# Statement of Basis for Graymont Western US Inc
# Tacoma Division

# AOP Renewal 1
# May 4, 2007
# Administrative Amendment, May 6, 2019

## I. PURPOSE OF THIS STATEMENT OF BASIS

### *A. General*

This document summarizes the legal and factual basis for the permit conditions in the air operating permit to be issued to Graymont Western US Inc (Graymont) under the authority of the Washington Clean Air Act, Chapter 70.94 Revised Code of Washington, Chapter 173-401 of the Washington Administrative Code and Puget Sound Clean Air Agency Regulation I, Article 7. Unlike the permit, this document is not legally enforceable. It includes references to the applicable statutory or regulatory provisions that relate to emissions to the atmosphere from Graymont. In addition, this statement of basis provides a description of activities and a compliance history for Graymont.

### *B. Renewal 1*

This document also describes the first renewal to the Graymont air operating permit (which was originally issued on March 27, 2001 for a five year period), briefly on page 4 and in greater detail on page 28.

## II. SOURCE DESCRIPTION

The source name was changed from Continental Lime to Graymont per letter submitted to the Puget Sound Clean Air Agency on August 7, 2000. The Graymont Tacoma facility consists of a lime manufacturing plant (SIC Code 3274) and two precipitated calcium carbonate (PCC) plants (SIC Code 2816). The two precipitated calcium carbonate plants are designated as PCC plant and XPCC plant. Graymont is a major emission source of particulate, sulfur dioxide, and nitrogen oxide emitting more than 100 tons per year of each. Therefore, the facility needs an air operating permit. Because of the large volume of dusty bulk material that Graymont handles, particulate fugitive emissions have been a major concern.

The raw material called “stone” is primarily limestone composed of calcium carbonate ($CaCO_3$) with the possibility of some of the calcium carbonate being combined with dolomite ($CaCO_3 \cdot CaMgCO_3$). The raw material is barged to the site and unloaded via a conveyor where it is stockpiled. The stone is fed from the stockpiles through a screen and stone washer to the preheater. The preheater uses heat from the kiln gas to preheat the stone before introduction to the kiln.

The basic process in producing lime includes (1) quarrying raw limestone; (2) preparing limestone for the kiln by crushing and sizing; (3) calcining limestone (disassociation of $CO_2$ gas); (4) processing the lime further by hydrating; and (5) miscellaneous transfer, storage, and handling operations.

The heart of the lime manufacturing is the lime kiln. At the Tacoma Division, the kiln is rated at 310 tons-per-day of lime product. The kiln is 110 feet long and 10 feet in diameter. The kiln is inclined from the horizontal with the stone being fed into the highest end. The kiln rotates slowly as a burner adds heat to the stone. The burner at the lower end can fire natural gas and/or coal (coal is the primary kiln fuel). The stone slides along the inclined rotating kiln toward the lower end. When the stone inside the kiln reaches a temperature that exceeds 1650$^{o}$F, the stone "calcines." Calcining is the process of converting calcium carbonate to calcium oxide ($CaCO_3$ converts to CaO) and gives off carbon dioxide ($CO_2$) following the chemical equation:

$$CaCO_3 + \text{Heat} <=> CaO \text{ (high calcium lime)} + CO_2$$
$$CaCO_3 \cdot MgCO_3 + \text{Heat} <=> CaO \cdot MgO \text{ (dolomite)} + 2CO_2$$

The peak process temperature in the kiln reaches about 2400$^{o}$F or greater. Fuel handling and pulverizing equipment for preparing the raw materials is closely associated with the kiln. The emissions from the preheater and kiln are controlled by a baghouse, with the collected dust conveyed to the dust silo.

Once the lime product leaves the kiln, it is cooled and conveyed to storage silos. Lime refers to any commercial product that is a combination of calcium oxide (CaO) and magnesium oxide (MgO). From the storage silos, the lime may be crushed, screened, and loaded onto trucks, railcars, containers, totes, or other means of conveyance for shipment.

The lime product may also be conveyed to the lime hydrator where it is hydrated into calcium hydroxide ($Ca(OH)_2$), then is sent to a pulverizing mill and on to storage bins. Lime is also diverted to the PCC plant where it is precipitated back to crystalline calcium carbonate ($CaCO_3$). Dust in the lime handling and hydrate handling area is controlled by baghouses.

The hydrate process takes the lime as calcium oxide (CaO) and adds water and/or steam to form calcium hydroxide ($Ca(OH)_2$). The product name is "hydrated lime" or "hydrate." In the process, the lime is belt-conveyed to a feed bin, weighed and transferred to a premixer where water is added; then it passes through various hydrator stages.

The hydrated (slaked) lime passes through a roller mill and then to a bulk storage area for either bulk shipment or packaging.

The manufacturing of PCC involves the contacting of a carbon dioxide-rich flue gas from the lime kiln with a high calcium lime slurry.

Lime for the PCC plant is pneumatically transferred to a hopper that delivers it to the slaker tank. Dust from the lime feed bin #MB-101 is controlled by a baghouse. The collected lime dust is returned to the process.

Lime feed for the XPCC plant is loaded inside the bulk loadout building into a tote bin and is then transferred by forklift to the enclosed screw conveyor to the slaker. Once slaked (an exothermic reaction), the slurry is screened and stored in the lime tank. The slaked slurry is then pumped to one of various carbonator vessels that are vented to controls for reaction.

The grit from the screen is returned to the existing lime system or sold as a product.

Carbon dioxide ($CO_2$) gas is withdrawn from the grate area of the lime kiln preheater by a compressor. The gas stream is cleaned, conditioned, and then blown through nozzles in the bottom of the reaction tanks, where it bubbles up through the slurry. The $CO_2$ gas reacts with the $Ca(OH)_2$ to produce $CaCO_3$ and $H_2O$. The spent gas contains some slurry droplets that are collected by a mist eliminator. The gas exhausts to the atmosphere via a vent, and any slurry droplets are returned to the product tank. At times, depending on gas flow needs, the compressor may be vented to the atmosphere. Emissions from the compressor vent are accounted for in kiln baghouse emission calculations.

After all the $Ca(OH)_2$ has been converted to $CaCO_3$, the slurry is pumped over a screen to remove any grit. The grit is returned to the existing lime system for reprocessing, or sold as a product. The PCC slurry is filtered and the "solids" increased by mechanical equipment, with the surplus water recycled for the production of the hydrate. The PCC slurry is then pumped to a number of tanks to await loadout and shipment.

# III.REVIEW OF PERMIT APPLICATION

## *A. Original Permit*

An air operating permit application was received from Graymont on June 7, 1995. On August 1, 1995, the Puget Sound Clean Air Agency determined that the operating permit application for Graymont was incomplete and requested additional information. Graymont submitted additional information on September 18, 1995. On November 14, 1995, the application was acknowledged to meet the requirements of WAC 173-401-500(7) and determined to be complete. The final air operating permit was issued on March 27, 2001.

## *B. Modifications during the first permitting period*

The first five-year permitting period began on March 27, 2001. During that first permitting period, the permit was modified twice, as follows:

- Administrative Amendments were made in accordance with WAC 173-401-720(3) to change typographical errors in the permit very soon after the final permit was issued.

- Very soon after the final permit was issued, Graymont filed an appeal of the operating permit with the Pollution Control Hearings Board (PCHB). The appeal focused on visible emissions limits from three precipitated calcium carbide (PCC) storage tanks that were contained in NOC Order of Approval No. 7610. Graymont submitted an analysis which purported that the new permit imposed opacity limits and monitoring methods that were

unduly burdensome, that the PCC storage tanks should not have special monitoring conditions, and in fact, should be listed as insignificant emissions units. Puget Sound Clean Air Agency concurred with the analysis submitted by Graymont and rescinded the three Orders of Approval (No. 3814, 6725, and 7610) on August 15, 2001. Graymont withdrew the appeal on November 7, 2001. The permit was modified by listing the PCC storage tanks as insignificant emissions units. The appeals and their resolution are discussed in greater detail in the Statement of Basis for the original air operating permit (as modified to resolve the appeal issues). That document is on file at the Puget Sound Clean Air Agency.

There were several changes to the facility, which were done as "off-permit changes," as allowed under WAC 173-401-724, that are described on page 3.

## *C. Off-Permit Changes under WAC 173-401-724*

A 200 ton dolomitic lime storage silo and conveyor system, vented to an existing baghouse, was installed as an off-permit change after issuance of Order of Approval No. 8256 on September 6, 2000. Order No. 8256 has no special conditions.

Another 200 ton dolomitic lime storage silo and conveyor system, vented to a new 2,000 cfm baghouse, was installed as an off-permit change after issuance of Order of Approval No. 8350 on September 6, 2000. This change has a PM emission limit in the Order of Approval, which has been brought into the air operating permit as Requirement EU-3.4, with monitoring requirements from the Order brought into Section II of the permit as Dolomite baghouse inspection requirements.

Two 40,000 gallon carbonators, each vented to a demister, were installed as an off-permit change after issuance of Order of Approval No. 8672 on June 10, 2002. This change has a $PM_{10}$ emission limit in the Order of Approval, which has been brought into the air operating permit as Requirement EU-6.1. Plantwide periodic monitoring for visible emissions is the monitoring method.

