EXHIBIT A 3

TO

AGREEMENT FOR ENVIRONMENTAL MONITORING, LABORATORY ANALYSIS AND REPORTING SERVICES AT THE SHELTON LANDFILL

SCOPE OF SERVICES

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Environmental Monitoring, Laboratory Analysis and Reporting - Shelton Landfill

BACKGROUND

The 86-acre Shelton Landfill parcel is located east of Route 110, bounded to the south by the Far Mill River, the Housatonic Lagoon and Housatonic River to the east and property used by Family Golf to the north.

A general location plan showing the CRRA Shelton landfill site is included as **Figure 1**. A detailed site plan showing sampling locations is included as **Figure 2**. The landfill consists of the following waste management units, all of which have been closed:

(a) MSW/Interim Ash Disposal Area: This area consists of a 36-acre footprint of municipal solid waste (MSW), the disposal of which began under private/town operations circa 1950. There is a 22-acre parcel consisting solely of ash residue from MSW combustion that is situated on top of the MSW disposal area.

(b) Metal Hydroxide Cell: This cell, which is located in the northeast corner of the site on top of the MSW disposal area, covers an area of approximately 2 acres.

(c) Northeast and Southeast Expansion Areas (NEEA and SEEA): The NEEA and SEEA are double-lined landfill units for the disposal of ash residue from MSW combustion. The NEEA is approximately 3.1 acres in area, while the SEEA is approximately 6.5 acres in area.

The site is equipped with various environmental control systems, including

(a) A landfill gas extraction, collection and flaring system (for the MSW/Interim Ash area),

(b) A leachate collection system (for the NEEA and SEEA),

(c) A leachate pre-treatment system (pH adjustment) for the discharge of collected leachate to the Town of Stratford POTW, and

(d) A stormwater collection, detention and discharge system (overall site).

There is also an active MSW transfer station located on the Shelton Landfill property that is permitted and operated by the City of Shelton.

The landfill has various environmental permits, with specific sampling programs and reporting requirements associated with the various control systems and permits. Copies of all site-specific permits applicable to the environmental monitoring program are included in **Appendix A**.

SCOPE OF SERVICES

Consultant's work shall be inclusive of all environmental monitoring and reporting required at the Shelton Landfill, unless otherwise indicated. Monitoring and reporting will be required for a three (3) year period starting July 1, 2010 and ending June 30, 2013.

Costs for monitoring work shall also include but are not limited to sample bottle preparation and delivery, sample collection, laboratory analysis, and reporting as further described in this Scope of Services. The environmental media to be sampled under this Scope of Services include ground water, surface water, ash leachate, and stormwater. All sampling will be performed to meet the requirements of all applicable permits issued to the Shelton Landfill/CRRA by the federal, state, and local permitting authorities, as applicable. Refer to **Appendix A** for site-specific permit information. All sample analyses shall be conducted by an analytical testing laboratory certified to perform such analyses by the State of Connecticut. The analytical testing laboratory will be subcontracted directly by the Consultant and approved by CRRA.

All work will be conducted pursuant to all applicable state and federal regulations and guidelines concerning groundwater, surface water, stormwater and sanitary discharge sampling, monitoring and analysis. Consultant is to be familiar with and have reviewed all applicable landfill permits and requirements for site monitoring issued by CTDEP (and EPA, where applicable). Consultant shall be familiar with representative past monitoring reports prepared for the Shelton Landfill and shall prepare monitoring reports consistent in format with past monitoring reports. Consultant shall provide summary tables of data results, and reference drinking water standards and Connecticut Remediation Standards for monitoring wells (i.e., Surface Water Protection Criteria), and surface water Numerical Criteria contained in the Connecticut Water Quality Standards. Consultant shall also be responsible for the timely submittal of sanitary discharge and stormwater discharge data to CRRA so that CRRA can meet its regulatory reporting obligations.

In accordance with the environmental permits for the Shelton Landfill, Consultant shall conduct the monitoring program for the sampling points and parameters as summarized in **Tables 1 through 4**, on a quarterly basis except as otherwise indicated. In some instances, monitoring points may be inaccessible for regularly scheduled quarterly monitoring, such that arrangements should be made to sample the location(s) at other times. If it is not possible to sample in a timely manner within the quarterly monitoring event timeframe, CRRA will not be charged for sample collection and laboratory analysis for those portions of work <u>not</u> completed.

The environmental monitoring will include but not necessarily be limited to the following elements:

- Preparation for sampling, including bottle preparation, field measured parameter equipment, sample collection equipment, and means of access to sampling points.

- Completion of field (RCRA) data sheets for each sample point, modified as applicable for each type of sample point.

- Completion of a synoptic groundwater measurement event on the first day of each monitoring event to determine the groundwater elevations. During the January and July monitoring events, the synoptic measurement events will be completed at all thirty-seven (37) sampled wells; during the April and October monitoring events, the synoptic measurement event will be completed at all sixty-one (61) monitoring wells that are in the monitoring well network The synoptic groundwater measurement event is to be completed prior to any purging and sampling activities.

- Measuring of field parameters, and collection of samples in bottles for laboratory analysis and appropriate field and laboratory QA/QC in accordance with applicable CTDEP and EPA regulations and guidance.

- Preservation and transport of samples to the laboratory.

- Analytical laboratory analyses of collected samples.

- Entering analytical results and other pertinent sample and/or laboratory test data into a database. Provide an electronic copy of the database to CRRA at the end of each calendar year to accompany the annual report, and after the completion of the April 2013 sampling event (i.e., the final sampling event under this Scope of Work).

- Data review and verification, cursory check for outliers, extreme exceedances and notification to CRRA of unusual results or "Significant Environmental Hazard" conditions under Public Act 98-134.

- Preparation of graphs and tables of data results, maps of sampling locations, groundwater elevation contours and isopleths of monitoring results as appropriate.

- Preparation of summary reports on status of each sample point and site environmental conditions.

- Preparation of draft quarterly and annual reports for CRRA review and comment prior to report finalization.

- Finalization of reports to incorporate CRRA comments, duplication and distribution.

