February 14, 2002

Mr. Keith Browne
NYS Department of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, New York 12561-1696

Subject: Town of Ramapo Landfill
October 2001 Monitoring Results
STERLING File #E20010

Dear Mr. Browne:

This letter reports groundwater and drinking water monitoring results for the Town of Ramapo Landfill Remediation Project. Samples were collected from post-closure monitoring well clusters 1 through 9 and drinking water wells PW-1, PW-2 October 16, 2001. Water supply wells SVWC-93 through SVWC-96 were not sampled because the representative from United Water New York was not present at the pre-arranged time. As a sufficient amount of water was not present in monitoring well 5-OS, well 5-I was sampled instead. A blind field duplicate sample was collected from water supply well PW-1, and labeled "Well 10-OS". Sampling locations are shown on the attached Figure 1, "Ramapo Landfill Sample Locations."

Field parameters were measured at the time of sampling, and are presented on the attached the Table 1, "Field Parameters and Water Levels." All samples were analyzed for approved post-closure "Routine" and "Site Related" parameters, listed on the attached Table 2R, by Severn Trent Laboratories located in Newburgh, New York, according to EPA methodologies and protocols.

Analytical results are summarized on the attached Table 2, "Post-Closure Groundwater Quality Monitoring Analytical Results." Table 2 also presents historical analytical data for the previous three sampling events. Historical analytical data for the four target compounds (Benzene, Chromium, Iron and Manganese) are presented on attached Tables 3A through 3D. Copies of the laboratory reports, prepared according to New York State Department of Environmental Conservation (NYSDEC) ASP Category A reporting requirements, are enclosed.

Analytical results of the blind field duplicate sample "Well 10-OS", sampled from water supply well PW-1, are generally consistent with results of the sample from PW-1. Where results differed, the higher of the two results are reported in this report and were entered on the attached Table 2, which has been noted appropriately.

As can be seen by examination of the attached Tables 2 and 3, the latest monitoring results are generally consistent with recent past results. A brief discussion of the latest monitoring results and applicable groundwater standards and guidance values (termed "ARARs" in past reports) for each well follows:

Well 1-OS:

Consistent with historic results, Iron and Manganese exceed the applicable ARARs. Chromium was detected at a much lower level than previously, and did not exceed the ARAR. No VOCs were detected in the sample from well 1-OS during this monitoring event, or in the recent past.

Well 1-R:

Consistent with historic results, Iron and Manganese exceed the applicable ARARs, but were detected at lower levels than in the recent past. Chromium did not exceed the ARAR during this sampling event.

Similar to recent past results, 1,1-Dichloroethane was detected at a low concetration, 1.1 µg/L, well below the ARAR of 5 µg/L. No other VOCs were detected in the sample from well 1-R during this monitoring event.

Well 2-OS:

Similar to past results, Chromium, Iron, Lead and Manganese exceed applicable ARARs. Overall, metals concentrations detected during this sampling event are slightly lower than in the recent past. No VOCs were detected in the sample from well 2-OS during this monitoring event, or in the recent past.

Well 2-R:

No compound exceeded the ARAR during this monitoring event, and no VOCs were detected in the sample from well 2-R during this monitoring event, or in the recent past.

Well 3-OS/I:

As shown by recent past results, Antimony, Chromium, Iron and Manganese exceed applicable ARARs, and current levels are consistent with historic concentrations. No VOCs were detected in the sample from well 3-OS/I during this monitoring event, or in the recent past.

Well 3-R:

Consistent with recent past results, Iron and Manganese exceed applicable ARARs, and the most recent results for Iron and Manganese are consistent with historic results. Chromium did not exceed the ARAR during this sampling event. No VOCs were detected in the sample from well 3-R during this monitoring event, or in the recent past.

Well 4-OS:

Consistent with historic and recent past results, Iron and Manganese exceed applicable ARARs. Historically, Chromium has exceeded the ARAR at times, but did not exceed the ARAR during this sampling event. No VOCs were detected in the sample from well 4-OS during this monitoring event, or in the recent past.

Well 4-R:

Consistent with historic results, Iron and Manganese exceed applicable ARARs. No VOCs were detected in the sample from well 4-R during this monitoring event, or in the recent past.

