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North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | **Division of Waste Management** | Michael F. Easley, Goverr
William G. Ross Jr., Secre

October 4, 2004

Mr. Wilbur M. Carroll, Jr.
President, ReUse Technology, Inc. and
Chief Executive Officer, Full Circle Solutions, Inc.
664 Molly Lane
Woodstock, Georgia 30189

Re: Review of Groundwater Analysis
Full Circle Solutions, Inc
Highway 301 Swift Creek Coal Combustion By-Product Structural Fill Site
(Formerly Owned by ReUse Technology, Inc.)

Dear Mr. Carroll:

The Solid Waste Section (Section) has reviewed the "Groundwater Analysis Swift Creek Project Highway 301" report dated July 2004 prepared for ReUse Technology, Inc. (ReUse) by Sherrill Environmental, Inc. as well as the letter dated August 4, 2004 from Mr. William A. White which accompanied the report.

Laboratory analytical results supplied by ReUse with the 1991 request to place the coal combustion by-products (CCB) showed both arsenic and lead potentially leaching from the CCB. CCB from Cogentrixs' plants in Lumberton and Kenansville yielded arsenic at concentrations of 0.39 mg/L and 0.11 mg/L respectively. CCB from Cogentrixs' plants in Hopewell, Portsmouth, and Lumberton yielded lead at concentrations of 0.7 mg/L, 0.2 mg/L, and 0.28 mg/L respectively. The current investigation shows both arsenic and lead in the groundwater sample from MW-1S at concentrations of 0.028 mg/L and 0.068 mg/L respectively. The maximum concentration of arsenic and lead allowed in groundwater is 0.010 mg/L and 0.015 mg/L respectively. Sulfate is also present in the groundwater sample from MW-1S at a concentration of 490 mg/L. The maximum concentration of sulfate allowed in groundwater is 250 mg/L.

Groundwater contamination is evident from the current investigation. The detection of arsenic, lead, and sulfate at concentrations greater than the applicable standard in MW-1S shows that pollutants from the CCB have degraded groundwater quality at the site. Pursuant to T15A NCAC 2L .0106(b) you must take immediate action to terminate and control the discharge. Because this CCB project is not a permitted disposal facility you must follow T15A NCAC 2L .0106(c) to asses the full horizontal and vertical extent of impact in preparation for developing a remedial strategy. **Within 60 days from the date of this correspondence submit to the Section for approval a plan to assess the full horizontal and vertical extent of groundwater impact resulting from the placement of CCB at this site.**

T15A NCAC 2L does allow the Section some flexibility to consider risks to human health and the health of the environment when evaluating corrective action. That flexibility is only available during the corrective action stage of the project. The horizontal and vertical extent of impact must be demonstrated through groundwater sampling on all sides of the facility before any risks to human health and the environment can be evaluated.

When developing your assessment plan please consider the following:

- Many questions remain about potential receptors. What is the potential for radial groundwater flow away from the project? It is higher than the surrounding land. Radial groundwater flow from the site would mean that receptors in the apparent hydraulic down gradient direction are not limited to the swamp. Potential receptors across Highway 301 are much closer to CCB than the swamp.

  Development pressure is building in that area as indicated by the pending sale of the subject property. The property immediately across Highway 301 from the facility may be developed. Municipal water is available in the area. Is there any requirement that new developments in the area connect to that service? Absent such a requirement, is there a mechanism to guarantee that future groundwater users would be aware of groundwater impact at the subject site to inform their decision about a water supply?

- ReUse asserts that although it deviated from its approved plan the project as built does not pose a threat to human health or the environment. How much, if any, has filling a natural drainage, an activity not in its approved plan, increased water levels in the CCB? The presence of groundwater within the CCB fill has the potential to significantly influence groundwater quality. The detection of contamination beyond the boundary of the fill shows that constituents from the CCB are migrating. What will be the fate of these constituents around the facility? Where will they discharge? What is the potential for vertical migration of constituents beneath the fill to deeper groundwater?

Other comments:

- Regarding the repeated references to a sentence in the Federal Register V65 No 99. As you are aware that entry in the register explained EPA's decision to continue an exemption for CCB from regulation under RCRA subtitle C (hazardous waste regulation) and develop rules for CCB disposal under subtitle D. The reference to a "proven damage case" and which sample locations should constitute such a case was not intended as a regulatory classification. No damage, Proven Damage, and Potential Damage were merely categories the EPA used to classify the limited number of cases considered during the decision process. The Section finds no suggestion in that entry in the Federal Register that the classification carries over to the regulations now being developed under subtitle D.

- The report refers to groundwater contamination being shallow and limited to the buffer zone. Buffer zones around structural fills are intended to shield neighbors and sensitive environments from daily operations and maintenance by remaining relatively undisturbed.

Buffers around structural fills are surface considerations only and thus do not extend beneath the ground surface.

If you have any questions regarding this project or would like to set up a meeting to discuss the pending assessment, please feel free to contact me at (919) 733-0692 extension 342.

Sincerely,

James M. Gamble

James M. Gamble, P.G.
Hydrogeologist
Solid Waste Section – Compliance Branch

Cc: William A. White, Moore Van-Allen
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