

detections of barium from 10 ug/l to 30 ug/l (there is no WQC limit for barium);

- Cyanide was ND in all surface water samples in the 2001 sampling round and the May 2003 and November 2003 sampling rounds, at a detection limit of 5 ug/l. Cyanide was detected above the WQC level of 5.2 ug/l, in all of the August 2003 samples (up to 159 ug/l in SW-7) and in 2 of the June 2004 samples (up to 8 ug/l in SW-11). MassDEP notes that the cyanide detections are suspect, given the data distribution;
- Indicator parameters, including iron and manganese, were somewhat elevated during several of the monitoring rounds at location SW-9, as compared to the upriver sample locations, but still below the applicable AWQC limit for iron (there is no WQC limit for manganese).

CSA Results -Sediment

Sediment samples were collected during one round in 2001 from 20 locations along 6 transects in the river (and 1 transect on Onota Brook), and during 2 rounds in 2003/2004 from 12 locations along 5 transects in the river. 7 of the transect locations were located adjacent or downstream of the landfill (SED-3, SED-4, SED-5, SED-7, SED-8, SED-9, SED-10, and SED-11), while 3 of the transects were located upstream of the landfill (SED-1, SED-2 & SED-6). Sediment sampling locations were generally co-located with surface water sampling locations. Sediment samples were analyzed for metals (RCRA 8 metals plus copper, iron, manganese, nickel and zinc), semi-VOCs by EPA Method 8270, and PCBs by EPA Method 8080. The results of sediment sampling were compared to MassDEP's revised Sediment Screening Criteria (SSC) guidelines for sediment where such SSC guidelines exist, and downstream and adjacent sample results were also compared to upstream, background sample results. The results of sediment sampling showed the following:

- All of the 37 sediment samples were ND for PCBs, except for a single sample (SED-7-3) from the 2001 sampling of Transect 7 along the southwest perimeter of the landfill, close to the shore (the shore is part of the landfill at that location), which contained 21.5 milligrams/kilogram (mg/kg, or parts-per-million) PCBs, above the SSC guideline of 0.06 mg/kg for PCBs. The 3 SED-7 samples subsequently obtained in 2003/2004 in that area were ND for PCBs, however, as previously noted, the surficial soil/sediment sample from the drilling of nearby groundwater monitoring well GW-7 contained 5.6 mg/kg PCBs;
- All of the sediment samples contained detectable SVOCs with some exceedances of the applicable SSC guidelines, including the three upstream samples, indicating that there are background levels of some SVOCs, particularly

polyaromatic hydrocarbons (PAHs), over the SSC levels in the river upstream of the landfill. The levels of PAHs were generally slightly elevated in the downstream/adjacent sample locations versus the upstream locations, particularly at transects SED-7 and SED-8. For example, benzo-a-pyrene (BAP) was detected at up to 20 mg/kg in a downstream sample location (SED-8-2) versus up to 14 mg/kg at an upstream location (SED-2-1), both were over the SSC guideline of 0.15 mg/kg for BAP;

- All of the sediment samples contained detectable metals with some exceedances of the applicable SSC guidelines, including the 3 upstream samples, indicating that there are background levels of some metals over the SSC levels in the river upstream of the landfill. The levels of metals were generally somewhat elevated in the downstream/adjacent sample locations. For example, lead was detected at up to 900 mg/kg in a downstream sample location (SED-7-3) versus up to 210 mg/kg at an upstream location (SED-2-1), both over the SSC guideline of 130 mg/kg for lead; and
- SEA notes in the report that the 2003/2004 sediment sample results showed higher PAH and metals levels than the 2001 sample results. SEA attributes this increase to the clearing and excavation for test-pitting performed in the 2003/2004 timeframe, which SEA believes may have contributed to additional surficial runoff of disturbed soils from the landfill.

CSA Results - Landfill Gas

A total of 6 shallow landfill gas (LFG) soil probes were installed along the western perimeter of the landfill, inside the fence along King Street. These LFG probes were monitored during at least 4 monitoring rounds for % Lower Explosive Limit (%LEL), % oxygen, and hydrogen sulfide. Results of the LFG monitoring showed no indications of LFG (0% LEL, 0 ppm hydrogen sulfide, and atmospheric levels of oxygen) in any of these probes.

