

**Alaska Department of Environmental Conservation**

**Air Permits Program**

**TECHNICAL ANALYSIS REPORT**

for

**Air Quality Control**

**Minor General Permit 9**

for

**Rock Crushers**

Prepared by: Jim Plosay, Adam Reed, and Dave Jones

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**Revision 3**

Prepared by: Dave Jones, Peter Saengsudham

Date: April 1, 2023

## INTRODUCTION

This permit is intended for rock crushers that are required to have a permit because they are classified as needing a minor permit under 18 AAC 50.502(b)(3), i.e. they have a rated capacity of at least five tons per hour.

Rock crushers sometimes break down the oversize material to be fed into the process for asphalt plants, or to recycle asphalt pavement. An applicant must apply for a Minor General Permit 3 (MG3) or a General Permit 3 (GP3) for Asphalt Plants to operate the asphalt plant. The MG9 Rev. 3 permit allows an asphalt plant to be located with the rock crusher only if the permittee has a separate minor source specific permit or minor general permit (MG3) for the asphalt production activities.

Activities co-located with a major source of air pollution are not covered under this minor general permit because the underlying analysis to protect ambient air quality did not include impacts from nearby emitting activities not covered by this permit. The Department assumed an annual 3,650 hours of operation in its potential to emit (PTE) calculations. This assumption was determined to be representative for the MG9 based on a review of currently active sources and the conservative operational assumptions detailed in the modeling memorandum for the 2003 General Permit 9.

## PERMIT HISTORY

### First Minor General Permit 9 (MG9)

The Alaska Department of Environmental Conservation (Department) issued the first MG9 on April 8, 2009. The Department included a public comment period from February 17 through March 19, 2009 for the original 2009 MG9, as required by 18 AAC 50.542(d). No comments were received.

### MG9 Revision (Rev.) 1

The Department issued Revision 1 to MG9 on April 1, 2014 to restructure the conditions and appearance of the permit from the previous MG9 permit in order to improve user accessibility and compliance. The Department included a public comment period from April 3 through May 3, 2013 for MG9 Rev 1, as required by 18 AAC 50.542(d). The comment period was extended to May, 24 2013 after requests were received by the Department from Permittees. The Department received 17 comments from Colaska, Inc., three comments from Brad Quade at Anchorage Sand & Gravel Co., In., 14 comments from Shawn Crouse at Granite Construction Company, and 11 comments from other parties. The Department's response to these comments are available in the Response to Comments document for the MG9 Rev. 1.

### MG9 Rev. 2

The Department issued MG9 Rev. 2 on April 1, 2017 to restructure the permit conditions from the 2014 MG9 Rev. 1 in order to improve user accessibility and reduce the compliance burden for Permittees. Prior to the issuance of MG9 Rev. 2, the Department conducted workgroup discussions with the Associated General Contractors (AGC) of Alaska from October 2016 through January 2017 to simplify conditions of the minor general permit and make compliance with the permit clearer for industry. The Department published MG9 Rev. 2 for the required public comment period February 2, 2017, ending March 3, 2017, as required by 18 ACC 50.542(d).

MG9 Rev. 2 new conditions include Condition 4 which moves Condition 17 of the MG9 Rev. 2 incorporating additional requirements to address rental of emissions units both to and from the

permitted source, and clarification that source tests may be conducted during any point during the fifth year after the previous source test under Condition 7.1(b).

Table 1 includes a comparison of the conditions from the MG9 Rev. 1 to the MG9 Rev. 2.

### MG9 Rev. 3

The Department issued MG9 Rev. 3 on April 1, 2023, to address changes within 18 AAC 50, make technical and grammatical corrections, reorganize and reformat text in the permit and TAR for consistency and clarity, and to update weblinks and the Department’s Standard Permit Conditions (SPCs). The corrections and updates to the SPCs have already been through the public comment process. Therefore, the Department did not public notice MG9 Rev. 3.

Table 2 includes a comparison of the conditions from the MG9 Revision 2 to the MG9 Revision 3.

**Table 1**  
**Condition changes from MG9 Rev. 1 to MG9 Rev. 2**

<b>MG9 Permit Rev. 1 Condition No.</b>	<b>Description</b>	<b>MG9 Permit Rev. 2 Condition No.</b>	<b>Description of Change</b>
1	Ambient Air Quality Protection	1	No Change
2	Relocation and Reporting of Site Selection	2	Revised Condition language and relocation sub-conditions
None	Preapproved Locations	2.1	Relocation allowed to pre-approved locations with 8-hr notification using Air Online Services (AOS). All other relocations now require five-day notification
None	New Locations	2.2	10 Day notice requirement relaxed to 48 hours for new locations using AOS and 5 days using other notification methods
None	Unexpected Breakdown and Repair	2.3	Condition added authorizing relocation for repair requiring notice within 24-hr after move for repair
3	General Recordkeeping	3	No Change
16	Equipment Changes	4	Permit language moved from condition 16 to Condition 4. Condition now requires reporting all equipment operated with each FOR.
None	Temporary Changes	4.1	Requirement to report equipment listed in the EU inventory which is leased, rented or provided to a third party for operation under a business agreement to the Department within seven days of business agreement.
4	General Reporting	5	Changes in sub-conditions
4.1	Submittals	5.1	Reporting methods added allowing reporting to Air Online Services and email to DEC Air Reports
4.2	Electronic Reporting	Removed	Incorporated into Condition 5.1
4.3	Certification	5.2	No Change

4.4	Operating Reports	5.3	No Change
4.5	Information Requests	5.4	No Change
5.1	Visible Emissions Standard Requirements for Rock Crushers	6.1	The PM opacity observation required once every 14-operating days and within two days of a shutdown exceeding five days. Modified to require Method 9 observations within two days of production during each calendar month of operations. Additional reporting added for colocation of rock crushers.
5.2 – 5.3	Visible Emissions Standard Requirements for Diesel Engines	6.2 – 6.3	No Change
6	Sulfur Compound Emission	7	Condition added to accommodate sources which use bulk fuel to fuel equipment tanks. Reporting requirement changed to require the permittee certify only ULSD or LSD was consumed in fuel burning equipment with each FOR
7	Pollution Control Equipment Breakdown Reporting	8	No Change
8	Excess Emissions and Permit Deviation Reports	9	Condition added to require the reporting of excess emissions for co-located sources when 12-month rolling actual emissions exceed 100 tons of a criteria air pollutant
9	Air Pollution Prohibited	10	No Change
10	Nonroad Engines	11	No Change
None	Stored Equipment	12	Condition added to address stored emissions units co-located at a permitted facility
11	Change of Ownership	13	No Change
12	Administrative Fees	14	No Change
13	Assessable Emissions & Fees	15	No Change
14	Good Air Pollution Control Practice	16	No Change
15	Reasonable Precautions to Prevent Fugitive Dust	17	No Change
16	Equipment Changes	4	Condition moved from condition 17 to Condition 4. Condition 4.1 adds requirements to address rented and leased equipment of emissions units operated under this permit.
17	Terms to Make Permit Enforceable	18	No Change
18	Source Testing Requirements	20	No Change

**Table 2**  
**Condition changes from MG9 Rev. 2 to MG9 Rev. 3**

<b>MG9 Permit Rev. 2 Condition No.</b>	<b>Description</b>	<b>MG9 Permit Rev. 3 Condition No.</b>	<b>Description of Change</b>
Cover Pages	Cover Pages	Cover Pages	Updates to Table B and footnotes to add clarity.
Table of Contents	Table of Contents	Table of Contents	Page numbers updated and new Particulate Matter, Assessable Emissions Estimates, and Emission Inventory Reporting conditions added. Added bookmarks and pages for appendices and forms.
Table C	Emissions Limits	Table D	Moved the table down, closer to the relevant conditions for compliance with the state standards for visible emissions, particulate matter and sulfur compound emissions, for better organization and readability.  Specified PM limits that apply to rock crushers and diesel engines.  Added the PM monitoring thresholds for diesel generators for clarity and ease of cross-referencing.
Table D	Operating Report Schedule	Table C	Table number changed due to moving down of (previous) Table C – Emissions Limits (now Table D).
1	Ambient Air Quality Protection Requirements	1	Revised Condition 1.2 to clarify that it only applies to engines that meet the definition of a nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii). Also removed Condition 1.3, because 18 AAC 50.025 has been repealed.
1.2	Nonroad engine location restrictions	1.2	Added MR&R requirements by referencing Condition 12.
None	Co-Located Equipment	1.3 (new)	Added Condition 1.3 for Co-Located Equipment for clarity, in connection with the MR&R requirements for co-located rock crusher plants in the VE MR&R table under Condition 6.1 and to allow co-locating an asphalt plant with a valid MG3 permit, consistent with Condition 1.5 of MG3 Rev. 4. The MR&R requirements are now included as new sub-Conditions 1.3a and 1.3b.  Added an option in Condition 1.3b for using the Department's MG9 Assessable Emissions Spreadsheet available on the Department's website for reporting emissions when the Permittee has collocated rock crusher plants.

