2)(d), 11/4/93]

D. Duty to provide information

Ash Grove shall furnish to the Puget Sound Clean Air Agency, within a reasonable time, any information that the Puget Sound Clean Air Agency 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, Ash Grove shall also furnish to the Puget Sound Clean Air Agency copies of records required to be kept by the permit or, for information claimed to be confidential, Ash Grove may furnish such records directly to EPA Region 10 along with a claim of confidentiality. The Puget Sound Clean Air Agency shall maintain the confidentiality of such information in accordance with RCW 70.94.205.

[WAC 173-401-620(2)(e), 11/4/93]

E. Permit fees

Ash Grove shall pay fees as a condition of this permit in accordance with the Puget Sound Clean Air Agency Regulation I, Article 7. Failure to pay fees in a timely fashion shall subject Ash Grove to civil and criminal penalties as prescribed in Chapter 70.94 RCW.

[WAC 173-401-620(2)(f), 11/4/93]

F. Emissions trading

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 this permit.

[WAC 173-401-620(2)(g), 11/4/93]

G. Severability

If any provision of this permit is held to be invalid, all unaffected provisions of the permit shall remain in effect and be enforceable.

[WAC 173-401-620(2)(h), 11/4/93]

H. Permit appeals

This permit or any condition in it may be appealed only by filing an appeal with the Pollution Control Hearings Board and serving it on the Puget Sound Clean Air Agency within thirty days of receipt, pursuant to RCW 43.21B.310 and WAC 173-401-735. The provision for appeal in this section is separate from and additional to any federal rights to petition and review found under §505(b) of the FCAA.

[WAC 173-401-620(2)(i) and WAC 173-401-735, 11/4/93]

I. Permit continuation

This permit and all terms and conditions contained therein, including any permit shield provided under WAC 173-401-640, shall not expire until the renewal permit has been issued or denied if a timely and complete application has been submitted. An application shield granted under WAC 173-401-705(2) shall remain in effect until the renewal permit has been issued or denied if a timely and complete permit application has been submitted.

[WAC 173-401-620(2)(j), 11/4/93]

J. Federal enforceability

All terms and conditions of this permit are enforceable by the EPA administrator and by citizens under the FCAA, except for those terms and conditions designated in the permit as not federally enforceable.

[WAC 173-401-625, 11/4/93]

K. Inspection and entry

Upon presentation of credentials and other documents as may be required by law, Ash Grove shall allow the Puget Sound Clean Air Agency or an authorized representative to:

1. Enter Ash Grove's premises or where records must be kept under the conditions of this permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices or operations regulated or required under the permit; and
4. As authorized by WAC 173-400-105 and the FCAA, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

[WAC 173-401-630(2) (11/4/93); RCW 70.94.200 (1991) State/Puget Sound Clean Air Agency only]

L. Compliance requirements

Ash Grove shall continue to comply with all applicable requirements with which the source is currently in compliance. Ash Grove shall meet on a timely basis any applicable requirements that become effective during the permit term.

[WAC 173-401-630(3), WAC 173-401-510(2)(h)(iii) 11/4/93]

M. Compliance certifications

Ash Grove shall submit a certification of compliance with permit terms and conditions once per year. The first such certification shall cover a one-year period commencing upon the date of issuance of this permit. Each certification shall include:

1. The identification of each term or condition of the permit that is the basis of the certification;
2. The compliance status;
3. Whether compliance was continuous or intermittent; and
4. The method(s) used for determining the compliance status of the source, currently and over the reporting period. These methods must be consistent with the permit Monitoring, Maintenance and Recordkeeping Methods.

All compliance certifications shall be submitted to EPA Region 10 and to Puget Sound Clean Air Agency, at the following addresses, within 30 days after the close of the period covered by the certification:

Puget Sound Clean Air Agency
Attn.: Operating Permit Certification
1904 3rd Ave, Suite 105
Seattle, Washington 98101

EPA Region 10, Mail Stop OAQ-107
Attn.: Air Operating Permits
1200 Sixth Avenue
Seattle, Washington 98101

[WAC 173-401-630(5) 11/4/93]

N. Performance Testing

For the purpose of determining compliance with an emission standard, Puget Sound Clean Air Agency or the Washington State Department of Ecology may conduct testing of an emission unit or require Ash Grove to have it tested. In the event Puget Sound Clean Air Agency or Ecology conducts the test, Ash Grove shall be given an opportunity to observe the sampling and to obtain a sample at the same time.

[Puget Sound Clean Air Agency Regulation I, Section 3.05(b), 2/10/94; WAC 173-400-105(4), 8/20/93]

Ash Grove shall notify Puget Sound Clean Air Agency in writing at least 2 weeks (14 days) prior to any compliance test and provide Puget Sound Clean Air Agency an opportunity to review the test plan and to observe the test. Provided, Ash Grove shall provide the Puget Sound Clean Air Agency at least 30 days prior notice of any NSPS (40 CFR Part 60) performance test, and 60 days prior notice of any NESHAP (40 CFR Part 63) performance test. If there is a delay in conducting a scheduled NSPS or NESHAP performance test, Ash Grove shall notify the Puget Sound Clean Air Agency as soon as possible of any delay, in accordance with procedures specified in 40 CFR 60.8(d) (for NSPS testing) and 40 CFR 63.7(b)(2) (for NESHAP testing).