The Consultant is responsible for maintaining clear access to all wells (i.e., by cutting back brush and trimming weeds and grass). Consultant is also responsible for maintaining well markers (i.e., stakes, flagging and labels) to assist field personnel in locating and identifying the wells.

The environmental monitoring program is outlined by task below for the Shelton Landfill with a description of the series of tasks to be completed. The format of the Not-To-Exceed Bid Price Form is consistent with the task listing that follows.

TASK 1: QUARTERLY ENVIRONMENTAL MONITORING, ANALYSIS, REPORTING AND ANNUAL REPORTING

Environmental permits issued to cover operations at the Shelton Landfill require that quarterly monitoring of the ground water, surface water, and untreated leachate be completed. The activities under Task 1 of this Scope of Services describe the quarterly monitoring activities.

Task 1.1: Sampling and Documentation of Field Activities

Sampling Schedule

Quarterly environmental sampling of site ground water, surface water, and untreated leachate is to be performed in the following months:

- January
- April
- July
- October

Sampling of groundwater, surface water, and untreated leachate can begin on the 1st day of the sampling month and must be completed by the last day of the sampling month.

Monitoring of Ground Water Wells

There are thirty-seven (37) ground water monitoring wells at the Shelton Landfill (including two wells that are yet to be installed) that are to be monitored on a quarterly basis. **Table 1** summarizes the characteristics of each well. Consultant is responsible for supplying all equipment to the site as required for each quarterly monitoring event and its storage at a safe off-site location by Consultant's arrangement.

Due to the presence of the closed RCRA cell at the Shelton Landfill, the Consultant shall develop and maintain a site-specific safety and health plan in accordance with 29 CFR 1910.120(b)(4). Additionally, the Consultant shall ensure that all sampling personnel "receive a minimum of 24 hours of instruction off the site, and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor," as required by 29 CFR 1910.120(e)(3)(ii). The Consultant shall also ensure that on-site supervisory personnel are trained in accordance with 29 CFR 1910.120(e)(4), and that all personnel (sampling personnel and supervisory personnel) are provided with annual refresher training under 29 CFR 1910.120(e)(8).

The following items are also highlighted for each quarterly sampling event:

- Keyed-alike well locks will be provided for all wells by CRRA. Access to buildings will have to be coordinated on a case-by-case basis.

- Permission to access off-site monitoring wells will be coordinated through CRRA at the initiation of the monitoring contract. Access to some wells is by foot only, because of location and/or restrictions of vehicle use.

- Consultant shall complete a "Monitoring Well Field Data Sheet" which summarizes well elevation data, well condition, purge data, observed water yield and quality comments, sampling data, and results of measured field parameters. An example of the proposed "Monitoring Well Field Data Sheet" is to be submitted for approval by CRRA before the first sampling event, at the initiation of the monitoring contract.

- On the first day of each quarterly sampling event, prior to any purging and sampling activities, complete a synoptic groundwater measurement event to determine the groundwater elevations at all thirty-seven (37) sampled monitoring wells (during January and July) or at all sixty-one (61) monitoring wells that are in the monitoring well network (during April and October). Measure water elevation data at all monitoring wells prior to well purging using decontaminated equipment (depth to water, depth to bottom, depth of sample) referenced to top of PVC (or casing) and record on the data sheet.

- Provide an in-line meter (or equivalent methodology which mitigates exposure to the atmosphere) to concurrently measure pH, temperature, specific conductivity, dissolved oxygen (DO), and redox potential (RP), as applicable, during purging. Also, provide a device to measure turbidity. A minimum of four (4) readings of each parameter shall be taken and recorded during purging.

- Perform purging using dedicated bladder pump equipment at low flow rates, not taking the first reading until at least one pump volume plus one discharge tubing volume have passed. The purged groundwater may be discarded to the ground at the landfill. Sampling personnel are to monitor the drawdown in the wells and ensure that the drawdown is maintained at less than or equal to 0.3 feet during the entire purging and sampling process. Wells shall be purged at a rate of less than or equal to 300 ml/minute. Field parameter readings shall be recorded at a minimum of three minute intervals, until turbidity is stabilized such that three consecutive reading are within 10% of each other for readings >10 NTU, or readings are within 2 NTU of each other for readings <10 NTU. Per EPA's SOP, if the turbidity has not stabilized after four hours of purging, collect samples and provide full explanation of attempt to achieve stabilization. Provide a summary of periodic readings and time of reading for all parameters.

- Sample collection should proceed from high parameter volatility to low parameter volatility at a low flow rate. Samples for volatile parameters should be transferred slowly to the sample container to eliminate creation of air bubbles. Samples are to be collected in proper containers and properly preserved in the field.

- No filtering of samples is to occur, except where analysis of dissolved metals is specified. Where analysis of dissolved metals is specified, sample filtration is to be performed in the field during sample collection with an in-line 0.45-micron filter.

- Record all observations relating to the well sampling and any deviations from the sampling plan.

Surface Water Sampling

A total of twelve (12) surface water samples need to be collected and analyzed on a quarterly basis. The samples are to be collected at "ebb flow" conditions (between one-half hour and two hours after low tide for Bridgeport) after at least 72 hours of no precipitation. Consultant is responsible for providing a Masterflex variable speed peristaltic pump or equivalent for collection of surface water samples. Surface water sampling shall proceed from downstream locations to upstream locations. For those surface water locations where a boat is required for sampling, samples shall be taken upstream of the boat's engine. A weighted tape measure shall be attached to the tubing so that depth of sample collection (and bottom depth) can be determined. Clean tubing shall be used at each sample location. The pump shall be operated at 300-500 ml/min and allow at least one (1) pump and tubing volume to pass through prior to sample collection. No filtering of samples is to occur, except where analysis of dissolved metals is specified. Where analysis of dissolved metals is specified, sample filtration is to be performed in the field during sample collection with an in-line 0.45-micron filter. A field data sheet shall be completed for each sample location. Field measurements of water temperature, air temperature, pH, specific conductance, salinity and dissolved oxygen shall be recorded. Gauging river flows, time of sample collection and other field data to be measured and recorded are to follow the permit requirements.

