Stony Brook Millstone Watershed Association

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June 11, 2003

Narinder K. Ahuja, P.E., P.P., Director
Division of Water Quality
401 E. State Street
P.O. Box 029
Trenton, NJ 08625-0029

RE: 3M Belle Mead Quarry, NJPDES Stormwater Permit

Dear Mr. Ahuja:

The Stony Brook-Millstone Watershed Association has actively participated in the review process of the Stormwater Management Plans and NJPDES Permits for the 3M Belle Mead Quarry since 2000. Overall, our Watershed Association is hopeful that these efforts, when properly implemented, will achieve a significant reduction in the turbidity currently impairing three streams (Roaring Brook, Back Brook and Cruser Brook) in Hillsborough and Montgomery Townships.

Our Watershed Association is very grateful to NJDEP for issuing the recent Administrative Consent Order (ACO) to the 3M Quarry on May 13, 200. We fully support this enforcement action and the assessment of penalties for the documented violations of water quality standards and reporting violations outlined in the ACO.
This order sent a strong message to industries, town officials and NJ residents that impairments to our waterways will be addressed.

However, there remain four (4) significant concerns that we request NJDEP address within the upcoming NJPDES Stormwater permit. These issues are discussed in detailed in the attachments:

1. Include effluent limitations for TDS and TSS in the NJPDES permit
2. Include compliance monitoring for TDS and TSS, and turbidity in the NJPDES permit.
3. Include the evaluation of treating the runoff based on monitoring results, as a conditional clause in the NJPDES permit.
4. Adopt the Category 1 nominations for Roaring Brook, Back Brook and Cruser Brook as proposed by the Stony Brook-Millstone Watershed Association, and enforce the anti-degradation policies for these streams.

The Watershed Association recommends the approval of the stormwater plans and permits for the 3M Bell Mead Quarry, contingent upon the incorporation of these issues into the NJPDES Stormwater Permit. 3M must commit to monitoring the health of local streams in order to document the effectiveness of their proposed stormwater controls with *quantitative analyses.* If you have any question please contact Noelle Mackay, the Director of Watershed Management at 609-737-3735.

Sincerely,

George Hawkins,
Executive Director

Copies to:

Barry Chalofsky, Bureau Chief, NPS Permits
Brian McLendon, NJPDES Permits
Joseph Mikulka, Bureau Chief, Northern Compliance Office
Christopher Boka, NJPDES Enforcement
Ms. Leigh Otterlei, 3M Quarry Manager
Louise Wilson, Mayor Montgomery Township
Anthony Gwiazdowski, Mayor Hillsborough Township
Jerry Haimowitz, Sourland Planning Council
Ernie Thurlow, Union-Somerset SCD

Attachment A
Stony Brook-Millstone Watershed Association
Recommendation for the 3M Belle Mead Quarry NJPDES Permit

Analytical results have documented excessive levels of Total Dissolved and Total Suspended Solids in stormwater runoff leaving the 3M Quarry site after significant rainfall events. Our volunteer monitoring program identified turbid conditions in 29% of the samples collected during 2000-2002. Many studies document that excessive sediment deposition and turbid water can encase fish gills, eggs and larvae, and reduce the viability of many species.

1. **Include effluent limitations for TDS and TSS in the NJPDES permit:**
   The former NJPDES permit required the 3M Quarry to meet the Water Quality Standard for Total Suspended Solids (TSS) of 40 mg/l for Non-Trout production waters. 3M *was previously permitted* to discharge a monthly average of 30 mg/l and a daily maximum not to exceed 50 mg/l. SBMWA reiterates our comment from September 2001 and requests that NJDEP reinstate these permit limitations in the new NJPDES permit to ensure and sustain aquatic life in these streams. These limits should be met within 24 hours after a significant storm event at the discharge points to the three (3) waters of Roaring Brook, Cruser Brook and Back Brook.
   As stated on the NJDEP website, "Individual NJPDES permits are issued to facilities which cannot eliminate exposure of pollutants to stormwater. These facilities have to develop and implement Stormwater Pollution Prevention Plans to minimize or eliminate contact between pollutants and stormwater. *Other permit conditions may require monitoring stormwater discharges for pollutants, and in some cases, effluent limitations may be imposed."*
   (Excerpt directly from NJDEP website http://www.state.nj.us/dep/dwq/stormind.htm)