[Puget Sound Clean Air Agency Regulation I, Section 3.07(b) (2/9/95); 40 CFR 60.8(d) (2/12/99); 40 CFR 63.7(b) (10/7/00)]

If required by Puget Sound Clean Air Agency to perform a compliance test, Ash Grove shall submit a report to Puget Sound Clean Air Agency no later than 60 days after the test. The report shall include:

- (a) A description of the source and the sampling location;
- (b) The time and date of the test;
- (c) A summary of results, reported in units and for averaging periods consistent with the applicable emission standard;
- (d) A description of the test methods and quality assurance procedures employed;
- (e) The amount of fuel burned and raw material processed by the source during the test;

- (f) The operating parameters of the source and control equipment during the test;
- (g) Field data and example calculations; and
- (h) A statement signed by the senior management official of the testing firm certifying the validity of the source test report.

[Puget Sound Clean Air Agency Regulation I, Section 3.07(c) (2/9/95)]

O. Credible Evidence

For the purpose of establishing whether or not a person has violated or is in violation of any provision of chapter 70.94 RCW, any rule enacted pursuant to that chapter, or any permit or order issued thereunder, nothing in Puget Sound Clean Air Agency Regulation I shall preclude the use, including the exclusive use of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test procedures or methods had been performed.

[Puget Sound Clean Air Agency Regulation I, Section 3.06 (10/08/98); State/Puget Sound Clean Air Agency only]

For purposes of Federal enforcement, nothing in 40 CFR Part 52 shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether Ash Grove would have been in compliance with applicable requirements if the appropriate performance or compliance test procedures or methods had been performed.

[40 CFR 52.12(c) and 52.33(a) (2/24/97)]

P. NSPS and NESHAP Performance Testing

NSPS performance tests shall be conducted and data reduced in accordance with procedures contained in 40 CFR 60.8 and in each applicable subpart of 40 CFR Part 60. Performance tests required under 40 CFR Part 63, Subpart LLL shall be conducted and data reduced in accordance with relevant procedures contained in 40 CFR 63.7 and 63.1349.

[40 CFR §60.8 (2/12/99); 40 CFR 63.7 (4/5/02); 40 CFR 63.1349 (12/6/02)]

Q. Certification of Truth, Accuracy and Completeness

Any application form, report, or compliance certification submitted pursuant to this permit shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this permit shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

[WAC 173-401-520, 11/4/93]

R. Emergencies

An emergency, as defined in WAC 173-401-645(l), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the conditions of WAC 173-401-645(3) are met.

The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that Ash Grove can identify the cause(s) of the emergency;
2. The permitted facility was at the time being properly operated;
3. During the period of the emergency Ash Grove took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in the permit; and
4. Ash Grove submitted notice of the emergency to the Puget Sound Clean Air Agency within two (2) working days of the time when the emissions limitations were exceeded due to the emergency or shorter periods of time specified in an applicable requirement. This notice fulfills the requirement of WAC 173-401-615(3)(b) unless the excess emissions represent a potential threat to human health or safety. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

In any enforcement proceeding, Ash Grove has the burden of proof to establish the occurrence of an emergency. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

[WAC 173-401-645, 11/4/93]

S. Unavoidable excess emissions

Excess emissions due to startup or shutdown conditions, scheduled maintenance or upsets that are determined to be unavoidable under the procedures and criteria in WAC 173-400-107 shall be excused and not subject to penalty. For any excess emission that Ash Grove wants the Puget Sound Clean Air Agency to consider unavoidable and excusable under WAC 173-400-107, Ash Grove shall submit the information required under WAC 173-400-107.

[WAC 173-400-107(2) (8/20/93)]

T. Need to halt or reduce activity not a defense

It shall not be a defense for Ash Grove 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.

[WAC 173-401-620(2)(b), 11/4/93]

U. Stratospheric ozone and climate protection

1. Ash Grove shall comply with the following standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
 - i) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156;
 - ii) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158;
 - iii) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.
2. Ash Grove may switch from any ozone-depleting substance to any alternative approved pursuant to the Significant New Alternatives Program (SNAP), 40 CFR Part 82, Subpart G, without a permit revision but shall not switch to a substitute listed as unacceptable pursuant to such program. [40 CFR 82.174]
3. Any certified technician employed by Ash Grove shall keep a copy of their certification at their place of employment. [40 CFR 82.166(1)]
4. Ash Grove shall not willfully release any regulated refrigerant and shall use refrigerant extraction equipment to recover regulated refrigerant when servicing, repairing or disposing of commercial air conditioning, heating, or refrigeration systems.
[RCW 70.94.970(2) and (4), 11/12/97 State/Puget Sound Clean Air Agency only]

V. RACT satisfied

Emission standards and other requirements contained in rules or regulatory orders in effect at the time of this permit issuance shall be considered RACT for the purposes of issuing this permit.