2	Relocation Reporting Requirements	2	Corrected a typographical error in Condition 2.2.
3	General Recordkeeping	3	No Change
4	Equipment Operated	4	Added “required in Condition 5.3” to cross-reference relevant FOR condition.
5.1	Submittals	5.1	Clarified mail submittals to “ADEC Air Compliance Program” which did not exist when the MG9 Rev. 2 was finalized.
5.2	Certification	5.2	Revised Condition 5.2 to reflect SPC XVII – Reporting Requirements updates.
5.3	Operating Reports	5.3	Added “for the period covered by the report” in the second sentence to clarify instructions and to better match SPC VII – Operating Reports.
6	Visible Emissions	6	Added “(VE)” after the subtitle “Visible Emissions and “Comply with the visible emissions limits for rock crushers and diesel engines, as set out in Table D” for clarity and consistency.
6.1	MR&R table for Visible Emissions for Rock Crushers	6.1	<p>Replaced “Visible emissions limits are listed in Table C” with “VE monitoring, recordkeeping, and reporting (MR&amp;R) requirements:” to avoid redundancy and for clarity.</p> <p>Reworded the 1<sup>st</sup> bullet to clarify Method 9 procedures. Replaced “with” with “using” in the 3<sup>rd</sup> bullet on the “Monitor” row for clarity and to simplify.</p> <p>Moved MR&amp;R requirements for co-located Rock Crushing plant from the VE MR&amp;R table under Condition 6.1 as new Conditions 1.3a and 1.3b.</p> <p>Reorganized reporting requirements in the MR&amp;R table for clarity and better readability.</p>
6.2	MR&R table for Visible Emissions for Diesel Engines	6.2	<p>Added “stationary” to the first bullet point to clarify that Condition 6.2 is not applicable to nonroad diesel engines.</p> <p>Replaced “Visible emissions limits are listed in Table C” with “VE monitoring, recordkeeping, and reporting (MR&amp;R) requirements:” to avoid redundancy and for clarity.</p> <p>Added language from SPC IX – Visible Emissions and PM Emissions Monitoring Plan for Liquid Fuel-Burning Equipment and Flares, to clarify requirements, including changing the observation criteria from</p>

			<p>“smoke” to “visible emissions” when conducting Smoke/No Smoke.</p> <p>Reorganized reporting requirements in the MR&amp;R table for clarity and better readability.</p>
6.3	Corrective Actions for Smoke Observed in Condition 6.2 (for diesel engine only)	6.3 and 7.1	Split Condition 6.3 into new Conditions 6.3 and 7.1 and updated to match the language in SPC IX Conditions 2.5 and 7.1 – 7.4.
None	Particulate Matter (PM) Emissions	7	Added as a lead condition for PM emissions for consistency and clarity.
None	PM Emissions Monitoring for Diesel Engines	7.1 – 7.3 and MR&R table for diesel engines table	Added MR&R language from SPC IX that addresses MR&R requirements for liquid fuel-burning engines.
None	PM Emissions MR&R for Rock Crushers.	7.4	Added Condition 7.4 as a gap-fill MR&R for Rock Crushers by referencing compliance with the applicable VE limit and associated MR&R requirements in Condition 6.1.
7	Sulfur Compound Emissions	8	<p>Included “SO<sub>2</sub>” in Condition 8 subtitle. Reworded the condition to include fuels used for stationary and nonroad engines and asphalt burners, for clarity and accuracy.</p> <p>Added “Monitor and” in the table subtitle for clarity.</p> <p>Reorganized and reworded reporting requirements in the MR&amp;R table for clarity and better readability.</p>
8	Pollution Control Equipment Breakdowns	9	Added “required under Condition 5.3” in the 2 <sup>nd</sup> bullet for Report to cross reference the relevant FOR condition, for consistency.
9	Excess Emissions and Permit Deviations	10	<p>Updated reporting requirements to more closely match SPC III – Excess Emissions and Permit Deviations Reports, and fixed a broken weblink for Air Online Services.</p> <p>Added “that occurred during the reporting period by citing the dates of those reports, or include a copy of those Excess Emissions and Permit Deviations reports” in the last bullet to clarify information required, as specified in SPC VII – Operating Reports.</p>
10	Air Pollution Prohibited	11	Added “required under Condition 5.3” in the 1 <sup>st</sup> bullet for Report to cross reference the relevant FOR condition, for consistency.
11	Nonroad Engines	12	Revised to clarify that condition only applies to engines that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad

			Engine-(1)(iii). Also added additional clarifying language around what constitutes as “relocated” under 40 C.F.R. 1068.30-Nonroad Engine-(2)(iii).
12	Stored Equipment	13	Modified language to clarify that Nonroad Engine Location Log is only for nonroad engines defined in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).
13	Change of Ownership	14	Updated broken weblink for Department’s Permit Information website.
14	Administration Fees	15	Change subtitle to “Fee Requirements” and modified condition to match the Department’s current Minor Permit Template which includes all fees under 18 AAC 50.410-499 and not just administrative fees.
15	Assessable Emissions & Emission Fees	16 and 17	Removed “in quantities greater than 10 tons per year” to reflect 9/7/22 revision in 18 AAC 50.410. Modified the Condition to include the option to use the Department’s MG9 Assessable Emissions Spreadsheet available on the Department’s website when reporting assessable emissions. Also modified language of the condition to better match SPC I – Emissions Fees.
16	Good Air Pollution Control Practices	18	Same requirements, different format. Added “the records may be kept in electronic format; and” in Condition 18.2 to closely match SPC VI - Good Air Pollution Control Practices language.
17	Reasonable Precautions to Prevent Fugitive Dust	19	No Change
18	Terms to Make the Permit Enforceable	20	Moved Rev 2 Condition 18.8 as subcondition 20.7.d (previously would have been 18.7.d) in this Rev 3 for clarity, as it is a sub-condition of the requirement to allow a Department inspector on-site.
None	Emission Inventory Reporting	21	Added SPC XV – Emissions Inventory Reporting condition to the permit with modifications to remove requirements only applicable to large Title V facilities. Additionally, the thresholds for triennial reporting were lowered from the SPC in order to capture all facilities subject to minor permitting to better meet the state’s reporting requirements to EPA, and under the authority of 18 AAC 50.275.
19	Source Testing Requirements	22	Updated Test Exemption and Test Plan Conditions to include new Condition 6.1 through 7.1.a and Condition 7.1.b, respectively.