Ash Leachate Sampling

Consultant is responsible for collecting grab samples of untreated ash leachate from each of the two (2) leachate lift stations associated with the NEEA and the SEEA. The Consultant shall use decontaminated bailers and clean rope to collect the leachate samples. Field measurements of pH, specific conductance, dissolved oxygen, turbidity, and leachate temperature shall be recorded. A field data sheet shall be completed for each sample location.

Preparation for Sampling

This task includes coordination between field monitoring personnel and the analytical laboratory for the bottle order, bottle delivery, sample preservation and chain of custody to complete the required sampling. In addition, the Consultant is responsible for mid-quarter monitoring if there is an exceedance of any of the four compliance parameters (hardness, total dissolved solids, total potassium, and total sodium) at any of the six (6) Compliance Monitoring Wells (see Columns 2 and 6 of Table 2).

Sample collection scheduling shall allow enough time for completion of the sample analyses by the laboratory so that the quarterly reports can be assembled, reviewed, finalized and submitted in a timely manner according to permit requirements as further discussed below.

Consultant is responsible for coordinating equipment blanks, field blanks, trip blanks and duplicate samples as part of the sampling quality assurance program. In addition to any other approved USEPA or CTDEP protocols, equipment blanks and field blanks are required for each day of sampling where non-dedicated equipment is used, with laboratory-supplied reagent water poured over the sampling equipment at the beginning of the sampling day and at the end of the sampling day and collected for analysis. Trip blanks, as supplied by the laboratory, are to be carried on each day that samples for analysis of VOC's are collected and returned with the other samples for analysis of VOC's. Duplicate samples are to be collected at one of the Surface Water Protection Well locations for each quarterly sampling event and analyzed for all the parameters applicable to the Surface Water Protection Wells.

Each monitoring well is equipped with a dedicated 2-inch diameter bladder pump (either Timco or Marschalk brand SS/Teflon bladder pumps). The pumps are owned by CRRA. The Consultant shall supply all equipment necessary to operate the bladder pumps. Such equipment may include but not necessarily be limited to bladder pump controllers, oil-less air compressors, inert gas packs to drive the pump bladders, pneumatic hoses and fittings. It is the Consultant's responsibility to maintain the CRRA-owned pumps in good working order. This Scope of Services does not include costs associated with repairs to CRRA-owned pumps that may be necessary due to normal wear and tear. It shall be the Consultant's responsibility to provide pump controllers and other necessary field equipment/power source(s) (i.e., air compressor, generator, 12-volt battery, etc.) to conduct the field sampling activities.

Consultant shall provide all required equipment, besides that which CRRA owns and has supplied to the Consultant, for collection of samples to fill laboratory-supplied bottles. The Consultant shall also supply equipment required for measurement of field parameters. Field equipment calibration and decontamination shall be the responsibility of the Consultant. The Consultant shall

supply any other equipment necessary to adequately and properly complete the work.

Field Measurements and Collection of Samples

This task includes measuring selected parameters in the field and collecting samples in laboratory-supplied bottles, varying with the sampling point's parameter matrix. Refer to **Table 2** for a summary of field and laboratory parameter requirements for each sampling point at the Shelton Landfill. **Table 1** provides summaries of monitoring well completion details with total well depth and screened interval depth of each monitoring well.

Consultant shall follow the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846" (latest edition) and "RCRA Groundwater Monitoring" Draft Technical Guidance (latest edition) as well as all applicable CTDEP and USEPA regulations. Procedures described herein are not intended to be comprehensive, but to provide a clarification or to supplement the referenced regulations as they might pertain to certain site conditions. The various subsections below describe particulars for sampling at various types of sample locations.

Sampling methods described herein are to be utilized by Consultant during water quality monitoring events including monitoring of groundwater, surface water, and ash leachate discharges to the sanitary sewer. Specific items that shall be performed during all water quality monitoring events and summarized in the quarterly reports include the following:

- Documentation of Field Activities
- Sample Handling
- Decontamination Procedures
- Monitoring and Sampling Techniques
- Field Quality Control Checks

Documentation of Field Activities shall include listing the procedures used to record data about the sampling event, the sampling locations, the samples themselves, and the handling and transport of the samples.

Sample Handling shall detail the source of the sample containers, sample preservation methods, and the chain-of-custody protocol that is followed from time of sample collection until sample acceptance by the laboratory performing the analysis.

Decontamination Procedures shall provide general data on field and in-house decontamination. Non-dedicated equipment used for purging, sampling,

and filtering (to be completed only for analysis of dissolved metals) is to be decontaminated (unless replaced) between each sampling location. For the groundwater monitoring wells, each purging device is effectively "dedicated" to each sampling location. It is recommended in those instances where pumps are dedicated to individual wells, that they receive a thorough in-house decontamination as conditions warrant.

Monitoring and Sampling Techniques for groundwater, surface water, and sanitary discharges shall include a description of the fundamental procedures for collection of samples. Specific procedures to be addressed include water level measurement; purging calculations, sample collection equipment and techniques utilized; and monitoring of field parameters (i.e., pH, temperature, specific conductivity, etc.) and their results. Surface water monitoring and sample techniques shall describe the order of sample collection, orientation of boat to sampling points, equipment purging, monitoring of field parameters, method of filtering for dissolved metals and sample collection techniques.

Field Quality Control Checks shall describe typical QA/QC samples and their use. Monitoring events will include trip blanks, equipment blanks, field blanks, and duplicate samples. The trip blank is only associated with days when groundwater well and untreated leachate monitoring is performed, because VOC's are not analyzed in surface waters. The equipment blank and field blank are only necessary when non-dedicated sampling equipment is utilized for well purging or sample collection. Duplicate samples will be collected at one (1) ground water monitoring well and at one (1) surface water monitoring location.

Except where sample analysis in accordance with methods in 40 CFR Part 136 is required by permits, the methodologies to be utilized should be consistent with 40 CFR Part 258, Subpart E, Section 258.53 through 258.56, and as further detailed in EPA 530-R-93-017, "Solid Waste Disposal Facility Criteria - Technical Manual," November 1993; CTDEP's "Solid Waste Management Program Description", July 1993; USEPA's "RCRA Ground Water Monitoring Technical Enforcement Guidance Document", September 1986; and US EPA Region I Standard Operating Procedure GW-001 – "Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells" (January 19, 2010 – Revision 3).

