NCES file

NHDES

State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES
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August 7, 2002

CERTIFIED MAIL # 7099 3400 0003 0564 4343
RETURN RECEIPT REQUESTED

Joe Gay, E.I.
North Country Environmental Services, Inc.
3 Pitkin Court
Montpelier, VT 05602

Subject: **North Country Environmental Services**
Bethlehem, NH
Secondary Leachate Collection System Flow Rates

Dear Mr. Gay:

The New Hampshire Department of Environmental Services, Waste Management Division (Department) has been reviewing the monthly operating reports prepared by North Country Environmental Services (NCES) for the first six months of this year with respect to elevated secondary leachate collection system flow rates. As you are aware, the flow rate has routinely exceeded the 25 gallons per tributary acre per day (g/a/d) reporting threshold (ref. Env-Wm 2506.08(k)(1)) for Stage I Phases II, III and IV (see table below). For the months of March and May 2002, the secondary flow rate exceeded the 100 g/a/d reporting threshold (ref. Env-Wm 2506.08(k)(2)) for Stage I Phase II and was appropriately reported to the Department. Elevated secondary flows were also reported to the Department by NCES in the spring of 2000 and 2001.

	January 2002	February 2002	March 2002	April 2002	May 2002	June 2002
Stage I, Phase II	28.08 g/a/d	42.16 g/a/d	197.72 g/a/d	63.86 g/a/d	119.35 g/a/d	76.32 g/a/d
Stage I, Phase III	16.03	39.25	39.07	49.40	61.39	33.41
Stage I, Phase IV	6.65	26.96	23.59	38.77	51.06	3.23

Notes: Exceeded 25 g/a/d reporting threshold pursuant to Env-Em 2506.08(k)(1).
Exceeded 100 g/a/d reporting threshold pursuant to Env-Wm 2506.08(k)(2).

Sampling and analyses of the secondary leachate by NCES appears to demonstrate that the increased flows are not likely the result of a primary liner leak (i.e., the secondary leachate is dilute as compared to the primary leachate). NCES attributes the elevated secondary flows to wicking of water between the primary and secondary liners in the anchor trench during periods when the rate of infiltration exceeds the capacity of the low permeable soils in the vicinity of the anchor trench to accommodate the inflow. The primary and secondary liners in Stage I are not welded together within the anchor trench. Based on record drawings, some portions of the liner anchor trench may be backfilled with select sand perhaps exacerbating the situation. As noted above, elevated secondary flows have been reported the past few years during the spring when there is snow melt and heavy rains occur.

In December 2000, NCES constructed drainage improvements near the toe of slope at the northwest corner of Stage I to convey infiltrating stormwater away from the landfill. In May 2001, NCES installed geosynthetic clay liner material or a polyethylene geomembrane liner at the toe of the Phase III

and Phase IV slopes to help reduce surface water infiltration in the area of the anchor trench. To date, these efforts have not mitigated the secondary flow rates. Monitoring of the secondary leachate collection system flow rate is the mechanism by which potential leaks in the primary liner system are detected. Since efforts to divert infiltrating surface water in the vicinity of the liner anchor trench appear to have been ineffectual in reducing the secondary flow rates, the Department requests that NCES develop a revised response action plan pursuant to Env-Wm 2506.09(f) together with an implementation schedule, that specifically addresses the pathway by which infiltrating surface water is believed to enter the secondary leachate collection system (i.e., between the primary and secondary liners in the anchor trench).

Please submit a response action plan to the Department within 30 days of receipt of this letter. Should you have any questions, please contact me at (603) 271-2934.

Sincerely,

Michael McCluskey, P.E., Civil Engineer IV
Permitting & Design Review Section
Waste Management Division

cc: Richard Reed, SWMB
SWMB files
Town of Bethlehem
Ted Reeves, P.E., NCES