Carbonator No. 2 (30 ton-per-day, 15' diameter x 13.5') for the PCC Pilot Plant (XPCC) controlled by a Demister (15' diameter x 13' long) rated at 2,500 cfm and 10 inches water pressure drop was installed as an off-permit change after issuance of Order of Approval No. 8351 on December 11, 2001. This change has a $PM_{10}$ emission limit in the Order of Approval, which has been brought into the air operating permit as Requirement EU-6.3. Plantwide periodic, with monitoring requirements from the Order brought into Section II of the permit as Carbonator No. 2 inspection requirements.

## *D. Renewal 1*

On February 10, 2004 Graymont submitted a Title V renewal application for the Graymont Tacoma facility. The application consisted of a cover letter and critical items required under WAC 173-401-710, such as a compliance plan and certification by the responsible official. On September 16, 2005 the Puget Sound Clean Air Agency sent a letter to Graymont indicating that the renewal application had been found to be complete. No substantive changes to the permit

were requested by Graymont or made by the Puget Sound Clean Air Agency, but numerous small items were changed, and those changes are described in detail beginning on page 28.

# IV. COMPLIANCE HISTORY

## *A. Compliance and Inspection history prior to issuance of the original AOP*

Puget Sound Clean Air Agency has inspected the Graymont facility annually since at least 1986. In the last five years, the Puget Sound Clean Air Agency has inspected Graymont eight times. During this period, there were no complaints received by the Puget Sound Clean Air Agency. The Agency issued two Notices of Violation (NOVs) as a result of those eight inspections. Both the NOVs were amended or corrected. The Puget Sound Clean Air Agency also issued two Compliance Status Reports (CSRs) resulting in corrective actions. Each of the cases has been resolved, without civil penalties; and there are no outstanding enforcement issues. Each year, the Puget Sound Clean Air Agency received the required emission statements.

## *B. Complaint History since issuance of the original AOP*

The Puget Sound Clean Air Agency has not received any complaints for this facility over the past five years.

## *C. Compliance and Inspection history since issuance of the original AOP*

During the first five-year permit period, the Puget Sound Clean Air Agency conducted nine compliance inspections of the Graymont facility. Inspection dates were: 6/13/2001, 9/13/2001, 10/17/2001, 5/7/2002, 9/12/2002, 7/23/2003, 8/5/2004, 4/7/2005 and 8/24/2005.

The Puget Sound Clean Air Agency has taken the following enforcement actions against Graymont during the last five years:

**Table 1 Enforcement Actions over the first AOP Period**

| NOV/WW # | Violation Date | Issue Date | Closure Date | Reg/AOP Citation | Note |
|---|---|---|---|---|---|
| 2-000605 | 5/31/2001 | 6/13/2001 | 1/8/2002 | Reg I: 3.07(c) and Section II.A.2(c) of the AOP | Failure to notify Agency at least 2 weeks prior to performance test. |
| 2-000159 | 9/13/2001 | 10/17/2001 | 1/8/2002 | Order of Approval No. 5856, Conditions 6 & 7, and Section II.A.2(d) of the AOP | Failure to record operating hours |
| 3-000167 | 12/1/2001 | 1/3/2002 | 2/5/2002 | Order of Approval No. 5856, Conditions 6 & 7, and Section II.A.2(d) of the AOP | Failure to report a deviation. Original deviation was failure to record operating hours. |
| 3-000176 | 5/1/2002 | 11/7/2002 | 9/30/2004 | AOP No. 11820, Section II.A.2(c) | Failure to perform particulate matter test on time. |
| 2-000178 | 9/12/2002 | 9/16/2002 | 9/30/2005 | Reg I, Section 9.15 | Fugitive emissions |
| 2-006652 | 2/28/2003 | 8/13/2003 | 8/13/2003 | AOP No. 11820, Section V.O.4. | Missing records of required daily baghouse inspections. |
| 2-006675 | 10/31/2004 | 11/30/2004 | 1/7/2005 | AOP No. 11820, Section V.Q.1. | Semi-annual report from 4/1/2004 to 9/30/2004 was not submitted on time. |
| 2-007283 | 7/11/2006 | 8/7/2006 | 9/14/2006 | AOP No. 11820, EU-3.4 | Failure to maintain equipment in good working order. |

# V. EMISSION INVENTORY

The emissions at this facility are tabulated below. The calcining kiln is controlled with a baghouse and its emissions represent the majority of the total plant-wide emissions. The plant-wide emissions also include emissions from the lime manufacturing plant and the precipitated calcium carbonate plant.

**Table 2 Criteria Pollutant Emissions, ton/yr**

| | 2005 | 2004 | 2003 | 2002 | 2001 |
|---|---|---|---|---|---|
| Carbon Monoxide (CO) | 61 | 66 | 71 | 71 | 67 |
| Nitrogen Oxides ($NO_X$) | 195 | 263 | 284 | 283 | 268 |
| Particulate Matter ($PM_{10}$) | 139 | 148 | 154 | 151 | 146 |
| Fine Particulate Matter ($PM_{2.5}$) | 31 | 39 | 57 | 53 | 50 |
| Sulfur Dioxide ($SO_2$) | 37 | 101 | 109 | 109 | 103 |

# VI. EXPLANATION OF APPLICABLE REQUIREMENTS

Applicable requirements are listed in several sections of this operating permit as outlined below. The permit only lists the requirements that the Puget Sound Clean Air Agency has determined to be within the scope of the definition of "applicable requirements" under the operating permit program. Graymont is legally responsible for complying with all applicable requirements of the operating permit and other requirements that do not fit the definition of "applicable requirements" found in Chapter 173-401 Washington Administrative Code (WAC).

Applicable requirements that are not ongoing are not included in the permit because they are not in effect during the term of the permit (a.k.a. "obsolete"). However, these requirements are addressed here in the statement of basis.

## *A. Applicable Requirements in the AOP*

### 1. How the tables in Section I work

Section I in Puget Sound Clean Air Agency air operating permits is set up in tabular form. Section I.A. contains the requirements that are applicable to Graymont on a facility-wide basis. Section I.B. contains requirements applicable only to specific emission units within the facility. It should be noted here that all the requirements in Section I.A. apply to the specific emission units as well. If the monitoring, maintenance and recordkeeping method for any requirement in Section I.A. is more extensive for a specific emission unit, that requirement is repeated in Section I.B. with the additional monitoring, maintenance and recordkeeping requirements.

The tables in Section I of the air operating permit list all the local (Puget Sound Clean Air Agency), state (Department of Ecology), and federal (EPA) emission limits and emission limiting operational requirements that apply to the facility and emission units within the facility. All requirements are federally enforceable unless they are identified in column two by the words "*STATE ONLY*."

The first column identifies the requirement. I.A.1 is the first facility-wide requirement. EU-1.5 if the fifth requirement for Emission Unit 1.

The second column contains the actual rule citation for each individual requirement. This can be a Puget Sound Clean Air Agency requirement from Regulation I, II, or III, a Washington State Department of Ecology requirement (WAC or RCW), or a federal requirement (generally a PSD permit condition or a New Source Performance Standard requirement).

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 either the state (or local authority) has not submitted the regulation to the EPA for approval into the State Implementation Plan (SIP), or the state (or local authority) has submitted it and the EPA has not yet approved it. "*STATE ONLY*" adoption dates are in *italicized* font. When the EPA does approve the new requirement by adopting it into the SIP, the old requirement will be replaced and superseded by the new requirement. This replacement will take place automatically, with no changes being made to this permit until the permit is renewed. The new requirement will be enforceable by the EPA as well as the Puget Sound Clean Air Agency from the date that it is adopted into the SIP, and the old requirement will no longer be an applicable requirement.

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 required to "reasonably assure continuous compliance" with, and is an enforceable requirement of, this air operating permit. Note that all inspections, tests, and other actions must be documented (the specific recordkeeping requirement for this is in paragraph 4 of Subsection V.P of the air operating 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.

## 2. How monitoring methods in Section II of the AOP were originally determined

These are the basic air operating permit requirements:

- Each air operating permit has to contain all the air quality requirements that apply to the facility.

- The permit has to describe exactly how the source would comply with each of the requirements.

- The "responsible official" for the facility has to certify "continuous compliance" with every applicable requirement.

Puget Sound Clean Air Agency air operating permits have the emissions standards and operating limits in tabular form in Section I of the air operating permit, and the monitoring methods in Section II. An air operating permit is not supposed to add any new requirements, or make any existing requirements more stringent, but sometimes "gap-filling" a monitoring method is necessary:

- All emission limits contained in EPA's National Emission Standards for Hazardous Air Pollutants have acceptable monitoring methods built in. These may be simply placed in the air operating permit.

- PSD permits and minor new source review permits issued after the launch of the air operating program usually include monitoring methods that are designed to reasonably assure continuous compliance. Those also may be placed in the air operating permit.

- Older minor new source review permits, older federal New Source Performance Standards (NSPS), and state and local emission limits either had very little or no on-going monitoring. Special "gap-filling" monitoring methods had to be developed for these requirements, as provided under WAC 173-401-615(1)(b).