[WAC 173-401-605(3), 11/4/93]

W. Risk management programs

In accordance with 40 CFR Part 68, if Ash Grove has or receives more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, Ash Grove shall comply with the requirements of the Chemical Accident Prevention Provisions of 40 CFR Part 68 no later than the following dates:

1. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
2. The date on which a regulated substance is first present above a threshold quantity in a process.

[40 CFR 68.10, 1/6/99]

X. Definitions

Unless otherwise defined in this permit, the terms used in this permit shall have the same meaning ascribed to them in WAC 173-401-200.

[WAC 173-401-200, 10/17/02]

Y. Duty to supplement or correct application

Upon becoming aware that it has failed to submit any relevant facts in a permit application or that it has submitted incorrect information in a permit application, Ash Grove shall promptly submit such supplementary facts or corrected information to the Puget Sound Clean Air Agency.

[WAC 173-401-500(6), 10/17/02]

VI. PERMIT ACTIONS

A. Permit Renewal, Revocation and Expiration

- 1) **Renewal application.** Ash Grove shall submit a complete permit renewal application to the Puget Sound Clean Air Agency no later than 12 months prior to the expiration of this permit. Puget Sound Clean Air Agency will send Ash Grove a renewal application no later than 18 months prior to the expiration of this permit. Failure of the Puget Sound Clean Air Agency to send Ash Grove a renewal application shall not relieve Ash Grove from the obligation to file a timely and complete renewal application.

[WAC 173-401-710(1), WAC 173-401-500(2), 10/17/02]

- 2) **Expired permits.** Permit expiration terminates Ash Grove's right to operate unless a timely and complete renewal application has been submitted consistent with WAC 173-401-710(1) and WAC 173-401-500. All terms and conditions of the permit shall remain in effect after this permit expires if a timely and complete permit application has been submitted.

[WAC 173-401-710(3), 10/17/02]

- 3) **Revocation of permits.** Puget Sound Clean Air Agency may revoke a permit only upon the request of Ash Grove or for cause. Puget Sound Clean Air Agency shall provide at least thirty days written notice to Ash Grove prior to revocation of the permit or denial of a permit renewal application. Such notice shall include an explanation of the basis for the proposed action and afford Ash Grove an opportunity to meet with the Puget Sound Clean Air Agency prior to the Puget Sound Clean Air Agency's final decision. A revocation issued under this condition may be issued conditionally with a future effective date and may specify that the revocation will not take effect if Ash Grove satisfies the specified conditions before the effective date. Nothing in this subsection shall limit the Puget Sound Clean Air Agency's authority to issue emergency orders.

[WAC 173-401-710(4), 10/17/02]

B. Administrative Permit Amendments

- 1) **Definition.** An "administrative permit amendment" is a permit revision that:
 - a) Corrects typographical errors;
 - b) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at Ash Grove;
 - c) Requires more frequent monitoring or reporting by Ash Grove;
 - d) Allows for a change in ownership or operational control of a source where the Puget Sound Clean Air Agency determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Puget Sound Clean Air Agency;

- e) Incorporates into the permit the terms, conditions, and provisions from orders approving notice of construction applications processed under an EPA-approved program, provided that such a program meets procedural requirements substantially equivalent to the requirements of WAC 173-401-700, 173-401-725, and 173-401-800 that would be applicable to the change if it were subject to review as a permit modification, and compliance requirements substantially equivalent to those contained in WAC 173-401-600 through 173-401-650.

[WAC 173-401-720(1), 11/4/93]

- 2) **Administrative permit amendment procedures.** An administrative permit amendment may be made by the Puget Sound Clean Air Agency consistent with the following:
 - a) Puget Sound Clean Air Agency shall take no more than sixty days from receipt of a request for an administrative permit amendment to take final action on such request, and may incorporate such changes without providing notice to the public or affected states provided that it designates any such permit revisions as having been made pursuant to this paragraph.
 - b) Puget Sound Clean Air Agency shall submit a copy of the revised permit to EPA.
 - c) Ash Grove may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

[WAC 173-401-720(3), 11/4/93]

- 3) **Permit shield.** Puget Sound Clean Air Agency shall, upon taking final action granting a request for an administrative permit amendment, allow coverage by the permit shield in WAC 173-401-640 for administrative permit amendments made pursuant to Part (1)(e) of this condition.

[WAC 173-401-720(4), 11/4/93]

C. Changes not Requiring Permit Revisions

- 1) **General.**
 - a) Ash Grove is authorized to make the changes described in this section without a permit revision, providing the following conditions are met:
 - i) The proposed changes are not Title I modifications as defined in WAC 173-401-200;
 - ii) The proposed changes do not result in emissions which exceed those allowable under the permit, whether expressed as a rate of emissions, or in total emissions;
 - iii) The proposed changes do not alter permit terms that are necessary to enforce limitations on emissions from units covered by the permit; and

