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April 8, 2020

Ms. Sara Conley
Engineer
Puget Sound Clean Air Agency
1904 Third Avenue, Suite 105
Seattle, WA 98101

RE: Notice of Construction Application for Tire Derived Fuel (TDF) Limit Removal at Ash Grove Cement Co. in Seattle, Washington

Dear Ms. Conley:

Ash Grove Cement Company (Ash Grove) respectfully submits this Notice of Construction (NOC) application to the Puget Sound Clean Air Agency (PSCAA) to revise PSCAA NOC No. 5755 and remove the limit on tire derived fuel (TDF) consumption by the cement kiln at its Seattle, Washington cement manufacturing plant (the facility). Ash Grove requests that PSCAA Air Operating Permit (AOP) No. 11339 be amended to reflect the changes requested in this letter. A complete NOC application form is included in Attachment A.

BACKGROUND

The cement kiln at the facility is currently limited to 30% TDF consumption by weight of fuel input on a daily average under Condition 6 to AOP No. 11339. PSCAA permitted the use of TDF as fuel in the cement kiln under the Order of Approval for NOC No. 5755, issued March 30, 1995. At that time, Ash Grove requested this limit on TDF consumption in order to qualify the kiln as a "cofired combustor." This classification allowed the facility to claim exemption from New Source Performance Standards (NSPS) Subpart Ea, which was in place at the time of approval of NOC No. 5755. Per 40 CFR § 60.51a, units combusting municipal solid waste with nonmunicipal solid waste fuel and subject to a federally enforceable limit of 30% or less of municipal solid waste by weight are defined as cofired combustors. Under 40 CFR § 60.50a(d), cofired combustors are not subject to NSPS Subpart Ea.

Since the establishment of this limit as NSPS Subpart Ea avoidance in 1995, the United States Environmental Protection Agency (EPA) finalized the non-hazardous secondary material (NHSM) rule on February 7, 2013 (78 Federal Register [FR] 9112). Certain additional amendments to the NHSM rule specifically related to TDF have also been promulgated by the EPA. The NHSM rule provides specific categorial exemptions and procedures stipulated under Title 40 of the Code of Federal Regulations (CFR) Part 241, *Solid Wastes Used as Fuels or Ingredients in Combustion Units* to characterize the TDF as a non-hazardous secondary material (NHSM) evaluated under the provisions of 40 CFR 241 Subpart B. TDF is no longer considered a "solid waste" as defined under 40 CFR 241. Therefore, the underlying basis for establishing this 30% limitation on a daily average is no longer valid since 2013. Ash Grove requests PSCAA to remove this 30% TDF daily consumption limit.

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Per the Portland Cement Association (PCA) 2008 annual report, over 60% of U.S. and Canadian cement plants used TDFs in 2008 compared to zero waste fuel utilization in 1972. The energy from TDFs and all other alternative fuels now account for over 10% of the energy demand at cement plants.[1] The United States Environmental Protection Agency (EPA) and other environmental institutions have also thoroughly researched the use of TDFs in cement kilns in recent years.[2,3] This steady increase demonstrates that there continues to be an excess quantity of tires that cannot be readily used in recycling applications. Ash Grove would like to utilize more available tires in Washington and nearby states on an annual basis by removing this 30% daily limit. As discussed in this application, the proposed permit condition change does not result in any emission changes on hourly or annual averaging periods. This request will provide an environmentally safe disposal option for the available used tires in WA other than monofills or other recycling applications. As a part of this request, Ash Grove is not proposing to make any physical modifications to the kiln system or TDF handling system.

TDFs are not considered solid or hazardous waste because they meet the criteria for NHSM under the provisions of 40 CFR Part 241 Subpart B (NHSM Rule). As a result, the kiln at the Facility will continue to not be subject to the standards for commercial and industrial solid waste incineration (CISWI) units under 40 CFR Part 60 Subpart CCCC. As an existing source, the kiln will remain subject to 40 CFR Part 63 Maximum Achievable Control Technology (MACT) Subpart LLL regulations and applicable limits.

IMPACT TO KILN EMISSIONS

Hourly Potential Emissions

The modification of an existing source of air pollutants is subject to New Source Review (NSR) under PSCAA Regulation I, Section 6.03. PSCAA rules do not include their own definition of modification but adopt by reference the section of Washington Department of Ecology rules (WAC 173-400-030) which include the definition. The Ecology definition (below) references the section of the Clean Air Act that establishes the federal New Source Performance Standards.