Whenever the Puget Sound Clean Air Agency uses a "gap-filling" monitoring method, we determine the monitoring frequency using criteria contained in EPA's April 30, 1999 Draft *Periodic Monitoring Technical Reference Document*. We consider "the five criteria" in determining how often the facility should perform a monitoring activity: hourly, once per shift, daily, weekly, monthly, quarterly, annually, or once per five-year permitting period. The five criteria are:

(1) Initial compliance. One source may have never have violated a requirement, but it still applies. The next source, however, may really have to work to stay in compliance with the requirement. Walk-around inspections for fugitive emissions should be done more frequently at a steel mill than a truck assembly facility, for example.

(2) Margin of compliance. The monitoring method and frequency are designed so that the source will identify a problem early and take corrective action before a violation occurs. The generic opacity limit on a fabric filter control device might be 20%, but a properly maintained baghouse should not have any visible emissions at all.

(3) Variability of process and emissions. A highly variable process may need more frequent watching than one that runs only intermittently, or one that runs continuously at an "easy" rate.

(4) Environmental impacts of problems. More frequent inspections would be required for a process for which a maintenance problem is likely to result in emissions that would have a

significant environmental impact.

(5) Technical considerations. The facility is required to periodically inspect and perform routine maintenance on all equipment in accordance with an acceptable operation and maintenance (O&M) Plan. What technical aspects of the equipment under consideration would influence inspection frequency above and beyond O&M Plan requirements? Usually it is sufficient to operate and maintain (and monitor) equipment in accordance with manufacturer's instructions.

The statements of basis for all original air operating permits contained analyses of "the five factors" for each monitoring requirement for which a monitoring frequency was not set in an underlying requirement.

## *B. Section I.A. (Facility-Wide)*

### 1. Requirement I.A.2 (Opacity)

Both WAC 173-400-040(1) and Puget Sound Clean Air Agency Regulation I, Section 9.03 standards are 20% opacity and apply to all stationary sources.

The monitoring method is based on quarterly visual inspections of all emission points at Graymont. Graymont must take corrective action or use the reference test method, WDOE Method 9A, to determine opacity if any visible emissions are noted. The Puget Sound Clean Air Agency has determined that the monitoring should be quarterly for the reasons listed below:

(1) Initial compliance. The Puget Sound Clean Air Agency has not observed visible emissions from the facility during any inspection since 1999.

(2) Margin of compliance. The monitoring method is designed so that the source will take corrective action before a violation of the underlying emission standard occurs.

(3) Variability of process and emissions. The facility operates at a relatively constant production rate, both during a per-shift basis and during a per-hour basis, so emissions can be expected to be relatively constant during the time period of the emission standard.

(4) Environmental impacts of problems. Plant-wide emissions of particulate matter are large enough to make Graymont a major source and, therefore, have the potential to cause environmental impacts if emissions increased significantly. Review of the emission inventory reports show that a very large fraction of the PM emissions are from the calcining kiln, however, and that unit is checked on a daily basis. Emissions from the remainder of the facility are not as significant as the PM emissions from the calcining kiln.

(5) Technical considerations. Graymont has demonstrated over the first permitting period that a quarterly monitoring schedule works for the non-calcining kiln portion of the facility.

## 2. Requirements I.A.3 and I.A.4 ($PM_{10}$)

Puget Sound Clean Air Agency Regulation I, Section 9.09 limits particulate emissions to 0.05 grain per dry standard cubic foot (gr/dscf) from equipment used in a manufacturing process. WAC 173-400-060 limits particulate emissions to 0.1 gr/dscf from general process units (i.e., units using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding combustion).

The monitoring method is based on the fact that particulate emissions less than 0.05 gr/dscf usually do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in Requirement I.A.2.

## 3. Requirement I.A. 5 ($PM_{10}$ from combustion sources)

WAC 173-400-050(1) limits particulate emissions to 0.1 gr/dscf corrected to 7% $O_2$ from all combustion units, including both internal and external combustion units. There are SIP approved, federally enforceable, and newer, non-SIP-approved, non-federally enforceable versions of WAC 173-400-050(1). Graymont does not have any emission units to which this requirement can be applied, but it is in the I.A. Section because the requirement applies to all industrial facilities, statewide. Therefore, this requirement does not contain additional monitoring requirements other than facility-wide monitoring discussed above.

## 4. Requirement I.A. 6 ($SO_2$)

Both Puget Sound Clean Air Agency Regulation I, Section 9.07 and Ecology's WAC 173-400-040(6) are equivalent requirements ($SO_2$ emissions not to exceed 1000 ppmv), except for the second paragraph of the WAC, which is not in the Puget Sound Clean Air Agency regulation. That paragraph, which is not federally enforceable, allows for exceptions to this requirement if the source can demonstrate that there is no feasible method of reducing the $SO_2$ concentrations to 1000 ppm. Since the Puget Sound Clean Air Agency rules do not allow the exception, the second paragraph does not apply to Graymont.

Facility-wide, Graymont burns pipeline quality natural gas except that coal is the primary fuel fired in the calcining kiln. "Natural gas" is a mixture of gaseous hydrocarbons, with at least 80 percent methane (by volume), and of pipeline quality, such as the gas sold or distributed by any utility company regulated by the Washington Utilities and Transportation Commission. Graymont receives the same natural gas as all of the other natural gas consumers, private and industrial, in the Northwest. According to Section 1.4-3 of AP-42, natural gas contains approximately 2000 grains of sulfur per million cubic feet, which is equivalent to approximately 3.4 parts of sulfur per million cubic feet of natural gas, as shown in the following calculation:

$$\frac{2{,}000\,gr\,S}{1{,}000{,}000\,ft^3\,nat.gas}\times\frac{1lb}{7000\,gr}\times\frac{385\frac{ft^3}{mole\,S}}{32\frac{lb}{mole\,S}}=3.44\times10^{-6}\,\frac{ft^3\,S}{ft^3\,nat.gas}\equiv3.44\ ppmdv\,S$$

According to *Perry's Chemical Engineer's Handbook*, each cubic foot of natural gas requires approximately 10 cubic feet of air for combustion, yielding approximately 11 cubic feet of combustion exhaust gases, consisting mostly of nitrogen, water vapor, and carbon dioxide. The

sulfur in the natural gas will almost all be converted to sulfur dioxide, with each cubic foot of sulfur producing the same volume of sulfur dioxide. Since each cubic foot of natural gas contains 3.44 x $10^{-6}$ cubic foot of sulfur, each cubic foot of stack exhaust will contain approximately:

$$3.44\times10^{-6}\frac{ft^3\,S}{ft^3\,nat.gas}\times\frac{1\,ft^3\,SO_2}{1\,ft^3\,S}\times\frac{1\,ft^3\,nat.gas}{11\,ft^3\,stack\,exhaust}=3.13\times10^{-7}\frac{ft^3\,SO_2}{ft^3\,stack\,exhaust}$$

The burning of natural gas generates about 0.31 ppmdv $SO_2$. Note that this estimated value is less than one-tenth of one percent of the 1,000 ppm $SO_2$ standard. Therefore, on a facility-wide basis, it is reasonable to assume that combustion units which are only fired on natural gas cannot exceed the 1,000 ppm $SO_2$ limits in Puget Sound Clean Air Agency Regulation I, Section 9.07 and WAC 173-400-040(6), and no monitoring is required for permit requirements I.A.6 plant-wide except for coal burning in the calcining kiln (see Section VI.C.2(a) Requirement EU-2.1 ).

## 5. Requirement I.A. 7 (HCl)

Puget Sound Clean Air Agency Regulation I, Section 9.10(a) specifies that HCl emissions shall not exceed 100 ppm (dry), corrected to 7% $O_2$ for combustion sources. Emission tests results on similar rotary kilns fired with coal and coke conducted at Graybec Calc Inc. in Mableton, Quebec, on August 12-16, 1996 found HCl emission to be 1 to 2 ppm. The emission factor during four runs averaged 0.0035 lb with a maximum of 0.0106 lb of HCl per ton of limestone. Because chlorine emissions only occur from the kiln and because chlorine is at such a low concentration in the materials used and fired in the Graymont kiln, Puget Sound Clean Air Agency has determined that no monitoring for HCl is required.

## 6. Requirements I.A.8 and 1.A. 9 (nuisance)

Puget Sound Clean Air Agency Regulation I, Section 9.11(a) and WAC 173-400-040(5) are similar requirements that address emissions that may be environmentally detrimental or cause a nuisance. WAC 173-400-040(5) has SIP-approved and non-SIP approved versions that are virtually identical. Puget Sound Clean Air Agency Regulation I, Section 9.11 has not been adopted into the SIP. The monitoring method for all these requirements is based on responding to complaints and general inspections of the facility to identify any emissions that are likely to be injurious to human health, plant or animal life, or property, or that unreasonably interfere with enjoyment of life and property. Therefore, the Puget Sound Clean Air Agency has determined that complaint response requirements if Section II.A.1(b) and the quarterly facility-wide inspections required in Section II.A.1(c) of the permit are sufficient to monitor for changes that would cause a fugitive emission or unexpected buildup of dust on the roadways and plant grounds.

Puget Sound Clean Air Agency Regulation I, Section 9.11(b) (non-Federally enforceable) and the WAC 173-400-040(4) address odors. The monitoring method is based on responding to complaints, monthly inspections of the facility to identify emissions of odor-bearing contaminants and correcting any problems identified as a result of the inspection or investigation. Receiving complaints does not necessarily mean Graymont is in violation of this requirement, since the regulation does not prohibit the emission of odors, but prohibits the emissions of odors

if good practices are not employed to control emissions. Graymont does not generally emit odors that would cause a complaint. Complaints will trigger action by Graymont to investigate and correct problems that could result in a violation.