			Corrected the cross reference to the Certification Condition 5.2. in the Test Reports Condition.
Appendix A	Assessable Emissions Calculation (MG9) Form	Appendix A	Corrected two typographical errors and a broken cross reference to Table A. Changed the diesel engine rating from “Less than 600 hp” to “up to 600 hp” to match AP-42.  Modified assessable emissions section by removing references to rounding pollutants below 10 tons to 0, in order to be consistent with new Condition 16 and 18 AAC 50.410 (effective 9/7/2022).
Appendix B	Fugitive Dust Control Plan	Appendix B	Changed generic language referencing “all MG permits” to specifically reference MG3 and MG9 permits, to clarify that we are not referring to the MG1 or MG2 permits.
Form 1	Relocation Notification	Form 1	Changed “Plant Name” to “Facility Name.”
Form 2	Excess Emissions and Permit Deviation Reporting Form	Form 2	Updated to latest version found in SPC IV – Notification Form (revised 7/22/2020).
Form 3	Emission Reporting and Emission Fess Estimate	Form 3	Updated reporting and certification instructions to reference Conditions 5.1, 5.2, and 17 and updated table to specify it only applies to stationary diesel generators.
Form 4	MG9 FOR Form	Form 4	Added a new section for Co-located Equipment (moved from Visible and PM Emissions sections for Asphalt).  Changes in Visible Emissions – Rock Crusher section: <ul style="list-style-type: none"> <li>Added reference to PM and new Condition 7.4</li> </ul> Changes in Visible Emissions – Diesel Engines section: <ul style="list-style-type: none"> <li>Modified the Smoke/No Smoke plan observation summary section, changing “smoke observations” to “visible emissions observations” to match the new language in Condition 6.</li> <li>Reformatted Method 9 Observations Summary table and added columns for “Emissions Units” and “Highest 18-consecutive-minute Average”.</li> <li>Added “(from Conditions 6.2 through 7.3)” next to “All Method 9 Observation forms attached” for clarity.</li> </ul> Added a new section to address reporting requirements for PM emissions for Diesel Engines.

			<p>Added “LSD” in the Sulfur Compound Emissions section, to be consistent with the terms in Condition 8.</p> <p>EEPD Section – updated to match MG3 Rev 4 for consistency and accuracy.</p> <p>Changed the Nonroad Engine section to clarify that the Nonroad Engine Location Log is only for nonroad engines defined in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).</p> <p>Updated the submittal instructions to reference Conditions 5.1 and 5.3.</p>
Form 5	Method 9 Visible Emissions Observations	Form 5	No Change
Form 6	Smoke/No Smoke Log	Form 6	Modified the Smoke/No Smoke plan, changing smoke observations to visible emissions observations to match the new language in Condition 6.
Form 7	Compliant Summary Form	Form 7	No Change
Form 8	Nonroad Engine Location Log	Form 8	<p>Changed “Company Name” to “Permittee Name” and added a line for Facility Name.</p> <p>Included a footnote to clarify that the Nonroad Engine Location Log is only for nonroad engines defined in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).</p>
Form 9	Equipment Operated Report Form	Form 9	No Change
Form 10	Stored Non-Operating Equipment Log	Form 10	No Change
Form 11	Equipment Operated Report Form	Form 11	Corrected a reference to the rental agreement Condition 4.1

## EXCLUDED FACILITIES

A stationary source is excluded from using this minor general permit if the following applies.

1. The rock crusher plant has emission points with mechanically induced air flow, such as a fan forcing emission to a stack or control device, unless approved in writing by the Department.

The modeling characterized the rock crusher as a fugitive emission source. The emissions associated with a mechanically induced airflow design would be released from a stack, which could be of various heights, orientations, exit velocities, and downwash potential. With such a wide range of stack parameters, in addition to potential emissions controls such as cyclones or baghouses, the Department was unable to easily develop a general approach for assessment. Therefore, the MG9 must exclude rock crushers with mechanically induced air flow. However, the MG9 does allow rock crushers to be enclosed in a building or other structure.

2. The stationary source contains open burning or an incinerator.

Open burning and the operation of incinerators have substantive particulate matter (PM) emissions and ambient impacts, which were not included in the modeling analysis for simplicity.

3. The stationary source has a PTE of more than 100 tons per year (TPY) of a regulated air pollutant or is co-located at a Clean Air Act Title V Major Source, i.e., it is subject to the Title V permitting requirements.

However, if there is a General Permit (GP3) for the activities listed above, the stationary source may operate under both permits.

If there is an asphalt plant permitted under Minor General Permit 3 (MG3) it may operate in conjunction with this MG9 permit.

Potential emissions from an engine classified as stationary (i.e., an engine that does not qualify as nonroad engine<sup>1</sup> under 40 C.F.R. 1068.30) are accounted for in determining major or minor classification of a stationary source. Chapter 3.4 of EPA AP-42 provides an emission factor of 0.024 lb/hr for oxides of nitrogen (NO<sub>x</sub>) for diesel engines greater than 600 hp. Based on that emission factor and the assumed annual operation of 3,650 hours, a diesel engine with a cumulative rating of greater than 2,280 bhp will exceed the 100-TPY major source classification threshold for NO<sub>x</sub>. The Permittee may obtain a combination of permits, or an owner requested limit (ORL) under either 18 AAC 50.225 or 18 AAC 50.508(5) to limit the stationary source's NO<sub>x</sub> emissions if stationary diesel engines in excess of this cumulative power rating will operate beyond the assumptions.

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<sup>1</sup> Nonroad engines, as defined in 40 C.F.R. 1068.30 and adopted by reference in 18 AAC 50, are excluded from PTE calculations for permit applicability.

## TECHNICAL ANALYSIS FOR THE PERMIT CONDITIONS

### Condition 1 – Ambient Air Quality Protection

Legal Basis: This condition applies to all rock crushers unless a stricter condition exists in this permit, State Statutes, or Federal Guidelines. 18 AAC 50.010 establishes the ambient air quality standards in the State of Alaska. The Permittee is required to comply with these requirements.

Factual Basis: The Department incorporated the same setback distance requirements detailed in the 2014 MG9, which were carried over from the 2009 MG9. The Department established these distances based on a generic air quality modeling analysis (see Attachment 1).

The Department established the setback distance in Condition 1.1 in order to protect the 24 hour PM-10 ambient air quality standards.

The setback distances are based on the best information available to the Department as noted in the 2003 GP9. These requirements do not guarantee that an operation cannot violate the ambient air quality standards, or create a public air quality nuisance. Therefore, the Department previously included a note that all complaints attributed to an operation are subject to investigation. The following note lists some of the possible outcomes of an investigation:

*Note: The setback distances in Condition 1 are minimum requirements. You should give adequate consideration to local siting issues which may exist within a given area. Poor siting can lead to public complaints regarding dust impacts and/or impacts from other air pollutants. The Department does investigate these types of public complaints. These investigations could result in:*

- 1. Formal enforcement with punitive damages;*
- 2. A formal request under 18 AAC 50.201 that the Permittee demonstrate, by air quality dispersion modeling or other means, that the air quality impacts are not violating State air quality standards or increments; or creating a public nuisance (under 18 AAC 50.110);*
- 3. The requirement to reduce emissions or implement another control strategy to reduce the ambient impact of those emissions as necessary to ensure that the concentration of air pollutants does not exceed the State air quality standards; or the concerns listed in 18 AAC 50.110;*
- 4. A requirement to install and operate air quality monitoring equipment; or*
- 5. The requirement to obtain a site specific permit with which would contain requirements tailored to that exact operation.*

Condition 1.2 is derived from 40 C.F.R. 1068.30-Nonroad Engine-(2)(iii), and specifies that an engine that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii)<sup>2</sup>, does not qualify as a nonroad engine if it remains or will remain at a location for more than 12 consecutive months or is located at a seasonal source and operates during the full annual operating period of the seasonal source.

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<sup>2</sup> Definition for *Nonroad Engine* in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii): Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine: that by itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

During the second revision to MG9, the Department incorporated provisions to allow multiple rock crushers to be co-located, under the Visible Emission section (Condition 6). During this 3<sup>rd</sup> revision, the Department has moved these requirements as Condition 1.3 (Co-Located Equipment) as more appropriately associated with the ambient air quality section. Condition 1.3 protects ambient air quality by ensuring only one of any co-located rock crusher plants operates at any single time. This limits the impact of PM emissions to the ambient air to the emissions associated with those of the single largest rock crusher plant located at the facility. The condition also allows co-locating an asphalt plant with a valid MG3 permit, consistent with Condition 1.5 of MG3 Rev. 4. When operating co-located sources, the monthly and twelve-month rolling totals for all sources located at the facility are required to be reported in the semiannual operating report.