> *WAC 173-400-030 (51): "Modification means any physical change in, or change in the method of operation of, a stationary source that increases the amount of any air contaminant emitted by such source or that results in the emissions of any air contaminant not previously emitted. The term modification shall be construed consistent with the definition of modification in Section 7411, Title 42, United States Code, and with rules implementing that section." The "rules implementing that section" are the NSPS rules in 40 CFR Part 60.*

The NSPS definition of modification states that "any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification." 40 C.F.R. § 60.14 defines "modification" for purposes of the NSPS and provides procedures for evaluating whether an emissions increase has occurred for determining pre-change and post-change emission rates.[4] The NSPS rule and guidance establish that an emission increase is based on whether the change results in an increase in *potential hourly* emissions. EPA has provided guidance on calculating the hourly

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[1] PCA. 2008. U.S. and Canadian Portland Cement Industry: Plant Information Summary,

[2] EPA. 2008. "Cement Sector Trends in Beneficial use of Alternative Fuels and Raw Materials."

[3] The Pembina Institute and Environmental Defense. 2014. White Paper on Alternative Fuel Use in Cement Manufacturing.

[4] *See* 40 C.F.R. § 60.14(b)(1).

increase using representative operating conditions at the maximum capacity of the facility and under the conditions at which maximum emissions will occur. EPA stated in a guidance memorandum that maximum emission rates "under current maximum capacity" must be compared to "emissions at maximum capacity after the change."[5] Similarly, in another guidance letter, EPA explained that "the proper way to determine whether a modification has occurred is to compare the hourly mass emission rate from the [facility] at full capacity before the change to the hourly mass emission rate from the [facility] at full capacity after the change."[6]

Ash Grove is currently required to limit the amount of tires injected into the kiln to 30% by weight on a daily average. This current limit is not based on an hourly averaging period. Ash Grove is permitted to inject up to 100% tires into the kiln in any hour as long as the daily average remains less than 30% by weight. The removal of the TDF limit will therefore not affect the potential hourly emissions from the kiln, and no further evaluation on hourly basis is needed. Therefore, the proposed request is not considered as a modification under PSCAA Regulation I, Section 6.03.

Long-Term Potential Emissions

Under Sections 1.A and I.B. to PSCAA AOP No. 11339, Ash Grove is currently subject to annual emission limits of carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter (PM) and hydrochloric acid (HCl). Ash Grove is also subject to emission limitations of PM, dioxins & furans, mercury, and total hydrocarbons (THC) or organic hazardous air pollutants (OHAPs) under the Portland Cement (PC) MACT rules in 40 CFR 63 Subpart LLL. Ash Grove will continue to be subject to all emission limitations under PSCAA AOP No. 11339 and 40 CFR 63 Subpart LLL.

Ash Grove is not requesting any changes to the currently permitted emission limits, CO, NO_x, SO_2, HCl, and PM. Ash Grove also does not anticipate any change in actual emission levels. The impact of the removal of the TDF limit on emissions of NO_x, CO, SO_2, PM, volatile organic compounds (VOC), THC/OHAPs and Washington Toxic Air Pollutants (TAP) are discussed below.

NO_x

In cement kilns, NO_x emissions are formed during fuel combustion by two primary mechanisms: fuel NO_x and thermal NO_x. Thermal NO_x comes from the oxidation of molecular nitrogen present in combustion air, and fuel NO_x comes from the oxidation of nitrogen compounds in fuel. Because of the high temperatures involved in burning or clinker formation, thermal NO_x is the dominant mechanism for NO_x formation in kiln system.

High temperatures that lead to thermal NO_X are necessary for the required clinkering reactions in the kiln. One way to minimize thermal NO_X is to minimize the amount of combustion that must occur at a single location of maximum temperature (near the main burner). Changing the combustion such that a greater fraction of the fuel is inserted at another location (calciner, back end of kiln, etc.) allows for a lower maximum temperature at the main burner. This concept is called staged combustion, or mid-kiln firing, and is well documented as a mechanism for thermal NOx reduction. Further, tires are often a preferred fuel for mid-kiln firing at portland cement plants; EPA stated that "Technical literature, industry publications, and state emissions data for several kilns that have used or tested mid-kiln firing demonstrate NO_X reductions ranging from 28 to over 50 percent".[7]

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[5] Memorandum from Don Clay, EPA, to David Kee, EPA (Sept. 9, 1988) (EPA ADI Control No. 0000062). *See also* Letter from Lee M. Thomas, EPA, to John W. Boston, Wisconsin Electric Power Co. (Oct. 14, 1988) (EPA ADI Control No. NN02) (stating that "the baseline emission rates from units 1-5 are determined by hourly maximum capacity just prior to the renovation," and that EPA relied on "actual operating data" submitted by the company to determine the pre-change maximum capacity).

