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ENGINEERING TECTONICS, P.A.
ENGINEERS • GEOLOGISTS • HYDROLOGISTS
P.O. Box 11846, Winston-Salem, NC 27116 (919) 767-8807

January 9, 1990

State of North Carolina
Department of Environment, Health and Natural Resources
Division of Solid Waste Management
P.O. Box 27687
Raleigh, North Carolina 27611-7687

Attention: Mr. Bobby Lutfy
Hydrogeological Technician

Subject: Groundwater Monitoring Well Installation
Alamance County Landfill
Alamance County, North Carolina

Dear Mr. Lutfy:

In reference to the above cited project, your letter of September 12, 1989 to Mr. Ernest Perry, my reply to you dated October 19, 1989 and your reply, we have complied with the State's insistence that the two deep bedrock wells at the landfill be completed with the same construction techniques as the shallow regolith wells. This is in no manner an endorsement of this technique which we believe is incorrect. However, in order to lay this matter to rest, we have determined that it is in the best interest of the County of Alamance that these wells be completed to the State's specification. By taking this action, Engineering Tectonics, P.A. and any successors hereby forfeit any responsibility for the adequate function and integrity of the samples from these wells.

You will find the revised well completion forms and schematic diagrams for these two wells attached to this letter. They were equipped with 2 inch diameter Schedule 40 PVC well screens. The screens were ten feet in length, had a slot size of .010 inches, contained a bailer plug of similar material, were screw jointed and installed in the bottom 10 feet of the borehole. A sand pack was installed in the annular space between the well screen and the borehole. The sand pack extended a minimum of 2 feet above the top of the well screen. A bentonite seal with a minimum thickness of 1 foot was placed above the gravel pack in the annular space between the borehole and the riser pipe. The riser was constructed of 2 inch diameter Schedule 40 PVC with screw joints and extended at least 1.5 feet above the ground surface. A small vent hole was placed near the top of the riser. A PVC cap was placed at the end of the riser. No glues or solvents were used in joining the material together. The annular space between the borehole and the riser piped was filled with neat cement grout. The grout was placed by a tremie beginning at the bottom of the well. The grout seal was extended to the top of the ground. A six inch square steel protective cover was placed over the riser pipe. This protective casing contains a locking cap which was attached. All well materials were inspected in the field to insure their integrity. The PVC well materials were stored in unopened plastic bags until their placement in the

wells. A 3' by 3' concrete well pad was placed at the surface of the ground around the protective casing. This pad is approximately 4 inches thick.

We hope that this action will satisfy your requirements even-though we strongly object to construction of this type. Should you have any questions or require additional information, please contact us.

Very truly yours,
ENGINEERING TECTONICS, P.A.

A. Barry Nelson, P.G.
Vice President
Chief Geohydrologist

cc: Mr. Ernest Perry