## **Condition 2 – Relocation and Reporting Site Selection**

Legal Basis: This relocation condition applies to all Rock Crushers because Alaska Statute (AS) 46.14.211 authorizes the Department to issue a general minor permit that is valid for multiple locations in the state of Alaska. The permit also contains siting requirements that limit the rock crusher from operating within specified distances to occupied structures, and has monitoring requirements based upon startups at new locations.

This site selection condition applies to all Rock Crushers because 18 AAC 50.110 prohibits pollution that is injurious to human health or welfare, animal or plant life or property, or which would unreasonably interfere with the enjoyment of life or property. This condition applies unless a stricter condition exists in this permit, State Statutes, or Federal Guidelines.

Factual Basis: Because of public complaints, the Department conducted air dispersion modeling to predict the impacts of Rock Crushers on ambient air. See Attachment 1 for a description of modeling performed. The new locations must comply with the distance requirements in Conditions 1.1 and 2, giving adequate consideration to the siting issues described in Condition 1.1 and provide a revised dust control plan per Condition 2 if within 2,000 feet of the nearest off-site occupied structure. The requirement for a dust control plan in Condition 2 for operations within 2,000 feet of the nearest off site occupied structure is based on predicted 24 hour impacts of the ambient standard for PM-10. An updated dust plan is requested to ensure everyone has an up to date dust control plan.

In Revision 2, the Department revised this condition to allow Permittees more flexibility in relocating operations due to the often short timeframe in which new projects may become available. The 10 Day notification requirements of the 2014 MG9 Rev. 1 limited the ability of industry to comply with the condition.

Permittees must provide notification to the Department 48 hours before startup at a new location using Air Online Services (AOS). If the new location is a preapproved location by the Department, then notification is required at least eight hours before startup using AOS. For relocations to a maintenance yard, due to repair or for maintenance, the Permittee is required to notify the Department within 24 hours after relocation. For new locations not reported using AOS, the Permittee must notify the Department at least five days before relocation using either email or post office mail (Conditions 5.1.b or 5.1.c). See attachment 1 for a description of modeling performed.

### **Condition 3 – General Recordkeeping**

Legal Basis: The Permittee is required to keep records to demonstrate compliance with the terms and conditions of the permit and applicable regulations.

Factual Basis: The condition restates the regulatory requirements for recordkeeping and supplements the recordkeeping defined for specific conditions in the permit. The records being kept provide evidence of compliance with this requirement.

### **Condition 4 – Equipment Operated**

Legal Basis: This condition applies under 18 AAC 50.200 which allows the Department to request information from the Permittee to determine compliance. This condition also applies under 18 AAC 50.546 to revise a minor permit, either at the request of the permittee or on the Department's own initiative. The request for updated equipment information also applies under AS 46.14 and 18 AAC 50 to determine permit applicability; modification is covered by definition under 18 AAC 50.990(59), provisions not requiring an application are covered under 18 AAC 50.508(6).

Factual Basis: In Condition 4 the Department moved the equipment changes reporting requirement from within the general conditions to the main section of the permit. The Permittee is authorized to operate equipment listed in Table A of the permit. Changes to equipment must be reported under Condition 4 within each semiannual operating report. Condition 4.1 requires the Permittee to include language in any business agreement in which equipment authorized under the permit is leased to a third party and that the agreement include language that the lessee will comply with Alaska Statutes and Regulations. The rental or lease of permitted equipment authorized under this permit must be reported to the Department within seven days of signature of the business agreement.

Information on equipment changes will be used to aid in compliance determination and permit applicability. If the new equipment has a different PTE, the Department may request a new MG9 Rev. 3 application to reflect the changes in potential emissions or a Title V permit if PTE is greater than 100 TPY for any one regulated pollutant.

Condition 4 reinforces the obligation of the Permittee to report changes in the emissions unit inventory authorized under the permit to the Department when new equipment is rented for use at the facility or authorized units are leased to a third party. This ensures the facility does not operate above the Title V threshold and that unpermitted operators do not rent and operate equipment at unapproved locations without obtaining the appropriate authorization from the Department.

### **Condition 5 – General Reporting**

Legal Basis: The Permittee, in accordance with Condition 5.1, is required to send reports to the Department using the language in SPC XVII (Reporting Requirements), adopted by reference 18 AAC 50.346(b)(10).

The Department used the language SPC XVII for Condition 5.2 which requires the Permittee to comply with the certification requirement in 18 AAC 50.205. This standard condition is required in all operating permits under 18 AAC 50.345(j) and 50.346(b)(10).

The Department used the language in SPC VII (Operating Reports), adopted by reference under 18 AAC 50.346(b)(6), for Condition 5.3. The Department modified SPC VII to better meet the operating seasons of road construction in Alaska, breaking the reporting periods up into a seven-month period from April through October and a five-month period from November to March.

Condition 5.4 requires the Permittee to submit information requested by the Department, as authorized under 18 AAC 50.200 and 50.345(i). This condition allows the Department to request any records that the Permittee is required to keep by other permit conditions to be used for compliance determination or cause to modify, revoke and reissue, or terminate the permit. Monitoring consists of receipt of the requested information.

Factual Basis: The Department added reporting by submittal through Air Online Services and ADEC reporting email to Condition 5.1. This condition lists the appropriate submission methods for report submittals and written notices as outlined by the Department’s SPC XVII Submission Instructions. Receipt of the submittal provides sufficient monitoring for this condition. This condition supplements the standard reporting and notification requirements for the permit.

Condition 5.2 requires the Permittee to certify all reports submitted to the Department. This condition supplements the reporting requirements of this permit.

Condition 5.3 restates the requirements for reports listed in the regulations. This condition also supplements the specific reporting requirements included elsewhere in the permit. The reports themselves provide monitoring for compliance with this condition. The semi-annual operating period of April 1 through October 31 and November 1 through April 30 was retained from the MG9 Rev. 1 without modification.

Condition 5.4 requires the Permittee to submit information requested by the Department. This condition allows the Department to request any records that the Permittee is required to keep by other permit conditions to be used for compliance determination or cause to modify, revoke and reissue, or terminate the permit. Monitoring consists of receipt of the requested information.

### **Condition 6 – Visible Emissions (VE) Requirements**

Legal Basis: For a minor permit classified under 18 AAC 50.502(b), in accordance with 18 AAC 50.544(b), the Department will include terms and conditions as necessary to ensure the proposed stationary source will meet the requirements of AS 46.14 and 18 AAC 50. This includes terms and conditions for:

- Installation, use, and maintenance of monitoring equipment;
- Sampling emissions according to the methods prescribed by the Department, and at locations, intervals, and by procedures specified by the Department;
- Providing source test reports, monitoring data, emissions data, and information from analyses of any test samples;
- Keeping records; and
- Making periodic reports on process operations and emissions.

All industrial processes and fuel burning equipment may not reduce visibility through the exhaust effluent by more than 20 percent in accordance with 18 AAC 50.055(a)(1). Rock crushers are industrial processes and diesel engines are fuel-burning equipment.

Factual Basis: Condition 6 requires the Permittee to comply with the visible emission (VE) standard for rock crushers and diesel engines including the fugitive emissions from rock crushers, as shown in Table D. The MR&R requirements in Conditions 6.1 and 6.2 were based on SPC IX - Visible Emissions and Particulate Matter Monitoring Plan for Liquid Fuel-Burning Equipment and Flares (SPC IX), adopted by reference under 18 AAC 50.346(c) and Table 7. The conditions were modified to reflect the mobility of rock crushers and the seasonal nature of their operations. The condition requires U.S. Environmental Protection Agency Reference Method 9 (EPA Method 9) VE readings on the rock crusher under Condition 6.1 and the diesel engines under Condition 6.2 within two days of each operating month and within two days after relocating the plant. Conditions 6.3 and 7.1 address corrective actions based on Smoke/No Smoke and EPA Method 9 observations, respectively.

