

MINNESOTA POLLUTION CONTROL AGENCY
Industrial Division

*Mesabi Nugget, LLC, -
Request for Approval of the following actions:*

- 1) Authorization to issue Air Emission Facility Permit No. 13700318-001*
- 2) Approval of variances for National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Permit No. MN0067687*
- 3) Authorization to issue NPDES/SDS Permit No. MN0067687*

July 26, 2005

ISSUE STATEMENT

Mesabi Nugget, LLC, (Company) proposes to construct a commercial-scale demonstration plant in St. Louis County designed to produce iron nuggets from iron ore concentrate at a rate of 600,000 metric tons per year (Project). The process utilizes coals, fluxes, binders, and iron ore concentrates which are fed into a rotary hearth furnace. In the furnace the raw materials are converted to metallic iron (nuggets) and slag. The Air Emission Permit will authorize construction and operation of the Project with an air infiltration system to control combustion pollutants and a wet scrubber to capture particulate pollutants and neutralize acids from the rotary hearth furnace. In addition, fabric filters will be installed to control particulate emissions from the raw material pulverizers, dryers and material transfer operations. The Water Quality Permit will authorize construction and operation of a chemical precipitation wastewater treatment plant to remove metals and sulfate from process wastewater generated by the wet scrubber. Effluent from the chemical precipitation treatment plant will then be treated by mercury filters prior to discharge to Second Creek at a rate of approximately 1,000 gallons per minute. The Company has requested variances for Hardness, Bicarbonates, Specific Conductance, and Total Dissolved Solids. During the comment period for the Air Emission and Water Quality Permits and water variances, concerns were raised about the proposed Project's potential to negatively impact air quality and water quality. No commenters requested a contested case hearing on the permits or the variances, however, several commenters requested that the Minnesota Pollution Control Agency (MPCA) Citizens' Board (Board) act on the proposed permits, one commenter requested that the Board deny the variance requests, and one commenter recommended that the Board deny issuance of the Air Emission Permit. Based on an analysis of the comments, the MPCA staff is recommending minor modifications to the permits to address some of the comments. Further, the MPCA staff recommends that the Board adopt the individual Findings of Fact, Conclusions of Law, and Order approving the Water Quality variances for Hardness, Bicarbonates, Specific Conductance, and Total Dissolved Solids and authorizing the Commissioner to issue the Air Emission and Water Quality Permits.

I. Background:

A. Facility Description

The proposed Project is a commercial-scale demonstration plant in St. Louis County designed to produce iron nuggets from iron ore concentrate. Attachment 1 is a map showing the proposed location of the Project. Attachment 2 is an aerial map of the Mesabi Nugget facility.

The proposed Project will produce 600,000 metric tons per year of iron nuggets. The process utilizes coals, fluxes, binders and iron ore concentrates which are fed into a rotary hearth furnace. In the furnace the raw materials are converted to metallic iron (nuggets) and slag. The iron and slag are cooled and separated. Iron nuggets will either be directly loaded into rail cars or stored on-site in piles for later shipment. Slag will either be sold as a product or disposed of in accordance with solid waste requirements.

Air pollutants that will be emitted from the facility operation include particulate matter, particulate matter less than 10 microns in diameter, nitrogen oxides, sulfur dioxide, volatile organic compounds, carbon monoxide, lead, fluorides, sulfuric acid mist, and a number of hazardous air pollutants, including mercury. Sources of emissions from the proposed Project include materials handling and storage, pulverizing, drying and mixing of raw materials, and conversion of raw materials in the rotary hearth furnace. The proposed Project will employ an air infiltration system to control combustion pollutants, a wet scrubber to control particulate pollutants and neutralize acids and a fabric filter to control particulate emissions. During the life of the proposed permit, the Company will be required to perform research regarding mercury emission reductions. This requirement has a goal of reducing mercury emissions by 50 percent.

The Water Quality Permit will authorize construction and operation of a chemical precipitation wastewater treatment plant to remove metals and sulfate from process wastewater generated by the wet scrubber. Effluent from the chemical precipitation treatment plant will then be treated by mercury filter #1 prior to discharge into Area 1 Pit. Further, discharge from Area 1 Pit to Second Creek will be treated by mercury filter #2. The discharge to Second Creek will be approximately 1,000 gallons per minute.

The Company has requested temporary water quality variances for Hardness, Bicarbonates, Specific Conductance, and Total Dissolved Solids.

B. Public Notice and Public Meeting

Air Emission Permit No. 13700318-001 was placed on public notice May 13, 2005. The notice period expired at 4:30 pm on June 13, 2005. NPDES/SDS Permit MN000067687 and proposed temporary variances for Hardness, Bicarbonates, Specific Conductance and Total Dissolved Solids were placed on public notice May 13, 2005. The notice period for the NPDES/SDS Permit and proposed variance expired at 4:30 pm on June 13, 2005.

On May 25, 2005, the MPCA staff held a public informational meeting from 6:00 pm to 9:00 pm in the Hoyt Lakes Arena to explain the proposed permits and variances and to answer questions about the proposed Project. Approximately 250 people attended the public informational meeting.

