

**Berkshire Regional Planning Commission
Clearinghouse Review Committee Meeting
February 6, 2003**

PROJECT/ISSUE: SPECIALITY MINERALS INC.
REVIEW: DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION
SYSTEM (NPDES) PERMIT
COMMENTS TO THE ENVIRONMENTAL PROTECTION AGENCY
ID: PERMIT NUMBER: MA0005991
LOCATION: ADAMS, MA
APPLICANT/PROPONENT: SPECIALITY MINERALS Inc.
COMMENTS DUE: FEBRUARY 12, 2003

DESCRIPTION:

The Federal Clean Water Act requires a National Pollutant Discharge Elimination System Permit (also referred to as NPDES permit) for the discharge of pollutants, or potential pollutants, to the waters of the United States. The Clean Water Act requires that NPDES permits limit pollutants that are currently discharged or may be discharged at a level that has caused, has the potential to cause, or contributes to water quality degradation. The Environmental Protection Agency (EPA) issues NPDES permits, which are in effect for 5 years. The Massachusetts Surface Water Quality Standards, as enforced by the Massachusetts Department of Environmental Protection (DEP,) also permits discharges.

Specialty Mineral Inc. (SMI) has requested an NPDES Permit to discharge up to 6 millions gallons per day (mgd) into the Hoosic River. This is an increase from its 4.2 mgd permit level. SMI uses the water to produce lime and precipitated calcium carbonate products at its facility in Adams. The draft permit establishes effluent levels and conditions to meet Clean Water Act and Massachusetts water quality standards. These conditions address flow, temperature, acidity/alkalinity (pH), total suspended solids (TSS), turbidity, and whole effluent toxicity. Sampling practices are specified as well.

According to Massachusetts Water Quality Standards, the Hoosic River from the headwaters near the Cheshire Reservoir to a point immediately upstream of the SMI discharge, at the Adams Waste Water Treatment Plant, is designated a Class B cold water fishery. Designated uses for a Class B water include the protection and propagation of fish. Trout is considered a cold water fish. Spawning wild trout has been documented in this stretch of the river. The instream temperature criterion for cold water fisheries that include wild trout is 68 °. From the Adams Waste Water Treatment plant downstream to the Vermont border the Hoosic River is designated a warm water fishery. The instream temperature criterion for a warm water fisheries is 83°. SMI's actual discharge point is in the section of the river designated a warm water fishery. An unusual circumstance occurs in that trout, a cold water fish, is found in the section of the river classified as warm water. The temperature level considered to cause mortality to trout is 79 °. Trout mortality at or above these levels can occur with exposures as short as a few hours.

The Adams flood control chutes are in close upstream proximity to the SMI discharge point. According to temperature studies by the Hoosic River Watershed Association the flood control chutes contribute as much as a 7 ° gain in water temperature during certain flow conditions. Working in partnership with the Town of Adams and several Massachusetts State agencies, the U.S. Corps of Engineers is conducting a feasibility analysis to evaluate a modification of the approximately 2.2 miles of flood control chutes. The objectives of the modifications are to restore the natural conditions of the channel bottom and sides, which are currently built of slab concrete. These modifications are intended to provide habitat for trout, as well as

habitat for other natural species, and improve the river as a town recreational resource and asset. Restoration of the Hoosic River in downtown Adams is one of the key features in Adams' revitalization efforts. Purportedly these modifications to the flood control chutes would also reduce the instream water temperature an estimated 4° as it leaves the chutes.

When the flood control chute restoration project was proposed the concept of "pollution trading" was discussed. This concept would have SMI participate in some manner to the flood control chute restoration such as by providing a cash or in-kind match. In return, a reduction of the water temperature from the flood control chute modifications was to enable SMI to discharge to a warm water fisheries at a slightly higher temperature than what might be expected without the modifications.