[6] Letter from R. Douglas Neeley, EPA, to Tracy R. Carter, Tenn. Dept. of Env't & Conservation (Aug. 11, 1999) (EPA ADI Control No. 0000043).

[7] NOx Control Technologies for the Cement Industry, September 2000, EPA-457/R-00-002. Pages 5-6.

As mid kiln firing of TDF is a method of improving staged combustion, it is expected to improve thermal NOx formation. Consequently, thermal NO_x emissions are expected to either remain the same or decrease with the increase in use of TDF.

The raw material feed may also contain nitrogen compounds which may lead to feed NO_x similar to fuel NO_x. However, the raw material feed will remain unchanged, and tires have a comparable or lower nitrogen content than the other fuels expected to be replaced by TDF usage.

Although there is an inherent variability in thermal NO_x, fuel NO_x and feed NO_x are not expected to increase. Thus, NO_x emissions are not expected to change due to the increase in TDF throughput. Ash Grove will continue to meet current NO_x permit limits and will continue to demonstrate compliance using NO_x CEMS. Therefore, no increase in NO_x emissions is expected. Ash Grove will continue to meet the kiln NO_x emission limits under AOP No. 11339.

CO

CO emissions from cement kilns result from the kiln feed (feed CO) and fuels (fuel CO). Feed CO can be produced from trace amounts of carbon and hydrocarbons that are inherently contained within the raw materials used in the cement manufacturing process. This will not change by use of tires as a fuel. Fuel CO is produced by incomplete combustion, and this is not a desired outcome since this means that the full heating value of the fuel is not being used efficiently. Good Combustion Practices used in the control of the kiln include minimizing CO as much as possible. Interruptions in fuel, feed or airflow can cause spikes of CO, but systems are already in place to minimize these excursions and stay within emissions limits.

As Ash Grove does not expect long term emissions of CO to increase, Ash Grove will continue to demonstrate compliance using CO CEMS and meet current CO permit limits under AOP No. 11339.

SO_2

SO_2 emissions from cement kilns are driven primarily by feed SO_2 formed due to sulfur in the form of metallic sulfides (pyrite), sulfate, or organosulfur compounds found in raw materials used to manufacture cement. The raw materials used in the kilns are not affected by the proposed increase in TDF, thus feed SO_2 emissions are not expected to change. SO_2 emissions may also come from fuel SO_2 due to SO_2 formed from the oxidation of organic, pyritic, and sulfate sulfur in the kiln fuel. However, fuel SO_2 emissions is not expected to change because the sulfur content of tires is expected to have a comparable or lower sulfur content than the other fuels expected to be replaced by TDF usage.

SO_2 emissions will not change as a result of this request. Ash Grove will continue to meet existing SO_2 permit limits and continue to demonstrate compliance using SO_2 CEMS. Ash Grove will continue to meet the kiln SO_2 emission limits under AOP No. 11339.

VOC and THC/OHAP & TAP

VOC emitted by the kiln is generated as feed VOC and fuel VOC. Feed VOC is the dominant source of VOC emissions and is created as the feed is heated and undergoes pyrolysis and/or volatilization. Because the raw materials used will not change, feed VOC emissions are not expected to increase.

Fuel VOC may result from the incomplete combustion of fuel in the kiln, though a properly designed and operated cement kiln system minimizes VOC formation from fuel combustion. Combustion-related VOCs are a minor component of total VOC emissions from a preheater/precalciner cement kiln because no combustion occurs in the flue gas stream after the potential generation of VOCs from raw materials.

In addition, the kiln is subject to organic pollutant emission limitations under PC MACT. PC MACT regulations limit cement kilns to a THC emission limit of 24 parts per million by volume dry basis (ppmvd) or OHAP limit of 12 ppmvd. Regardless of the type of fuel used, Ash Grove will demonstrate compliance with the applicable THC or OHAP emission limit. During the PC MACT rule making process, the EPA noted:

> *"Because the standards are based on complete combustion of the fuel, and because of the extremely high temperatures in the end of the kiln where fuels are introduced (both those burn hazardous wastes and those do not), we believe that both type of kilns should achieve comparable complete destruction of organic materials present in the fuels under normal operating conditions reflecting good combustion."*

Organics will be completely combusted due to the high operating temperature of the kilns. Therefore, Ash Grove supports the conclusion that emissions of VOC, THC/OHAP, and organic TAP will not increase due to increase in TDF usage in the kiln. Ash Grove will continue to meet MACT and permit limits for THC/OHAP and will demonstrate compliance using THC CEMS.

