EXECUTIVE SUMMARY OF RECOMMENDATIONS

Reference:
North Mountain Shale, LLC application for quarry operations and
July 15, 2009 report by Charles H. Grenot, Jr., P.G. and Gerald Ahnell, P.G.
as prepared for North Mountain Shale, LLC

RECOMMENDATIONS TO BE CONSIDERED BY BCPSWD FOR FORWARDING TO WVDEP IN THEIR REVIEW OF THE NMS PERMIT APPLICATION

Potentiometric Map: An accurate groundwater elevation map should be developed using available static water level elevations from the new and existing monitoring and water supply wells in the area. This should encompass an area not less than ½-mile surrounding the proposed permit area, and any future areas intended for quarry development. Using these potentiometric contours and a Digital Elevation Model, an estimate of water table depth across this area should also be developed.

Water Management Plan: the Site should be described in detail, including development of Storm Water and S&E management plans. These plans should include:

- baseline turbidity measurements of all the Mill Creek tributaries that originate on the NMS Site, including the tributary that flows onto the Prospect Hill Farm property.

- peak as well as "typical" flow measurements should be made for the tributaries draining North Mountain, both on the NMS site and on adjacent properties.

Dewatering Engineering: If NMS really does feel there will be zero dewatering flows, they should provide evidence for this claim that their excavations won't extend to below the current water table. These should derive from the potentiometric mapping as described above plus detailed as-planned pit excavation contours.

If, on the other hand, their analysis shows that the excavation will reach below the water table at any portion of the site, NMS should make a realistic estimate on pit dewatering flows (both peak and average), and identify what, if any, springs outside the excavation may be lowered in flow or dried up. A dewatering test should be conducted to determine the effect of quarry dewatering on surrounding springs and wells. This test should include the installation of a sufficient number of extraction wells, capable of lowering the local water table to the proposed depth of quarrying. Once a stable drawdown at the level of the quarry excavation is reached, the pumping should be continued at the appropriate rate for a minimum of 72 hours. All accessible wells and springs on the NMS property, and within 1,000 feet of the well points, should be monitored for changes in water level and flow.

Completion of Baseline Chemistry Data: NMS should, if possible, complete its chemical analyses of monitoring samples already collected to include all common analytes (Ca, Mg, Na, K, Fe, Al, Mn, alkalinity, pH, Cl. NO3, SO4), not an arbitrary subset for different samples. These samples are a timely baseline for evaluation of future post-mining changes.

Monitoring of Water Supply and Chemistry: The NMS operation should be required to establish specific monitoring locations close to the mine for continuous unattended water level recording to assure no long-term water availability impacts. If these wells are unused and available for monitoring, my suggestions for locations would be "GW Mon 01" and "PSWD Well 03". Sealed pressure loggers that are virtually maintenance-free should be used. At these two locations, groundwater storage declines would have the best chance of being observed first. Infrequent periodic chemical sampling of water from these sentry well locations during mining would also be prudent, provided they are done following rigorous protocols for well purging and sample collection/preservation/chain of custody.

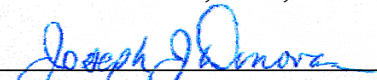
RECOMMENDATIONS TO BE CONSIDERED BY BCPSWD FOR FUTURE ACTION

Dye Tracing: A dye trace should be conducted to determine if the losing stretch of Mill Creek lying above the Rockdale Run Formation resurges at the Springdale Farm. The dye should be introduced during base flow conditions, ideally at an area of known water loss (insurgence).

Source-Water Protection: Source-water protection plans should be developed or updated for the area of Figure 1 in the GA report, including well sources at Glenwood Forest and Springdale Farm. Source-water delineations for these areas should be updated and it should be determined if the NMS pits lie within these.

Monitoring of Water Supply and Chemistry: BCPSWD should ensure it continues adequate chemical monitoring of its own wells at Springdale Farm and Glenwood Forest that it does to meet US EPA and WVDHHR requirements. This will allow future determinations of any changes in baseline condition with respect to potential contamination that might be introduced from the NMS mine.

Robert K. Denton, CPG, LRS — 17 August 2009 . date



Joseph J. Donovan, PhD — 17 August 2009 . date