SMI currently has an NPDES permit that was issued in 1975. Although these permits are supposed to be re-issued every 5 years, SMI's permit has been continued since 1975 despite SMI's efforts to have the permit renewed. Currently SMI is permitted to discharge 4.2 mgd. Previous temperature permit limits have been as high as 93° although the current actual temperature of the discharge is approximately 85°. Since the year 2000 SMI has participated in a low-cost, low-tech water cooling process. Instead of discharging directly into the Hoosic River SMI's water is conveyed approximately 1 mile along an open ditch where ambient cooling occurs. In addition to cooling the water, water is withdrawn from the ditch and re-used by an adjacent paper mill minimizing ground water withdrawals for that paper mill.

The current draft permit presents two sets of conditions. Upon immediate approval of the permit, SMI would be allowed to discharge up to 5 mgd at a maximum daily temperature of 84.7°. After mixing with the river water an 82° instream temperature would result. This is below the 83° maximum temperature criteria for a warm water fisheries. When, and only when, the flood control chutes are restored, SMI would be allowed to discharge up to 6 mgd at a maximum temperature of 81.5°. After mixing with the river water a 79° instream temperature would result.

The Berkshire Regional Planning Commission provided comments to the most recent draft permit that was offered for formal public comment in October 1999. The 1999 draft permit proposed to allow SMI to discharge up to 6 mgd. The 1999 draft permit established a maximum temperature of 83° for the discharge water.

In the Summer of 2002 a revised draft NPDES permit was released by EPA for informal review. The revised informal 2002 draft NPDES permit also proposed to allow the flow discharge to be increased to 6 mgd. The maximum temperature of the revised informal 2002 draft was proposed to be 88°. This temperature limit was partially derived by considering a temperature reduction benefit (4°) from the restoration of the flood control chutes.

Recently a concurrent request was submitted by SMI to the Massachusetts Environmental Policy Act (MEPA) according to regulation 301 CMR 11.00,(5)(b) that requires that an Environmental Notification Form (ENF) be filed for the increase of 20,000 or more gallons per day (gpd) of industrial waste water to a surface water. The Certificate from the Secretary of Environmental Affairs stated that an Environmental Impact Report (EIR) was not required and that no further MEPA review was required at this time. The Certificate did state that SMI must file a Notice of Project change if the increase to 6mgd is not specified in the NPDES permit as being not contingent upon the restoration project.

DISCUSSION AND CONSIDERATIONS

The water temperature of the discharge is one of the key items in this draft permit with a number of important considerations. The current designation of the Hoosic River at SMI's discharge point as a warm water fishery effectively requires the impact from the temperature of the SMI discharge to be no greater than 83° to the river. According to the calculations presented in the draft permit that target is met with a maximum SMI discharge volume of 5 mgd at a maximum discharge temperature of 84.7°. This scenario, while it does allow a minimum increase in flow, essentially maintains the status quo. With these conditions, SMI is allowed to minimally increase its discharge volume, and by using the open ditch canal currently being used, is generally able to meet that temperature requirement. While the resulting worse case instream temperature to the river is higher than is optimal for the survival of trout (82° vs. 79°,) the trout do seem to survive at the current level as evidenced by their current presence in the river. This scenario does not address SMI's request to substantially increase its discharge volume nor result in a net environmental improvement. The draft permit does not and should reference the current use of the open canal, or other passive cooling measure, as an acceptable discharge location and low-tech method to achieve temperature reduction. This is an extremely useful temperature reduction method. Without this being recognized in the permit as being legitimate there is the potential that SMI could not be allowed to use this method. This could result in greater treatment costs to meet the 84.7° maximum temperature.

The draft permit outlines two scenarios: one at a maximum 5mgd discharge at a maximum of 84.7°; the second scenario at a 6mgd discharge at 81.5°, provided the flood control chute restoration project occurs and provides a 4° temperature reduction.

