
May 16, 2004

Tamworth Conservation Commission

As I am unable to attend tonight's public hearing concerning the Application of Valley Motorsports, I have asked Blair Folts of the Green Mountain Conservation Group to deliver this letter. I am a geology professor and Chair of the Geology Department at Smith College in Northampton, Massachusetts and have done much research in the Tamworth-Ossipee area. I mapped the surficial geology of the Ossipee Lake Quadrangle for the State of New Hampshire, I examined the mineralogy and geochemistry of glacial tills in the Ossipee Mountains as part of my PhD dissertation, and I have mapped the recharge areas of the Ossipee Aquifer. I have had a chance to make a preliminary examination of the documents in support of the permit application and have the following comments and concerns.

- **MOST OF THE WATER THAT FALLS ON THIS SITE IS EVENTUALLY RECHARGED TO THE AQUIFER.** The racetrack parcel covers about 2,910 acres, 569 acres of which is in the primary recharge area (on the aquifer) while all of the remaining area is in the secondary recharge area. Thus about 20 percent of the site is directly on the aquifer and the remaining 80 percent is in an area that directly feeds water into the aquifer. Even water that runs off the steep slopes enters the aquifer when it reaches the primary recharge area. Much of this recharge is associated with the wetlands at the base of the slope.
- **ANY CHEMICAL CONTAMINANT INTRODUCED WITHIN THE SITE HAS A HIGH PROBABILITY OF ENTERING THE AQUIFER.** Although I am sure that there is a long list of potential problem chemicals that will be used at the racetrack, the one that is most obvious and probably most dangerous is gasoline. High-octane racing fuels are exempt from most EPA regulations. They can contain high concentrations of tetraethyl lead, benzene (a proven carcinogen), toluene, and methyl tertiary butyl ether (MTBE) (a suspected carcinogen). As an example, SSA Cam 2 Racing Fuel has the following concentrations of these constituents: Toluene – 30 percent by weight, MTBE – 15 percent by weight, Benzene – 5 percent by weight and lead 0.13 percent by weight. Of greatest concern in this list is MTBE. MTBE is soluble in water and has been found to be extremely mobile in groundwater. It is seen as a major concern to groundwater supplies in New Hampshire and the State is suing some oil companies over this issue. The State has adopted the lowest MCL (maximum contaminant level) for MTBE in the country (14 parts per billion (ppb)). Towns throughout the State are having to deal with contamination from MTBE and it is costing the local communities a lot of money – Salem New Hampshire \$1 million as an example. The costs come from having to build municipal water systems to provide water to residents

whose wells have become contaminated. It should be obvious to everyone that racing cars on a road course with 500 ft of vertical relief is a high-risk activity. Accidents will happen. Gasoline will be released in these accidents. The steep slopes will cause the gasoline to rapidly move down the slope to areas where it will be able to infiltrate the ground. Given that the incidental spills associated with fueling at regular gas stations has led to MTBE groundwater contamination, accidents on the steep slopes of the track will surely end up contaminating the aquifer. The very low MCL's for Benzene and MTBE mean that a little gasoline can contaminate a large volume of groundwater. At 5% benzene a gallon of gasoline will contaminate over 29 million gallons of groundwater; at 30% MTBE a gallon of gas will contaminate over 30 million gallons of groundwater.

- **EXCAVATIONS AT THE SITE COULD RELEASE LARGE VOLUMES OF SILT AND CLAY SEDIMENT.** There are two types of glacial till that occur in New England. The upper till is the unit that we are all most familiar with. It represents the material deposited directly by the glacial ice associated with the last glacial advance that ended approximately 14,000 years ago. This material is characterized by boulders sand and silt. The matrix is 67 percent sand with 29 percent silt and only 4 percent clay size material. There is also a till deposited from an earlier glaciation. This is called the lower till and is generally rare except in the Ossipee Mountains where it is very common. There are lower till outcrops within 2000 ft of the property boundary of the racetrack site and based on the geomorphology it appears that this till could underlie much of the racetrack site. The lower till is very different in characteristics from the upper till. In the Ossipee Mountains it averages 20% clay, 30% silt, and 50% sand. The material is very hard and dense in outcrop until disturbed. After it is disturbed it becomes prone to movement through earthflow. The high silt and clay content means that excavations on the steep slopes release large volumes of silt and clay to streams and wetlands. The sediment control plan in the proposed document would be completely inadequate if lower till occurs at this site. Road cuts would also have to be redesigned with proper drainage on the upslope side to prevent slope failures from developing.

I urge the commission to proceed cautiously and to take the time necessary to make an informed decision. This project could have severe long-term environmental consequences. I will be leading a field trip for my students in the area during the weekend of April 24, 25 and would be happy to make a visit to the site with the commission and explain my concerns.

Sincerely,

Robert Newton
Professor of Geology
Chair, Department of Geology