Well 5-I:

No compound exceeded the ARAR during this monitoring event. As can be seen from Tables 3B and 3C, results for Chromium and Iron are consistent with historic results. As can also be seen from Table 3D, Manganese was detected at the lowest level (2.7 µg/L) since monitoring of this well began in December 1993.

No VOCs were detected in the sample from well 5-I during this monitoring event, or in the recent past.

Well 5-R:

No compound exceeded the ARAR during this monitoring event, and no VOCs were detected in the sample from well 5-R during this monitoring event, or in the recent past.

Well 7-OS:

The latest monitoring results indicate that Iron and Manganese exceed applicable ARARs, but have been detected at much greater levels historically. Chromium did not exceeded the ARAR during this sampling event. No VOCs were detected in the sample from well 7-OS during this monitoring event, or in the recent past.

Well 7-R:

Consistent with past results, Manganese exceeded the applicable ARAR. As can be seen from Table 3C, Iron was detected at the lowest level (22.2 µg/L) since September 1990.

No VOCs were detected in the sample from well 7-R during this monitoring event, or in the recent past.

Well 8-OS:

Consistent with historic results, Iron and Manganese exceed applicable ARARs. Although Iron and Manganese were detected at higher levels than in the recent past, these compounds have been detected at much greater concentrations during prior monitoring events. Historically, Chromium has sporadically exceeded the ARAR, but has remained comparatively consistent since June 1999.

No VOCs were detected in the sample from well 8-OS during this monitoring event, or in the recent past.

Well 8-I:

Consistent with recent past results, Iron and Manganese exceed applicable ARARs but were detected at much lower concentrations then in the recent past. Historically, Chromium has sporadically exceeded the ARAR during past monitoring events, but has been detected at a concentration lower than the ARAR for the past seven monitoring events.

Consistent with recent past results, Chlorobenzene was detected at a low concentration, below the ARAR of 5 µg/L. No other VOC was detected at this monitoring location during this sampling event.

Well 8-R:

Consistent with recent past results, Iron and Manganese exceed applicable ARARs, but have been detected at much higher concentrations historically.

Chlorobenzene was detected at a low concentration (laboratory estimated value of 0.59 µg/L), below the ARAR of 5 µg/L. No other VOCs were detected at this monitoring location during this monitoring event.

Well 9-OS:

Consistent with recent past results, Iron exceeds the ARAR. The latest results for Chromium, Iron and Manganese are consistent with historic results. No VOCs were detected in the sample from well 9-OS during this monitoring event, or in the recent past.

Well 9-I:

No compound exceeded the ARAR during this monitoring event, and no VOCs were detected in the sample from well 9-I during this monitoring event, or in the recent past.

Well 9-R:

Consistent with recent past and historic results, Iron and Manganese exceed applicable ARARs. Historically, Iron and Manganese have been detected at higher concentrations. Cadmium was not detected during this monitoring event.

Similar to the September 2000 sampling event, Chlorobenzene was detected at a low concentration of 0.54 µg/L (laboratory estimated value), well below the ARAR of 5 µg/L. No other VOCs were detected in the sample from well 9-R during this monitoring event.

Well PW-1:

The latest monitoring results are comparable to recent past results. There were no exceedances of applicable ARARs during this or recent past monitoring events. No VOCs were detected in the sample from well PW-1 during this monitoring event, or in the recent past.

Well PW-2:

There were no exceedances of applicable ARARs during this or recent past monitoring events, and the latest monitoring results are comparable to recent past results. No VOCs were detected in the sample from well PW-2 during this monitoring event, or in the recent past.

With the exception of discussions related to Benzene, Chromium, Iron and Manganese, the above discussions are based on comparison of the latest monitoring results with recent past results shown on Table 2. As such, the comparisons are based on a maximum of four monitoring events per sampling location, and any trends that may appear to evident may not be statistically significant. Future monitoring data will reveal any trends in changes of groundwater quality. Tables 3A through 3D include all reported monitoring results for Benzene, Chromium, Iron and Manganese since January of 1990, and so were used to compare the latest results for those four target compounds.

The next sampling event is expected to occur in March 2002. Please call me at 518/456-4900 if you have any questions or comments.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.

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First Class Mail
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* letter, figures and tables only.
** letter, figures, tables and partial lab report enclosure.