This draft NPDES permit essentially ignores or negates what was originally proposed as an innovative Watershed-Based "Pollutant Trading" Initiative. Through the original proposal SMI would have been required to participate in efforts to reduce instream temperature impacts from non-point sources within the watershed. Specifically SMI would have been required to place money in an escrow account for funding or contribute in-kind services to the so-called Ecosystem Restoration Project, restoration of the flood control chutes in Adams. The goal of the restoration of the flood control chutes was to reduce the water temperature as it left the chutes. In return, and as part of the "pollutant trade" SMI would have been allowed to discharge at a slightly higher temperature than they would have had the flood control restoration not occurred. The net overall result was to have been an overall lower water temperature of the Hoosic River, an enhanced river as it passes through downtown Adams, and overall lower water treatment costs to SMI.

At best, the draft permit is silent about the original concept: allowing a slightly higher SMI discharge temperature provided that SMI participate in the flood control restoration project and a temperature reduction is realized from the effort. The 84.7° degree draft permit maximum at 5mgd (essentially current flow volumes) is based on existing conditions and does not factor in the potential temperature reduction from the flood control chute restoration.

At worst, this permit creates a dis-incentive for SMI to participate in the flood control restoration effort. Instead of SMI's allowed discharge temperature to be higher with a successful flood control restoration it would, especially at the higher discharge volume of 6 mgd, be significantly lower. This would likely increase SMI's water treatment costs and create a disincentive for SMI to participate in the restoration effort either through a cash match or in kind services. The Town of Adams still has some approvals related to the flood control restoration project. There is a risk that the town would not enter into those approvals if the restoration project contributed to higher water treatment costs to SMI, a large and important employer in the Town.

It is disappointing that the concept of watershed – wide pollution trading could not have been incorporated into this permit. Not incorporating this concept jeopardizes a potential widespread restoration effort that arguably would have a greater and broader benefit to Hoosic River. Not including this concept also appears to be contrary to the intent of a relatively new EPA policy statement “Watershed-Based NPDES Permitting Policy Statement. That policy states: “EPA will build on the existing NPDES Watershed Strategy and previous activities to actively promote and support watershed-based NPDES permitting. Further, EPA will work to provide greater incentives and mechanisms necessary to undertake a more holistic and integrated approach to assessing water quality conditions, identifying and quantifying pollutant sources, developing and implementing efficient control practices, and working with stakeholders to the extent authorized by the Clean Water Act and implementing regulations. EPA will educate stakeholders about the benefits of watershed-based permitting, facilitate stakeholder involvement, and move watershed-based permitting from concept to implementation.”

This draft permit could get back to the original pollution trading concept, as well as come closer to EPA’s new, “holistic” approach, under the following scenario: change the maximum discharge temperature at the 6 mgd discharge volume from the currently proposed 81.5° to a temperature that will result in a worst case downstream temperature no greater than 82°, the existing downstream temperature of the river. This is the target downstream temperature at a 5 mgd discharge volume as well and it results in a downstream temperature below the maximum 83° allowed in a warm water fisheries. This volume increase should be allowed **provided and only provided** that SMI materially and significantly participates in the restoration of the Hoosic River. Under this scenario it is estimated that SMI’s maximum discharge temperature would be 84.2° rather than 81.5°.

In addition, in order to allow an increase in flow to 6mgd SMI’s participation in the Hoosic River restoration should not be exclusively limited to participation in the flood control chute restoration effort. Rather it should be expanded to include other acceptable restoration efforts, such as the creation of trout friendly micro-habitats, **should and only should** the flood control chute restoration effort not be deemed feasible by the U.S. Corps of Engineers through their feasibility study.

This accomplishes the following objectives.

- It requires SMI to actively participate in the restoration of the Hoosic River but in exchange for that participation it provides a strong incentive for SMI to actively participate in the restoration effort, that being it allows SMI to increase its discharge volume from its current 4.2 mgd to the desired 6mgd.
- It reduces the absolute temperature of the discharge from the current temperature of $\pm 85^\circ - 86^\circ$ to $+ 84^\circ$.
- It reduces the absolute temperature of the discharge in a manner that will most likely be able to be achieved by relatively cost effective passive cooling measures.
- It results in a downstream temperature equal to existing conditions or conditions at a 5 mgd discharge volume. It results in a downstream temperature below the maximum allowable in a warm water fishery, 83°.
- It could result in an improved trout habitat by either contributing to the likelihood that the flood control chute restoration effort will continue to be advanced or increases the likelihood that other in-stream habitat improvements will be implemented.

