tonawanda, new york 14150 • 779 two mile creek road • 693-4900 • fax 693-0601

town of tonawanda water resources department

wastewater division

[redacted]
director of water resources

June 11, 1999

[redacted]
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Radiation and Hazardous Site Management
Radiation Section, Room 402
50 Wolf Road
Albany, NY 12233-7255

Re: Tonawanda Landfill Closure
FUSRAP Material

Dear [redacted],

The attached information has been provided as a follow-up to our meeting of June 4, 1999 regarding the above referenced project. The information has been provided to give the NYSDEC an understanding of the currently proposed approach for handling the FUSRAP waste located at two distinct, non-contiguous locations at the site.

As presented at our meeting, we have made contact with the Army Corps of Engineers to review the proposed plan and discuss options for handling the closure of the FUSRAP waste. During our meeting with the Corps we agreed that the most cost effective and expedient option for handling the waste was to negotiate directly with the Corps for cost recovery purposes and have the Town of Tonawanda perform the closure in concurrence with the landfill closure. Under this scenario, and based upon our meetings with your Bureau, NYSDEC would be the regulatory approval body for the RAD waste closure. The NYSDEC and NYDOH have already acted in this capacity for the Americium 241 waste on site. The final outcome of this waste included capping with additional soil fill.

To date several studies of the FUSRAP waste have been performed. The studies included:

Results of Mobile Gamma Scanning Activities in Tonawanda, New York prepared by Oak Ridge National Laboratory dated December 1990

Results of the Radiological Survey at the Town of Tonawanda Landfill, New York prepared by Oak Ridge National Laboratory dated December 1992

FUSRAP Technical Memorandum – Tonawanda Landfill Field Sampling Results prepared by BECHTEL FUSRAP Project Job 14501 dated November 11, 1995

Technical Memorandum Radiological Human Health Assessment for the Town of Tonawanda Landfill prepared by US Army Corps of Engineers, February 1999 (Attached)

Our meetings with the US Army Corps have indicated our proposed Closure Plan for the landfill, with the addition of added barrier material over the RAD waste areas and institutional controls, would be an acceptable closure alternative for the site. The Corps also concurs with our thought that the consolidation of the FUSRAP material from the Mud Flats area would also be an acceptable method for reducing the overall closure costs, making the Mud Flats property developable and provide a timely closure of the site.

Proposed Closure Plan

The proposed Closure Plan for the site will include the following components related to the RAD Waste portion of the closure:

1) **Waste Relocation** – Waste relocation will take place from three separate areas. Two of these areas include the FUSRAP material.

   The first FUSRAP area is located on the North edge of the site. Waste/FUSRAP material will be consolidated from an area along the edge of the property, to a maximum depth of 3 feet. The relocation of the waste will reduce the amount of capping required, create an additional buffer from the adjacent residences rear yards and allow for the installation of a perimeter control system including a clay berm and leachate collection system. The total amount of waste/FUSRAP material that will be relocated is currently estimated at 3,400 cyd. The material will be placed immediately adjacent to the excavation and placed over the FUSRAP material that will remain in-place. No relocated FUSRAP material will be placed outside its current horizontal limit.

   The second FUSRAP area is located in the Mud Flats. The Technical Memorandum (Feb 1999) estimated that total volume of FUSRAP material in this area to be 1,700 cyd. Our proposed plan will be to relocate this waste material to the North Edge of the landfill, over the existing FUSRAP material area.

   Third area is waste located within the Niagara Mohawk Right-of-Way, on the southern side of the landfill property. The waste in this area is not radioactive. The removal of waste from this area will not effect the radioactive waste relocation. Negotiations with Niagara Mohawk have prompted this material to be relocated.

   Procedures will be put into place for the proper material handing and "verification of removal" from the waste relocation areas. In addition, a field survey will be performed during the cover placement to ensure the additional barrier material and the final cover system.

   A drawing is attached which illustrates the FUSRAP and waste relocation limits. Please note, following our meeting discussion, we have further reduced the amount of material to be handled on the North side of the landfill. The material to be relocated will only consist of waste less than 3' in thickness and will provide for a clean buffer to adjacent properties.