Task 1.2: Quarterly Laboratory Analysis

All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health or, in advance of any use, a laboratory approved in writing by the CTDEP. The laboratory shall analyze all samples submitted from the same monitoring event, at one time, such that duplicate samples and blanks are analyzed under the same conditions.

Preservation and Transport of Samples to Laboratory

Samples shall be properly preserved and kept cool. They shall be transported to the laboratory the same day they are collected per coordination with the lab by the Consultant's field personnel. Container types, preservatives and maximum holding times shall be per SW-846, latest edition, or 40 CFR 136, as applicable. Consultant is to coordinate re-sampling, at no additional cost to CRRA, if re-sampling is necessary due to loss of sample in bottle transport or in laboratory handling, or if the maximum holding times are exceeded.

Analytical Methods and Detection Limits

Where published by CTDEP, laboratory analyses will be conducted in accordance with Reasonable Confidence Protocol (RCP) analytical methods. In those circumstances where an RCP method has not been published by CTDEP, the applicable method from the most-recent edition of EPA SW-846 ("Test Methods for Evaluating Solid Waste, Physical/Chemical Methods") will utilized. In the absence of RCP and SW-846 analytical methods, the laboratory analytical procedure from the most recent edition of "Standard Methods for the Examination of Water and Wastewater" will be utilized.

Monitoring parameters for surface water and groundwater samples are summarized in **Table 2.** Analytical results for each parameter shall be reported together with the analytical method, method detection limits, date of analysis, and initials of analyst. The value of each parameter shall be reported to the maximum level of accuracy and precision possible. Failure to submit data in accordance with the procedures and protocols set forth in the applicable permits shall constitute a permit violation.

Analyses required under the groundwater, surface water and sanitary discharge monitoring programs shall be performed using the methods specified, unless an alternative method has been specifically approved in writing by the CTDEP for monitoring at the facility. Failure to use the analytical method specified or approved by the Commissioner of CTDEP shall constitute a permit violation.

Monitoring required of surface water and groundwater which specify the use of analytical methods as listed in the permits and summarized in **Table 2** must be conducted to achieve the minimum detection levels for each of the parameters, where identified, unless an alternative method that is capable of achieving the minimum detection levels has been specifically approved in writing by the CTDEP.

The minimum detection levels specified in **Table 2** represent the concentrations at which quantification must be achieved and verified during the chemical analyses for these compounds, as required by relevant permit(s). It is important to note that, for some parameters, the permit-required detection limits listed in **Table 2** may be higher than those parameters' Groundwater Protection

Criteria and/or Surface Water Protection Criteria, as established in the CTDEP's Remediation Standard Regulations (RSR's). In this situation, the minimum detection level achieved by the laboratory must be at least as low as the lowest applicable RSR criterion. For surface water samples, the minimum detection limits need to be at least as low as the Chronic Aquatic Life Criteria (CALC) from the State's Surface Water Quality Standards. Analyses for these compounds must include calibration points at least as low as the specified minimum detection level. Check standard within ten percent of the specified minimum detection level may be used in lieu of a calibration point equal to the minimum detection level.

If any sample analysis indicates that quantification for a particular parameter can not be verified at or below the permit-specified minimum level, a second sample shall be collected and analyzed for that parameter according to the above specified methodology as soon as practicable but no later than thirty (30) days following collection of the sample for which the quantification at or below the minimum level was not verified. The results of the first and subsequent sample analyses shall be submitted to the CTDEP verifying that the appropriate methodology was employed, the minimum level was achieved for quality-control samples and that failure to quantify the parameter at or below the minimum level specified for the analysis was a result of matrix effects which could not be compensated for as part of sample analysis allowed pursuant to 40 CFR Part 136.

If any three (3) samples collected in a twelve-month period indicate that the specified minimum level was not achieved for a particular parameter when using the specified test methodology, the Consultant shall, after consultation with and approval by CRRA, submit a report for the review and approval of the CTDEP which justifies and defines the matrix effect upon analyses for that parameter, identifies the level at which quantification can be verified and recommends modification(s) to the method or an alternative method that is sufficiently sensitive and free of the identified matrix effect.

Review of Lab Results, Quality Control Procedures and Invoices

Consultant is responsible for ensuring lab analyses are performed as required by the parameter list and that MDL limits are met. A summary of the lab's QA/QC procedures and results, including matrix spikes and surrogate recovery analyses, are to be reviewed and included in the quarterly report. The laboratory must also provide signed "Laboratory Analysis QA/QC Certification Forms" that certify that the all reported data meet the CTDEP's requirements for "reasonable confidence." Consultant is to review the laboratory invoices for consistency with actual sample parameter analyses requested and completed.

Task 1.3: Quarterly Reports - Water Quality Monitoring

The Stewardship Permit specifies that finalized water quality monitoring reports must be submitted to the CTDEP within sixty (60) calendar days of the date of sampling.

Sampling shall be arranged to allow for a reasonable laboratory turnaround time for analysis and compiling of lab results, writing draft report, reviewing draft report, finalizing report and distributing report to appropriate parties.

The quarterly report shall include the monitoring results of all groundwater, surface water, and untreated ash leachate samples that were analyzed. In the text of the report and in summary tables, the Consultant will also indicate which parameters exceed criteria appropriate to the sampling point of classification. This will include state and federal limits for maximum contaminant levels not to be exceeded in the aquifer(s) at the relevant point of compliance (per Subtitle D requirements), groundwater and surface water protection criteria per CTDEP regulations in accordance with the classifications of the same, and aquatic life criteria for surface water locations.

Any mid-quarter re-sampling required because of exceedances of compliance parameters applicable to the RCRA cell or required by Permit No. LF0000052 shall be described in the current quarterly monitoring report if the results of the re-sampling are readily available at the time of report preparation.

These reports must include assessment of conditions of the groundwater monitoring wells and other sampling locations as applicable. The quarterly reports will also include a summary table of groundwater well construction details, and a site map which shows groundwater contours in both overburden and bedrock sampling locations on an AutoCAD drawing of the landfill site that includes site features and topography. CRRA will provide an AutoCAD disk of the landfill site for use by Consultant upon request.