During the second revision to MG9, the Department modified the schedule of monitoring required for rock crushing emissions under Condition 6.1. Previous versions of the MG9 permit required Method 9 observations once every 30 operating days and within two days of restart after a shutdown of more than five days. In the MG9 Rev. 2 the Department simplified this to require Method 9 observations within the first two days of any calendar month the facility operates. This reduces the burden of tracking operating days, shutdown periods and when Method 9 observation requirements are triggered by Condition 6.1 while ensuring that periodic observations are included within each operating report.

Condition 6.1 allows the Permittee to choose one emission point to monitor that is capable of producing fugitive emissions. Instead of monitoring every possible fugitive emission point, because there may be many depending on the process configuration, the Permittee should identify all possible fugitive emission points and select the one that appears to have the greatest continuous fugitive emissions based on initial observation. Example fugitive emissions points are found at aggregate handling areas, conveyor drop points, crushers, and screens. The Permittee should observe each point and determine which point continuously creates the most fugitive dust. This emission point should be monitored according to Condition 6.1.

The VE MR&R requirements for rock crushers are different from those for diesel engines because rock crushers may produce VE without smoke, which is typically associated with incomplete combustion. In the case of rock crushers, VE may also be produced by loose particulate from aggregate handling and storage piles. Therefore, the MR&R requirements for diesel engines in Condition 6.2 includes the EPA Method 9 and the smoke/no smoke plans, which are part of SPC IX and required under 18 AAC 50.346(c). MR&R requirements for the rock crushers deviate from those under 18 AAC 50.346(c) by excluding the possibility to monitor VE using the smoke/no smoke plan because PM emissions from the aggregate are not considered "smoke."

The VE standard applies to stationary diesel engines and does not apply to nonroad engines. A nonroad engine has the meaning given in 40 C.F.R. 1068.30. An engine that qualifies as a nonroad engine under the definition in 40 C.F.R. Part 1068.30 paragraph (1)(iii), will not be considered a nonroad engine if it remains, or will remain, at a location for more than 12 consecutive months. According to 40 C.F.R. Part 1068.31(e)(1), an engine used at a single specific location for 12 months or longer ceased to be a nonroad engine at the time it was placed in that location. Requirements relevant to nonroad engine are specified in Conditions 1.3 and 12. For MG9 Rev. 3, the Department clarified in Condition 6.2 that Method 9 monitoring only applies to stationary diesel engines and does not apply to nonroad engines.

Condition 6.3 was modified in MG9 Rev. 3 to more closely reflect SPC IX. The condition requires corrective action be taken when visible emissions are observed when conducting Smoke/No Smoke observations. After corrective actions are taken, the Permittee may then conduct seven days of Smoke/No Smoke observations or begin Method 9 observations.

*Gas-Fired Fuel Burning Equipment:* We anticipate there would be no gas-fired equipment, however if a source requiring an MG9 were to use pipeline quality natural gas, the following applies. The monitoring of gas fired sources for visible emissions through physical observation is waived. The Department has found that natural gas fired equipment from pipeline quality natural gas in Alaska inherently has negligible VE emissions. However, the schedule for source testing remains the same.

### **Condition 7 – Particulate Matter (PM) Emissions**

Legal Basis: Under 18 AAC 50.544(b), for a minor permit classified under 18 AAC 502(b), the Department will include terms and conditions as necessary to ensure the proposed stationary source will meet the requirements of AS 46.14 and 18 AAC 50. This includes terms and conditions for

- installation, use and maintenance of monitoring equipment;
- sampling emissions according to the methods prescribed by the Department, and at locations, intervals and by procedure specified by the Department;
- providing source test reports, monitoring data, emissions data, and information from analyses of any test samples;
- keeping records; and
- making periodic reports on process operations and emissions.

In accordance with 18 AAC 50.055(b), industrial processes or fuel burning equipment may not exceed the PM standards in grains per cubic foot of exhaust gas (gr/dscf), corrected to standard conditions and averaged over three hours, as provided in 18 AAC 50.055(b)(1) – (5). Rock crushers are industrial processes and diesel engines are fuel-burning equipment.

Under 18 AAC 50.055(b)(3), an industrial process in operation before July 1, 1972 may not emit PM in excess of 0.1 gr/dscf. Under 18 AAC 50.055(b)(1), all other industrial processes and fuel burning equipment at the Rock Crusher plant may not emit PM in excess of 0.05 gr/dscf.

Therefore, the same standard applies to the diesel engines used for power generation for a Rock Crusher plant and to Rock Crushers built on or after July 1, 1972. These applicable PM limits are provided in Table D of the permit.

The particulate matter standard applies to stationary diesel engines and does not apply to nonroad engines, as discussed in the VE section above.

Factual Basis: Conditions 7.1 through 7.3 reflects the PM monitoring, recordkeeping and reporting (MR&R) requirements for diesel engines set out in SPC IX. These are new conditions added in Revision 3 to address MR&R requirements if PM monitoring for diesel engines is triggered. The condition requires corrective action be taken if the results of any Method 9 reading is above the PM monitoring thresholds listed in Table D of the permit. If opacity readings are still above these thresholds after corrective action, the Permittee is required to perform a PM source test unless one has been performed on the emissions unit in the previous five-year period. PM source testing is

also waived if corrective actions taken have reduced visible emissions to less than the PM monitoring thresholds.

Condition 7.4 is added in Revision 3 as a gap-fill MR&R for Rock Crushers by referencing compliance with the applicable VE limit and associated MR&R requirements in Condition 6.1.

### **Condition 8 – Sulfur Compound Emissions Requirements**

Legal Basis: For a minor permit classified under 18 AAC 502(b), in accordance with 18 AAC 50.544(b), the Department will include terms and conditions as necessary to ensure the proposed stationary source will meet the requirements of AS 46.14 and 18 AAC 50. This includes terms and conditions for:

- Installation, use, and maintenance of monitoring equipment;
- Sampling emissions according to the methods prescribed by the Department, and at locations, intervals, and by procedures specified by the Department;
- Providing source test reports, monitoring data, emissions data, and information from analyses of any test samples;
- Keeping records; and
- Making periodic reports on process operations and emissions.

All industrial processes and fuel burning equipment may not emit sulfur-compound emissions exceeding 500 parts per million (ppm) averaged over a period of three hours in accordance with 18 AAC 50.055(c). The diesel engines are fuel-burning equipment; the rock crushers are industrial processes but do not produce any sulfur-compound emissions. Therefore, Condition 7 requires the Permittee to comply with this standard and associated MR&R requirements to demonstrate compliance with this standard for all fuel-burning (liquid- and gas-fired) engines.

Factual Basis: The sulfur-compound emissions standard applies to stationary diesel engines. Although sulfur-compound emissions standards do not apply to nonroad engines, all nonroad engines must be monitored to ensure the protection of ambient air quality standards in accordance with 18 AAC 50.010(2) and 18 AAC 50.110.

In Revision 2, the Department modified the reporting requirements under Condition 8 to simplify and reduce the amount of information to be reported by the Permittee and reviewed by the Department by eliminating the requirement to submit all fuel receipts. Instead of attaching all fuel receipts or a statement from the fuel supplier with each FOR, the Permittee is to keep these records for at least five years and only report the fuel grade used during the reporting period. If only ULSD or LSD was used for the entire reporting period, the Permittee should submit a statement certified by the Responsible Official stating that only ULSD or LSD was purchased. Otherwise, the Permittee should submit a list of fuel grades, including sulfur content or a fuel analysis showing sulfur content for each fuel grade used. If a fuel type other than ULSD or LSD was used, the Permittee is to submit a list of fuel grades, including sulfur content for each fuel grade used. The Department also modified MR&R requirements to provide flexibility when fuel used during the reporting period is from a bulk supply/tank. The Permittee must report this in the semiannual operating report and maintain fuel receipts for five years. The Department will review these records during Full Compliance Evaluations or when requested per Condition 5.4.