PM and Particulate HAP & TAP

PM emissions from the cement kiln are primarily due to particulate matter loading from raw materials, along with a minimal amount of ash from fuels. The removal of the TDF limit resulting into increase in TDF usage will not affect the potential of the raw material feed to form PM. Emissions of PM and particulate HAP & TAP are controlled by the kiln baghouse, and the increase in TDF usage will not increase the flow rate of exhaust gas through the baghouse or the capture efficiency of the filter media. In addition, the existing cement kiln will continue to be subject to emission limitations of PM under PC MACT regulations. Regardless of the type of fuel used, Ash Grove will demonstrate compliance with the PM emission limit.

Kiln emissions of particulate HAP and TAP may also be influenced by the concentration of pollutants within fuel sources. The PM limit under Subpart LLL is used as a surrogate for all particulate HAP. As a part of NHSM rulemakings, EPA compared all metal constituents of tires vs. traditional fuels such as coal. EPA promulgated tires as NHSM non-waste fuel because of no significance difference in metal constituents. TDF therefore will not contribute increased emissions of particulate HAP or TAP from the kiln and current PM limit on a 30-day basis will be used as a surrogate for all particulate HAPs and TAPs.

Emissions of PM and particulate HAP and TAP are not expected to increase as a result of the removal of the TDF limit. Ash Grove will continue meeting MACT and permit limits for PM and mercury and will continue to demonstrate compliance using PM Continuous Parametric Monitoring System (CPMS) and a continuous mercury emission monitoring system.

Dioxins & Furans

Emissions of dioxins & furans (D/F) from cement kilns are a primary function of exhaust gas residence time and temperature, which is independent of fuel type. In a letter to the Center for Maximum Potential Building Systems, the EPA similarly noted:[8]

"We believe that dioxin emissions from cement kilns in operations today are not a function of the fuels used in the manufacturing process, but rather occur primarily as a result of formation in the air pollution control system when favorable conditions for its formation are present. The recent EPA air standards have caused alterations to the emission control system designs and changes to the way the cement kilns are operated that minimize the potential for dioxin formation. Because emission standards applicable to cement kilns burning conventional fuels and to kilns

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[8] Letter from Susan Parker Bodine (EPA) to Gail Vittori (Center for Maximum Potential Building Systems) dated December 10, 2007.

burning hazardous waste fuels are the same for dioxin, dioxin emissions cannot be significantly different between them."

Therefore, D/F emissions are not expected to change as a result of the increase in TDF usage. Ash Grove will continue monitoring temperature of the exhaust gases from the kiln as required by MACT Subpart LLL and will continue meeting the existing temperature limits.

HCl and Hg

Hydrochloric acid (HCl) and mercury (Hg) emissions from cement kilns are primarily related to the composition of the raw materials used in the process. With regards to Hg and HCl emissions from cement plants, the EPA noted:[9]

> *"...emissions of these constituents were a function of raw material concentrations."*

Increase in TDF usage will not affect the potential of the raw material feed to form Hg or HCl. Therefore, HCl and Hg emissions are not expected to change as a result of this request. Under PC MACT regulations, existing cement kilns at an area source are subject to an Hg emission limit of 55 lb of Hg per MM ton of clinker. Condition I.A.17 of AOP No. 11339 limits HCl emissions to 100 ppm from all combustion sources. The applicable emission limits for Hg and HCl are irrespective of fuel usage. Regardless of the type of fuel used, Ash Grove will continue meeting MACT and permit limits on emissions of Hg and HCl. Ash Grove will continue demonstrating compliance with the MACT Hg limit using CEMS.

For the reasons described above and based on the information available to Ash Grove at this time, Ash Grove expects no increases in emissions for any of the regulated pollutants due to the proposed removal of TDF usage limitation. No additional emission changes of criteria pollutants attributed to the introduction of additional tires in the kiln is requested for the currently permitted levels. The table below provide a summary of applicable pollutants and the expected impact due to this request.

Table 1 below provides a summary of applicable kiln emission limits.

[9] Federal Register/Vol. 75, No. 174/Thursday, September 9, 2010, 54972.