- iv) Ash Grove provides EPA and the Puget Sound Clean Air Agency with written notification at least seven days prior to making the proposed changes except that written notification of a change made in response to an emergency shall be provided as soon as possible after the event.
- b) Permit attachments. Ash Grove and the Puget Sound Clean Air Agency shall attach each notice to their copy of the relevant permit.
- 2) **Section 502 (b)(10) changes.** Pursuant to the conditions in Subsection (1) of this section, Ash Grove is authorized to make Section 502(b)(10) changes (as defined in WAC 173-401-200) without a permit revision.
 - a) For each such change, the written notification required under Subsection (1)(a)(iv) of this condition shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.
 - b) The permit shield authorized under WAC 173-401-640 shall not apply to any change made pursuant to this paragraph.
- 3) **SIP authorized emissions trading.** Pursuant to the conditions in Subsection (1) of this condition, Ash Grove is authorized to trade increases and decreases in emissions in the permitted facility, where the Washington state implementation plan provides for such emissions trades without requiring a permit revision. This provision is available in those cases where the permit does not already provide for such emissions trading.
 - a) Under this Subsection (3), the written notification required under Subsection (1)(a)(iv) of this condition shall include such information as may be required by the provision in the Washington state implementation plan authorizing the emissions trade, including at a minimum, when the proposed change will occur, a description of each such change, any change in emissions, the permit requirements with which Ash Grove will comply using the emissions trading provisions of the Washington state implementation plan, and the pollutants emitted subject to the emissions trade. The notice shall also refer to the provisions with which Ash Grove will comply in the applicable implementation plan and that provide for the emissions trade.
 - b) The permit shield described in WAC 173-401-640 shall not extend to any change made under this paragraph. Compliance with the permit requirements that Ash Grove will meet using the emissions trade shall be determined according to requirements of the applicable implementation plan authorizing the emissions trade.

[WAC 173-401-722, 10/17/02]

D. Off Permit Changes

- 1) Ash Grove shall be allowed to make changes not specifically addressed or prohibited by the permit terms and conditions without requiring a permit revision, provided that the proposed changes do not weaken the enforceability of existing permit conditions. Any change that is a Title I modification or is a change subject to the acid rain requirements under Title IV of the FCAA must be submitted as a permit revision.

- 2) Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition.
- 3) Ash Grove must provide contemporaneous written notice to the Puget Sound Clean Air Agency and EPA of each such change, except for changes that qualify as insignificant under WAC 173-401-530. 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.
- 4) The change shall not qualify for the permit shield under WAC 173-401-640.
- 5) Ash Grove shall keep a record describing changes made at Ash Grove that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.
- 6) When making a change under this section, Ash Grove shall comply with applicable preconstruction review requirements established pursuant to RCW 70.94.152 and Puget Sound Clean Air Agency Regulation I, Article 6.

[WAC 173-401-724, 11/4/93]

E. Permit Modification

- 1) **Definition.** A permit modification is any revision to this permit that cannot be accomplished under provisions for administrative permit amendments under WAC 173-401-720.
- 2) **Procedures.** Minor permit modification procedures.
 - a) Criteria.
 - i) Minor permit modification procedures shall be used for those permit modifications that:
 - a) Do not violate any applicable requirement;
 - b) Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
 - c) 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 impacts, or a visibility or increment analysis;
 - d) Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that Ash Grove has assumed to avoid an applicable requirement to which Ash Grove would otherwise be subject. Such terms and conditions include:
 - (1) A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the FCAA; and

- (2) An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the FCAA;
 - e) Are not modifications under any provision of Title I of the FCAA;
 - ii) Notwithstanding (a)(i) of this subsection, and Subsection (3) of this section, the Puget Sound Clean Air Agency may allow the use of minor permit modification procedures for permit modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches, to the extent that the use of such minor permit modification procedures is explicitly provided for in the Washington state implementation plan or in applicable requirements promulgated by EPA and in effect on April 7, 1993.
 - b) Application. An application requesting the use of minor permit modification procedures shall meet the requirements of WAC 173-401-510 and shall include the following:
 - i) A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
 - ii) Ash Grove's suggested draft permit;
 - iii) Certification by a responsible official, consistent with WAC 173-401-520, of the truth, accuracy, and completeness of the application and that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and
 - iv) Completed forms for the Puget Sound Clean Air Agency to use to notify EPA and affected states as required under WAC 173-401-810 and 173-401-820.
 - c) Ash Grove's ability to make change. Ash Grove may make the change proposed in its minor permit modification application immediately after it files such application provided that those changes requiring the submissions of a notice of construction application have been reviewed and approved by the Puget Sound Clean Air Agency. After Ash Grove makes the change allowed by the preceding sentence, and until the Puget Sound Clean Air Agency takes any of the actions specified in WAC 173-401-725(d), Ash Grove must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this time period, Ash Grove need not comply with the existing permit terms and conditions it seeks to modify. However, if Ash Grove fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it.
 - d) Permit shield. The permit shield under WAC 173-401-640 shall not extend to minor permit modifications.
- 3) **Group processing of minor permit modifications.** Consistent with WAC 173-401-725(3), the Puget Sound Clean Air Agency may process groups of a source's applications for certain modifications eligible for minor permit modification processing.

4) **Significant modification procedures.**

- a) Criteria. Significant modification procedures shall be used for applications requesting permit modifications that do not qualify as minor permit modifications or as administrative permit amendments. Every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant. Nothing herein shall be construed to preclude Ash Grove from making changes consistent with Chapter 173-401 WAC that would render existing permit compliance terms and conditions irrelevant.
- b) Significant permit modifications shall meet all requirements of Chapter 173-401 WAC, including those for applications, public participation, review by affected states, and review by EPA, as they apply to permit issuance and permit renewal. Puget Sound Clean Air Agency shall complete review on the majority of significant permit modifications within nine months after receipt of a complete application.