During April and October, ground water elevation data will be collected at all available wells in the project vicinity as described in Task 1.4, regardless of whether or not the well is in the sampling program. The measured groundwater elevations at the additional well locations will be included on the groundwater contour maps. A Monitoring Well Field Data Sheet shall also be completed for each additional well.

Each quarterly report shall fully document the field activities and the laboratory work details, be formatted to support the annual report, and provide interim results and an update on impacts and exceedances. CRRA shall be notified immediately of any significant variation from past results or exceedances of compliance parameters with a recommendation on confirmation of the result.

A copy of the draft quarterly report, including sampling details and supporting analytical data, sample chains of custody, Monitoring Well Field Data Sheets, and a site map of groundwater elevations and possibly isopleths of results, is due to CRRA for

review a minimum of fourteen (14) calendar days before the final report is due to the CTDEP. CRRA shall also be allowed sufficient time to review any other reports or forms prior to submittal to CTDEP.

Finalized quarterly reports are to be printed by the Consultant on double-sided pages. The report distribution and addresses will be provided. Nine (9) finalized hard-copies of each report plus one electronic copy (PDF format) are required to be generated by the Consultant. Consultant is responsible for mailing reports directly.

Task 1.4: Non-Sampled Well Condition Survey and Water Elevations

There are twenty-four (24) ground water monitoring wells at the Shelton Landfill that are not part of the quarterly sampling program as outlined in **Table 2** herein. During the April and October sampling events, the ground water elevation shall be measured at each of the non-sampled wells, and a Monitoring Well Field Data Sheet (as described in Task 1.1) shall be completed to document each well's condition. The groundwater elevations obtained at the non-sampled well locations should be used to supplement the groundwater contour maps developed as part of the applicable quarterly environmental monitoring report. Copies of the Monitoring Well Field Data Sheets shall be included in the applicable environmental monitoring report.

Task 1.5: Interim Quarterly Event Monitoring – Groundwater Zone of Compliance

If an exceedance of the previously-established maximum background levels for hardness, total potassium, total sodium, and/or total dissolved solids is found at any of the six (6) compliance monitoring wells (as defined in permit LF00000052), Consultant shall re-sample the well(s) of exceedance(s) for the parameter(s) exceeded within 45 days of the quarterly sampling event. If the exceedance is confirmed, Consultant shall explain the source and cause of exceedance and any extenuating circumstances in a letter for CRRA review and approval before forwarding to CTDEP.

Task 1.6: Annual Reports - Water Quality Monitoring

The annual report shall address the zone of influence of the discharge (defined as the area of soil and groundwater within which the treatment of the leachate by soils and mixing of leachate with groundwater occurs and could be reasonably expected to occur, and therefore within which some degradation of groundwater quality is anticipated to occur). The annual reports shall also provide an overall assessment of site conditions for the calendar year, including but not limited to the following:

(a) Map depicting all groundwater and surface water monitoring locations, groundwater withdrawal locations, and the locations of the collection, treatment, and conveyance of stormwater, leachate, and gas condensate as applicable;

(b) Evaluation of surface water and groundwater quality, and leachate quality and leachate quantity, including graphical representations of monitoring results for at least the past six (6) years;

(c) Condition of all monitoring wells and the need for repair or replacement of any wells;

(d) Evaluation of the extent and potential extent of the leachate discharge to groundwater, and whether any impact on the surface water quality to any surface waters bodies including wetlands was detected or could reasonably be expected to occur;

(e) Preparation of graphs depicting parameter history versus precipitation hydrograph for those parameters and locations specified in Section 5.B.ii.a of Permit No. LF0000052; and

(f) Written request for modification of the surface water and/or ground water monitoring program, as warranted by the data generated through the monitoring.

All annual reports are to be submitted as a draft to CRRA at least fourteen (14) calendar days prior to the submittal deadline of March 1st specified in the permit. CRRA shall be supplied with electronic copies of all information included in the final annual report as well as groundwater contour maps and other miscellaneous site plans in AutoCAD files.

Finalized annual reports are to be printed by the Consultant on double-sided pages. The report distribution and addresses will be provided. Nine (9) finalized copies of the annual report are required to be generated by the Consultant. Consultant is responsible for mailing reports directly.

TASK 2: SANITARY DISCHARGE MONITORING, LABORATORY ANALYSIS AND REPORTING

Sanitary sewer discharge permit number SP0001459 requires that quarterly monitoring of the treated (pH-adjusted) leachate be completed. The quarterly sampling of treated leachate is to be performed in the following months:

- January
- April
- July
- October

The "Special Permit to Discharge to the Sanitary Sewer" issued by the Town of Stratford on June 16, 2009 requires that treated leachate samples be collected on a monthly basis.

Task 2.1 Sanitary Discharge Sampling

Permit SP0001459 requires that both grab samples and a daily composite sample of the pH-adjusted leachate be collected on a quarterly basis. The composite sample is

to be collected with use of an autosampler to be supplied by the Consultant. The autosampler is to be placed in an in-line downstream location in the leachate treatment facility, as specified by CRRA personnel. The composite is to be taken over the course of a full operating day, which is generally 6 hours +/-. The grab samples are also collected from a downstream location in the leachate treatment facility. The Consultant shall coordinate the schedule for sample collection with CRRA personnel at the site.

In addition to the quarterly sampling requirements of Pretreatment Permit SP0001459, the Special Permit to Discharge to the Sanitary Sewer of the Town of Stratford requires that, grab samples of the treated leachate shall be collected from the downstream location inside the treatment facility on a monthly basis.

Task 2.2: Laboratory Analysis

Samples shall be appropriately preserved and kept cool. They shall be transported to the laboratory the same day they are collected per coordination with the lab by Consultant. Container types, preservatives and maximum holding times per 40 CFR 136, latest revisions, shall be followed. Consultant is to coordinate re-sampling at no additional cost to CRRA, if re-sampling is necessary due to loss of sample in bottle transport or in laboratory handling, or if the maximum holding time is exceeded. Samples shall be analyzed for the parameters listed in **Table 3**, varying for the quarterly versus off-quarterly month sampling event. Analytical methods shall be in accordance with the methods listed in **Table 3**, as required by Permit No. SP0001459.