For liquid fuel-fired engines the MR&R conditions are based on the SPCs XI and XII under 18 AAC 50.346(c), adopted into regulation pursuant to AS 46.14.010(e).

*Gas-Fired Fuel Burning Equipment:* If a source permitted under an MG9 Rev. 3 uses pipeline quality natural gas, no monitoring terms are needed and reporting should consist of submitting a statement certified by the Responsible Official stating that only natural gas was used.

*Highline Power:* If a source permitted under MG9 Rev. 2 uses highline power, no monitoring terms are needed, and reporting should consist of submitting a statement certified by the Responsible Official stating that only highline power was used.

### **Condition 9 – Pollution Control Equipment Breakdown Reporting**

Legal Basis: This condition is intended to ensure all emissions units operating at the stationary source are in compliance with 18 AAC 50.544(b)(2).

Factual Basis: The Department included these reporting requirements to better ensure compliance with the permit conditions. Permittees can more effectively meet their compliance obligations by ensuring that all emissions units are well maintained and that any pollution control equipment, if used, functions properly. These requirements are an extension of the Good Air Pollution Control Practices of Condition 18.

### **Condition 10 – Excess Emissions and Permit Deviations**

Legal Basis: This condition requires the Permittee to comply with the applicable requirement in 18 AAC 50.235(a)(2) and 18 AAC 50.240(c). The Department adopted this condition from SPC III under 18 AAC 50.346(b)(2) pursuant to AS 46.14.010(e). The Department copied *Form 2, ADEC Notification Form SPC IV* under 18 AAC 50.346(b)(3).

Factual Basis: This condition satisfies two state regulations related to excess emissions – the technology-based emission standard regulation and the excess emission regulation. Although there are some differences between the regulations, the condition satisfies the requirements of each regulation.

The Department adopted this condition as SPC III under 18 AAC 50.346(c) pursuant to AS 46.14.010(e). The Department used a slightly condensed version of the standard condition which adequately meets the requirements of 40 C.F.R. 71.6(a)(3). No additional emissions unit or stationary source operational or compliance factors indicate the unit-specific or stationary-source-specific conditions would better meet the requirements. Therefore, the Department concludes that the standard conditions as modified meets the requirements of 40 C.F.R. 71.6(a)(3).

### **Condition 11 – Air Pollution Prohibited**

Legal Basis: This condition ensures compliance with the applicable requirements in 18 AAC 50.110. The requirements prohibit the Permittee from causing any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property. Air Pollution Prohibited requirements apply to the stationary source because rock crushers produce emissions and because activities at or associated with the stationary source may result in complaints from the public. The Department adopted these requirements as SPC II under 18 AAC 50.346(a) pursuant to AS 46.14.010(e).

Factual Basis: The Department used a slightly condensed version of SPC II which adequately meets the MR&R requirements in of 40 C.F.R. 71.6(a)(3). Unforeseen emission impacts can cause

violations of the requirements under 18 AAC 50.110. These violations can go undetected in the absence of public complaints. Public complaints are an indication that a violation of 18 AAC 50.110 has occurred. The Permittee is required to investigate and report any complaints and must keep records that detail the date, time, and nature of all complaints received. The Permittee must maintain a record of the investigation and any corrective actions undertaken and submit copies of these records upon request of the Department. Therefore, the Permittee must monitor and respond to complaints to ensure compliance with 18 AAC 50.110.

## Condition 12 – Nonroad Engine Requirements

**Legal Basis:** Nonroad engines are not subject to the standards approved under the State Implementation Plan for the air pollution control for stationary sources. 18 AAC 50.100 states that the PTE from nonroad engines does not count towards the classification of a newly constructed or modified stationary source in accordance with AS 46.14.130.

**Factual Basis:** This condition requires the Permittee to keep records detailing the location and specifications of an engine if it meets the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii)<sup>3</sup>. The date and location log requested in this condition should be submitted with each Facility Operating Report (FOR). This condition was changed from the 2017 MG9 Rev. 2 to specify that the only nonroad engines that are applicable to this condition are those that specifically meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii).

The Department needs to know if an engine no longer qualifies as a nonroad engine to ensure that PTE does not exceed Title V permit thresholds so that the proper monitoring, recordkeeping, and reporting for stationary engines are met.

A nonroad engine has the meaning given in 40 C.F.R. 1068.30, presented as follows, and is adopted by reference in 18 AAC 50. This condition and other conditions in this permit regarding nonroad engines only apply to portable nonroad engines that meet the definition of nonroad engine under 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii), not self-propelled nonroad engines under 40 C.F.R. 1068.30-Nonroad Engine-(1)(i) (e.g. a rock crusher on tracks).

### *40 C.F.R. 1068.30 Nonroad Engine Means*

*(1): Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine that meets any of the following criteria:*

*(i) It is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers).*

*(ii) It is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers).*

*(iii) By itself or in or on a piece of equipment, it is transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of*

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<sup>3</sup> Definition for *Nonroad Engine* in 40 C.F.R. 1068.30-Nonroad Engine-(1)(iii): Except as discussed in paragraph (2) of this definition, a nonroad engine is an internal combustion engine: that by itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

*transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.*

*(2) An internal combustion engine is not a nonroad engine if it meets any of the following criteria:*

*(i) The engine is used to propel a motor vehicle, an aircraft, or equipment used solely for competition.*

*(ii) The engine is regulated under 40 CFR part 60, (or otherwise regulated by a federal New Source Performance Standard promulgated under section 111 of the Clean Air Act (42 U.S.C. 7411)). Note that this criterion does not apply for engines meeting any of the criteria of paragraph (1) of this definition that are voluntarily certified under 40 CFR part 60.*

*(iii) The engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. For any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced, include the time period of both engines in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. See § 1068.31 for provisions that apply if the engine is removed from the location.*

This condition provides supplemental information for nonroad engines monitored under Condition 8 and is intended to help ensure the protection of ambient air quality in accordance with 18 AAC 50.010(2).

### **Condition 13 – Stored Equipment**

Legal Basis: This condition requires the permittee to record and report any equipment which is permitted with the Department under a separate permit but kept onsite with the asphalt plant operated under this permit solely for storage.

Factual Basis: If multiple sources are operated at the same site there is a potential that the aggregated emissions will exceed Title V permitting thresholds. This condition provides the Permittee the flexibility to store permitted asphalt plants, rock crushers and nonroad engines at an operating facility by reporting to the Department the co-located cold stacked equipment.

### **Condition 14 – Change of Ownership**

Legal Basis: This condition requires new and previous owners of the permitted rock crusher plant to submit the transfer of ownership form and pay the administrative amendment fees in accordance with 18 AAC 50.400(f)(1)-(3) and 40 C.F.R. 71.7(d), adopted by reference in 18 AAC 50.040.

Factual Basis: If owner or operator of a stationary source transfers ownership of the stationary source, both new and previous owners must complete the transfer of ownership form. Once the

form is received by the Department, the new owner will receive authorization to operate the stationary source.

### **Condition 15 – Fee Requirements**

Legal Basis: This condition requires the Permittee, owner, or operator to pay fees as set out in regulation. Paying fees is required as part of obtaining and holding a permit with the Department or as a fee for a Department action.

Factual Basis: The owner or operator of a stationary source who is required to apply for a permit under AS 46.14.130 shall pay to the department all assessed permit fees. The regulations in 18 AAC 50.400-499 specify the amount, payment period, and the frequency of fees applicable to a permit action.

### **Condition 16 and 17 – Assessable Emissions & Emission Estimates**

Legal Basis: The regulations require all permits to include due dates for the payment of fees and any method the Permittee may use to calculate assessable emissions. This is SPC I under 18 AAC 50.346(b)(1), adopted into regulation pursuant to AS 46.14.010(e).

Factual Basis: These standard conditions require the Permittee to pay fees in accordance with the Department's billing regulations. The billing regulations set the due dates for payment of fees based on the billing date.