[WAC 173-401-725, 11/4/93]

F. Reopening for Cause

- 1) **Standard provisions.** This permit shall be reopened and revised under any of the following circumstances:
 - a) Additional applicable requirements become applicable to Ash Grove with a remaining permit term of three or more years. Such a reopening shall be completed not later than eighteen 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 have been extended pursuant to WAC 173-401-620(2)(j);
 - b) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by EPA, excess emissions offset plans shall be deemed to be incorporated into the permit;
 - c) Puget Sound Clean Air Agency or 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; or
 - d) Puget Sound Clean Air Agency or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- 2) **Procedures.** Proceedings to reopen and issue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable.
- 3) **Notice.** Reopenings under this section shall not be initiated before a notice of such intent is provided to Ash Grove by the Puget Sound Clean Air Agency at least thirty days in advance of the date that the permit is to be reopened, except that the Puget Sound Clean Air Agency may provide a shorter time period in the case of an emergency.

[WAC 173-401-730, 11/4/93]

VII. PERMIT SHIELD

Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements contained in Sections I through VI of this permit that are specifically identified in this permit as of the date of permit issuance. [WAC 173-401-640(1)]

Nothing in this permit shall alter or affect the following:

- (1) The provisions of Section 303 of the FCAA (emergency orders), including the authority of the administrator under that section;
- (2) The liability of an owner or operator of Ash Grove for any violation of applicable requirements prior to or at the time of permit issuance;
- (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the FCAA;
- (4) The ability of EPA to obtain information from a source pursuant to Section 114 of the FCAA; or
- (5) The ability of Puget Sound Clean Air Agency to establish or revise requirements for the use of reasonably available control technology (RACT) as provided in Chapter 252, Laws of 1993.

[WAC 173-401-640(4), 11/4/93]

VIII. INAPPLICABLE REQUIREMENTS

As of the date of permit issuance, the requirements listed below do not apply to Ash Grove, or to the specific emission units specified below for the reasons indicated. The permit shield applies to all requirements so identified.

[WAC 173-401-640(2), 11/4/1993]

| Citation | Type of Requirement | Basis for Non-applicability |
|---|---|---|
| RCW 70.94.531 | Transportation Demand Management | This section requires, within 6 months after King County's adoption of a commute trip reduction plan, employers develop a trip reduction program and submit the program to the Puget Sound Clean Air Agency for review. This section is not an applicable requirement because it applies only to "major employers" that employ 100 or more full-time employees at a single work site who begin their work day between 6:00 a.m. and 9:00 a.m. Ash Grove does not employ 100 or more workers; therefore, it is not an applicable requirement. This requirement does not apply to emission units or stationary sources. |
| WAC 173-400-040(3)(b) and (8)(b) | Fugitive emission standards for emission units identified as "a significant contributor to the nonattainment status of a designated nonattainment area" | There are no designated nonattainment areas in the vicinity of the Seattle plant, and no emission unit at the Seattle plant has been identified as a "significant contributor" to the nonattainment status of a designated nonattainment area. |
| WAC 173-400-075 (except asbestos NESHAPS) | Emissions Standards for Sources Emitting Hazardous Air Pollutants | This requirement adopts the national emissions standards for hazardous air pollutants in 40 CFR Part 61 by reference and gives Ecology authority to conduct source tests and access to records to determine compliance. WAC 173-400-075 is not an applicable requirement because none of the subparts of 40 CFR Part 61 applies to any emissions unit at Ash Grove. |
| WAC 173-400-151 | Retrofit Requirements for Visibility Protection | This is inapplicable because Ecology has not identified Ash Grove as a source causing or contributing to impaired visibility in a Class I area. If Ecology makes such a determination, Puget Sound Clean Air Agency will reopen the permit. |
| WAC 173-434 Solid Waste Incinerator Facilities (as amended on 12/22/03) | Emission and operational limits for solid waste incinerator facilities | WAC 173-434 (as amended on December 22, 2003) does not apply to Ash Grove because the amendments exempt from the coverage of WAC ch. 173-434 the only solid waste materials that Ash Grove currently is authorized to combust. The previous 10/18/90 version of WAC 173-434 was superseded with the approval the current |