2) **Site Fill** – Fill will be added to the landfill site in order to create the proposed barrier over the RAD waste areas and also provide for a shallow slope for recreational use. A minimum of 3' of total fill/cap material will be placed over the radiological waste.

3) **Capping** – A final cover system will be placed over the entire landfill. The final cover system will be designed to meet all NYSDEC requirements. Additional barrier fill will be placed over ALL the RAD areas (both the FUSRAP and Americium). The final cover and barrier fill will have a minimum combined thickness of 36". In order to ensure that the full extent of coverage has been met, the additional barrier fill boundary will be extended a minimum of 50' beyond the RAD waste limits, within the waste limit boundary.

Human Health and the Environment

The Health Assessment prepared by the Corps for the site indicates that the closure of the site will not create an unacceptable risk for human health and the environment. The study anticipates the final closure use as recreational. The Town has plans for creating several soccer fields and walking/bike paths on the site.

A review of the DEC TAGM you provided has given some insight into the Department's requirements for the protection of public health and the environment. The TAGM has a maximum allowable exposure rate of 10 mrem/year for unrestricted use. The analysis performed by the Corps indicates levels below this for the landfill recreational use. The remediation worker scenario exceeds this limit, although the TAGM does allow for this limit to be exceeded during construction activities with a decision from the Chief of the Bureau of Radiation.

The scenario that reflects the impact to adjacent residents during remediation construction was not performed. This scenario may be necessary to fully comply with the TAGM. Provisions can be made during the construction activities that will negate this impact.

The Town of Tonawanda is very anxious to move forward with the closure of the landfill. We believe it is in the best interest of the Town of Tonawanda residents for the most expedient and cost effective closure alternative to be selected to handle this site. We look forward to working with the DEC in closing the Town of Tonawanda Landfill.

Sincerely,

[redacted]