There are two key features of the Clean Water Act that affect this draft permit, especially related to SMI’s request to increase its flow: the antibacksliding and antidegradation provisions. The antibacksliding provision prohibits the relaxations of permit limits, standards, and conditions from a previous permit. A new permit must at least be as stringent as the previous permit. The antidegradation provision requires that any

new or increased discharge maintain the existing uses and level of water quality necessary to protect those uses. These provisions come into play with potential temperature reduction resulting from the flood control restoration and / or re-classification of the Hoosic River from a warm to cold water fishery. Essentially, according to the Clean Water Act, SMI's discharge temperature must continue to meet what is hoped to be improving water quality standards from the flood control restoration or those imposed by a change in stream classification from warm to cold water fishery.

The presence of a wild trout spawning area in the vicinity of SMI's discharge provides evidence that the Hoosic River could be re-classified as a cold-water fishery. There are current efforts to re-classify that segment of the Hoosic River from a warm water to cold water fishery. Under a best case scenario that re-classification could take 3 – 6 month. More likely a much longer time frame would be involved. If the Hoosic River were re-classified as a cold water fishery in the location of SMI's discharge, effective instream temperatures related to an increase in discharge volume would be limited to 68°. SMI's discharge would have to be substantially lower than the proposed 84.7°, probably closer to 70°. Under this scenario there would need to be significant changes to SMI's operation or water treatment. The changes to water treatment could involve the use of cooling towers or refrigeration. The cost of these additional measures would be significantly higher than the current treatment methods. A worst case change in SMI's operation could be a decision to close the facility.

It is not clear from the draft permit material what SMI's permit conditions would be if the river was re-classified from warm to cold water fishery and SMI were allowed to discharge at a higher volume, either 5 mgd or 6 mgd. It is equally not clear from the draft permit material what SMI's permit conditions would be if the river was re-classified from warm to cold water fishery and at the same time there was no request by SMI to increase its volume from the permitted 4.2 mgd. With no volume increase would SMI be required to meet effective instream temperatures of 68°, or since there was no flow increase they would be allowed a higher temperature discharge? The draft permit should contain greater detail about the SMI's permitting requirements relating to the impending river re-classification, from a warm to cold water fishery, especially if the flow were increased. The flood control chute restoration effort could be threatened by the impending re-classification of the Hoosic River in this vicinity of the SMI discharge if it contributes to, or is perceived to contribute to the re-classification and the re-classification substantially increases SMI's treatment costs. There is a risk that Adams officials would decide not to participate in the flood control restoration effort.

RECOMMENDATIONS:

- The draft permit should reference the current use of the open canal, or other passive cooling measure, as an acceptable discharge location and low-tech method to achieve temperature reduction. This is an extremely useful temperature reduction method.
- The draft permit should change the maximum discharge temperature at the 6 mgd discharge volume from the currently proposed 81.5° to a temperature that will result in a worst case downstream temperature no greater than 82°, the existing downstream temperature of the river **provided and only provided** that SMI materially and significantly participates in the restoration of the Hoosic River. Under this scenario it is estimated that the maximum discharge temperature would be 84.2° rather than 81.5°.
- The draft permit should state that in order to allow an increase in flow to 6mgd, SMI's participation in the Hoosic River restoration should not be exclusively limited to participation in the flood control chute restoration effort. Rather it should be expanded to include other acceptable restoration efforts, such as the creation of trout friendly micro-habitats, **should and only should** the

flood control chute restoration effort not be deemed feasible by the U.S. Corps of Engineers through their feasibility study.

- The draft permit should contain greater detail about the permitting requirements to SMI relating to a stream re-classification from warm to cold water fishery, especially as it relates to an increase in the discharge flow above 4.2 mgd.