Consultant is responsible for ensuring lab analyses are performed as required by the parameter list and that required methods are utilized. Analytical results for each parameter shall be reported together with the analytical method, method detection limits, date of analysis, and initials of analyst. The latter two items are specifically required for the sanitary discharge permit reporting. A summary of the lab's QA/QC procedures and results are also to be reviewed. Consultant is to review the laboratory invoices for consistency with actual sample parameter analyses requested and completed.

Task 2.3: Reporting

CTDEP reporting requirements specify that CRRA is required to submit Discharge Monitoring Reports (DMR's) to the CTDEP on a quarterly basis. The DMR's must be submitted by CRRA by the last day of the month following the month that the samples were collected. Therefore, the Consultant is required to provide complete, finalized laboratory reports, sample chains of custody, and sample collection data sheets for the treated leachate monitoring to CRRA by the following deadlines:

Sampling Event	Deadline to Provide Final Lab Reports to CRRA
January	February 20
April	May 20
July	August 20
October	November 20

CRRA is required to submit the results of the monthly sampling events to the City of Stratford on a timely basis. In order to maintain consistency with the CTDEP reporting deadlines, the Consultant shall provide finalized laboratory reports and sample chains of custody for monthly sampling events to CRRA by the 20th day of the month following the month that the samples were collected.

TASK 3: STORMWATER DISCHARGE SAMPLING, ANALYSIS AND REPORTING

The Shelton Landfill is registered under the "General Permit for the Discharge of Stormwater Associated with Industrial Activity", issued October 1, 2002, modified on July 15, 2003, and re-issued April 14, 2009. The permit registration number is GSI000512.

In accordance with the General Permit, stormwater samples are to be collected and analyzed on an annual basis. Annual sampling is to be completed by June 30th of each year. There are a total of four (4) locations that must be sampled annually. Refer to Figure 2 for a map depicting the sampling locations.

Task 3.1: Stormwater Sampling

The General Permit requires that grab samples of stormwater be collected for analysis. The Consultant will also be required to collect a sample of uncontaminated rainfall, as required by the General Permit. The grab samples are to be collected from the sampling locations specified in the Stormwater Pollution Prevention Plan (SPPP) that has been prepared for the landfill (refer to **Figure 2**). The Consultant is responsible for following proper sampling protocols to ensure that all collected samples are representative of the discharges and that contaminants are not artificially introduced into the samples.

Task 3.2: Laboratory Analysis

Samples shall be appropriately preserved and kept cool. They shall be transported to the laboratory the same day they are collected per coordination with the lab by Consultant. Container types, preservatives and maximum holding times per 40 CFR 136, latest revisions, shall be followed.

Both chemical analyses and acute toxicity biomonitoring shall be completed at each sampled outfall per the General Permit requirements. It is important to note that the

samples from the four landfill outfalls must also be analyzed for the parameters specified in 40 CFR 445 (Landfill Point Source Category). The stormwater monitoring parameters are specified in **Table 4**.

Consultant is responsible for ensuring lab analyses are performed as required by the parameter list and that required methods are utilized. A summary of the lab's QA/QC procedures and results are to be reviewed. Consultant is to coordinate re-sampling if necessary due to loss of sample in bottle transport or in laboratory handling. Consultant is to review the laboratory invoices for consistency with actual sample parameter analyses requested and completed.

Task 3.3: Reporting

CRRA is required to submit Stormwater Monitoring Reports (SMR's) to the CTDEP within ninety (90) calendar days of the sampling event. In order to meet this reporting requirement, the Consultant shall provide to CRRA finalized laboratory reports, laboratory QA/QC results, sample chains of custody, and stormwater event data (i.e., sample date and time, sampler's name, magnitude of storm event, date and magnitude of previous storm event, etc.) within forty-five (45) calendar days after the sampling event.

TASK 4: HABITAT MAPPING

In 1996, a habitat map of the Shelton Landfill and nearby areas was prepared to meet habitat characterization requirements under groundwater discharge permit LF0000052. Section 4(H)(i) of the permit requires that the habitat map be updated on an annual basis and submitted to CTDEP as part of the annual environmental monitoring report.

In order to meet the requirement to update the habitat maps, an on-site inspection must be conducted annually between July 1 and August 31. The purposes of the on-site inspection are to document wildlife observed at the site, to determine if there have been any changes in wetland or upland cover types, to determine if there have been any new habitat units established, to determine if any existing habitat units have been lost, and to determine if there have been changes in the size and/or classification of any existing habitat units.

The annual update to the habitat maps is to include a written summary report discussing the observations made during the on-site inspection and revisions made to the habitat maps, as well as copies of the revised habitat maps themselves. The annual update is to be submitted to the CTDEP as an appendix to the annual environmental monitoring report.

TABLE 1

Summary of Monitoring Well Construction

Shelton Landfill
Shelton, Connecticut

Sampled Monitoring Wells*

Well No.	Screen Interval	Hydraulic Conductivity (Year of Test), K, in ft/day	Measuring Point (Top of PVC) Elevation, ft.	Top of Screen Elevation, ft.	Screen Length, ft.	Depth to Bottom, ft.
GP-4	S	---	56.72	42.52	20	36.12
BR-4	B	1.10 (1988)	55.32	-4.45	10	70.62
E	S	6.01 (1988)	9.47	-7.34	10	27.45
Ed	D	37.49 (1988)	8.97	-52.66	10	71.34
BR-6	B	---	9.06	-66.46	10	84.2
Qb	B	0.72 (1996)	71.48	2.16	10	74.43
Rs	S	18.33 (1996)	17.17	7.1	10	20.04
Rd	D	14.18 (1996)	16.22	-17.3	5	37.82
BR-12	B	---	16.75	-19.63	10	46
BR-9	B	---	72.38	Open Borehole	Open Borehole	49.18
D2d	D	17.89 (1988)	21.61	-9.81	10	42.49
BR-7	B	---	19.96	-34.3	20	103.85
S2s	S	33.08 (1996)	17.67	5.85	5	22.5
S2d	D	---	17.11	-6.73	15	35.93
Ts	S	35.69 (1996)	12.75	6.75	5	18.24
Td	D	---	12.68	-41.32	5	64.05
100	S	6.84 (1988)	14.08	-2.2	10	26.43
BR-1	B	---	13.26	-57.43	10	80.62
A	D	---	16.22	-6.6	10	32.59
Bs	S	---	11.30	4.32	10	16.8
Bd	D	---	11.50	-5.33	10	26.62
BR-2	B	---	10.26	-28.38	10	50.03
Cs	S	---	22.34	-3.78	15	40.88
C	D	---	22.37	-27.98	5	54.83
Cd	D	---	22.33	-54.08	10	85.83
I3s	S	---	9.98	0.96	10	21.43
BR-8	B	---	11.98	-99.02	10	123.88
D2	D	---	15.52	5.13	10	20.04
Hs	S	---	22.85	4.25	10	28.02
H2d	D	---	21.59	-14.41	10	45.68