| Citation | Type of Requirement | Basis for Non-applicability |
|--|--|---|
| | | version into the Washington State Implementation Plan, effective September 6, 2005 |
| WAC 173-435 | Emergency Episode Plans | This chapter is not an applicable requirement until it is triggered by a request from Ecology to prepare a Source Emission Reduction Plan (SERP). Absent a request for a SERP, nothing in this chapter (except WAC 173-435-050(2)) imposes substantive requirements on sources. |
| WAC 173-435-050(2) | Action Procedures | Subsection (2) is not an applicable requirement because Ash Grove's operations do not include open burning. The other subsections are not applicable requirements, because they do not impose substantive requirements on facilities. |
| WAC 173-470 | Ambient Air Quality Standards for Particulate Matter | Ambient air quality standards are not "applicable requirements" [See WAC 173-401-200(4)(a)(xii) (10/17/02); 57 Fed. Reg. 32276 (July 22, 1992)]. |
| WAC 173-474 | Ambient Air Quality Standards for Sulfur Oxides | Ambient air quality standards are not "applicable requirements" [See WAC 173-401-200(4)(a)(xii) (10/17/02); 57 Fed. Reg. 32276 (July 22, 1992)]. |
| WAC 173-475 | Ambient Air Quality Standards for Carbon Monoxide, Ozone, and Nitrogen Dioxide | Ambient air quality standards are not "applicable requirements" [See WAC 173-401-200(4)(a)(xii) (10/17/02); 57 Fed. Reg. 32276 (July 22, 1992)]. |
| WAC 173-480 | Ambient Air Quality Standards and Emission Limits for Radionuclides | Ambient air quality standards are not "applicable requirements" [See WAC 173-401-200(4)(a)(xii) (10/17/02); 57 Fed. Reg. 32276 (July 22, 1992)]. These standards are also not applicable requirements because Ash Grove does not emit radionuclides. |
| WAC 173-481 | Ambient Air Quality and Environmental Standards for Fluorides | Ambient air quality standards are not "applicable requirements" [See WAC 173-401-200(4)(a)(xii) (10/17/02); 57 Fed. Reg. 32276 (July 22, 1992)]. |
| Puget Sound Clean Air Agency Reg. I: Article 5 | Registration | This section will not be applicable because Title V permitted sources are not subject to these registration and reporting requirements per RCW 70.94.161(17). |
| Puget Sound Clean Air Agency Reg. I: 9.04(e) (04/9/98) | Venturi Scrubber | This section does not apply because Ash Grove does not operate a Venturi scrubber and Ash Grove will apply for a permit modification before installation. |

| Citation | Type of Requirement | Basis for Non-applicability |
|--|--|---|
| Puget Sound Clean Air Agency Reg. I: 12.02(b) (08/10/89) | Wet Control Equipment | This section is not an applicable requirement because Ash Grove does not use wet control equipment, and Ash Grove will apply for a permit modification before installation. |
| Puget Sound Clean Air Agency Reg. I: 12.03(c) (08/10/89) | Pressure Loss Through Scrubbers | This section is not applicable because Ash Grove does not use scrubbers. |
| Puget Sound Clean Air Agency Reg. I: 12.03(d) (08/10/89) | Scrubber Liquid Supply Rate | This section is not applicable because Ash Grove does not use scrubbers. |
| Puget Sound Clean Air Agency Reg. I: 12.04(b) (08/10/89) | Recordkeeping for Scrubber Operations | This section is not applicable because Ash Grove does not use scrubbers. |
| Puget Sound Clean Air Agency Reg. II: Articles 1, 2 & 3 | Gasoline Marketing & VOC Standards | These sections are not applicable because Ash Grove does not have equipment that is governed by this regulation. |
| Puget Sound Clean Air Agency Reg. III: Articles 3 | Chromium Standards | This section is inapplicable because Ash Grove does not have any of the listed equipment and must obtain approval before installing this type of equipment. |
| PSD Permit 90-03 (6/20/90) and Amendments 1 (11/7/95) and 2 (3/8/99) | PSD Permit | These versions of Permit 90-03 were superseded by Amendment 3 (10/8/01). |
| Puget Sound Clean Air Agency Approval Orders 3382, 5730 and 7381 (6/29/98) | New source approval orders | Superseded by Order of Approval 7381, condition 8 (6/6/01) |
| 40 CFR Part 60, Subpart OOO | NSPS for Nonmetallic Mineral Processing Plants | 40 CFR 60.670(b) states that a Subpart OOO “affected facility” that is subject to Subpart F or that follows in the plant process any facility subject to Subpart F is not subject to Subpart OOO. All equipment at the Seattle plant that falls within the Subpart OOO definition of “affected facility” is also a Subpart F “affected facility.” |