The Puget Sound Clean Air Agency has determined that the monitoring should be quarterly for the reasons listed below. These factors are consistent with EPA's April 30, 1999 Draft *Periodic Monitoring Technical Reference Document*.

(1) Initial compliance. The Puget Sound Clean Air Agency has received zero complaints regarding fugitive dust or odor emissions over the past five years, and has not observed visible or odorous emissions from plant activities during any inspection. Therefore, we conclude that it is generally in compliance with the nuisance requirements.

(2) Margin of compliance. The monitoring method is designed so that the source will take corrective action before a violation of the underlying emission standard occurs.

(3) Variability of process and emissions. Because the manufacturing process is relatively constant, it is unlikely that the variability of the process itself will be the cause of emissions leading to environmentally detrimental problems or be the cause of nuisances while the plant is normally operating.

(4) Environmental impacts of problems. A maintenance problem with equipment other than the calcining kiln equipment is unlikely to result in emissions that would have a significant environmental impact.

(5) Technical considerations. It is very likely that fugitive dust emissions from equipment will be identified by quarterly visual inspections of plant operations and by workers in their normal course of work.

## 7. Requirements I.A. 10, I.A. 11 (Fugitive emissions)

WAC 173-400-040(3) addresses fugitive dust emissions for some activities, and WAC 173-400-040(8) requires reasonable precautions or reasonably available control technology (RACT) to control fugitive emissions. Puget Sound Clean Air Agency Regulation I, Section 9.15 requires the use of reasonable precautions for fugitive dust and lists some examples of reasonable precautions. Monitoring, maintenance and recordkeeping methods II.A.1(b) (Complaint Response) and II.A.1(c) (Facility-wide Inspections) are sufficient to monitor for changes that would cause a fugitive emission or unexpected buildup of dust on the roadways and parking lots.

## 8. Requirement I.A.12 (maintain equipment)

Puget Sound Clean Air Agency Regulation I, Section 9.20 requires Graymont to maintain equipment in good working order. Section 9.20(a) applies to sources that received a Notice of Construction Order of Approval under Puget Sound Clean Air Agency Regulation I, Article 6. Section 9.20(b) applies to equipment not subject to Section 9.20(a). Section II.A of the permit identifies the minimum monitoring criteria for maintaining equipment in good working order. The section identifies both facility-wide criteria and specific criteria for the emission units and activities. The Puget Sound Clean Air Agency has determined that following the requirements

of Section II of the permit provides sufficient monitoring criteria to certify that the equipment has been maintained in good working order. However, the Puget Sound Clean Air Agency reserves the right to evaluate the maintenance of each piece of equipment to determine if it has been maintained in good working order.

## 9. Requirements I.A.13 and 14 (O&M plan)

In accordance with Puget Sound Clean Air Agency Regulation I, Section 7.09(b), Graymont is required to develop and implement an O&M Plan to assure continuous compliance with Puget Sound Clean Air Agency Regulations I, II and III. The requirement specifics that the plan shall reflect good industrial practice, but does not define how to determine good industrial practice. To clarify the requirement, Puget Sound Clean Air Agency added that in most instances following the manufacturer's operations manual or equipment operational schedule, minimizing emissions until the repairs can be completed and taking measures to prevent recurrence of the problem may be considered good industrial practice. This language is consistent with a Washington Department of Ecology requirement in WAC 173-400-101(4). The Puget Sound Clean Air Agency also added language establishing criteria for determining if good industrial practice is being used. These may include, but are not limited to, monitoring results, opacity observations, review of operations and maintenance procedures, and inspections of the emission unit or equipment. The Puget Sound Clean Air Agency added this wording in response to Washington State court decision, Longview Fibre Co. v. DOE, 89, Wn. App. 627 (1998), which held that similar wording was not vague and gave sufficient notice of the prohibited conduct. Puget Sound Clean Air Agency Regulation I, Section 7.09(b) also requires Graymont to promptly correct any defective equipment. However the underlying requirement in most instances does not define "promptly"; hence for significant emission units and applicable requirements that Graymont has a reasonable possibility of violating or that a violation would cause an air quality problem, the Puget Sound Clean Air Agency added clarification that "promptly" usually means within 24 hours. For many insignificant emission units and equipment not listed in the permit, the meaning of "promptly" will vary because the emission sources and suitable pollution control techniques vary widely, depending on the contaminant sources and the pollution control technology employed. However, the permit identifies a means by which to identify if Graymont is following good industrial practice.

Graymont must report to the Puget Sound Clean Air Agency any instances where it failed to promptly repair any defective equipment. Graymont has the right to claim certain problems were a result of an emergency (Section V.R) or unavoidable (Section V.S).

Following these requirements demonstrates that Graymont has properly implemented the O&M Plan, but it does not prohibit the Puget Sound Clean Air Agency or EPA from taking any necessary enforcement action to address violations of the underlying applicable requirements after proper investigation.

## 10. Requirement I.A.15

RCW 70.94.040 is similar to Puget Sound Clean Air Agency Regulation I, Section 9.11 and is listed separately here because it is not a federally enforceable requirement.

## *C. Section I.B. (Emission Unit Applicable Requirements)*

Section I.B. of the permit lists applicable requirements that are specific to an emission unit or activity. The Generally Applicable Requirements of Section I.A. apply to all the emission units listed in Section I.B and are not repeated in this section. Monitoring Methods and Reference Methods are also identified if they are different from, or in addition to, those listed in Section I.A.

The EPA incorporates what the EPA has determined to be "all necessary monitoring" into all recently adopted federal air pollution regulations. Where a recently adopted federal regulation does not identify a monitoring method, the permit does not identify one either, except in some cases where the Puget Sound Clean Air Agency has determined additional monitoring to be necessary. Finally, any requirements that are inapplicable to the specific emission unit are also listed in this section.

All generally applicable requirements apply to the specific emission units. To simplify the permit, the Puget Sound Clean Air Agency did not repeat these requirements for each unit unless a specific monitoring requirement applied. Federally enforceable requirements that are specific to the operations are listed.

Order of Approval No. 5619 (approved December 22, 1994) limits the $PM_{10}$ emissions from several emission units listed in the operating permit (EU-1, EU-2.2, EU-4.1, EU-4.2, EU-5.1, and EU-6.1). This $PM_{10}$ limit was required of Graymont to assure the ambient standard was being met and is part of the maintenance plan for the $PM_{10}$ SIP. Because the $PM_{10}$ mass emission limit is fundamentally the same as the particulate concentration limit and the opacity limit, the monitoring frequencies are the same.

### 1. Emission Unit 1 – Calcining Kiln

#### *(a) Requirements EU-1.1 – Opacity*

Both Puget Sound Clean Air Agency Regulation I, Section 9.03 and WAC 173-400-040(1) standards are 20% opacity and apply to the calcining kiln emissions. Requirement EU-1.1 contains federally enforceable and *(STATE ONLY)* opacity limits. Regulation I, Section 9.03 (March 11, 1999) will be superseded by Regulation I, Section 9.03 (March 25, 2004) upon its adoption into the SIP. WAC 173-400-040(1) (September 23, 1993) will be superseded by WAC 173-400-040(1) (February 10, 2005) upon its adoption into the SIP.

The monitoring method is based on daily visual inspections and frequent particulate source testing (quarterly tests initially) of the calcining kiln emissions, with Graymont taking corrective actions within 24 hours or using the opacity reference test method to determine opacity if any visible emissions are noted. The Puget Sound Clean Air Agency has determined that the monitoring should be daily for the reasons listed below.

(1) Initial compliance. Although the calcining kiln baghouse is capable of complying with the opacity requirements, the Puget Sound Clean Air Agency has observed visible emissions from Graymont during recent inspections and has issued CSRs for maintenance

deficiencies.

(2) Margin of compliance. Both fugitive and stack emissions have been observed from the calcining kiln baghouse; however, these observations did not result in the issuance of Notices of Violation. The Puget Sound Clean Air Agency has determined there is the potential to cause violations of this requirement so there is a moderate margin for compliance.

(3) Variability of process and emissions. The calcining kiln equipment operates on a relatively constant production rate, on a per-shift basis and a per-hour basis, so emissions can be expected to be relatively constant on an hourly basis during facility operations. This equipment is designed to control opacity emissions if maintained in accordance with a good O&M Plan. The most significant variable affecting emissions would, therefore, be the degree to which Graymont follows its O&M Plan and performs daily inspections.

(4) Environmental impacts of problems. Observed opacity from a baghouse is generally related to the quantity of particulate matter being emitted. If opacity problems are observed from a large flow rate baghouse such as this one, there is considerable increased risk of environmental impacts and damage from particulate matter emissions. Opacity from baghouses is generally related to inadequate operations or maintenance programs. Significant environmental impacts are expected to be avoided by discovering problems quickly, by performing daily inspections, following corrective actions in the O&M Plan, and making updated adjustments to the O&M Plan.