Qualitative Risk Assessment

As required by MassDEP's Solid Waste regulations, a Qualitative Risk Assessment (the Risk Assessment) was completed for the landfill in accordance with the Solid Waste regulations and the MassDEP's publication Landfill Technical Guidance Manual (the LAC Manual). The Risk Assessment concluded that the site did not represent a significant threat to human health, public safety, public welfare or the environment, and specifically made the following conclusions:

- Because a fence was erected around the landfill to

limit access, the Risk Assessment applied only to areas beyond the boundary of the landfill itself, i.e. groundwater, surface water and sediments. Soil sampling results from within the fenced, landfill area were therefore not considered in the Risk Assessment;

- The report states that no public or private water supply wells exist immediately downgradient of the site, and therefore there is no groundwater exposure pathway for human health. In addition, groundwater levels have been below the GW-3 standards;
- The report states that surface water in the river could be a potential exposure pathway, but that surface water samples have all been below the applicable AWQC guidelines, therefore there is no significant risk from surface water (MassDEP notes that there were cyanide AWQC exceedances, but acknowledges that the data may be suspect);
- The report states that sediments in the river could be a potential exposure pathway, but that the upstream (background) sediments in the river also contain elevated levels of the same PAHS and metals as the sediments adjacent to and downriver of the landfill; and,
- The report states that LFG was not present in the only area where LFG could potentially migrate from the landfill, and the landfill should not produce LFG because it is primarily ash, therefore there is no significant risk from LFG.

Conclusions/Recommendations

The CSA report contained additional conclusions and recommendations, as follows:

- The majority of the solid waste in the landfill is ash, metal and glass and approximately 70 to 80% of this material is present below the water table. The approximate volume of this ash matrix is 400,000 to 500,000 cubic yards, of which about 300,000 to 400,000 cubic yards is below the water table;
- The entire landfill is within the 100-year floodplain of the river;
- The Qualitative Risk Assessment shows no apparent risks to human health and little to no future impact to the environment from the landfill;
- A Corrective Actions Alternatives Analysis (CAAA) remedial feasibility report and permit application should be submitted to MassDEP according the Solid Waste regulations; and
- The CAAA report should include the following alternatives: (1) No action; (2) Clear, grade and vegetate the site, with no net fill in the 100-year

floodplain; (3) Completion of a modified, soil cap to ensure a minimum 2-foot thick soil cap, with no net fill in the 100-year floodplain; and (4) Completion of a modern-day, standard impermeable cap.

MASSDEP DETERMINATIONS

Personnel of the MassDEP have reviewed the Final CSA Report in accordance with M.G.L. c. 111, Sec. 150A, 310 CMR 19.000, 310 CMR 40.0000, the MassDEP's publication Landfill Technical Guidance Manual (LAC), revised May, 1997, and the MassDEP's publication Standard References for Monitoring Wells (the Standard References). The MassDEP is issuing this CSA permit as a **final permit** in accordance with 310 CMR 19.037. The MassDEP has determined that the Final CSA Report is acceptable, subject to the conditions outlined below.

1. By no later than July 1, 2007, the following additional sampling shall be performed and the results submitted to MassDEP:
 - (A) Sufficient sediment sampling in the area of SED-7-3 to fully define the extent of any PCBs in sediments in that area, with analysis for PCBs by EPA Method 8082;
 - (B) Sufficient soil/sediment sampling in the area of the drum removal area to fully define the extent of contaminants in sediments in that area, with analysis for VOCs by EPA Method 8260, semi-VOCs by EPA Method 8270, RCRA 8 metals, and PCBs by EPA Method 8082;
 - (C) Two deep soil samples (minimum of 10 feet deep) shall be collected from the previous locations of the SB-9 and SB-23 soil samples, with analysis for PCBs by EPA Method 8082; and
 - (D) Three surficial soil samples shall be collected from the area near the confluence of Onota Brook and the river, i.e. the "paper road" area, with analysis for PCBs by EPA Method 8082.

2. A Quantitative Risk Assessment shall be completed for the landfill, in accordance with Chapter 9 of the LAC Manual, the appropriate sections of 310 CMR 40.0000, and the guidelines of MassDEP's Office of Research & Standards (ORS). MassDEP agrees with SEA's conclusions that groundwater and surface water do not pose risks to human health or the environment, and that the background river sediments upstream of the landfill contain somewhat elevated levels of PAHs and metals which are not attributable to the landfill. However, the increased levels of some PAHs and metals in the river sediments adjacent to the landfill warrant the

completion of a Quantitative Risk Assessment. By no later than July 1, 2007, a Scope-of-Work for a Quantitative Risk Assessment shall be submitted to MassDEP for review and approval.

3. The completed Quantitative Risk Assessment and a Corrective Actions Alternatives Analysis (CAAA) report and permit application shall be submitted to the MassDEP by December 31, 2007 for the landfill, which shall evaluate the technical and economical feasibility of various remedial alternatives for the landfill, based on the results of the Quantitative Risk Assessment. The CAAA report shall be completed in accordance with the regulations at 310 CMR 19.150(6) and the MassDEP's Landfill Technical Guidance Manual (the LAC), revised May, 1997.
4. The CAAA report shall evaluate the following remedial alternatives:
 - (A) No Action (with existing fence maintained);
 - (B) Clear, grub and vegetate site;
 - (C) An alternative soil cap, in accordance with the regulations at 310 CMR 19.113, (with and without compensatory flood storage);
 - (D) A standard impermeable cap, in accordance with the regulations at 310 CMR 19.112 (with and without compensatory flood storage);
 - (E) Excavation, removal and proper disposal of the entire landfill;
 - (F) Excavation and proper disposal of a portion of the landfill adjacent to the river, and creation of a wetland buffer in that area. This alternative could include consolidation of the landfill footprint into a smaller area;
 - (G) Removal and proper disposal of PCB-impacted soils and sediment by GE and/or the City, in conjunction with any of the above alternatives;
 - (H) Armoring or other erosion-protection measures for the riverbank to prevent the erosion of solid wastes of the landfill into the river; and
 - (I) Any other alternatives which may be deemed necessary by the results of the Quantitative Risk Assessment.