| Citation | Type of Requirement | Basis for Non-applicability |
|--|--|---|
| The requirements that are identified below are inapplicable for specific emission units or for rule and unit specific reasons. The requirements identified in the first column for these subsequent items are inapplicable only insofar as the scope and explanation provided in the third column qualifies the limitation of inapplicability and are not universally inapplicable to the entire site or for this permit beyond that scope and explanation. | | |
| 40 CFR Part 60, Subpart A | NSPS reporting requirements | NSPS notices and reports required by Subparts A, F, and Y need be submitted only to Puget Sound Clean Air Agency without parallel submittal copies to EPA. Letter of February 5, 2003 from Betty Weise, EPA Region 10 to Dennis McLerran. EPA retains responsibility for review and approval of major changes to NSPS monitoring and test methods, as described in the February 5 th letter. |
| 40 CFR 60 Part 60, Subpart F | NSPS for Portland Cement Plants | Clinker storage shed, finish mills, steel scale tanks and Group I and Group II silos are not Subpart F “affected facilities” because none of these facilities were constructed or modified after August 17, 1971. 40 CFR 60.60(b) (7/25/77). |
| 40 CFR 60.63(b) | COMS requirement | Requirement to install COMS on “each bypass stack” does not apply <u>to the coal mill stacks</u> because coal mills are subject to 40 CFR Part 60, Subpart Y opacity limit, rather than Subpart F. See Memo of 4/6/95 from John Rasnic to EPA Regional Directors re Opacity at Portland Cement Plants (Applicability Determinations 9600073) and Memo of 5/12/95 from John Rasnic (Applicability Determinations 9600082). |
| 40 CFR 60.13; 40 CFR 60.253(b) | NSPS performance specifications and QA/QC requirements for continuous monitoring systems | 40 CFR 60.13 does not apply <u>to the temperature monitors required to be installed on the coal mill stacks</u> by 40 CFR 60.253(a)(1) because 60.13 requirements take effect “upon promulgation of performance specifications for continuous monitoring systems under appendix B to this part,” and no performance specs have been promulgated under 40 CFR Part 60, Appendix B for continuous temperature monitors. |
| 40 CFR Part 60, Subpart Y | NSPS Standards for Coal Preparation Plants | <u>Coal loading, transfer and storage equipment upstream of the Raw Coal Silo</u> are not Subpart Y “affected facilities.” See EPA Applicability Determinations Y002 (2/24/77) and NR90 (10/29/90) |
| 40 CFR Part 63, Subparts A and LLL | MACT standards for Portland cement Plants | All Subpart A and Subpart LLL standards that apply to emission units at a <u>“major source”</u> do not |

| Citation | Type of Requirement | Basis for Non-applicability |
|--|--|--|
| (Major Source Provisions) | | apply to the Seattle plant because the Seattle plant is not a “major source” within the meaning of 40 CFR 63.2. |
| 40 CFR Part 63, Subparts A and LLL (Notifications & Reports) | MACT standards for Portland cement plants | All Subpart A and LLL requirements to submit notifications and reports to EPA do not apply to the Seattle plant, because EPA waived notice in its delegation action to Puget Sound Clean Air Agency. See 65 Fed. Reg. 10392 (2/28/00). All requirements in Subparts A and LLL to serve notifications and reports on “the Administrator” or EPA are amended to designate Puget Sound Clean Air Agency as the recipient. |
| 40 CFR 63.7 and 63.1349(a) and (b) | MACT initial performance test requirements | The requirement to conduct a performance test to demonstrate <u>initial compliance</u> with the dioxin/furan emission standards in 40 CFR 63.1343(d) was satisfied on October 22-24, 2002. The test report and compliance notification were submitted on December 20, 2002. |
| 40 CFR 63.9 (b) through (d) and 63.1353(b)(1) | MACT initial notification requirements | Subpart A and LLL initial notification requirements for the kiln/raw mill were satisfied by the letter of October 7, 1999 from Henrik Voldbaek to Tom Fitzsimmons et al.. |
| 40 CFR 63.1350(g) | Dioxin/furan monitoring requirements for kilns that employ carbon injection as an emission control technique | The Seattle plant does not employ carbon injection as an emission control technique. |
| 40 CFR 63.1351(b) | Subpart LLL compliance date for affected sources that commence new construction or reconstruction after March 24, 1998 | Ash Grove did not commence new construction or reconstruction on any Subpart LLL affected source after March 24, 1998. |
| 40 CFR 63.1344(b) | Temperature limit for affected sources determined through performance test | The <u>procedure</u> in 40 CFR 1344(b) to set the temperature limit for affected sources through measurements taken during dioxin/furan performance testing does not apply to <u>the coal mills</u> , because Puget Sound Clean Air Agency approved an intermediate monitoring change establishing the coal mill temperature limit at 200 degrees F. See letter of October 18, 2002 from Steven Van Slyke to Robert Vantuyl. |

IX. INSIGNIFICANT EMISSION UNITS

A. Insignificant Emission Units and Activities

1. Insignificant emission units and activities at Ash Grove are subject to all applicable requirements set forth in Sections I.A, III and IV. This permit shall not require testing, monitoring, reporting or recordkeeping for insignificant emission units or activities except as required by Puget Sound Clean Air Agency Regulation I, Sections 7.09(b) and 9.20. Compliance with Puget Sound Clean Air Agency Regulation I, Sections 7.09(b) and 9.20 shall be deemed to satisfy the requirements of WAC 173-401-615 and 173-401-630(1).

[WAC 173-401-530(2)(c), 10/17/02]

2. Where this permit does not require testing, monitoring, recordkeeping and reporting for insignificant emissions units or activities, Ash Grove may certify continuous compliance if there were no observed, documented, or known instances of noncompliance during the reporting period. Where this permit requires testing, monitoring, recordkeeping and reporting for insignificant emission units or activities, Ash Grove may certify continuous compliance when the testing, monitoring, and recordkeeping required by the permit revealed no violations during the period, and there were no observed, documented, or known instances of noncompliance during the reporting period.

[WAC 173-401-530(2)(d), 10/17/02]

3. An emission unit or activity that qualifies as insignificant solely on the basis of WAC 173-401-530(1)(a) shall not exceed the emission thresholds specified in WAC 173-401-530(4) until this permit is modified pursuant to Section VI.E of this permit and WAC 173-401-725.