Table 1. Summary of Applicable Permit and MACT Limits

Pollutant	Current Permit Limits	Proposed Limits	MACT Limit for Kiln	Continuous Monitoring Method	Changes Due to Increase in TDF Usage
CO	1045 ppm @ 10% O_2 (8-hr) 538 lb/hr (8-hr) 2353 tpy (annual)	No Change	--	CEMS	No
NO_x	650 ppm @ 10% O_2 (24-hr) 1846 tpy (annual)	No Change	--	CEMS	No
SO_2	180 ppm @ 10% O_2 (1-hr) 176 tpy (annual)	No Change	--	CEMS	No
HCl	100 ppm @ 7 % O_2 (1-hr)	No Change	--	None	No
VOC	--	--	--	CEMS	No
THC/ OHAP	--	--	24 ppmvd or 12 ppmvd	CEMS	No
PM	--	--	0.07 lb/ton clinker	CPMS	No
Hg	--	--	55 lb/MM ton clinker	CEMS	No
HCl	--	--	3 ppmd	CEMS	No
D/F	--	--	0.2 or 0.4 ng/dscm	CPMS	No
CO_2	--	--	--	CEMS	No

Basis of Modeling & Calculations in Application for PSCAA NOC No. 5755

Ash Grove included emission calculations and air dispersion modeling results in its response to the Draft Order of Approval for NOC No. 5755, dated February 22, 1995. Emission rates used in air dispersion modeling were determined using the highest production-based emission factor for each pollutant from a range of source tests performed on kilns burning fossil fuels and TDF. Emission rates were determined at the kiln's maximum production capacity. Because emission rates were determined using maximum emission factors at the kiln's maximum capacity, the 30% limit on TDF burning did not influence the results of emission calculations or air dispersion modeling leading to the approval of PSCAA NOC No. 5755. The TDF limit was requested solely to avoid the kiln's classification as a municipal solid waste incinerator. The impact of the removal of the TDF limit on federal solid waste incinerator rule applicability is discussed in the *Regulatory Applicability* section below.

REGULATORY APPLICABILITY

The following sections describe the regulatory applicability of the removal of the TDF limit.

Notice of Construction Applicability

According to PSCAA Regulation I, Section 6.03(a), "the establishment of a new source" of air emissions is subject to NOC requirements under PSCAA Regulation 1, Section 6.03. Pursuant to WAC 173-400-030(56), a modification, as defined in WAC 173-400-010(51), qualifies as a new source. As discussed in the *Impact to Kiln*

Emissions section above, the removal of the TDF limit is not a modification and is therefore not considered a new source. The provisions of NSR under PSCAA Regulation I Section 6.03 therefore do not apply. This application is submitted to amend the existing NOC No. 5755.

PSD Review Requirements

PSCAA Regulation I, Section 6.01 refers to WAC 173-400-720 Prevention of significant deterioration (PSD) regulations (effective 7/01/16).

The EPA defines a "major modification" as modification in which a physical change or change in the method of operation at a "major stationary" source results in a significant net emissions increase. Portland cement plants are considered PSD "major sources" if site-wide source emissions exceed 100 tpy of a regulated pollutant. Under this definition, the Facility is an existing PSD major source because the PTE of at least one PSD regulated pollutant exceeds 100 tpy.

The Facility has the potential to emit greater than 100 tpy of several PSD pollutants, and is therefore classified as an existing major stationary source under the PSD permitting program.[10] Unless otherwise exempt, a change to an existing major source is considered to be a major modification if the net emissions increase resulting from the modification is greater than the PSD Significant Emission Rate (SER) threshold for the respective regulated NSR pollutant. A structured step-by-step procedure to evaluate PSD applicability is used, in accordance with WAC and federal PSD regulations. Most of the definitions of terms used in this section are consistent with the corresponding definitions found in 40 CFR 52.21.

An important part of the major modification definition in the PSD regulation is that a physical or operational change must result in an emissions increase above the significance threshold. The Clean Air Act (CAA) requires only those changes that cause emissions to increase to be to subject to PSD/NSR. If there is no causal relationship between a project and an emission increase, then PSD cannot be triggered.

The EPA clearly understood this concept when it promulgated the 1980 PSD regulations containing the causation criteria in the major modification definition. The EPA provided that a "major modification" will occur under the 1980 NSR rules only when there is a direct causal link between a non-exempt change and any subsequent emissions increase. In the preamble to the 1992 PSD rule amendments, the EPA reiterated the causal linkage when it wrote (57 FR 32326):

> *"The NSR regulatory provisions require that the physical or operational change "result in" an increase in actual emissions in order to consider that change to be a modification (see, e.g., 40 C.F.R. 52.21(b)(2)(i))."*

In other words, PSD does not apply unless the source finds that there is a causal link between the proposed change and any post-change increase in emissions.

More recently, the EPA again confirmed the causal linkage in the December 2002 version of the PSD regulations. 2002 regulations articulated the "demand growth" exclusion that originates from the causal link requirement of the Clean Air Act. Under the demand growth principle, only increases that result from a proposed physical or operational method change are to be taken into account (67 FR 80186):

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[10] Ash Grove falls under the designation of "portland cement plant," which is identified in 40 CFR 52.21(b)(1)(i)(a) as having a major source PSD threshold of 100 tpy.