(5) Technical considerations. This monitoring method is based on the fact that particulate emissions and opacity emissions are related, and increases in opacity emissions indicate increases in particulate emissions. Generally, when emissions from a baghouse exceed 20% opacity, the particulate emissions exceed 0.05 gr/dscf. Alternatively, when particulate emissions from a baghouse are less than 0.05 gr/dscf, there are usually no visible emissions. Therefore, this permit requires both daily visual inspections and frequent particulate source tests (quarterly tests initially) as a monitoring method to assure compliance with this requirement.

### *(b) Requirements EU-1.2 and EU-1.3 – Particulate Emissions*

Puget Sound Clean Air Agency Regulation I, Section 9.09 (April 9, 1998) is federally enforceable and limits particulate emissions to 0.05 gr/dscf and applies to all equipment used in a manufacturing process and general process units, uncorrected for excess air.

The State Implementation Plan (SIP) identifies the effective date of WAC 173-400-060 as August 20, 1993; however, the versions that were in effect on August 20, 1993 became effective on March 22, 1991.

Permit requirement EU-1.3 (WAC 173-400-060) limits particulate emissions to 0.1 gr/dscf from general process units (i.e., units using a procedure or a combination of procedures for the purpose of causing a change in material by either chemical or physical means, excluding

combustion). The federally enforceable version of the regulation is dated March 22, 1991, and the *(STATE ONLY)* version is dated February 10, 2005.

Graymont shall conduct daily visual inspections of the calcining kiln baghouse during daylight hours when operating and taking corrective action within 24 hours or using the opacity reference test method to demonstrate compliance if any visible emissions are noted. Also, Graymont shall conduct frequent particulate source testing (quarterly tests initially).

The Puget Sound Clean Air Agency has determined that monitoring should be daily visual inspections and frequent particulate source testing (quarterly tests initially) for the reasons listed below.

Initial compliance. The calcining kiln has demonstrated compliance with the particulate matter standard of 0.05 gr/dscf during several compliance tests that were required as part of the monitoring conditions for this air operating permit.

(6) Margin of compliance. Source test results have shown the particulate matter concentration to be typically less than 50% of the 0.05 gr/dscf standard.

(7) Variability of process and emissions. The calcining kiln equipment operates on a relatively constant production rate, on a per-shift basis or a per-hour basis. Therefore, emissions can be expected to be relatively constant on an hourly basis during facility operations. This equipment is designed to control opacity emissions if maintained in accordance with a good O&M Plan. Graymont is likely to remain in compliance by following the monitoring frequency. The most significant variable affecting emissions would, therefore, be the degree to which Graymont follows its O&M Plan, performs daily inspections and performs frequent particulate source testing (quarterly tests initially).

(8) Environmental impacts of problems. Observed opacity from a baghouse is generally related to the quantity of particulate matter being emitted. If opacity problems are observed, there is considerable increased risk of environmental impacts. Opacity is generally caused by incorrect operations or maintenance problems and must be addressed quickly. By not following and upgrading the O&M Plan, performing daily inspections with corrective actions or performing frequent particulate source testing (quarterly tests initially), the calcining kiln is capable of significant environmental impacts.

(9) Technical considerations. The compliance reference method is EPA Method 5D which is specifically designed by EPA for measuring particulate emissions from a positive pressure baghouse. However, because of the configuration of the positive pressure kiln baghouse, an alternate equivalent method to measure the emission flow rate as a compliance determination method may need to be requested for approval from Puget Sound Clean Air Agency. The calcining kiln particulate emissions are controlled by a positive pressure baghouse with 10 equal sections for a total of 120,000 cfm. The monitoring method requires daily inspections for visible emissions and frequent particulate source testing (quarterly tests initially). The monitoring method is based on the fact that particulate emissions and opacity emissions are related, and increases in opacity emissions are caused by increases in particulate emissions. Generally, when emissions from a baghouse exceed

20% opacity, the particulate emissions significantly exceed 0.05 gr/dscf. Alternatively, when particulate emissions from a baghouse are less than 0.05 gr/dscf, there are usually no visible emissions. In general, during baghouse inspections, there are no visible emissions when good operations and maintenance are followed. Therefore, this permit requires both daily visual inspections and frequent particulate source tests as a monitoring method to assure compliance with this requirement. This monitoring frequency is the same as Requirements EU-1.1 and EU-1.4.

With $PM_{10}$ emissions at 20.1 pounds-per-hour, the annual emissions could be 88 tons-per-year, and uncontrolled $SO_2$ emissions could be more than 1,000 tons-per-year. With emissions and potential emissions this large, this unit will be subject to EPA's Compliance Assurance Monitoring (CAM) rule at the time of permit renewal or modification. Graymont provided an adequate CAM Plan in their application and it has been incorporated into the draft renewed permit. Compliance Assurance Monitoring requirements in Section II.C. have been added to the monitoring, maintenance and recordkeeping requirements.

#### *(c) Requirement EU-1.4 – $PM_{10}$ Emissions*

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 4 specifies that the $PM_{10}$ emission rate from the calcining kiln baghouse shall not exceed 20.1 lb/hr.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 20.1 lb/hr limit for the kiln baghouse is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf usually do not result in visible emissions, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in Requirements EU-1.2 and EU-1.3.

## 2. Emission Unit 2 – Coal Handling and Storage System

#### *(a) Requirement EU-2.1 – Sulfur*

Puget Sound Clean Air Agency Order of Approval No. 2121A requires that Graymont only burn coal in the calcining kiln that has been certified by the supplier to have 1.0% or less of sulfur by weight, using ASTM Method D3176-74 (solid fuels) "Standard Method for Ultimate Analysis of Coal and Coke" and ASTM Method D2234–76 "Standard Methods for Collection of a Gross Sample of Coal." Additional ASTM Methods that may be used to verify the sulfur content of coal include ASTM Methods 5016-95 and 5016-98, "Standard Test Method for Sulfur in Ash from Coal and Coke Using High-Temperature Tube Furnace Combustion Method with Infrared Absorption," and ASTM Method 4239, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods. Sulfur analysis may also be conducted by Graymont using one of the prescribed ASTM Methods.

Graymont shall report to Puget Sound Clean Air Agency Permit Certification within 10 days after receiving fuel that exceeds 1.0% sulfur, if certification is received from the supplier, or within 10 days after obtaining test results that are above 1.0% sulfur, if Graymont conducts the analysis.

#### *(b) Requirement EU-2.2 – $PM_{10}$*

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 7 requires that the $PM_{10}$ emission rate from the coal baghouse shall not exceed 0.5 lb/hr.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 0.5 lb/hr limit for the coal handling and storage system is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in Requirements I.A.1 and I.A.10.

Because both the conditions for grain loading and mass emission rate are measured by the same monitoring method and the same monitoring frequency, the justification for this monitoring frequency is the same as for Requirements I.A.3 and I.A.12 - Particulate Emissions.

## 3. Emission Unit 3 – Lime Processing

#### *(a) Requirement EU-3.1 – $PM_{10}$*

Puget Sound Clean Air Agency Order of Approval No. 5856 (January 24, 1996), Condition No. 4 states that $PM_{10}$ emissions from the MAC filter and 39AVSC III baghouse shall not exceed 0.02 gr/dscf.

The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in Requirements I.A.1 and I.A.10.

The justification for this monitoring frequency is the same as for Requirements I.A.3 and I.A.12 - Particulate Emissions.

#### *(b) Requirement EU-3.2 – Opacity*

Puget Sound Clean Air Agency Order of Approval No. 5856 (January 24, 1996), Condition No. 5 states that opacity from the MAC filter and 39AVSC III baghouse shall not exceed 10% for 3 minutes in any 1 hour.

The monitoring method is the same monitoring method at the same frequency as the opacity requirements in Requirements I.A.1 and I.A.10.

### *(c) Requirement EU-3.3 –Operating Hours*

Puget Sound Clean Air Agency Order of Approval No. 5856 (January 24, 1996), Condition No. 6 states that the MAC-120RPT 224 baghouse shall not exceed a total of 4,380 hours of operation in any consecutive 12-month period.

### *(d) Requirement EU-3.4 – $PM_{10}$*

Puget Sound Clean Air Agency Order of Approval No. 8350 (September 6, 2000), Condition No. 3 states that $PM_{10}$ emissions from a 200 ton dolomite lime storage silo and conveyor system, vented to a new 2,000 cfm baghouse shall not exceed 0.02 gr/dscf. Monitoring methods specified in the Order are placed in Section II.A.2(e) of the AOP.

## 4. Emission Unit 4 – Hydrator

### *(a) Requirement EU-4.1 – Hydrator Scrubber*

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 5 required that the hydrator scrubber not exceed 1.2 lb/hr of $PM_{10}$.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 1.2 lb/hr limit for the hydrator scrubber is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in the Facility-Wide Applicable Requirements.

Because both the conditions for grain loading and mass emission rate are measured by the same monitoring method and the same monitoring frequency, the justification for this monitoring frequency is the same as for the particulate matter standards in the Facility-Wide Applicable Requirements.

### *(b) Requirement EU-4.2 – Hydrator Baghouse and Silo Baghouse*

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 6 required that the hydrator baghouse and silo baghouse not exceed 3.7 lb/hr of $PM_{10}$.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 3.7 lb/hr limit for the hydrator baghouse is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in the Facility-Wide Applicable Requirements.

