



North Carolina Department of Environment and Natural Resources  
**Division of Land Resources**  
Land Quality Section

James D. Simons, PG, PE  
Director and State Geologist

Beverly Eaves Perdue, Governor  
Dee Freeman, Secretary

June 25, 2010

Certified Mail  
Return Receipt Requested  
7008 1830 0001 8839 2806

Mr. Don Mason  
APAC-Atlantic, Inc.  
Harrison Construction Company  
PO Box 449  
Franklin, North Carolina 28744

RE: Waynesville Quarry  
Permit No. 44-01  
Haywood County  
French Broad River Basin

Dear Mr. Mason

We have reviewed the Modification request your company submitted for the referenced mine site. However, the following information is needed to continue processing your application:

1. Provide a detailed blasting analysis including projected air blast and ground vibration levels for the closest off site dwelling and a detailed monitoring plan by a qualified blasting expert.
2. Provide a copy of the recent survey showing the disturbance to date along the slide remediation area.
3. Provide a north arrow for each of the mine maps.
4. Provide proof that the proposed addition will not impact the spring on the Rogers property and the well on Gunter's property.
5. Provide a detail of the fencing to be maintained above the highwall along the slide remediation area.

Certified Mail

Mr. Mason

Page Two

6. Provide cross sections and road profiles for the proposed roadways.
7. Provide proof that the proposed activities will not impact the Blue Ridge Parkway or Waynesville Rec Center.
8. Please find enclosed comments from Mr. Rick Wooten of the NC Geological Survey. Please address the concerns outlined in the comments. Revise the cross section of the highwall on Sheet 5-01 to show a more realistic cross section for the slide area.
9. Extend the contours into the adjoining properties so it can be seen how the mine site ties into the adjoining properties. Provide the runoff coefficient for the existing basin. Clarify and provide more details regarding the existing and proposed basins below the existing overburden area. The erosion and sediment controls do not appear to be sufficient to control runoff from the disposal area. Draw the basins to scale. Provide a phased seeding schedule for the overburden storage area.
10. The affected acreage for the modification on page 2, page 5, page 14 and the mine maps is not consistent. Please clarify which of the proposed affected acreage figures at this site is correct.
11. Please provide any additional documents that your company may have received from the Mine Safety Health Administration regarding the slide that occurred at this site.
12. Please be aware that we are discussing with the Division of Air Quality the possibility of requiring the installation of air monitoring devices near the permit boundary to evaluate the dust conditions at the site.

Please be advised that our review cannot be completed until all of the items listed above have been fully addressed. In addition, please note the Land Quality Section may request additional information, not included in this letter, as the mining application review progresses.

In order to complete the processing of your application, please forward **four (4)** copies of the requested information to my attention at the following address:

Certified Mail

Mr. Mason  
Page Three

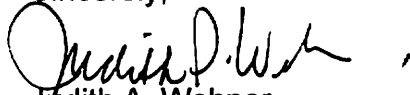
Land Quality Section  
Division of Land Resources  
Department of Environment and Natural Resources  
1612 Mail Service Center  
Raleigh, NC 27699-1612

As required by 15A NCAC 5B.0013, you are hereby advised that you have 180 days from the date of your receipt of this letter to submit all of the requested information. If you are unable to meet this deadline and wish to request additional time, you must submit information, in writing, to the Director clearly indicating why the deadline can not be met and request that an extension of time be granted. If an extension of time is not granted, a decision will be made to grant or deny the mining permit based upon the information currently in the Department's files at the end of the 180-day period.

Though the preceding statement cites the maximum time limit for your response, we encourage you to provide the additional information requested by this letter as soon as possible. Your prompt response will help us to complete processing your application sooner.

Please contact me at (919) 733-4574 if you have any questions.

Sincerely,



Judith A. Wehner  
Assistant State Mining Specialist  
Land Quality Section

Enclosure

cc: Ms. Janet Boyer, PE

## **Wehner, Judy**

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**From:** Wooten, Rick  
**Sent:** Thursday, June 10, 2010 4:49 PM  
**To:** Taylor, Kenneth; Riddle, Shawna; Wehner, Judy  
**Cc:** Boyer, Janet  
**Subject:** Waynesville Quarry Review Comments

Judy, Kenneth, Shawna,

My review comments on the submittals for the Waynesville Quarry follow. Please let me know if you have questions, need more information, or have information that would change my review comments.

Thanks,  
Rick

### **Documents Reviewed – Waynesville Quarry 44-01**

- Mining Permit Application dated 4/23/2010
- Plans for Waynesville Quarry by McGill and Associates dated April 2010
- Foundation Systems Engineering Report dated June 3, 2009 RE: Slope Stability Analysis of Proposed Overburden Disposal Area.

### **Remediation of slide area**

1. In general, the reviewed documents contained insufficient information to assess the stability of rock and soil slopes proposed to remediate the area of the 3/12/2009 rockslide.
2. If a MSHA report concerning the 3/12/2009 rockslide can be obtained, it should be reviewed for any information pertinent to remediating the slopes or stability of mine area.
3. Information was not identified indicating that individuals qualified in slope stability analysis and design will be making assessments on the stability of the slopes as remediation work progresses. Unexpected planes of weakness in the bedrock or other unexpected conditions may be discovered as work progresses.
4. Mine permit application item 6d calls for bedrock excavations with a 10-foot bench every 100 vertical feet (shown as typical high wall cross section on sheet C-502). Information to support the stability of this proposed configuration of the rock and soil slopes in the slide remediation area and adjacent private property were not identified in the documents reviewed.

### **Proposed Overburden Disposal Design**

1. It is good to see stability analyses being used to help design the overburden disposal area.
2. The triaxial shear test was performed on a remolded bulk sample recompacted to 92.8% of Standard Proctor maximum density. For the stability analyses in the report to adequately reflect the stability of the proposed overburden slope, then compaction of the placed overburden to 92.5% of the Standard Proctor maximum dry density, as recommended by the engineering report, will be essential.

3. Considerable professional judgment is required to interpret shear strength tests to arrive at values to use in stability analyses. The shear strength values interpreted from the one test are reported as a friction angle of 36.3 degrees and cohesion of 209 psf. Other than these reported test values, information was not found in the report to support the basis for the friction angle of 35 degrees and a cohesion of 200 psf used for the new fill (placed overburden) in the stability analyses. The values used in the analyses may be reasonable, or even conservative, however, this could not be determined from information in the report.
4. It could not be determined from the report if the modeled circular arc failure surfaces are critical failure surfaces modeled by the slope stability analysis software, or if they are assumed failure surfaces. Locations of the existing failure surfaces in the current disposal area were not identified on the slope stability analysis cross sections.
5. The basis for the groundwater levels used in the stability analysis of the proposed overburden design, and in the back-analyses performed to estimate the shear strength properties of the existing fill could not be determined. It is not clear from the description of the back-analyses how many of the several unknown parameters were adjusted to produce a factor of safety of some unspecified value less than 1.0 for the existing slope.
6. A key or explanation could not be found that correlates the material properties with the subsurface distribution of the different earth materials shown in the cross sections used in the stability analyses.
7. The effect of the proposed overburden loads on the existing failure surfaces in the overburden could not be determined from the analysis cross sections presented.

#### Notes

1. Overburden slope failures on excavated slope have occurred in the past at the Waynesville Quarry and are visible in 2004 imagery, and during a 3/30/09 NCGS site visit.
2. The 4/23/10 rockslide appears to have occurred, at least in part, along a SW-dipping bedrock discontinuity inclined toward the pit wall (i.e. a dip slope condition). Rock slope data collected by the NCGS on 3/30/09 at the quarry and vicinity include NNE-, NE-, and SW- dipping bedrock foliations; and, SE-, NE- and WNW-dipping fracture planes. Many other bedrock discontinuities that influence rock slope stability are likely present.
3. The rock being mined is not granite as stated in the permit application. The metamorphosed sedimentary and igneous (?) rock exposed in the pit is much more structurally complex and heterogeneous than a typical granite.

Rick Wooten - Rick.Wooten@ncdenr.gov  
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