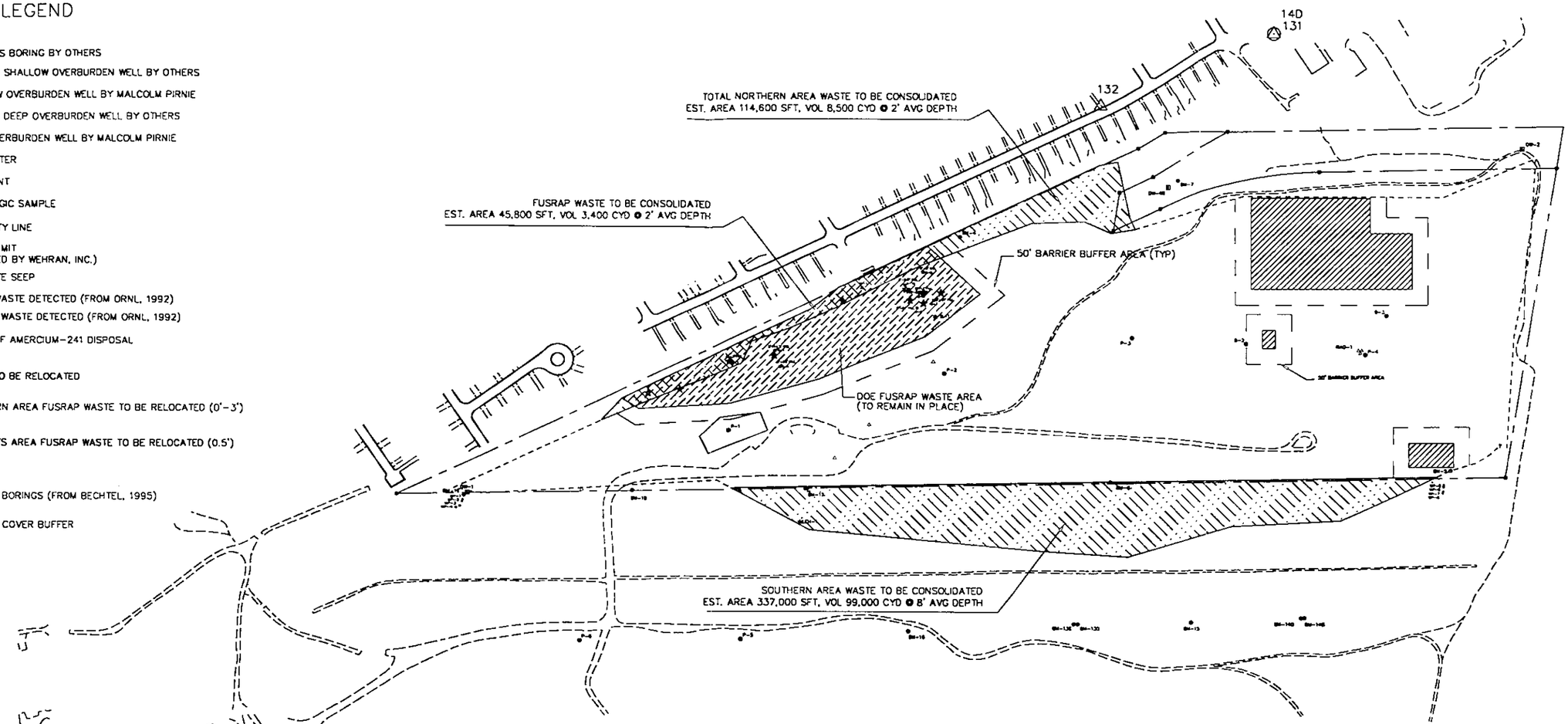
Town of Tonawanda

[redacted] – Tonawanda
[redacted], EnSol, Inc.
[redacted] – DEC
[redacted] – DOH
[redacted] – DEC
[redacted] – DEC

[redacted] – Corps
[redacted] - Tonawanda
[redacted] – Malcom Pirnie
[redacted] – Corps
[redacted] - Corps ✓

LEGEND

- ⊗ B-1 — PREVIOUS BORING BY OTHERS
- ⊕ BM-7 — EXISTING SHALLOW OVERBURDEN WELL BY OTHERS
- ◐ BM-19 — SHALLOW OVERBURDEN WELL BY MALCOLM PIRNIE
- ⊡ DW-1 — EXISTING DEEP OVERBURDEN WELL BY OTHERS
- ◧ DW-4 — DEEP OVERBURDEN WELL BY MALCOLM PIRNIE
- ⊙ P-1 — PIEZOMETER
- • WP-1 — WELLPOINT
- △ RAD-1 — RADIOLOGIC SAMPLE
- PROPERTY LINE
- WASTE LIMIT (REPUTED BY WEHRAN, INC.)
- ✳ LCH-1 — LEACHATE SEEP
- ★ — USDOE WASTE DETECTED (FROM ORNL, 1992)
- △ — AM-241 WASTE DETECTED (FROM ORNL, 1992)
- AREAS OF AMERICIUM-241 DISPOSAL
- WASTE TO BE RELOCATED
- NORTHERN AREA FUSRAP WASTE TO BE RELOCATED (0'-3')
- MUDFLATS AREA FUSRAP WASTE TO BE RELOCATED (0.5')
- FUSRAP BORINGS (FROM BECHTEL, 1995)
- 50' RAD COVER BUFFER



FUSRAP WASTE TO BE CONSOLIDATED
EST. AREA 90,000 SFT, VOL 1,700 CYD @ 0.5' AVG DEPTH

SCALE

NO.	REVISION	BY	DATE

ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS ILLEGAL

JOHN B. BATTAGLIA, P.E.
N.Y.S. LICENSE NO. 70818

PREPARED FOR: TOWN OF TONAWANDA

TITLE: WASTE LOCATION PLAN

PROJECT: TONAWANDA LANDFILL CLOSURE

TOWN OF TONAWANDA, N.Y. | COUNTY OF ERIE

STATE OF NEW YORK

EnSol, Inc.
ENVIRONMENTAL SOLUTIONS
452 THIRD STREET
NIAGARA FALLS, N.Y. 14301
PHONE (716) 285-3920
FAX (716) 285-3928

DATE	SCALE	DWG.	CHECKED BY	PROJ. NO.	SHEET
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