Because both the conditions for grain loading and mass emission rate are measured by the same monitoring method and the same monitoring frequency, the justification for this monitoring frequency is the same as that in the Facility-Wide Applicable Requirements.

## 5. Requirement EU-5.1 – Bulk Loading/Unloading

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 6 requires that the emissions of $PM_{10}$ from the bulk loading/unloading baghouse not exceed 4.1 lb/hr.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 4.1 lb/hr limit for the bulk loading/unloading baghouse is equivalent to a particulate matter concentration that is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in the Facility-Wide Applicable Requirements.

Because both the conditions for grain loading and mass emission rate are measured by the same monitoring method and the same monitoring frequency, the justification for this monitoring frequency is the same as that in the Facility-Wide Applicable Requirements.

## 6. Emission Unit 6 – Precipitated Calcium Carbonate (PCC) Plant

### *(a) Requirement EU-6.1 – $PM_{10}$ from carbonators*

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 9 requires that the emissions of $PM_{10}$ from the PCC plant carbonators not exceed 0.5 lb/hr.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 0.5 lb/hr limit for the precipitated calcium carbonate (PCC) plant is equivalent to a particulate matter concentration that is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in the Facility-Wide Applicable Requirements.

Because both the conditions for grain loading and mass emission rate are measured by the same monitoring method and the same monitoring frequency, the justification for this monitoring frequency is the same as that in the Facility-Wide Applicable Requirements.

Two 40,000 gallon carbonators, each vented to a demister, were installed as an off-permit change after issuance of Order of Approval No. 8672 on June 10, 2002. Both these units have emission

standards and monitoring methods that are the same as Order of Approval No. 5619. Condition 3 of Order of Approval No. 8672 is exactly the same as Condition 9 of Order of Approval No. 5619, so they are in the same requirement (EU-6.1).

### *(b) Requirement EU-6.2 – $PM_{10}$ from Demister*

Carbonator No. 2 (30 ton-per-day, 15' diameter x 13.5') for the PCC Pilot Plant (XPCC) controlled by a Demister (15' diameter x 13' long) rated at 2,500 cfm and 10 inches water pressure drop was installed as an off-permit change after issuance of Order of Approval No. 8146 on December 11, 2001. Condition 3 of Order of Approval No. 8146 limits $PM_{10}$ emissions from the demister to 0.5 lb/hr. The monitoring method and rationale are the same as in EU-6.1.

### *(c) Requirement EU-6.3 – $PM_{10}$ from Baghouse*

Puget Sound Clean Air Agency Order of Approval No. 5619 (December 22, 1994), Condition No. 10 requires that the emissions of $PM_{10}$ from the PCC plant baghouse not exceed 3.9 lb/hr.

Order of Approval 5619 requires affected emission units to meet specified emission rate limits in pounds per hour. These emission limits are based on the equipment being designed to meet an emission concentration less than 0.05 gr/dscf required by Regulation I, Section 9.09.

This 3.9 lb/hr limit for the precipitated calcium carbonate (PCC) plant is equivalent to a particulate matter concentration that is less than 0.05 gr/dscf. The monitoring method is based on the fact that generally particulate emissions less than 0.05 gr/dscf do not result in visible emissions and, therefore, the permit requires the same monitoring method at the same frequency as the opacity requirements in the Facility-Wide Applicable Requirements.

Because both the conditions for grain loading and mass emission rate are measured by the same monitoring method and the same monitoring frequency, the justification for this monitoring frequency is the same as that in the Facility-Wide Applicable Requirements.

### *(d) Requirement EU-6.4 – $PM_{10}$ from Carbonator No. 2*

Carbonator No. 2 (30 ton-per-day, 15' diameter x 13.5') for the PCC Pilot Plant (XPCC) controlled by a Demister (15' diameter x 13' long) rated at 2,500 cfm and 10 inches water pressure drop was installed as an off-permit change after issuance of Order of Approval No. 8351 on December 11, 2001. Condition 3 of Order of Approval No. 8351 limits $PM_{10}$ emissions from the carbonator to 0.02 gr/dscf; that condition is Requirement EU-6.3. Conditions 4 and 5 of the Order contains the monitoring methods, and they have been placed in Section II.A.2(f) of the AOP. Condition 6 of the order is the recordkeeping requirement. This requirement is in Section V.O.(5) of the AOP.

## 7. Emission Unit No. 7 – Miscellaneous Equipment

Emission Unit No. 7 contains miscellaneous equipment and activities that do not have specific applicable requirements, but must comply with the facility-wide requirements listed in Section I.A.

| Industrial Process | Equipment |
|---|---|
| Calcining Kiln | Pre-heater |
| | Drag Chain |
| | Backspill Elevator |
| Coal Unloading, Handling, Transloading, and Storage | Baghouse(s) |
| Limestone Handling | Stockpiles |
| | Conveyors |
| | Bins, Hopper(s), and Storage Areas |
| | Screen(s) |
| | Baghouse(s)/Dust Collector(s) |
| Lime Processing | Crushers |
| | Screens |
| | Conveyors |
| | Diverters |
| | Bins and Silos |
| | Baghouse(s)/Dust Collector(s) |
| Hydration | Mixing Equipment |
| | Secondary Hydrator |
| | Tanks (Mixing and Water Make-up) |
| | Roller Mill |
| | Conveyors |
| | Baghouse(s)/Dust Collector(s) |
| XPCC Process | Reactor/Carbonator |
| | Demister |
| | Slaker |
| | Baghouse(s)/Dust Collector(s) |

# VII. ORDERS OF APPROVAL SUMMARY

Following is a summary of all the Notice of Construction Application Orders of Approval issued to Graymont by the Puget Sound Clean Air Agency. The applicable portions of these Orders of Approvals are listed in Section I.B for the specific applicable requirements for each emission unit. The table below contains a list of all the obsolete Orders of Approval issued to Graymont.

The Puget Sound Clean Air Agency has issued Notice of Construction Orders of Approvals to Graymont. The Puget Sound Clean Air Agency has determined that some of the approval conditions are now informational statements, which have been satisfied and, therefore, do not meet the criteria of being applicable requirements. Therefore, they are not listed in the air operating permit, but are listed in the following table.

- Order of Approval No. 98 was issued on May 21, 1969 with the approval to install the equipment, but without any specific restrictions or conditions.

- Orders of Approval between No. 341 and No. 2228 in the table below include a general provision that has been complied with in all cases.

- Order of Approval No. 2121 was superseded by No. 2121A.

- Orders of Approval No. 5619 and No. 5856 included Conditions No. 1, No. 2 and No. 3.

    - Approval Condition No. 1 requires the applicant to install the approved equipment according to the specifications submitted to the Puget Sound Clean Air Agency. This requirement has been complied with in all cases and verified by an Agency inspector.

    - Approval Conditions No. 2 and No. 3 inform the applicant that the approval does not relieve it of any requirement of any other agency and that an O&M Plan is required. These requirements are informational only.

- Orders of Approval No. 8146 to the present include Conditions No. 1 and No. 2.

    - Approval Condition No. 1 requires the applicant to install the approved equipment according to the specifications submitted to the Puget Sound Clean Air Agency. This requirement has been complied with in all cases and verified by an Agency inspector.

    - Approval Condition No. 2 informs the applicant that the approval does not relieve it of any requirement of any other agency. This requirement is informational only.

    - The following table lists all Orders of Approval with obsolete conditions that are not active and not included in the permit.

| Order No | Approval Date | Notice of Construction & Approval Summary | Effective |
|---|---|---|---|
| 98 | 06/20/69 | Lime kiln internal refractory heat exchanger (Trefoil) on the existing lime kiln. This heat exchanger is no longer present | Obsolete |
| 341 | 10/28/70 | Add 2 units to existing 6-unit lime kiln baghouse | Obsolete |
| 889 | 01/29/73 | Venturi scrubber 7,000 cfm @ 145F, 22 inch Del-P on existing lime hydrator | Obsolete |
| 972 | 05/16/73 | Baghouses 12,000 cfm & 15,000 cfm @ 70F for existing silos & hydrator bldg | Obsolete |
| 1943 | 08/20/79 | Rail/truck loading bldg vented to existing Order of Approval No. 972 baghouse | Obsolete |
| 2121 | 07/28/80 | Coal unloading/conveying system; 100 ton bucket elevator baghouse @ 2,500 cfm @ 70F; #533 CE Raymond bowl mill. Superseded by Order of Approval No. 2121A | Obsolete |
| 2228 | 03/31/81 | 770 ton kiln run storage silo vented to existing Order of Approval No. 972 baghouse | Obsolete |
| 2701 | 10/14/85 | Precipitated calcium carbonate (PCC) pilot plt w/custom 13'6"x15' reactor vented to Style III Flexichevon 2,500 dscfm demister | Obsolete |
| 2749 | 03/18/86 | PCC plt w/ 90 TPD slaker, 3-50 TPD 17'x20" Carbonators venting to 3 Fexichevron-Type III demisters 4,000 cfm, 2 Farr 2-C baghouse 500 cfm | Obsolete |
| 3814 | 04/22/91 | PCC 30'x45' No. 4 tank 225,000 gal (Ref. Order of Approval No. 2749) | Rescinded 8/15/01 |
| 5619 | 12/22/94 | Condition No. 8: PM10 emission rate from the PCC plant Carbonators shall not exceed 0.5 lb/hr.<br>This condition is superseded by Order of Approval No. 8146 Condition No. 3: Graymont shall not exceed a PM10 emission rate from the 33,000 gal 20'x17' diameter Carbonator of 0.5 lb/hr (06/13/00) | Replaced |
| 6725 | 10/25/96 | PCC storage tank No. 6, 250,000 gal 30'x45' | Rescinded 8/15/01 |
| 7610 | 11/19/98 | PCC Storage Tanks No. 7, 8 and 9 250,000 gal each. Condition No. 3: No visible emissions from the tanks. Condition No. 4: PM concentration shall not exceed 0.02 gr/dsef from the tank vents. | Rescinded 8/15/01 |

