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June 10, 2009

Via e-mail

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Dr. Keith Kirkpatrick
12605 Buttermilk Road
Knoxville, TN 37932

RE: Knoxville/Knox County Metropolitan Planning Commission (the "MPC")
File No.: 4-B-09-UR
Use on Review (105 acres) (the "New Area")

Dear Dr. Kirkpatrick:

On behalf of Vulcan, thank you for meeting with company representatives Ken Haislip, Jack Lambert, my law partner, Don Leake, and me on June 1, 2009. Please also extend our thanks to Ms. Williams and Mr. Bryant for attending.

Since our meeting, we have been working with representatives of Vulcan to do two things. We have sought to articulate definitive, meaningful commitments that will both address the requests made by the Community, and at the same time be clear enough that any miscommunication is avoided. Some of the requests involve technical things about which most of us non-technical people are not conversant. The second thing we have been doing is gaining an understanding of the conditions recommended by MPC staff and how those mesh and/or overlap the Community's concerns that you have expressed on behalf of your group.

At the outset let me make a couple of overriding points. First, the aerial photograph with your letter is turned about 90 degrees clockwise from true north and that has caused a little confusion in some of the Community's requests, but we feel certain that we understand what you intended and will try to clarify hereinafter where it is material to the issue.

As a general matter, I believe you will find the following to be consistent with the discussions that occurred at our meeting. Of course, there are some requests in the Community's submission to us that were not specifically discussed at the meeting. The issues that we only discussed in a general way appear to relate to (1) the monitoring of certain things such as air and acoustics and (2) requests for technical standards related to vibration and air-shock/air blast

target values that are more stringent than current state regulations under which Vulcan and all quarry operators are required to operate. As you are aware from the blasting data that Mr. Haislip provided last week, Vulcan's track record against those state standards, as well as the Community's target values set out in your letter is very good.

The following is an item-by-item response authorized by Vulcan that is offered to the Community in connection with the Amended Use on Review application related to the 105 acres of property Vulcan owns that lies southwest of Graybeal Road and which adjoins the currently permitted area for its quarry operation, that area referred to herein as the "New Area":

1. Routing of Berm and Landscaping

- Request (1): The northern berm along Buttermilk be routed to keep the outer edge of the berm at least 200 feet from the roadway and at least 200 feet from Graybeal where current residences are constructed across the streets.

Response: Berms along Buttermilk Road in the New Area and along Graybeal from its intersection with Buttermilk that lies across from property owned by third party landowners will be constructed in accordance with Knox County zoning regulations and MPC staff recommendations. The outer toe of the berm will be 100 feet from the property line.

- Request (2): The southwestern berm along Graybeal be routed to keep the outer edge of the berm at least 100 feet from the roadway.

Response: The berm in this area, which is across Graybeal from property owned/controlled by Vulcan, will be constructed in accordance with Knox County's Zoning Regulations and MPC recommendations, with the outer toe of the berm along Graybeal Road, subject to certain exceptions in the zoning regulations, being a minimum of 100 feet from the right of way.

- Request (3): The southernmost part of the berm along Graybeal be routed to keep the berm at least 200 feet from the roadway where adjacent properties not owned by Vulcan Lands, Inc. are located.

Response: The outer toe of the berm, along this area, will be about 200 feet from the Graybeal Road right of way, approximately as depicted on the Community's figure 2.

- Request (4): All constructed berms will be landscaped within 6 months of construction (with construction taking place no longer than 6 months) with indigenous biodiverse trees and plants (no monocultures). Trees will be allowed and ensured to grow as an additional blind beyond the constructed berm height.

Response: The construction of berms is a continual process. Thus, Vulcan (VLI) cannot agree to construct all berms within six months. Because of the nature of stripping requirements, and the huge expense involved, the berms must be built on an on-going basis, to allow the construction of the berms from the over-burden, as the quarry pit expands on the current permitted area and the New Area toward Graybeal Road. VLI, however, will agree to build the berms along Buttermilk Road and that portion of the north end of Graybeal Rd., across from third party landowners addressed in request (2) above, before VLI mines on property included in the New Area. VLI agrees to landscape the berms within six months after completion (weather permitting) in accordance with the MPC staff recommendations.

2. Continuous Monitoring

- Request (5): It is requested that continuous seismic and sound monitoring be provided by Vulcan Lands, Inc., via a 3rd party firm at the parameter and in strategic locations throughout the community so that the impact of blasting can be monitored and shared with the community. This will ensure that when using any explosives, blasting shall not exceed the standards of distance, amount of charge, maximum earth vibration, and maximum air shock as set forth in the United States department of the interior bureau of mines report of investigators number 8507 which is entitled “Structure Response and Damage Produced by Ground Vibration from Surface Mines Blasting,” and any amendment and/or modifications thereof, which standards are incorporated herein by reference.