2. **Include compliance monitoring in the NJPDES permit**.:
   The Watershed Association requests that NJDEP include compliance monitoring in the proposed NJPDES Stormwater permit for three reasons.
   - The proposed stormwater BMP plans for the 3M Quarry are designed to control sediment and may not fully address the fine colloidal particles (Total Dissolved Solids -TDS) that are generated from the 3M Quarry.
   - 3M has not provided any data to ensure that the proposed BMPs will be able to meet Water Quality Standards downstream.
   - NJDEP recognized that monitoring runoff would be necessary in some circumstances and included a monitoring option in the proposed stormwater rules that *allows NJDEP the opportunity to require monitoring on a case-by case basis (Section N.J.A.C. 7:14A-24.9).* NJDEP *does require* that Concrete Industries monitor runoff for TSS and pH.

   The recent April 2003 Administration Consent Order (ACO) requires 3M to inspect outfalls after a rainfall event of 0.5 inches or greater and report turbid conditions. 3M must also satisfy NJ Surface Water Quality Standards, or be fined. However, the ACO does not specially require the performance of monitoring.

   Our Watershed Association requests that the NJPDES permit require monitoring for TSS, TDS, turbidity, temperature and pH, be performed bi-monthly and after each rainfall event of 0.5 inches or greater, in conjunction with the outfall inspections, as specified in the ACO. The NJDEP should also require monitoring for nitrates and total phosphorus, to ensure that

fertilizers applied to vegetate the site and mineral fines piles do not degrade these streams. *Details of the sampling plan are outlined in Attachment B.*

NJDEP already requires the Concrete Industries to monitor stormwater for pH and TSS to demonstrate the effectiveness of their BMPs (Concrete General Permit NJ0108456). In many ways, the conditions at the 3M Quarry are similar to these concrete facilities because they "*cannot completely eliminate exposure to precipitation of their fine solids; aggregate stockpiles; and other stored materials and industrial activity*."
(Excerpt directly from the NJDEP website. http://www.state.nj.us/dep/dwq/concrete.htm)

At a recent Montgomery Township hearing, 3M proposed monthly monitoring at two (2) streams for turbidity, TDS and TSS, for one year. The Watershed Association contends that three (3) streams are affected by stormwater from the Quarry, and monthly monitoring is insufficient to ensure that the stormwater best management practices (BMPs) are operating effectively. In addition, one year is insufficient to ensure the long-term health of the streams.

Our Watershed Association also supports inclusion of biological assessment monitoring to be performed twice annually on the three streams to evaluate the long-term health of the streams. Montgomery Township also fully supports the requirement for 3M to monitor water quality in streams after storm events, which they have stated repeatedly during municipal hearings.

3. Include the evaluation of treating the runoff based on monitoring results, as a conditional clause in the NJPDES permit:

3M testified at recent public hearings that removing colloidal particles from their runoff may not be achieved by the proposed retention basins. In April 2003, 3M had testified that alum treatment, which is commonly used by many wastewater and drinking water treatment plants, could be effective in removing these suspended and dissolved solids. However, 3M withdrew their proposal to treat runoff because of the costs without providing any documentation of the success of these treatment programs or costs analyses.

Decisions whether to require treatment or not, should be based on accurate and reliable monitoring data, not solely on costs. This is another reason to support the inclusion of monitoring in the permit.
The NJPDES permit should clearly outline that runoff treatment should be re-considered at the 3M Quarry if stormwater quality is not improved within one year of the implementation of the proposed BMPs.

Alum treatment is provided for stormwater runoff at the Hopewell Trap Rock Quarry and overall this program successfully reduces turbidity in the storm runoff. I understand that following excessive rains, runoff from the Trap Rock Quarry can exhibit turbid conditions which may be attributed to an under-sized treatment unit for the runoff capture area at that site.

4. Adopt the Category 1 nominations for Roaring Brook, Back Brook and Cruser Brook as proposed, and enforce the anti-degradation policies for these streams.