* - In addition to the thirty (30) wells listed above, five (5) shallow bedrock wells listed in bold type on the next page plus two (2) new bedrock wells to be installed by 9/16/2010 are proposed to be added to the network of sampled monitoring wells.

TABLE 1

Summary of Monitoring Well Construction

Shelton Landfill
Shelton, Connecticut

Non-Sampled Monitoring Wells

Well No.	Screen Interval	Hydraulic Conductivity (Year of Test), K, in ft/day	Measuring Point (Top of PVC) Elevation, ft.	Top of Screen Elevation, ft.	Screen Length, ft.	Depth to Bottom, ft.
BR-14D	B	---	59.74	-3.48	10	79.5
BR-14S*	**B**	**---**	**59.62**	**10.44**	**10**	**61**
102S	S	---	59.65	31.93	10	39
BR-15D	B	---	25.38	-20.54	10	57
BR-15S*	**B**	**---**	**24.49**	**-1.77**	**10**	**35**
103	S	---	24.56	19.31	10	15
BR-16D	B	---	9.12	-99.45	10	120
BR-16S*	**B**	**---**	**8.16**	**-83.95**	**10**	**100.5**
104D	D	---	7.91	-62.09	10	79
104S	S	---	9.64	4.48	10	12
BR-17D	B	---	14.43	-36.79	10	65
BR-17S*	**B**	**---**	**13.88**	**-21.81**	**10**	**44.5**
105	S	---	14.15	4.80	10	25
BR-3	B	---	58.37	NA	NA	NA
BR-5*	**B**	**---**	**69.02**	**30.02**	**NA**	**NA**
BR-10	B	---	70.27	29.27	10	51
BR-11	B	---	23.74	5.14	NA	NA
B1	S	---	60.86	NA	NA	NA
B2	S	---	66.99	NA	NA	NA
B3	S	---	67.83	NA	NA	NA
D1	S	---	10.36	NA	NA	NA
Gd	S	---	14.54	NA	NA	NA
GP1	S	---	60.60	NA	NA	NA
GP2	S	---	57.07	NA	NA	NA
GP3	S	---	53.43	NA	NA	NA
L	S	---	16.75	4.75	NA	NA
M	S	---	60.82	40.32	NA	NA
N	D	---	13.07	-11.43	NA	NA

S = Shallow Overburden
D = Deep Overburden
B = Bedrock
*** - These 5 shallow bedrock monitoring wells will be added to the network of sampled monitoring wells.**
Depth to Bottom measurements of sampled wells were measured during pump installations in October 1996.

TABLE 2
MONITORING PARAMETERS

SHELTON LANDFILL
SHELTON, CONNECTICUT

(1)	(2)	(3)	(4)	(5)	(6)
Parameters		**Surface Water**		**Groundwater**	**Leachate**
Description: **Number of Sample Locations:**	**MDL**	**T/B** **9 ea + 1 QA/QC**	**MID** **3 ea**	**Wells** **37 ea + 1 QA/QC**	**Untreated** **2 ea**
Field Measured					
Time of Collection		X	X	X	X
Sample Depth		X	X	X	X
Total Water Column Depth		X	X	X	X
Water Level Elevation				X	
Water Temp.		X	X	X	X
Air Temp.		X	X		X
PH		X	X	X	X
Spec. Cond.		X	X	X	X
Salinity		X	X		X
Dissolved Oxygen (D)		X	X		X
ORP				X	
Turbidity - (NTU)				X	
Water Clarity-Secchi Disk		X	X		X
Lab Measured					
Spec. Cond.		X	X	X	X
PH		X	X	X	X
TDS		X	X	X	X
TSS		X	X	X	X
Chloride		X	X	X	X
Alkalinity		X	X	X	X
Hardness as CaCO3		X	X	X	X
BOD - 5-day		X	X		X
COD		X	X	X	X
Ammonia - (T)		X	X	X	X
TKN (T)		X			X
Nitrate (T)		X		X	X
Nitrite (T)		X			X
Phosphorus (T)		X			X
Aluminum (T)	10 ug/L	X			X
Antimony (T)				X-1	
Arsenic (T)	4 ug/L	X		X	X
Barium (T)	10 ug/L	X		X	X
Beryilium				X	
Cadmium (T)	0.5 ug/L	X		X	X
Chromium (T)	5 ug/L	X		X	X
Cobalt (T)				X	
Copper (T)	5 ug/L	X		X	X
Copper (D)	5 ug/L	X			X
Iron (T)	5 ug/L	X		X	X
Iron (D)	5 ug/L	X			X
Lead (T)	5 ug/L	X		X-1	X
Lead (D)	5 ug/L	X			X
Manganese (T)	1 ug/L	X		X	X
Manganese (D)	1 ug/L	X			X
Mercury (T)	0.2 ug/L	X			X
Nickel (T)	5 ug/L	X		X-1	X
Potassium (T)				X	
Selenium (T)				X	
Silver (T)	1 ug/L	X		X	X