Response: Although not required by the Tennessee Blasting Standards Act, VLI currently has a third party firm monitor and will continue to so monitor for seismic activity and air blast for every shot. Blasting operations have been and will be conducted in accordance with the Tennessee Blasting Standards Act, T.C.A. 68-105-102, for limits on seismic activity and air blast response. However, VLI’s blasting has been conducted such that it has been in accordance with the standard referenced by the Community in almost every shot. VLI currently conducts this monitoring at one location which is at a close by residence to the north of the New Area. VLI agrees to increase the monitoring of seismic activity and air blast response to be done at three additional off-site locations which will be sited at locations generally to the west, east and south of VLI’s quarry operations.

- Request (6): (a) Blasting limits. No licensee shall use an explosive weight in pounds per delay in excess of the formula of the distance to the nearest structure in feet, divided by the factor of 70, multiplied by itself, [$W = (D/70)$ squared], except when seismograph monitoring as set forth in subsection (b).

Response: The maximum weight of explosives in pounds per delay will be in accordance with the Tennessee Blasting Standards Act. As noted above, VLI blasts are and will continue to be monitored for seismic activity.

- Request (7): (b) Seismograph required. Each licensee shall be required to perform a seismograph test at the nearest structure to the blast prior to and during any blasting that would exceed the limits as set forth in subsection (c).

Response: All VLI blasts are monitored for seismic activity, and will be shared with the community upon request.

- Request (8): (c) Seismic limits. At the structure nearest to the blast, the peak particle velocity in any direction at frequencies between 2.5 and 10 Hertz shall not exceed 0.5 inches per second, and at each frequency, f , greater than 10 Hertz, the peak particle velocity shall not exceed $0.05f$ inches per second up to a maximum of 2 inches per second. In addition, at the nearest structure no air-shock (sound) reading shall exceed one hundred and thirty-four (134) decibels using a 0.1-Hz, high-pass system or exceed one hundred and thirty-three (133) decibels using a 2-Hz high-pass system or exceed one hundred and twenty-nine (129) decibels using a 5-Hz or 6 Hz high-pass system. (2) If blasting within the allowed limits as dictated under subsection (a), but is found in excess of the seismic limits of this subsection, Vulcan shall reduce the amount of explosives per delay, or adjust the operation to comply with the limits as dictated by this subsection.

Response: VLI operations will be in compliance with the Tennessee Blasting Standard Act. A review of blast results, from 2005 through April 2009, for the Dixie Lee quarry, show the peak particle velocity and corresponding frequency results are almost always less than the Community's target values. Many factors beyond Vulcan's control affect air blast responses, but VLI will comply with 140 dB allowed by Tennessee Blasting Standards Act.

- Request (9): It is requested that VLI provide engineering surveys of the property structures within the community so that a baseline can be established of the current structures. This will serve as a point of reference for vibration induced damage from blasting.

Response: VLI proposes to conduct engineering surveys of structures along Buttermilk Road that are within 1,000 feet of the northern most property line of the new area that is adjacent to Buttermilk Road and Graybeal Road. VLI proposes to offer a community meeting before the surveys are done for those whose structures will be surveyed, and others in the community, at which presentations will be made on blasting methods, pre-blast survey procedures, and about the type of blasting and mining VLI does at the Dixie Lee Quarry.

- Request 10: It is requested that VLI provide continuous acoustic monitoring through a 3rd party independent agency at strategic locations to ensure that their operations stay within an acceptable limit (65 dBA and 78 dBC at the quarry boundary) where data can be shared with the Community.

Response: VLI responds to this request by agreeing to that which is agreed to in Request (12) below.

- Request (11): It is requested that VLI provide continuous air quality monitoring within strategic locations at the boundary and within the community to monitor dust and other harmful emissions from the quarry activities.

Response: VLI will conduct its operations in accordance with VLI's permit issued in accordance with the Tennessee Division of Air Pollution Control regulations, which are protective to its employees and adjoining neighbors.

- Request (12): It is requested that Vulcan Lands, Inc. investigate alternative safety devices in place of the backup sounding buzzers on their earth moving and excavation equipment. The Community understands the importance of these safety devices, but the sound emitting from the backup warning devices will create a undesirable sound emission into the surrounding areas. There are alternative devices that do not emit sound that should be acceptable.

Response: VLI will agree to this request.

3. Landscaping on Community Property

- Request (13): It may be advantageous due to the topography of the surrounding land to build landscaping blinds on adjacent properties in the community. If the owner consents, would Vulcan be agreeable to the building of landscaping blinds on the properties of adjacent land owners. Please note this will have to be discussed on a property by property case with the respective owners.

Response: On a case by case basis, VLI is willing to concede to this request, but based upon a visual inspection of close-by residences, VLI believes that limiting its obligation to such four (4) residences is reasonable. The parties will have to agree on the definition of what the "landscaping blind" will consist of.

Yours truly,



Thomas M. Hale

Dr. Keith Kirkpatrick

June 10, 2009

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cc: Dan Kelly, MPC Staff
Jack Lambert
Ken Haislip