In reviewing the NJPDES Stormwater Permit application for the 3M Quarry please be mindful that the Quarry borders on the Sourland Preserves and drains to Roaring Brook, Back Brook and Cruser Brook. The Stony Brook-Millstone Watershed Association has nominated

these streams to the NJDEP for Category One Designation, with full support from Montgomery Township.

On February 13, 2003, the Watershed Association nominated these streams to the NJDEP, because these waters fully represent the State Water Quality Standard's definition for "Category One Waters" at N.J.A.C. 7:9B-1.4, including pristine water (except for the turbid water conditions following storm events), healthy ecosystems, and are located within or near preserved lands. The C1 nominations included the entire length of Roaring Brook and Cruser Brook, which would also include Back Brook as a headwater tributary. NJDEP should require 3M to monitor these waters to ensure that their water quality is maintained.

Roaring Brook originates in the Sourland Preserve, a 273-acre passive recreation park owned by the Somerset County Park Commission. The Sourland Mountains and the forested headwater areas of Roaring Brook and Cruser Brook are ecologically significant because they are designated as Level 4 in the NJDEP's Landscape Project data, indicating they provide habitat for State threatened and endangered species including the Barred Owl and Cooper Hawk; as well as migratory birds with stopover areas along the Atlantic Flyway; they encompass the largest piece of contiguous forest in Central New Jersey; and contain very few developed areas. In addition, the recent wetland Letter of Interpretation issued by NJDEP classified 15 areas on the 3M property as *"exceptional wetlands"* where threatened or endangered species may be present.

Protection under Category 1 will aid in preserving habitat for these threatened species, and provide the catalyst for the region to coordinate protective measures along Roaring Brook and Cruser Brook.

Attachment B
Stony Brook-Millstone Watershed Association
3M Quarry Sampling Recommendations

I. The Watershed Association recommends approval of the 3M stormwater plans and NJPDES permit, contingent upon 3M's commitment to routinely monitor the health of local streams to provide accurate baseline data on the streams, and to monitor the effectiveness of their proposed Stormwater Management Facilities with *quantitative analyses*.

II. *Chemical Monitoring* is recommended for the 3M Quarry as a routine assessment of stream conditions. The chemical monitoring program should include:

1. *Parameters:* Total Suspended Solids, Total Dissolved Solids, temperature, pH, nitrates and total phosphorous.
   These parameters were chosen based on previous data that recorded elevated levels of turbidity and nitrates, which can affect stream pH and temperature essential to aquatic health. Nitrates and phosphorous are included to monitor the application of fertilizers during re-vegetation of the mineral fines piles and berms.
2. *Sampling Frequency:*
   - Sampling should be conducted every two weeks at five (5) locations identified below. This frequency could be reduced depending upon the success of the stormwater management facilities, after at least two years of monitoring.
   - In addition, samples for laboratory analyses of TSS and TDS should be collected within 24 hours after rain events of 0.5 inches or greater, to confirm the effectiveness of the runoff controls.
3. *Sampling Locations* for Chemical Monitoring are outlined below and identified on the attached Map.
   1. North Branch of Roaring Brook near the Sourland Mountain Preserve to provide background information on the health of Roaring Brook upstream or prior to it flowing past the 3M Quarry property.
   2. South Branch of Roaring Brook where it crosses Dutchtown-Zion Road.
   3. Back Brook where it crosses Dutchtown-Zion Road. This stream is impacted from runoff from the mineral fines piles.
   4. Cruser Brook after its confluence with Roaring Brook, near the 3M property border. This site would provide information on water quality after passing through the 3M Stormwater Management Facilities.
   5. Cruser Brook where it crosses Route 206. This site would provide information on water quality information on any downstream impacts along Cruser Brook, and would supplement the NJDEP data collected every four years from this station.

III. *Biological Assessments* of the macro-invertebrate populations should also be conducted to assess the long-term health of the ecosystem. These assessments should be conducted three times annually in March, July and October, following the NJDEP methodology. These

macro-invertebrate assessments can be conducted at the same five locations identified for the chemical analyses.