During the public notice period fifty-one (51) public comments were submitted regarding the proposed permits and variances.

II. Discussion:

A. Air Emission Permit

During the 30-day public comment period, the MPCA received forty-eight (48) comments regarding the proposed Air Emission Permit. Thirty (30) commenters support issuance of the permit. Thirteen (13) commenters asked questions about the proposed permit and/or expressed concerns. Five (5) commenters expressed opposition to the proposed permit.

The most significant air quality areas of concern raised during the public comment period are as follows:

- (1) whether the permit is protective of visibility and other air quality related values at Class I areas
(See Attachment 3, pages 5 to 7);
- (2) whether the method in which technologies were selected to control emissions met the requirements of a Best Available Control Technology (BACT) review (See Attachment 3, pages 8 to 19);

- (3) whether appropriate limits were set for the rotary hearth furnace, the green ball dryer, pulverizer/dryers, the product separator, and fugitive emissions (See Attachment 3, pages 8 to 19);
- (4) whether all required BACT limits were imposed (See Attachment 3, pages 8 to 19);
- (5) whether the Maximum Achievable Control Technology (MACT) limits for mercury and other Hazardous Air Pollutants are stringent enough (See Attachment 3, pages 19 to 21); and
- (6) whether the conditions in the permit, including the required mercury reduction effort, demonstrate that the MPCA permitting process assures the lowest mercury emissions reasonably possible (See Attachment 3, pages 21 to 23).

The MPCA staff's complete response to air quality comments, questions, and concerns are detailed in Attachment 6.

Because of the level of public concerns raised during the public notice period, the proposed Air Emission Permit is presented to the Board for final action.

The MPCA staff made some modifications to the public noticed Air Emission Permit, which are detailed in the attached errata sheet (See Attachment 9). The MPCA staff also believes that the permit modifications, the MPCA staff's responses to public comments (See Attachment 6), and the Findings of Fact, Conclusions of Law, and Order (See Attachment 3) adequately address all the comments received on the proposed permit.

Finally, the U. S. National Park Service (NPS) conveyed some preliminary air quality comments to the MPCA staff late July 13, 2005. The MPCA staff will address any final NPS comments and apprise the Board of the outcome.

B. Water Quality Permit and Proposed Temporary Variances

During the 30-day comment period, the MPCA received forty-three (43) comments regarding the proposed Water Quality Permit and the proposed temporary variances. Thirty-one (31) of the commenters supported issuance of the permit. Seven (7) commenters asked questions, expressed

concerns, and/or requested specific modifications to the proposed permit. Five (5) commenters expressed opposition to the proposed actions. There were no requests for a contested case hearing; however, there was one request to deny issuance of the permit, one request for Board review of the permit, and one request to extend the thirty (30) day comment period. The request to deny issuance of the permit was based, in part, on the requester's assertion that the proposed temporary variances for Hardness, Specific Conductance, Total Dissolved Solids, and Bicarbonates were in violation of federal and state law.

The most significant areas of concern raised during the Water Quality public comment period are as follows:

- (1) whether the financial requirements proposed in the permit are reasonable (See Attachment 4, page 8);
- (2) whether all the land ownership and/or control of necessary property have been resolved (See Attachment 4, pages 18 to 20);
- (3) whether the draft Water Quality Permit requirements are protective of the environment (See Attachment 4, pages 8 to 18);
- (4) whether the proposed temporary variances are prohibited by federal and state law (See Attachment 4, pages 14 to 16);
- (5) whether the MPCA should follow nondegradation procedures for the Water Quality Permit (See Attachment 4, pages 16 to 17); and
- (6) whether the proposed effluent limit for Mercury is the right value (See Attachment 4, page 17).

Because of the level of public concerns raised during the public notice period, and the applicable provisions of Minn. Stat. § 116.02, subd. 6, regarding variances the proposed permit and variances are presented to the Board for final action.

The MPCA staff made some minor modifications to the public noticed NPDES/SDS Permit. The MPCA staff believes that the minor permit modifications, the MPCA staff's responses to public comments (See Attachment 6), and the Findings of Fact, Conclusions of Law, and Order (See Attachment 4) adequately address all the comments received on the proposed permit and temporary variances.

C. Request to Issue Air Emission Permit and Water Quality Permit

The MPCA must find that certain preconditions to permit issuance are met prior to granting issuance of an Air Emission Permit. The preconditions are specified in Minn. R. 7007.1000, subp. 1, which states:

***Preconditions for issuance.** The agency shall issue a permit or permit amendment, or reissue a permit only if it determines that all of the following conditions have been met:*

A. The agency has received a complete application for a permit, permit amendment, or permit reissuance, except that a complete application need not be received before issuance of a general permit under part 7007.1100, subpart 4.

B. The agency has complied with the public participation procedures for permit issuance, if required by part 7007.0850.

C. The agency has complied with the procedures for notifying and responding to affected states, if required by part 7007.0900.

D. If the administrator's review is required by part 7007.0950, the administrator has received a copy of the permit and any notices required and has not objected to issuance of the permit within the time period specified, or the administrator has objected but the objection has been resolved to the administrator's satisfaction.