> *"Both the statute and implementing regulations indicate that there should be a causal link between the proposed change and any post-change increase in emissions..."*

Finally, the EPA again wrote on September 14, 2006, in their proposed rule involving Debottlenecking, Aggregation, and Project Netting (71 FR 54235):

> *"As we explained in promulgating the demand growth exclusion, we interpret the "which increases" and "which results in" language of section 111(a)(4) of the modification provision of the CAA as requiring "a causal link between the proposed change and any post change increase in emissions.""*

As discussed in the prior section, Ash Grove does not have a reason to believe that emissions from the proposed increase in TDF usage will change relative to the kiln's current emissions levels on actual or potential basis. Therefore, additional PSD review is not required, and this project does not trigger PSD permitting requirements for a major modification.

New Source Performance Standards (NSPS)

Subpart A - General Provisions

All affected sources subject to NSPS are also subject to the general provisions of NSPS Subpart A unless specifically excluded by the source-specific NSPS. NSPS potentially apply to constructed, reconstructed, or modified sources. 40 CFR §60.2 defines construction as fabrication, erection, or installation of an affected facility. As discussed previously in this letter, the proposed TDF limit removal does not involve construction of any newly affected facilities under Subpart F, therefore this project is not considered a new construction under NSPS.

40 CFR §60.15 defines reconstruction as the replacement of components of an existing facility to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and it is technologically and economically feasible to meet the applicable standards. The proposed project does not involve replacement of components of Subpart F affected facilities, therefore it is not considered a reconstruction under NSPS regulations.

40 CFR §60.14 defines modification as any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted. The proposed project will not result in increase of emissions of NO_x SO_2, or PM. Therefore, this project is not subject to NSPS §60.14 provisions.

40 CFR 60 Subpart F

Per 40 CFR 60.60(a), Subpart F for "Standards of Performance for Portland Cement Plants" applies to the following facilities:

> *"Kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems."*

NSPS Subpart F applies to the following affected facilities at Portland cement plants that are constructed, reconstructed, or modified after August 17, 1971: kilns, clinker coolers, raw mill systems, finish mill systems, raw mill dryers, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems. Subpart F regulates PM, SO_x, and NO_x emissions with newer and more stringent standards for kilns that were constructed or modified after June 16, 2008. This kiln was constructed after August 17, 1971 and has not been modified after June 16, 2008. Therefore, this kiln is currently subject to the existing NSPS Subpart F requirements for units constructed after August 17, 1971 and not subject to the existing NSPS Subpart F requirements for units modified after June 16, 2008.
As discussed in earlier sections, the PM, NO_x, and SO_x emissions are not expected to increase. Therefore, this project is not considered a modification under NSPS provisions. As a result, this kiln will continue to be subject to NSPS Subpart F requirements for units constructed after August 17, 1971 and not subject to the existing NSPS Subpart F requirements for units modified after June 16, 2008. Ash Grove currently complies with all standards applicable to the kiln under 40 CFR Subpart F and will continue to meet all standards and requirements under Subpart F following the removal of the TDF limit.

40 CFR 60 Subpart Eb

40 CFR 60 Subpart Eb, "Standards of Performance for Large Municipal Waste Combustors" applies to municipal waste combustor units with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction, modification, or reconstruction is commenced after September 20, 1994.

40 CFR Subpart B, Section 241.4 provides non-waste determinations for specific non-hazardous secondary materials when used as fuel. Per 40 CFR § 241.4(a)(1), "scrap tires that are not discarded and are managed under the oversight of established tire collection programs, including tires removed from vehicle and off-speciation tires," are not considered solid wastes when used as a fuel in a combustion unit.

Ash Grove stores and handles TDF separate from waste streams at the facility. Tires used as TDF are managed as a resource and valuable commodity. Ash Grove receives tires from established TDF providers and maintains documentation from providers that shipments of TDF qualify as non-waste per 40 CFR § 241.4(a)(1).

Ash Grove will not combust any solid waste in the kiln at the Seattle facility. 40 CFR 60 Subpart Eb therefore does will apply to the kiln since TDFs are considered as non-waste fuel.

40 CFR 60 Subpart CCCC

40 CFR 60 Subpart CCCC, "Standards of Performance for Commercial and Industrial Solid Waste Incineration Units," applies to incineration units meeting the requirements in 40 CFR § 60.2010. Per 40 CFR § 60.2010(b), the incineration unit must be either a CISWI or an ACI as defined in § 60.2265. Per § 60.2265, CISWI and ACI are defined as follows:

> *Commercial and industrial solid waste incineration unit (CISWI) means any distinct operating unit of any commercial or industrial facility that combusts, or has combusted in the preceding 6 months, any solid waste as that term is defined in 40 CFR part 241...*
>
> *Air curtain incinerator (ACI) means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. Air curtain incinerators are not to*

be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.