The Department has modified Condition 15 by deleting the phrase “in quantities 10 tons per year or greater” to match the revision made in 18 AAC 50.410, effective September 7, 2022. Additionally, Condition 16 is altered from SPC 1 to specifically call out forms in the permit and on the Department’s website that are designed to assist Permittees in calculating assessable emissions. Beyond as noted, the Department has determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3).

The default assessable emissions are emissions of each air pollutant authorized by the permit (AS 46.14.250(h)(1)(A)). Air pollutant means any regulated air pollutant and any hazardous air pollutant. Therefore, assessable emissions under AS 46.14.250(h)(1)(A) means the potential to emit any air pollutant identified in the permit, including those not specifically limited by the permit. For example, hydrogen chloride (HCl) emissions from an incinerator are assessable emissions because they are a hazardous air pollutant, even if there is currently no emission limit on HCl for that class of incinerator.

The condition also describes how the Permittee may calculate actual annual assessable emissions based on previous actual annual emissions. According to AS 46.14.250(h)(1)(B), assessable emissions are based on each air pollutant. Therefore, fees based on actual emissions must also be paid on any pollutant emitted whether or not the permit contains any limitation of that pollutant.

This standard condition specifies that, unless otherwise approved by the department, calculations of assessable emission based on actual emissions use the most recent previous calendar year's emissions. Since each current year's assessable emission are based on the previous year, the Department will not give refunds or make additional billings at the end of the current year if the estimated emissions and current year actual emissions do not match. The Permittee will normally pay for actual emissions, just with a one-year time lag.

Projected actual emissions may differ from the previous year's actual emissions if there is a change at the stationary source, such as changes in equipment or an emission rate from existing equipment.

The emission factors in the *Rock Crusher Emission Calculation Guide* are taken from US EPA publication AP-42 *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition* as adopted by reference in 18 AAC 50.035. The Permittee may use other emission factors as outlined in *Rock Crusher Emission Calculation Guide* and SPC I provided those emission factors have been approved by the Department. If the Permittee does not choose to annually calculate assessable emissions, emissions fees will be based on "potential to emit" (PTE).

The forms and spreadsheets for PTE and assessable emissions calculations provided by the Department for the MG9 are based on using liquid fuel with a sulfur content of 0.0015 percent by weight (ULSD) in stationary and nonroad diesel engines. If the actual sulfur content of the fuel is greater than this assumption, the assessable emissions calculations provided by the Permittee should reflect the actual sulfur content. The change in these values for stationary diesel engines may result in SO<sub>2</sub> emissions that could trigger Title V or PSD permitting.

### **Condition 18 – Good Air Pollution Control Practice**

Legal Basis: This condition ensures compliance with the applicable requirements under 18 AAC 50.346(b)(5) SPC VI -Good Air Pollution Control Practices and applies to all emissions units, except those subject to federal emission standards. Also, under 18 AAC 50.544(b)(2), for a minor permit classified under 18 AAC 502(b), the Department will include a condition requiring the owner to

- perform regular maintenance considering the manufacturer's or the operator's maintenance procedures;
- keep records of any maintenance that would have a significant effect on emissions (the records may be kept in an electronic format); and
- keep a copy of either the manufacturer's or the operator's maintenance procedures.

Factual basis: The condition requires the Permittee to comply with good air pollution control practices for all emissions units. The permit contains the provision exactly as required by regulation. This is the same as 18 AAC 50.346(b)(5) and requires that all permits issued by the State of Alaska contain the provisions of SPC VI -Good Air Pollution Control Practices unless more specific requirements adequately meet the requirements.

### **Condition 19 – Reasonable Precaution to Prevent Fugitive Dust**

Legal Basis: This condition expands the requirements under 18 AAC 50.346(c) SPC X - Reasonable Precautions to Prevent Fugitive Dust to provide a condition that more adequately meets these requirements given the significant sources of fugitive dust that may be generated by the Stationary Source. This condition applies to all Rock Crushers.

Factual Basis: The condition requires the Permittee to comply with 18 AAC 50.045(d), and take reasonable action to prevent PM from being emitted into the ambient air. 18 AAC 50.045(d) requires an operator to take reasonable precautions to prevent fugitive dust when handling bulk materials. The condition lists examples of reasonable precautions.

This condition requires the Permittee to use reasonable precautions when handling, storing or transporting bulk materials or engineering in an industrial activity in accordance with the applicable

requirement in 18 AAC 50.045(d). Bulk material handling requirements apply to the Permittee because the Permittee will engage in bulk material handling, transporting, or storing; or will engage in industrial activity at the stationary source.

If the Rock Crusher is to be located within 2,000 feet of a business, residence or other inhabited structure, the Permittee under this minor general permit must implement the plan under Condition 19 or get the Department's approval to implement a different plan. The plan must be specific to any location named in the application and must be attached to the relocation notice required in Condition 2.

The "2,000 feet" distance requirement came from a circa-2003 dispersion modeling analysis conducted in support of the 2003 General Permit (GP9) for Rock Crushers. Modeling predicted that during dry conditions, if precautions are not taken to control emissions from fugitive sources, the 24-hour PM-10 ambient air quality standard could be violated up to 2,000 feet away.

A sample fugitive dust control plan is provided as Appendix B with the MG9 Rev. 3. This sample plan may be used as is or modified to fit the needs of the Permittee.

#### *Dust Control Plans:*

- If a location listed in an application or in an application addendum (see Form 1) is within 2,000 feet of the nearest inhabited off-site structure, the applicant or Permittee must attach a fugitive dust control plan as part of that application or addendum. The Permittee must also submit a fugitive dust control plan, or revision to the plan if requested by the Department. The operator must comply with a dust control plan approved by the Department.
- The plan must be specific to any location named in a permit application or application addendum, and must specify the measures that will be taken and under what circumstances the Permittee will use them. If necessary, the plan will identify the frequency with which the measures will be applied. A plan does not fulfill this requirement if it simply mentions the measures that can be taken to control fugitive dust for a particular emissions unit.

### **Condition 20 – Terms to Make the Permit Enforceable**

Legal Basis: These are standard conditions required under 18 AAC 50.345(a)-(c)(2) and (d)-(h) for all minor permits.

Factual Basis: These are standard conditions for compliance required for all minor permits.

### **Condition 21 – Emission Inventory Reporting**

Legal Basis: This condition requires the Permittee to submit emissions data to the state so the state is able to satisfy the federal requirement to submit emission inventory data from point sources to the EPA as required under 40 C.F.R. 51.15 and 51.321. The federal emission inventory requirement applies to sources defined as point sources in 40 C.F.R. 51.50. Under 18 AAC 50.275, the state also requires reporting of emissions triennially for stationary sources with an air quality permit, regardless of permit classification. This includes sources that do not meet the federal emission thresholds in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A. The state must report emissions data as described in 40 C.F.R. 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A to EPA.

Factual Basis: Except as noted in the last paragraph, the Department used the language in SPC XV, as adopted by reference under 18 AAC 50.346(b)(8), for the permit condition.

The emission inventory data is due to EPA 12 months after the end of the reporting year (40 C.F.R. 51.30(a)(1) and (b)(1)). Permittees have until April 30<sup>th</sup> to compile and submit the data to the Department. To expedite the Department’s process of transferring data into EPA’s electronic reporting system, the Department encourages Permittees to submit the emission inventory through the Department’s electronic emission inventory submission system in the Permittee Portal on the Department’s Air Online Services webpage <http://dec.alaska.gov/Applications/Air/airtoolsweb/>. A myAlaska account and profile are needed to gain access to the Permittee Portal. Other options are to submit the emission inventory via mail, email, or fax.

Detailed instructions on completing and submitting the emission inventory and the report form are available at the Point Source Emission Inventory page <http://dec.alaska.gov/Applications/Air/airtoolsweb/PointSourceEmissionInventory> by clicking the Emission Inventory Instructions button. The emission inventory instructions and report form may also be obtained by contacting the Department.