E. The conditions of the permit provide for compliance with all applicable requirements and the requirements of parts 7007.0100 to 7007.1850, or include a schedule to achieve such compliance.

F. The permit does not reflect a variance from any federally enforceable applicable requirement or requirement of parts 7007.0100 to 7007.1850.

G. The agency anticipates that the applicant will, with respect to the stationary source and activity to be permitted, comply with all conditions of the permit.

H. All applicable provisions of Minnesota Statutes, chapter 116D, and the rules adopted under Minnesota Statutes, chapter 116D, have been fulfilled.

Each of these preconditions regarding the Air Emission Permit has been met.

The grounds upon which the MPCA may refuse to issue an Air Emission Permit are provided in Minn. R. 7007.1000, subp. 2. None of the grounds for denial apply to this draft permit at this time.

The MPCA must find that certain preconditions to permit issuance are met prior to granting issuance of a Water Quality Permit. The preconditions are specified in Minn. R. 7001.0140, subp.1. which provides in relevant part:

Subpart 1. Agency action. Except as provided in subpart 2, the agency shall issue, reissue, revoke and reissue, or modify a permit if the agency determines that the proposed permittee or permittees will, with respect to the facility or activity to be permitted, comply or will undertake a schedule of compliance to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the agency, and conditions of the permit and that all applicable requirements of Minnesota Statutes, chapter 116D, and the rules adopted under Minnesota Statutes, chapter 116D, have been fulfilled.

Each of these preconditions regarding the Water Quality Permit has been met. The grounds upon which the MPCA may refuse to issue a Water Quality Permit are provided in Minn. R. 7001.0140, subp. 2. None of the grounds for denial apply to this draft permit at this time. In addition, the conditions for granting the variances in Minn. R. 7050.0190 have been met.

III. Conclusion:

For the reasons discussed above and more fully explained in the individual Findings of Fact, Conclusions of Law, and Order (Attachments 3 and 4) and in the MPCA staff's responses to comments (Attachment 6), the MPCA staff concludes that the temporary water quality standard variances should be approved and the Air Emission and Water Quality Permits should be issued.

IV. Recommendation:

The MPCA staff recommends that the Board adopt the attached Findings of Fact, Conclusions of Law, and Order, approve the temporary water quality standard variances for Hardness, Bicarbonates, Total Dissolved Solids, and Specific Conductance, and authorize issuance of the attached Air Emission Permit and the attached Water Quality Permit in accordance with the following suggested staff resolutions.

SUGGESTED STAFF RESOLUTION
Authorization to issue Air Emission Facility Permit No. 13700318-001

BE IT RESOLVED, that the Minnesota Pollution Control Agency (MPCA) approves and adopts the attached Findings of Fact, Conclusions of Law, and Order (Attachment 3) in support of its approval to issue the Air Emission Facility Permit to Mesabi Nugget, LLC.

BE IT FURTHER RESOLVED, that the Commissioner is authorized to do the following: (1) execute the Findings of Fact, Conclusions of Law, and Order (Attachment 3) on behalf of the MPCA; (2) execute Air Emission Facility Permit No. 13700318-001 on behalf of the MPCA; and (3) undertake all actions necessary for issuance and effectiveness of the permit in accordance with the following provision:

- (1) that any applicable construction authorization is not made effective until:
 - (a) the U.S. Environmental Protection Agency (EPA) Prevent of Significant Deterioration (PSD) appeal period has expired, and the PSD regulations allow applicable construction authorizations; and
 - (b) Mesabi Nugget, LLC, has fully exercised and implemented all options and related agreements necessary to possess and control properties integral to the implementation and compliance with water quality and air quality permits and has submitted a written certification to MPCA verifying the completion of this precondition.

SUGGESTED STAFF RESOLUTION
Approval of Temporary Water Quality Standard Variances for Hardness, Bicarbonates, Specific Conductance and Total Dissolved Solids and Authorization to issue NPDES/SDS Permit No. MN0067687

BE IT RESOLVED, that the Minnesota Pollution Control Agency (MPCA) approves and adopts the attached Findings of Fact, Conclusions of Law, and Order (Attachment 4) in support of its approval for temporary variances to water quality standards for Hardness, Bicarbonates, Specific Conductance, and Total Dissolved Solids and in support for its approval to issue NPDES/SDS Permit No. MN0067687 to Mesabi Nugget, LLC.

BE IT FURTHER RESOLVED, that the Commissioner is authorized to do the following:

(1) execute the Findings of Fact, Conclusions of Law, and Order (Attachment 4) on behalf of the MPCA;

(2) execute NPDES/SDS Permit No. MN0067687 on behalf of the MPCA; and (3) undertake all actions necessary for issuance and effectiveness of the permit in accordance with the following provision:

(1) that the permit is not made effective until:

(a) EPA has approved the temporary variances to water quality standards for Hardness,

Bicarbonates, Specific Conductance, and Total Dissolved Solids; and

(b) Mesabi Nugget, LLC, has fully exercised and implemented all options and related agreements necessary to possess and control properties integral to the implementation and compliance with water quality and air quality permits and has submitted a written certification to MPCA verifying the completion of this precondition.