A standard Puget Sound Clean Air Agency Notice of Construction Order of Approval condition, Condition No. 1, requires that the equipment, device or process be installed according to plans and specifications submitted to the Puget Sound Clean Air Agency. Once the equipment is installed, the Puget Sound Clean Air Agency requires certification by the applicant that the installation was as approved; this is usually done with a Notice of Completion. Normally within six months to a year after receiving a Notice of Completion, a Puget Sound Clean Air Agency inspector verifies by inspection that the equipment was installed as specified and in accordance with the Order of Approval. While the Notice of Completion is a one-time requirement that has been completed by Graymont, Graymont cannot change the approved equipment in such a manner that requires an NOC application without first obtaining an order of approval, as addressed in Section IV.A of the permit. In most cases, once Graymont has filed the Notice of Completion and a Puget Sound Clean Air Agency inspector has verified that the equipment was

installed according to the Order of Approval, the Puget Sound Clean Air Agency considers Order of Approval Condition No. 1 an obsolete condition. However, in some cases in the permit the Puget Sound Clean Air Agency has identified a need to specify that the equipment cannot be altered in such a manner that requires an NOC order of approval.

# VIII. MONITORING, MAINTENANCE AND RECORDKEEPING PROCEDURES

Graymont must follow the procedures contained in Section II of the permit, Monitoring, Maintenance, and Recordkeeping Procedures. Failure to follow a requirement in Section II may not necessarily be a violation of the underlying applicable emission standard in Section I. However, not following a requirement of Section II is a violation of Section II, and Graymont must report such violations, as well as violations or deviations from any other permit condition, as a deviation under Section V.Q.1 of the permit. In addition, all information collected as a result of implementing Section II can be used as credible evidence under Section V.N.2 of the permit. Reporting a permit deviation and taking corrective action does not relieve Graymont from its obligation to comply with the underlying applicable requirement.

The permit requires Graymont to conduct quarterly facility-wide inspections. These inspections are to include checking for prohibited activities under Section III of the permit and activities that require additional approval under Section IV of the permit, as well as checking for any "nuisance" odor-bearing contaminants. The Puget Sound Clean Air Agency determined the frequency of these inspections after considering the potential for emissions, the lack of federally required monitoring, in-house training practices at Graymont, and similar factors. If problems are identified, Graymont has the responsibility to not only correct the specific problem, but also to adjust the work practices and training to prevent future problems.

In determining the appropriate monitoring frequencies for monitoring identified in Section II.A. of the permit, the Puget Sound Clean Air Agency considered "the five factors," as described in Section VI.A.2 of this document.

# IX. PROHIBITED ACTIVITIES

Some of the requirements Graymont identified in the operating permit application are included in Section III as prohibited activities. The Puget Sound Clean Air Agency has listed these activities in this section to highlight that they cannot occur at the facility. Since these activities are prohibited, routine monitoring of parameters is not appropriate; however, the permit does require Graymont to look for such activities during a routine facility-wide inspection.

Puget Sound Clean Air Agency Regulation I, Section 9.13 and WAC 173-400-040(7) contain similar requirements addressing concealment and masking of emissions. Although both requirements apply, the permit language has been simplified by grouping these requirements together.

# X. ACTIVITIES REQUIRING ADDITIONAL APPROVAL

Some of the requirements Graymont identified in the operating permit application are included in Section IV as activities that require additional approval. For new source review, the permit language has been simplified. Chapter 173-460 WAC and Puget Sound Clean Air Agency Regulation I, Article 6 New Source Review Programs require approval to construct, install, establish, or modify an air contaminant source. All these requirements apply, but the language in these requirements has been incorporated into one section to simplify the permit language.

# XI. STANDARD TERMS AND CONDITIONS

Some of the requirements Graymont identified in the operating permit application are included in Section V, Standard Terms and Conditions. This provided an easier mechanism for describing requirements that are more general in nature. This section also contains the standard terms and conditions specifically listed in WAC 173-401-620.

Section V.Q.1 of the permit requires Graymont to report deviations of the permit to the Puget Sound Clean Air Agency, normally within 30 days after the end of the month. Section V.Q.2 of the permit requires that a responsible official certify all required reports at least once every six months. Graymont may submit the certification with the report or certify all the reports submitted in the previous six months. For example, if Graymont detected a deviation in January, it must report the deviation to Puget Sound Clean Air Agency in February. A responsible official must certify the report according to WAC 173-401-520 at the time the report is submitted or any other time within six months of submitting the report.

If Graymont does not detect any deviations to report for a six-month period, then Graymont is required to report that there were no deviations during the six-month period.

# XII. DEVIATIONS

“Deviation” means any situation in which an emissions unit fails to meet a permit term or condition. A deviation is not always a violation. A deviation can be determined by observation or through review of data obtained from any testing, monitoring, or recordkeeping required by the air operating permit. For a situation lasting more than 24 hours which constitutes a deviation, each 24 hour period is considered a separate deviation. Included in the meaning of deviation are any of the following situations:

- Emissions exceed an emission limitation or standard;
- Process or emissions control device parameter values indicate that an emission limitation or standard has not been met;
- Observations or data collected demonstrates noncompliance with an emission limitation or standard or any work practice or operating condition required by the permit; or
- An exceedance or an excursion, as defined in 40 CFR 64, occurs.

# XIII. BASIS FOR INAPPLICABLE REQUIREMENTS

**40 CFR 63, Subpart AAAAA, National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants, does not apply.** 40 CFR 63.7142 contains requirements for claiming area source status. An "area source" is a source that emits less than 10 tons per year of any single hazardous air pollutant (HAP) and less than 25 tons per year of any combination of HAP. The "litmus test" for Subpart AAAAA applicability is a test for hydrogen chloride emissions from the lime kiln, using prescribe methodology and procedures. Graymont had this test performed on the lime kiln on May 21, 2002, and the results indicated that the Graymont, Tacoma facility has the potential to emit HCl of approximately 1 ton per year. Graymont concluded that 40 CFR 63 Subpart AAAAA does not apply, and the Puget Sound Clean Air Agency concurs.

# XIV. INSIGNIFICANT EMISSION UNITS

Insignificant emission units are listed in Section IX of Graymont's air operating permit. The permit shield applies to all requirements so identified.

# XV. OBSOLETE REQUIREMENTS

Obsolete requirements are discussed in Section VII above.

# XVI. EXPLANATION OF CHANGES MADE DURING THE COURSE OF PERMIT RENEWAL

On February 10, 2004 Graymont submitted a Title V renewal application for the Graymont Tacoma facility. The application consisted of a cover letter and critical items required under WAC 173-401-710, such as a compliance plan and certification by the responsible official. On September 16, 2005 the Puget Sound Clean Air Agency sent a letter to Graymont indicating that the renewal application had been found to be complete. No substantive changes to the permit were requested by Graymont or made by the Puget Sound Clean Air Agency, but numerous small items were changed, and those changes are described in detail below.

The format of the AOP was changed to the latest Agency form, and numerous regulatory references throughout the AOP were updated due to rule changes since the last time the permit was open. Changes involving decisions by the Agency, or that were otherwise substantive, are described below:

## *A. Changes throughout Section I (tables of requirements)*

- The tables in Section I have been changed. Previously, facility-wide requirements and requirements for each emission unit were expressed in two tables each. The first table contained requirements that were in the State Implementation Plan (SIP) and were therefore "federally enforceable," immediately followed by a second table with the requirements that were "*STATE ONLY*." Also, there was a rather lengthy notation below each of the old,

federally enforceable requirements stating that the requirement would be superseded by the new requirement, once that new requirement was adopted into the SIP. The new table style consolidates the two-table system into a single table for facility wide requirements and for each emission unit requirements. The notations below each of the "dual" requirements have been replaced with a single explanation of the SIP and *STATE ONLY* adoption process and the display conventions used in all the tables. This one-time explanation is contained in the paragraph between the Section I heading and the requirements tables. The *STATE ONLY* requirements are shown with their federally enforceable counterparts, with the dates *italicized*, as shown below:

| Reqmt No. | Enforceable Requirement | Adoption or Effective Date | Requirement Paraphrase (Information Only) | Monitoring, Maintenance & Recordkeeping Method |
|---|---|---|---|---|
| **Particulate Matter Standards** | | | | |
| I.A.3 | Puget Sound Clean Air Agency Reg I: 9.09 | 4/9/98 | Graymont shall not emit particulate matter in excess of 0.05 gr/dscf from equipment used in a manufacturing process. | II.A.1(a) Opacity Monitoring |
| I.A.4 | WAC 173-400-060<br>WAC 173-400-060 *(STATE ONLY).* | 3/22/91<br>*2/10/05* | Graymont shall not emit particulate matter in excess of 0.1 gr/dscf uncorrected for excess air from general process units | II.A.1(a) Opacity Monitoring |
| I.A.5 | WAC 173-400-050(1)<br>WAC 173-400-050(1) *(STATE ONLY)* | 3/22/91<br>*2/10/05* | Graymont shall not emit particulate matter in excess of 0.1 gr/dscf corrected to 7% $O_2$ from combustion and incineration units. | II.A.1(a) Opacity Monitoring |
| **$SO_2$ Standards** | | | | |
| I.A.6 | Puget Sound Clean Air Agency Reg I: 9.07<br>WAC 173-400-040(6) first paragraph only.<br>WAC 173-400-040(6) *(STATE ONLY)* | 4/14/94<br>9/23/93<br>*2/10/05* | Graymont shall not emit $SO_2$ in excess of 1,000 ppmv (dry) corrected to 7% $O_2$ for fuel burning equipment | No monitoring required |

