

Class I Modeling Protocol Approval (Plant Site and Mine Site)

From: Sullivan, Jim (MPCA)
Sent: Tuesday, July 19, 2016 3:34 PM
To: Kevin Pylka (kpylka@polymetmining.com)
Cc: Foss, Ann (MPCA); Baumann, Suzanne (MPCA); Sommer, Steve (MPCA); Roberson, Ruth (MPCA); Bouchareb, Hassan (MPCA); Wickman, Trent; ASkoglund@barr.com; Pat Sheehy (PSheehy@barr.com); Todd M. Fasking (TFasking@barr.com); Jon Bloomberg (jbloomberg@envirolawgroup.com) (jbloomberg@envirolawgroup.com); baanderson02@fs.fed.us
Subject: Approval of the PolyMet Class I Modeling Protocol
Attachments: aq2-43a.doc; aq2-44a.doc

Good afternoon,

The Minnesota Pollution Control Agency (MPCA) has reviewed the Class I air modeling protocol for the proposed PolyMet mining operation. The protocol is approved for use. You may proceed with the Class I modeling demonstration. Please submit the final modeling demonstration report and related modeling files along with the air quality permit application. We have discussed delivery of the modeling files via a portable hard drive in light of the size of the modeling files. This is still the most viable option in light of the scope of the project.

Best regards,

James E. Sullivan
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AQDM-04a

AQDM Protocol Approval Notification Form Air Quality Dispersion Modeling (AQDM)

Doc Type: Air Dispersion Modeling

Instructions: This form is used for Minnesota Pollution Control Agency (MPCA) internal use by Air Dispersion Modeler and Air Permit Engineers to review for Class I Air Dispersion Modeling.

Facility Information

AQ file no.: NA AQ facility ID no.: AI 213111 Submittal date (mm/dd/yyyy): 06/27/2016
Three-letter modeling facility ID (ex., ACE, XAK, MEC, NUP, etc.): PLM
Facility name: Poly Met Mining Company
Facility street address: P.O. Box 475, 6500 County Road 666
City: Hoyt Lakes County: St. Louis State: MN Zip code: 55750-0475
Protocol prepared by: Andrew Skogland, Barr Engineering Preparer phone: 952.832.2685
Preparer e-mail address: askogland@barr.com

Protocol Approval Notification

This is to notify you that the modeling protocol has been reviewed and is approved or denied as noted below for the project described in the protocol.

If approved, any minor changes to the project after this approval should be made in consultation with Minnesota Pollution Control Agency (MPCA) and documented in the modeling results report that is submitted with your permit application. Major changes from the protocol may result in a request for a re-submittal of the protocol.

Please be aware that federal and state standards and model versions can change over the life of a project, therefore the facility may be asked to update the modeling protocol and/or modeling report to reflect applicable changes.

Reviewer Information

Protocol reviewed:

Modeler name: Jim Sullivan Final Review date (mm/dd/yyyy): 07/19/2016
Permit engineer name: Hassan Bouchareb Final Review date (mm/dd/yyyy): 07/11/2016

Modeler:

Engineer: Emissions information (Facility Emissions and Cumulative Class I Inventory) and general protocol

Areas reviewed: setup

Modeling information (Non-emissions) Preliminary emissions

Protocol is: **Approved** **Conditionally approved** **Not approved**

Reasons:



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AQDM-05a

AQDM Protocol Review Form
for CLASS I Air Dispersion Modeling
Air Quality Dispersion Modeling (AQDM)

Doc Type: Air Dispersion Modeling

Publication document # _____

Instructions: This form is used for Minnesota Pollution Control Agency (MPCA) internal use by Air Dispersion Modelers and Air Permit Engineers to review for Criteria Pollutant Modeling.

Protocol Information

Today's date - Modeler (mm/dd/yyyy): 7/19/2016 Today's date - Engineer (mm/dd/yyyy): 07/11/2016
MPCA Air Dispersion Modeler: Jim Sullivan MPCA Air Permit Engineer: Hassan Bouchareb
Air quality file number: n/a Air quality ID number: AI 213111
Three-letter modeling facility ID (ex., ACE, XAK, MEC, NUP, etc.): PMM
Facility name: Poly Met Mining Inc.
Date protocol was received at the MPCA (mm/dd/yyyy): 06/27/2016