To ensure that the Department’s electronic system reports complete information to the National Emissions Inventory, stationary sources with air quality permits are required to submit with each report emissions data described in 40 C.F.R. 51.15 and the data elements in Tables 2a and 2b to Appendix A of 40 C.F.R. 51 Subpart A, as applicable. Title V stationary sources with potential annual emissions greater than or equal to any of the emission thresholds for Type A (large) sources, as listed in Table 1 to Appendix A of 40 C.F.R. 51 Subpart A, are required to report emission inventory data every year for the previous calendar year (also known as the inventory year). For triennial inventory years, Type A sources only need to submit one report, not both an annual report and a separate triennial report.

Stationary sources, excluding owner requested limits (ORLs) issued under 18 AAC 50.225 and preapproved emission limits (PAELs) issued under 18 AAC 50.230, that do not meet any of the emission thresholds for Type A sources (large sources subject to annual reporting) are required to report emission inventory data every third year (i.e., triennially) for the previous inventory year under Condition 21. Minor sources such as rock crusher plants operating under the MG3 permit are subject to triennial reporting in accordance with Condition 21.

The Department has modified Condition 21 from SPC XV by lowering the thresholds that require reporting to include all stationary sources regardless of permit classification (excluding ORLs and PAELs) to capture the new requirements found in 18 AAC 50.275, effective September 7, 2022. Additionally, the Department has added Condition 21.2 to specify the consistent emission factor requirements found in 18 AAC 50.275(b). Beyond as noted, the Department has determined that the standard conditions adequately meet the requirements of 40 C.F.R. 71.6(a)(3).

### **Condition 22.1 – General Source Testing Requirements**

Legal Basis: Condition 22.1 applies because this is a standard condition to be included in all permits under 18 AAC 50.345(k).

Factual Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.220(a) and applies because this is a standard condition to be included in all operating permits under 18 AAC 50.345(k). Monitoring consists of conducting the requested source test.

**Condition 22.2, 22.3, & 22.4 - Operating Conditions, Reference Test Methods, Excess Air Requirements**

Legal Basis: These conditions apply because the Permittee is required to conduct source tests, and also ensures compliance with 18 AAC 50.220(b) - (c).

Factual Basis: These conditions supplement the specific monitoring requirements stated elsewhere in this permit. Compliance monitoring with Conditions 22.2 through 22.4 consists of the test reports required by Condition 22.9.

*Reference Test Methods:* You should use the following as reference test methods when conducting source testing for compliance with this permit.

- Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in Reference Method 9.
- Source testing for emissions of total PM, sulfur compounds, and nitrogen compounds must be conducted in accordance with the methods and procedures specified in 40 C.F.R. 60, Appendix A.
- Source testing for emissions of any pollutant may be determined using an alternative method approved by the Department in accordance with 40 C.F.R. 63, Appendix A, Method 301.

**Condition 22.5 - Test Exemption**

Legal Basis: This condition ensures compliance with the applicable requirement in 18 AAC 50.345(a) and applies when the source exhaust is observed for visible emissions.

Factual Basis: As provided in 18 AAC 50.345(a), the requirements for test plans, notifications and reports do not apply to visible emissions observations by smoke readers, except in connection with required particulate matter testing.

**Condition 22.6, 22.7, & 22.8 - Test Plans, Notifications, and Reports**

Legal Basis: These conditions ensure compliance with the applicable requirements in 18 AAC 50.345(l)-(o) and apply because the Permittee is required to conduct source test by this permit.

Factual Basis: Standard conditions in 18 AAC 50.345(l)-(o) are incorporated through these conditions. These standard conditions supplement specific monitoring requirements stated elsewhere in this permit. The source test itself monitors compliance with this condition.

## **Attachment 1 – Rock Crusher Dispersion Modeling Summary**

Alaska Department of Environmental Conservation  
Dispersion Modeling Summary  
For Rock Crushers

Prepared by Bill Walker April 24, 2003

This summary is to support the renewal of general air quality operating permits for rock crushers. The Department specifically requests comment on the assumptions used to characterize these facilities, and on how we should use the information produced by the modeling analysis.

### **Background**

On April 14, 1998 the Department issued a general permit for transportable or stationary rock crushers. The first round permits were not supported by dispersion modeling.

During the life of that permit, the Department has received complaints about emissions from rock crushing operations. The complaints involve the potential for adverse impacts on human health and welfare<sup>4</sup>.

The Department is issuing the renewal permits under the authority of AS 46.14.210, but not AS 46.14.215. However, because of public health concerns that arose during the life of the original permits, I have done dispersion modeling as provided by 18 AAC 50.201. This modeling serves as the basis for proposed permit conditions.

### **Model and Methods Used**

For this modeling analysis I used ISCST3. This allowed sources to be distributed over a three dimensional space. Emissions are modeled as volume sources based on photographs of a rock crushing operation. I took emission rates from AP-42 for crushers, screens, conveyors and diesel engines.

### **Meteorological Data**

The meteorological data set was a screening data set similar to the one used in SCREEN3. It was applied to ISCST3 by Pat Hanrahan of the State of Oregon Department of Environmental Quality. The model predicted one hour ambient concentrations. To get 24 hour concentrations, I multiplied the results by 0.4. This is consistent with EPA guidelines.

### **Background Concentrations**

Background concentrations had to be applied statewide. I used highest concentrations measured at Healy. The location of the Healy monitoring site intended to gather background concentrations, not to measure impacts from the Healy power plants. The background concentration was:

- PM-10 24 hour – 31  $\mu\text{g}/\text{m}^3$

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<sup>4</sup> It is important to note that most plants operating under the general permits did so without public complaints to the Department.

## Receptors

Receptors were placed using a polar grid from a few meters from the center of the operation to a maximum of 2000 meters. Receptors were modeled assuming flat terrain, and terrain heights of 10, 15, and 20 meters.

## Downwash

I used one downwash structure based on one of the crusher operation photographs. It approximates a crusher and screen mounted on a trailer bed. The dimensions are 40 feet long by 12 feet high by 8 feet wide.

## PM-10

I modeled crushers, screens, and conveyors as one volume source 120 feet square, and 5 meters tall (estimated from crushing operation photographs).

Emission factors came from EPA's AP-42, Table 11.19.2-2 for crushed stone processing operations. Activity rates were based on 127 tons per hour (tph), as follows<sup>5</sup>:

- 127 tph in initial crusher
- 127 tph in initial screen
- ½ to second crusher and second screen
- ½ of that to tertiary crusher and recycle back to second screen

I used two other volume sources, one for unpaved road dust from loader operation, and the other from AP-42 13.2.4 for drop operations from the final processing to the storage piles.

Again from crusher operation photograph, I assumed the use of two 500 hp diesel engines (modeled as point sources). I selected 500 hp from the power requirement for a Pioneer cone crusher similar to the Spokane crusher in the photograph.

Emission factors were all based on 24 hours of operation per day, but I used a scaling factor to adjust results to 12 hours per day.

I did best and worst case modeling. The best case assumed that road dust is controlled well enough to be minimal. I used EPA's emission factors for controlled sources or factors calculated based on high moisture content. For the worst case option, I used emission factors for uncontrolled sources, or factors calculated assuming high road surface silt content and low moisture. Emission factors for diesel engines did not change.

With best case assumptions, modeling predicted compliance with the 24 hour PM-10 standard at 130 meters from the center of the operation and beyond [rounded to 400 feet from the edge of the operation], and with the increment at 350 meters and beyond [rounded to 1000 feet].

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<sup>5</sup> 127 tons per hour was the same activity rate used for modeling asphalt plant. It is based on 150 tons per hour of hot mix asphalt.

The worst case assumptions for fugitive emissions predicted that the ambient standard could be violated at a much greater distance from the crushing operation [700 meters – rounded to 2000 feet from the edge of the operation]. There is no set of limitations or practices to control fugitive dust that the permit could impose that would be both reasonable and effective in all cases. Therefore, the permit uses results from worst case modeling for requiring a dust control plan. If a crushing operation is within the 2000 feet of a residence or other occupied structure, the application must contain a site specific dust control plan, and the operator must comply with that plan.

Modeling at elevated terrain heights did not change any of these distances.

[Filenames: crushrco.bst, crushrun.bst]