## 1. Changes in Facility-wide applicable requirements

In general, the facility-wide applicable requirements have not changed from the original permitting period, other than updating the effective dates for rules that have been changed since the issue date of the original AOP. The table looks different, however, because the federally enforceable and non-federally enforceable requirements have been consolidated into a single table, and the requirements have been reorganized by pollutant. The items shown below the result of a permit-specific reason, rather than as part of the generic permit improvement process.

**I.A.3, I.A.4, and I.A.5** Several requirements that had been listed in the original AOP as inapplicable are now included in the facility-wide applicable requirements. These

requirements are: I.A.3 (Puget Sound Clean Air Agency Regulation I, Section 9.09), I.A 4 (WAC 173-400-060), and I.A.5 (WAC 173-400-050(1)). These requirements had been listed in the original AOP as exempt, but that earlier determination has been countermanded because these regulations apply statewide. These requirements have the same monitoring method that is used for the generic opacity requirements, so there is no increase in monitoring due to this change.

**I.A.14** RCW 70.94.152(7) has been moved from EU-1.6, EU-2.3, EU-3.4, EU-4.3, EU-5.2 and EU-6.4 to I.A.14 because this requirement applies throughout the facility. This change does not cause a change to the monitoring requirements.

## 2. Changes to Emission Unit Specific Requirements

The two tables (Federally Enforceable and Non-federally Enforceable Requirements) have been merged, as previously discussed.

**EU-1.3** Order of Approval No. 5619, Condition 4 limits $PM_{10}$ emission rate from the calcining kiln to 20.1 lb/hr. This had been listed erroneously as Condition 3 of that same order; EU-1.3 now correctly lists Order of Approval Condition 4 as the Enforceable Requirement.

**EU-2.2** Order of Approval No. 5619, Condition 8 limits $PM_{10}$ emission rate from the coal handling and storage system to 0.5 lb/hr. This had been listed erroneously as Condition 7 of that same order; EU-2.2 now correctly lists Order of Approval Condition 8 as the Enforceable Requirement.

**EU-3.4** A 200 ton dolomite lime storage silo and conveyor system, vented to a new 2,000 cfm baghouse, was installed as an off-permit change after issuance of Order of Approval No. 8350 on September 6, 2000. EU-3.4 now contains Condition 3 of Order of Approval No. 8350, which limits PM emission rate from the dolomite material handling system to 0.02 lb/hr.

**EU-4.1** Order of Approval No. 5619, Condition 5 limits $PM_{10}$ emission rate from the hydrator scrubber to 1.2 lb/hr. This had been listed erroneously as Condition 4 of that same order; EU-4.1 now correctly lists Order of Approval Condition 5 as the Enforceable Requirement.

**EU-4.2** Order of Approval No. 5619, Condition 6 limits $PM_{10}$ emission rate from the hydrate bag and silo baghouse to 3.7 lb/hr. This had been listed erroneously as Condition 5 of that same order; EU-4.2 now correctly lists Order of Approval Condition 6 as the Enforceable Requirement.

**EU-5.1** Order of Approval No. 5619, Condition 7 limits $PM_{10}$ emission rate from the bulk loading and unloading baghouse to 4.1 lb/hr. This had been listed erroneously as Condition 6 of that same order; EU-5.1 now correctly lists Order of Approval Condition 7 as the Enforceable Requirement.

**EU-6.1** Order of Approval No. 5619, Condition 9 limits $PM_{10}$ emission rate from the PCC Plant carbonators to 0.5 lb/hr. This had been listed erroneously as Condition 8 of that same order; EU-6.1 now correctly lists Order of Approval Condition 9 as the Enforceable Requirement. Also incorporated into EU-6.1 are two nearly identical conditions (Order of Approval No. 8146, Condition 3 and Order of Approval No. 8672, Condition 3). Both of these conditions are for new carbonators installed as off-permit changes. The requirement paraphrase was modified to indicate that the 0.5 lb/hr $PM_{10}$ limit applies to *each* carbonator, not the sum total of all emissions from *all* the carbonators.

**EU-6.2** Order of Approval No. 5619, Condition 10 limits $PM_{10}$ emission rate from the PCC Plant baghouse to 3.9 lb/hr. This had been listed erroneously as Condition 9 of that same order; EU-6.1 now correctly lists Order of Approval Condition 10 as the Enforceable Requirement.

## *B. Changes to Section II*

An effort was made to insert the appropriate rule reference at the end of each paragraph of Section II (see example at the end of this paragraph). The example shown here refers to the operating permit rule that requires the permitting authority to impose a "gap-filling requirement" when the underlying requirement does not contain a monitoring method.

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

**Section II.A.1(b)** Specific items that Graymont is to record upon receipt of a complaint were listed in this section of the AOP.

**Section II.A.2(c)** This section was reworded, hopefully for improved readability, with no changes to requirements intended.

**Section II.A.2(d)** Records must be maintained for five years. Five years from when? The words "from the date of record generation" were inserted into the sentence to tell when the five-year clock starts ticking.

**Section II.A.2(e)** A new section on Dolomite Baghouse inspection has been added. This section is a verbatim copy of Conditions 4, 5 and 6 of Order of Apprval No. 8350.

**Section II.A.2(f)** A new section on Carbonator No. 2 inspection has been added. This section is a verbatim copy of Conditions 4 and 5 of Order of Approval No. 8351.

**Section II.C.** A new section on Compliance Assurance Monitoring (CAM) has been inserted.

## *C. Changes to Section III*

No changes to this section.

## *D. Changes to Section IV*

**Section IV.D** This section, which describes Puget Sound Clean Air Agency Regulation I, was reworded and renumbered to exactly match Section 9.16, Regulation I, as of 7/1/02.

## *E. Changes to Section V*

**Section V.M.5** A sentence requiring compliance certification by the responsible official was added. The following sentence was also added, "Submittal of a Puget Sound Clean Air Agency "OPERATING PERMIT – ANNUAL CERTIFICATION FORM," completed in accordance with the instructions on the form, fulfills the requirements of this subsection." This paragraph was inserted because no environmental benefit is gained by making the source submit annual compliance certifications in "long form," in addition to the annual form provided by the Puget Sound Clean Air Agency.

**Section V.O.** Subsection (3) now requires maintenance of CAM records. Condition 7 from Order of Approval No. 8350 and Condition 5 from Order of Approval No. 8351 were inserted as references to subsection (4), which requires five-year record retention of all original monitoring data.

**Section V.P:** The data recovery requirement is now much shorter, but we now expect data recovery to be 100%.

**Section V.Q:** This section has been overhauled. An effort has been made to make the reporting subsection more understandable without losing the legal requirements. Reporting requirements are not changed from those in the original AOP; it's just that those requirements are spelled out more clearly now.

**Section VIII:** Several requirements that had been listed in the original AOP as inapplicable are now included in the facility-wide applicable requirements. These requirements are: I.A.3 (Puget Sound Clean Air Agency Regulation I, Section 9.09), I.A 4 (WAC 173-400-060), and I.A.5 (WAC 173-400-050(1)). These requirements had been listed in the original AOP as exempt, but that earlier determination has been countermanded. This is because they DO apply statewide, throughout all of Puget Sound Clean Air Agency jurisdiction, and therefore throughout the entire Graymont facility. Subpart AAAAA of 40 CFR 63, the National Emission Standard for Hazardous Air Pollutants for Lime Manufacturing Plants, however, does not apply. 40 CFR 63.7142 contains requirements for claiming area source status. An "area source" is a source that emits less than 10 tons per year of any single hazardous air pollutant (HAP) and less than 25 tons per year of any combination of HAP. The "litmus test" for Subpart AAAAA applicability is a test for hydrogen chloride emissions from the lime kiln, using prescribed methodology and procedures. Graymont had this test performed on the lime kiln on May 21, 2002, and the results indicated that the Graymont, Tacoma facility has the potential to emit HCl of approximately 1 ton per year. Graymont concluded that 40 CFR 63 Subpart AAAAA does not apply, and the Puget Sound Clean Air Agency concurs.

## F. No Changes to Section IX

## G. No Changes to Section X

## H. Administrative Amendment

On April 26, 2019, Graymont Western submitted an application to change the Responsible Official from Paul Liner to Keith Wiggs.

The Administrative Revision to make this change was issued on May 6, 2019.