Any alternatives which might propose post-closure uses other than as a closed landfill would need a post-closure use permit in accordance with the requirements of 310 CMR 19.143, and any such post-closure use would have to be supported by the Quantitative Risk Assessment.

5. Until such time as MassDEP approves otherwise in writing, environmental monitoring at the landfill shall

be performed annually by December 31 of each calendar year, (beginning in 2007) as outlined below. The results shall be submitted to the MassDEP within 45 days of the date of sampling, unless a shorter timeframe is specified by regulation (i.e. LFG exceedances).

6. Groundwater samples shall be collected from all site groundwater monitoring wells and shall be analyzed for all of the parameters outlined in 310 CMR 19.132(1)(h)(1-3), including dissolved RCRA 8 metals, VOCs by EPA Method 8260, and semi-VOCs by EPA Method 8270. Groundwater elevations shall be measured at all existing and new site monitoring wells, and a groundwater contour map shall be prepared on an annual basis.
7. Surface water and sediment samples shall be collected from single sampling locations at the SW/SED Transect locations 1,3,4,5,7,8,9, & 10 locations and shall be analyzed for all of the parameters outlined in 310 CMR 19.132(1)(h)(1-3), including total RCRA 8 metals, VOCs by EPA Method 8260, semi-VOCs by EPA Method 8270, and PCBs by EPA Method 8082. MassDEP reserves the right to modify the location of these samples at any time.
8. All VOC analyses by EPA Method 8260 shall be performed as outlined in 310 CMR 19.132(1)(h)(1-3), specifically methyl ethyl ketone, methyl isobutyl ketone, and acetone shall be included, and unknown peaks having intensities greater than five times the background intensity shall be identified.
9. LFG monitoring shall be performed on an annual basis in the remaining LFG probes SG-1, SG-2 & SG-3 for % Lower Explosive Limit (%LEL), % oxygen, and hydrogen sulfide. As outlined at 310 CMR 19.132(4), if any LFG levels exceed 25 %LEL at the property line, the MassDEP must be notified within 24 hours and immediate action shall be taken to protect public health and safety.
10. The MassDEP and its agents and employees shall have the right to enter upon the site at all reasonable times and without notice, to inspect the landfill and any equipment, structure or land located thereon, take samples, recover materials or discharges, have access to and photocopy records, to perform tests and to otherwise monitor compliance with this Permit and all environmental laws and regulations. This right of entry and inspection shall be in addition to the MassDEP's access authorities and rights under applicable federal and states laws and regulations, as well as any permits or other agreements between the Permittees and the MassDEP.

The MassDEP reserves the right to require additional investigations, including the installation of additional groundwater monitoring wells, or other samples, if deemed necessary.

Pursuant to 310 CMR 19.037(5), any person aggrieved by the issuance of this approval may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, s. 150A and C. 30A not later than thirty [30] days following notice of this decision.

Any aggrieved person intending to appeal the decision to the superior court shall provide notice to the MassDEP of said intention to commence such action. Said Notice of Intention shall include the MassDEP File Number (07-236-007) and shall identify with particularity the issues and reason(s) why it is believed the approval decision was not proper. Such notice shall be provided to the Office of General Counsel of the MassDEP and the Regional Director for the regional office which made the decision. The appropriate addresses to which to send such notices are:

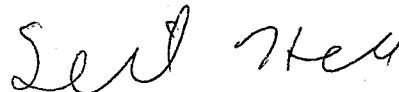
General Counsel
Department of Environmental Protection
One Winter Street
Boston, MA 02108

Regional Director
Department of Environmental Protection
436 Dwight Street - 4th Floor
Springfield, MA 01103

No allegation shall be made in any judicial appeal of this decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in those regulations, provided that matter may be raised upon a showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the public health or environmental impact of the permitted activity.

If you have any questions concerning this matter, please contact Larry Hanson of this office at (413) 755-2287.

Sincerely yours,



Daniel Hall
Section Chief
Solid Waste Management

DH/lgh
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cc: DEP/WERO/BWSC - Anna Symington, Susan Steenstrup
Pittsfield Health Dept. - Director
General Electric Co. - Richard Gates
USEPA - Dean Tagliaferro
Berkshire Environmental Action Team - Jane Winn
Housatonic Valley Association - Dennis Regan
Housatonic River Initiative - Tim Gray