Approval of Modeling Protocol by Sections - Completed by Air Dispersion Modeler

Section and section name	Acceptable/ Unacceptable	Deficiencies and/or comments
Files to accompany Protocol	Acceptable	Submittal is consistent with a Class I protocol review
Purpose for air dispersion modeling and related information	Acceptable	Evaluation is a voluntary Class I analysis of increment and project impacts on Class I areas (Isle Royale National Park, Voyageurs National Park, Rainbow Lake Wilderness and the Boundary Waters Canoe Area Wilderness). The modeling is an update of work previously completed for the project EIS.
CALPUFF/CALMET Pre-processors and Post-processors	Acceptable	No further comment.
Model selection and options	Acceptable	No further comment.
Emission source characterizations and parameters	Acceptable	No further comment.
Paved roads fugitive dust	Acceptable	Not applicable.
Receptors	Acceptable	No further comment.
Meteorological data	Acceptable	Meteorological data used for the Class I demonstration reflects the years 2002, 2003 and 2004. After consultation with the United State Forest Service, it was determined that the time period is reasonable for the scope of evaluation. Newer data would not change the modeled output.
SIL analysis and results	Acceptable	No further comment.
Background values	Acceptable	Background values are relevant input parameters for Chemistry in Calpuff. Input Group 11 has identified Ammonia, Ozone and Hydrogen Peroxide. In addition, a visibility background concentration will also be included in the modeling demonstration, consistent with Federal Land Manager's approach. The demonstration will include SO2 background concentrations from ambient air quality monitor locations near the Class I areas. The background concentration is used for the direct foliar damage evaluation using the "Green Line" approach. The ambient monitors and background calculation method are acceptable for the modeling demonstration.
Nearby sources	Acceptable	The nearby source inventory for this project is based on a Class I

		inventory developed by the MPCA and updated by Barr Engineering for this project. The facilities included in the modeling demonstration are the same for all Class I evaluations conducted in Northeastern Minnesota. See engineering review comments for specific update-related details.
Pollutant-based considerations	Acceptable	Protocol noted that an ozone value of 40 ppm would be used for gap-filling of missing data. Based on a June 30, 2016, telephone conversation with Andrew Skogland, Barr Engineering, this value should be in units of ppb.
CLASS I EMISSION INVENTORY	Acceptable	Review of non-emission features (confirmation of spatial location and related source characterization only). No further comment.
Modeling Protocol is:	Approved	
Comments on approvable-status:		

Approval of Modeling Protocol by Sections - Completed by Air Permit Engineer

Section and section name	Acceptable/ Unacceptable	Deficiencies and/or comments
Purpose for air dispersion modeling and related information	Acceptable	No comments.
Emission source characterizations and parameters	Acceptable	No comments.
Paved roads fugitive dust	Acceptable	Not applicable for this modeling demonstration.
Pollutant-based considerations	Acceptable	No comments.
CLASS I EMISSION INVENTORY	Acceptable	<p>Class I Cumulative Inventory:</p> <ul style="list-style-type: none"> - Further updates were made to the Class I Cumulative Inventory by MPCA as described in the "Revisions" tab in the provided revised version. Please use this revised version, as provided, in performing the necessary modeling exercise(s). <p>Mine Site Emission Inventory:</p> <ul style="list-style-type: none"> - Please include a key on the Class I modeling input tab for the less common acronyms used (PMC/PMF = condensible/filterable PM, EC = ?, SOA = Sulphates of Ammonia). This could also be a part of the "Read Me" tabs as discussed in previous preapplication meetings. - Emissions data should be updated to reflect the correct inputs for any emission sources that were identified in the Class II modeling file comparison as non-conforming. As both the Class I and Class II files pull some information from the same facility emission inventory tabs, it would be prudent to ensure the correct information is being used in the Class I input files. <p>Plant Site Emission Inventory:</p> <ul style="list-style-type: none"> - Please include a key on the Class I modeling input tab for the less common acronyms used (PMC/PMF = condensible/filterable PM, EC = ?, SOA = Sulphates of Ammonia). This could also be a part of the "Read Me" tabs as discussed in previous preapplication meetings. - Emissions data should be updated to reflect the correct inputs for any emission sources that were identified in the Class II modeling file comparison as non-conforming. As both the Class I and Class II files pull some information from the same facility emission inventory tabs, it would be prudent to ensure the correct information is being used in the Class I input files. - Please include a note referencing the other emission sources that use an overall emission rate divided out amongst individual portions similar to the "Ore Haul Locomotive" sources' note. This scenario seems to occur for Stack ID No. 327 and Volume Source Conc B V.
Comments on other sections:	No comments.	
Modeling Protocol is:	Approved	

As discussed at previous preapplication meetings, please note that any throughput limits, emission limits, or other assumptions that were used to reduce emissions (short term or long term) from any emission source below the maximum capacity of the source operating at 8760 hours per year must be included as part of a permit application. These assumptions would be included in any subsequent permit as

Comments on approvable-status: