

North Carolina  
Department of Environment and Natural Resources  
Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
Dexter R. Matthews, Director



December 8, 2003

Mr. Robert J. Waldrop, Vice-President  
ReUse Technology, Inc.  
665 Molly Lane, Suite 100  
Woodstock, Georgia 30189

Subject: Review of Site Investigation Swift Creek Project  
US Highway 301, ReUse Technology, Inc.,  
Nash County, Rocky Mount, North Carolina

Dear Mr. Waldrop,

The Solid Waste Section (SWS) expressed two major concerns to you as follows in a letter dated August 19, 2002:

- 1) "... as to whether the required one foot separation between ash and the groundwater (as stipulated in the November 11, 1991 structural fill agreement conditions) is realized in the area where the original ditch was located, especially at the discharge point at the swamp."
- 2) "... to establish the relationship of the placement of the RCP (reinforced concrete pipe) to the original ditch and coincidentally the separation of the ash from ground water at that location."

It is my understanding that ReUse technology sought to address these concerns by performing a subsurface investigation of the soil, ash and groundwater in the area of the ash placement as documented by the *Site Investigation Swift Creek Project Highway 301* document, dated May 2003. I have reviewed the report and have the following comments:

- 1) This document does not establish that there is a one-foot separation between the ash and the groundwater. It was established that water exists in the ash throughout the ash placement area within this investigation. The nested piezometers located in several locations within the ash placement area show movement of this water upwardly and downwardly through the clay layer which is purported to separate the upper water (in ash) from the underlying aquifer. This water moving as one body would cause us to conclude that the water is a surficial aquifer, and therefore groundwater. There is no separation at this time between ash and groundwater.

This document does not attempt to prove whether or not there existed, at the time of ash placement, a separation between groundwater and surface water.

2) ReUse did in fact locate the existing pipe, partially remove the pipe and close, with cement, the ends of the pipe to prevent water movement through the pipe.

The pipe was located by auger refusal at the location of B-2 at an elevation of 92.4. B-3 was placed immediately next to the pipe. Natural ground (in situ soil) was determined to be at an elevation of 89.6 within B-3. Being that the pipe is 2 feet in diameter, it would indicate that the pipe was laid within 0.8 foot of natural soil. The pipe is very close to, if not on top of, natural soil. Boring B-3 also shows that the pipe ditch is backfilled with ash. Figure 2 *Approximate Elevation of Coal Ash/Soil Contact* and the boring logs for B-1 and P-1 which are immediately uphill from borings B-2 and B-3 show that the coal/soil contact in this area is at an elevation of 91.2 - 92.2.

Reuse established that the pipe was in fact in a ditch. It was stated by this report that the pipe is in a ditch other than the original drainage ditch. It cannot be determined whether this is the case or not, from this report, as surveys or topographical maps showing the original ditch were not provided, nor did the plan views in this report show the location of the pipe.

The final question, which was addressed by the SWS letter of August 19, 2002, was whether ground water separation exists within the ditch area. Similarly to 1) we must conclude that it definitely does not at this time given the data from the piezometers.

Within Section 8.0 *Discussion and Summary* of the report, several conclusions were made which I would like to dispute so that they cannot be used to make the argument that the water within the ash is other than groundwater.

1) The clay layer is not 6.5 feet thick. The report states "A very low permeability layer of about 6.5 feet thickness is present between the base of the ash and the top of the marine sediments of the aquifer."

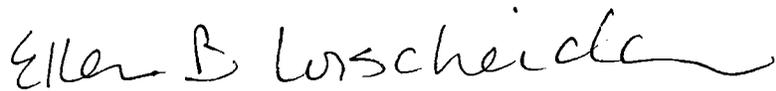
The boring logs show the clay layer (CL), which was tested to have a permeability of  $10^{-8}$ , is missing in P-6 and P-9. In P-7 the clay layer (CL) was shown to be a thickness of 0.7'; in P-8 a thickness of 1.5'; P-10 0.5'; P-11 2'; P-22 3.7', B-1 3.3'; B-2 1.4'. In the remaining 14 borings the depth of the clay layer is inconclusive because the boring data ends in the clay layer. In no case has the auger penetrated more than 3.5' of clay (CL) within the footprint of the ash placement area.

2) Given that the clay layer is not 6.5 feet the calculated travel times would be much shorter than "Calculated travel times through the alluvial soil confining layer are longer than 28 years", as stated in the report.

3) "Water levels in the marine sediments indicate that there is an upward groundwater gradient in at least some portions of the site." This was shown to be true. It was also shown that there were downward gradients at locations within the ash placement area. This shows the interconnectivity of the water within the soils below the clay layer and the water within the ash.

In conclusion, it was not proven by this report that there was not groundwater in the ash; in fact the data shows that groundwater is in the ash. It can not, however, be proven one way or the other by this investigation if the ash was actually placed in water. Please contact me at 919-733-0692 extension 345 with questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Ellen B. Lorscheider". The signature is written in black ink and is positioned below the word "Sincerely,".

Ellen Lorscheider  
Permitting Hydrogeologist  
Solid Waste Section

Cc: John F. Sherrill, Sherrill Environmental Inc.  
James C. Coffey, SWS  
Mark Poindexter, SWS  
Ben Barnes, SWS