As discussed in the applicability assessment for 40 CFR Part 60 Subpart Eb above, Ash Grove does not combust any solid waste in the kiln at the Seattle facility. The kiln is not an air curtain incinerator as described in § 60.2265. 40 CFR Part 60 Subpart CCCC is therefore not applicable to the kiln at the Seattle facility or the removal of the TDF limit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Subpart A - General Provisions

All affected sources are subject to the general provisions of Part 63 NESHAP Subpart A unless specifically excluded by the source-specific NESHAP. These provisions include initial notification and performance testing, recordkeeping, and monitoring requirements for all other subparts as applicable. Ash Grove will continue to comply with provisions of Subpart A as applicable.

40 CFR 63 Subpart LLL

40 CFR 63 Subpart LLL, "National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry" applies to "each new and existing Portland cement plant which is a major source or an area source as defined in § 63.2." The Seattle Plant is considered an area source of HAP emissions and is subject to 40 CFR 63 Subpart LLL. Affected sources under this NESHAP are kiln and inline coal mills, clinker coolers, raw mills, finish mills, raw material dryers, storage bins, conveying systems, bagging and bulk loading and unloading systems, and open storage piles.

Subpart LLL does not limit the types of materials or fuels that can be used in the kiln. However, kilns which burn hazardous waste, are subject to and are regulated under Subpart EEE - National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors, instead of Subpart LLL. As discussed previously in this letter, tires are not considered a hazardous waste. Tires meet the exemptions and procedural requirements outlined in the NHSM pursuant to the provisions of 40 CFR 241 Subpart B, *Identification of Non-Hazardous Secondary Materials that are Solid Wastes When Used as Fuels or Ingredients in Combustion Units* (NHSM Rule). Therefore, the kiln will continue to be subject to the PC MACT Subpart LLL.

EPA amended PC MACT regulations, and amended regulations now include more stringent emission limits for PM, THC/OHAP, D/F, and Hg. Ash Grove as an existing area source has complied with these limits since they went into effect on September 9, 2015.

Provisions in 40 CFR §63.1348 (c) requires a new performance test for D/F if the subject facility undertakes operational changes that may adversely affect compliance with the applicable standards under Subpart LLL. Subpart LLL establishes the emission limits for PM, D/F, THC/OHAP, and Hg. As discussed in earlier sections, the proposed increase in tires does not affect the portland cement manufacturing emissions. Therefore, Ash Grove also asserts that the proposed project is a change that will not adversely affect compliance as stipulated under 40 CFR 63.1348 (c), whereby authorization is not required under 40 CFR 63.5 and notification is not required under 40 CFR 63.1348 (c) prior to implementation of increase in TDF use.

Ash Grove currently complies with all applicable emission limitations and performance testing, monitoring, reporting and recordkeeping requirements under Subpart LLL. The removal of the TDF limit will not cause any

previously inapplicable standards under Subpart LLL to apply to the kiln. Ash Grove will continue to comply with all applicable standards under Subpart LLL.

Washington Toxic Air Pollutant Regulations

PSCAA incorporates the Washington Toxic Air Pollutant (TAP) program under WAC 173-460 by reference. In 2019, the Washington State Department of Ecology issued updated TAP rules under WAC 173-460, effective December 23, 2019. At the time of the submittal of this NOC application, PSCAA has not adopted the 2019 issuance of WAC 173-460. This application assesses the impacts to TAP emissions in reference to the previous 2009 issuance of WAC 173-460. The impact of the removal of the kiln TDF limit on potential emissions of TAPs from the kiln is discussed in the *Impact to Kiln Emissions* section below.

Local Regulatory Applicability

The cement kiln at the Ash Grove Seattle Plant will continue to be subject to the following Ecology and PSCAA regulations:

Per PSCAA Regulation I Section 9.04(c)(2), no air contaminant source shall exceed opacity of 20% for any 6-minute period as determined by the continuous opacity monitor system (COMS).

Per PSCAA Regulation I Section 9.04(c)(1), the kiln stack shall not exceed opacity during any hour that averages greater than 5%.

Per PSCAA Regulation I Section 9.11, no air contaminant shall be emitted 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.

Per PSCAA Regulation I Section 9.20, no features, devices, control equipment, or machines shall operate unless such equipment are maintained in good working order.