[WAC 173-401-530(6), 10/17/02]

As of the date of permit issuance, the emission units listed below are defined as insignificant for the reasons indicated.

| Unit | Basis for IEU Designation |
|--|---------------------------|
| Lubricating oil storage tanks | WAC 173-401-532 (3) |
| Vehicle maintenance | WAC 173-401-532 (7) |
| Internal combustion engines for propelling or powering a vehicle | WAC 173-401-532(10) |
| Welding equipment | WAC 173-401-532(12) |
| Cleaning and sweeping of streets and paved surfaces | WAC 173-401-532(35) |
| Roads (sweep and water for dust control) | WAC 173-401-532(35) |
| Steam cleaner | WAC 173-401-532(39) |
| Kerosene, grease, and oil drums | WAC 173-401-532(42) |

| Unit | Basis for IEU Designation |
|--|---------------------------|
| Truck wash | WAC 173-401-532(45) |
| Window air conditioners | WAC 173-401-532(46) |
| Bathroom vents | WAC 173-401-532(48) |
| Fuel and exhaust emissions from vehicles in parking lots | WAC 173-401-532(54) |
| Staff vehicles | WAC 173-401-532(54) |
| Air compressor (electric) | WAC 173-401-532(88) |
| Diesel Fuel Tank (kiln drive standby) 185 gal | WAC 173-401-533(2)(a) |
| Underground Diesel Fuel Tank 2000 gal | WAC-173-401-533(2)(c) |
| Lignite Tank | WAC-173-401-533(2)(c) |
| Finish Grinding Aid Tank | WAC-173-401-533(2)(c) |
| Space Heaters <5 MMBtu/hr | WAC 173-401-533(2)(r) |
| Underground Gasoline tank 1000 gal | WAC 173-401-533(2)(t) |
| Safety-Kleen station | WAC 173-401-533(2)(z) |
| Calibration gases (for equipment) | WAC 173-401-533(3)(c) |

X. APPENDIXES

A. Reference Methods (by reference only, not attached)

- (1) EPA Method 5 [40 CFR 60, Appendix A, July 1, 2002]
- (2) EPA Method 9 [40 CFR 60, Appendix A, July 1, 2002]
- (3) EPA Method 10 [40 CFR 60, Appendix A, July 1, 2002]
- (4) EPA Method 7E [40 CFR 60, Appendix A, July 1, 2002]
- (5) EPA Method 6C [40 CFR 60, Appendix A, July 1, 2002]
- (6) EPA Method 23 [40 CFR 60, Appendix A, July 1, 2002]
- (7) EPA Method 20.A [40 CFR 51, Appendix M, July 1, 2001]

B. Non-EPA Test Methods (attached)

- (1) Puget Sound Clean Air Agency Method 5 as approved by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983
- (2) Ecology Method 9A

C. Reference Continuous Emission Monitoring Performance Specification (by reference only, not attached)

- (1) EPA Performance Specification 1 (Opacity Monitoring), [40 CFR 60, Appendix B, July 1, 1992]
- (2) EPA Performance Specification 2 (SO₂ and NO_x Monitoring) [40 CFR 60, Appendix B, July 1, 1992]
- (3) EPA Performance Specification 3 (O₂ Monitoring) [40 CFR 60, Appendix B, July 1, 1992]
- (4) EPA Performance Specification 4 (CO Monitoring) [40 CFR 60, Appendix B, July 1, 1992]

D. EPA Quality Assurance Procedures (attached)

Continuous Emission Monitoring for Opacity: "Recommended Quality Assurance Procedures for Opacity Continuous Monitoring Systems" (EPA 340/1-86-010)

***E. Elements of Opacity COMS Summary Report for 40 CFR 60.7(d)
(Condition II.C.5)***

Pollutant: Opacity; Reporting period dates; Company name and address; Process unit(s) description; Emission limits; Monitor manufacturer and model no.; Date of latest CMS Certification or Audit; Total source operating time in reporting period¹

Include with the Emission Data Summary¹:

1. The duration of excess emissions in reporting period that was due to: (a) Startup/Shutdown, (b) Control equipment problems, (c) Process problems, (d) Other known causes, and (e) Unknown causes;
2. The total duration of excess emission; and
3. $[\text{Total duration of excess emissions}]/[\text{Total source operating time}](100) = \%^2$

Include with the CMS Performance Summary¹:

1. The CMS downtime in reporting period due to: (a) Monitor equipment Malfunctions, (b) Non-Monitor equipment Malfunctions, (c) Quality assurance calibration, (d) Other known causes, and (e) Unknown causes;
2. The Total CMS Downtime; and
3. $\text{Total CMS Downtime}/[\text{Total operating time}](100) = \%^2$

Describe any changes since last quarter in CMS, process or controls.

Certify that the information attained in the report is true, accurate, and complete.

Include Name and Signature (Title) of the responsible official and Date

1. For Opacity, record all times in minutes. For gases, record all times in hours.
2. For the reporting period: If the total duration of excess emissions is $\geq 1\%$ or the total CMS downtime is $\geq 5\%$ of the total operating time, both the summary report form and the excess emission report described in 60.7(c) shall be submitted.