Ash Grove will continue to follow all other requirements applicable to the kiln under PSCAA AOP No. 11339. Ash Grove looks forward to receiving a completeness determination for this NOC application from PSCAA.

If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at 206-694-6225.

Sincerely,

Laura McAnany
Ash Grove Cement Company
Plant Manager

Attachments

Appendix A
NOC Application Form

DIRECT 206-623-5596
FAX 206-623-5355

3801 EAST MARGINAL WAY SOUTH
SEATTLE, WA 98134-1113

ASHGROVE.COM

AGENCY USE ONLY	NOC#:	REG#:	Date Fee Pd:	Eng. Assigned:
	12003	11339	6/4/20	

PUGET SOUND
Clean Air Agency

1904 3rd Ave #105, Seattle, WA 98101
206-343-8800
pscleanair.gov

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

The following information must be submitted as part of this application packet before an Agency engineer is assigned to review your project.

SECTION 1. FACILITY INFORMATION

Business Name
Ash Grove Cement Company

Equipment Installation Address	City	State	Zip
3801 East Marginal Way South	Seattle	WA	98134

Is the business registered with the Agency at this equipment installation address?

☒ Yes. Current Registration or AOP No. 11339 ☐ No, not registered ☐ Unknown

Business Owner Name
Ash Grove Cement Company

Business Mailing Address	City	State	Zip
3801 East Marginal Way South	Seattle	WA	98134

Type of Business
Cement Manufacturer

Is the installation address located within the city limits?

☒ Yes ☐ No

NAICS Code	NAICS Description
32731	Hydraulic Cement Manufacturing

Contact Name (for this application)	Phone	Email
Laura McAnany	(206) 694-6225	laura.mcanany@ashgrove.com

Description for Agency Website

Provide a 1-2 sentence simple description of this project. See examples www.pscleanair.gov/176

Ash Grove Cement Company proposes to revise NOC No. 5755 to remove the limit on tire derived fuel consumption by the cement kiln at its Seattle, Washington cement manufacturing plant.

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS

1) **Process flow diagram**
☐ YES, attached. ☐ NO, not attached. This application is incomplete N/A - PFD not required

2) **Emission estimate**. Emission rate increases for all pollutants.
☐ YES, attached. ☐ NO, not attached. This application is incomplete. N/A - no associated emission increase

3) **Environmental Checklist** (or a determination made by another Agency under the State Environmental Policy Act) www.pscleanair.gov/DocumentCenter/View/170
☐ YES, attached. ☐ NO, not attached. This application is incomplete. N/A - SEPA checklist not required

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS (CONT)

4) Attach **equipment form**(s) applicable to your operation. Forms are available online at www.pscleanair.gov/179

☐ YES, attached. ☐ NO, not attached. This application is incomplete. N/A - no modification to equipment or new equipment installation proposed

5) **Detailed Project Description**

The project description must include a detailed description of the project, a list of process and control equipment to be installed or modified, a description of how the proposed project will impact your existing operations (if applicable), and measures that will be taken to minimize air emissions.

Detailed description of the proposed project included in packet?

☒ YES, attached. ☐ NO, not attached. This application is incomplete.

6) **$1,150 filing fee** (nonrefundable)

☒ PAY BY CHECK – Attached and made payable to **Puget Sound Clean Air Agency**

☐ PAY BY CREDIT – Accounting technician will contact person identified below for payment information

Contact Name:	Contact Number:
Laura McAnany	206-694-6225

SECTION 3: PROCESS AND CONTROL EQUIPMENT (attach additional pages if necessary)

Process Equipment		Does this equipment have air pollution control equipment?	Air Pollution Control Equipment	
# of Units	Equipment Type & Design Capacity		# of Units	Equipment Type
1	Dry process cement kiln	☒ Yes ☐ No	1	Pulse-jet baghouse filter
		☐ Yes ☐ No		
		☐ Yes ☐ No		
		☐ Yes ☐ No		

SECTION 4: CERTIFICATION STATEMENT

I, the undersigned, certify that the information contained in this application and the accompanying forms, plans, specifications, and supplemental data described herein is, to the best of my knowledge, accurate and complete.

Signature — April 8, 2020 (Date)

Laura McAnany (Printed Name) — Plant Manager (Title)

SECTION 5: APPLICATION SUBMITTAL

☐ **EMAIL application and attachments to:**

NOC@pscleanair.gov

-OR-

☒ **MAIL application, payment, and attachments to:**

Puget Sound Clean Air Agency
ATTN: NOC Application Submittal
1904 3rd Ave, Suite 105 - Seattle, WA 98101