TABLE 2
MONITORING PARAMETERS

SHELTON LANDFILL
SHELTON, CONNECTICUT

(1)	(2)	(3)	(4)	(5)	(6)
Parameters		**Surface Water**		**Groundwater**	**Leachate**
Description: **Number of Sample Locations:**	**MDL**	**T/B** **9 ea + 1 QA/QC**	**MID** **3 ea**	**Wells** **37 ea + 1 QA/QC**	**Untreated** **2 ea**
Sodium (T)				X	
Sulfate (T)				X	
Thallium (T)				X-1	
Vanadium (T)				X-1	
Zinc (T)	10 ug/L	X		X-1	X
Zinc (D)	10 ug/L	X			X
VOCs via EPA Method 8260				X	X
Additional Parameters to be monitored only at listed locations:					
Phenols				RCRA Wells	
Radium (Radium-226 and Radium-228 combined via EPA Method 9320 of SW-846)				RCRA Wells	
Gross Alpha				RCRA Wells	
Gross Beta				RCRA Wells	
Silica				RCRA Wells	
Calcium				RCRA Wells	
Cyanide, Total				RCRA Wells	
TOC				RCRA Wells	
TOX				RCRA Wells	
Chromium, Hexavalent				See Note Below	
PCB's via EPA Method 608					X-July
Dioxins and Furans via EPA Method 8280					X-July

NOTES:

Column 1

The VOC analytical parameter list is to include all Organic Constituents listed in Appendix I to 40 CFR 258, all analytes listed in CTDEP RCP Method 8260, and 2-Chloroethyl Vinyl Ether, Chloromethyl Methyl Ether, and 1-Chlorohexane.

Column 2

If a parameter's Groundwater Protection Criterion (GWPC) and/or Surface Water Protection Criterion (SWPC) is lower than the listed MDL, then the MDL must be at least as low as the lower of the GWPC and the SWPC.

Surface Water

Column 3 - T/B = Top and Bottom Surface Water Samples at the Following Locations

SW-1 SW-2T SW-2B SW-3T SW-3B SW-4T SW-4B SW-5T SW-5B

Column 4 – MID = Mid-Depth Surface Water Samples at Locations:

SW-3M SW-4M SW-5M

Columns 5-6 - Notes: "X-1" = Inorganic listed in Appendix 1 of 40 CFR 258

"X-July" indicates that sampling for these parameters is only required on an annual basis in the month of July.

Ground Water

Column 5 – The well designations in Groundwater Discharge Permit LF0000052 are as follows:

"Upgradient" Wells:

MW-GP-4 MW-E MW-BR-6 MW-BR4 MW-Ed MW-Qb

"Compliance" Wells:

MW-RS MW-BR-12 MW-D2d MW-Rd MW-BR-9 MW-BR7

"Plume Characterization" Wells:

MW-Td MW-C MW-Bs MW-BR-2 MW-Hs MW-BR-8 Sd (a.k.a. S2d)
MW-BR1 MW-Cd MW-Bd MW-H2d I2s (a.k.a. I3s) Ss (a.k.a. S2s)

"Surface Water Protection" Wells

MW-Ts MW-CS MW-D2 MW-100 MW-A

The RCRA Wells are:

MW-GP-4 MW-A MW-BR1 MW-100 MW-Qb
Plus 2 Additional Bedrock Wells to be Installed Before the October 2010 Monitoring Event

Hexavalent Chromium is analyzed at the following 13 monitoring wells:

MW-Qb MW-Rs MW-Rd MW-D2d MW-BR-9 MW-S2s MW-S2d MW-Td
MW-Ts MW-Cs MW-D2 MW-I3s MW-BR-12

Untreated Leachate

Column 6 – The following 2 locations represent the sample locations for untreated ash residue leachate from the SEEA and the NEEA, respectively:

L-1S (SEEA Lift Station) – L-1N (NEEA Lift Station)

TABLE 3
TREATED LEACHATE SAMPLING PARAMETERS

Shelton Landfill
Shelton, Connecticut

Parameter	Units	EPA Method Number	Sample Frequency	Sample Type
Barium, Total	mg/l	Per 40 CFR 136	Quarterly	Daily Composite
Chemical Oxygen Demand	mg/l	Per 40 CFR 136	Quarterly	Daily Composite
Copper, Total	mg/l	Per 40 CFR 136	Quarterly	Daily Composite
Lead, Total	mg/l	Per 40 CFR 136	Quarterly	Daily Composite
Nickel, Total	mg/l	Per 40 CFR 136	Quarterly	Daily Composite
Zinc, Total	mg/l	Per 40 CFR 136	Quarterly	Daily Composite
Total Volatile Hydrocarbons	µg/l	Via EPA Method 624	Quarterly	Grab
Biochemical Oxygen Demand (5-Day)	mg/l	Per 40 CFR 136	Monthly	Grab
Total Suspended Solids	mg/l	Per 40 CFR 136	Monthly	Grab
Total Nitrogen	mg/l	Per 40 CFR 136	Monthly	Grab

Notes:

1. Quarterly sampling is to be conducted in the months of January, April, July, and October.
2. All chemical analyses shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health.

TABLE 4 STORMWATER SAMPLING PARAMETERS Shelton Landfill Shelton, Connecticut			
Parameter	**Units**	**Shelton Landfill Outfalls 001, 002, and 003**	**Shelton Landfill Outfall 004**
Total Oil and Grease	mg/L	✓	✓
Chemical Oxygen Demand	mg/L	✓	✓
Total Suspended Solids	mg/L	✓	✓
Total Phosphorous	mg/L	✓	✓
Total Kjeldahl Nitrogen	mg/L	✓	✓
Nitrate as Nitrogen	mg/L	✓	✓
Total Copper	mg/L	✓	✓
Total Lead	mg/L	✓	✓
Total Zinc	mg/L	✓	✓
Aquatic Toxicity (LC_{50})	%	✓	✓
pH	S.U.	✓	✓
BOD_5	mg/L	✓	✓
Ammonia (as N)	mg/L	✓	✓
α-Terpineol	mg/L	✓	✓
Benzoic acid	mg/L	✓	✓
p-Cresol	mg/L	✓	✓
Phenol	mg/L	✓	✓
Analine	mg/L		✓
Naphthalene	mg/L		✓
Pyridine	mg/L		✓
Arsenic	mg/L		✓
Chromium	mg/L		✓
pH of Uncontaminated Rainfall	S.U.	✓	✓

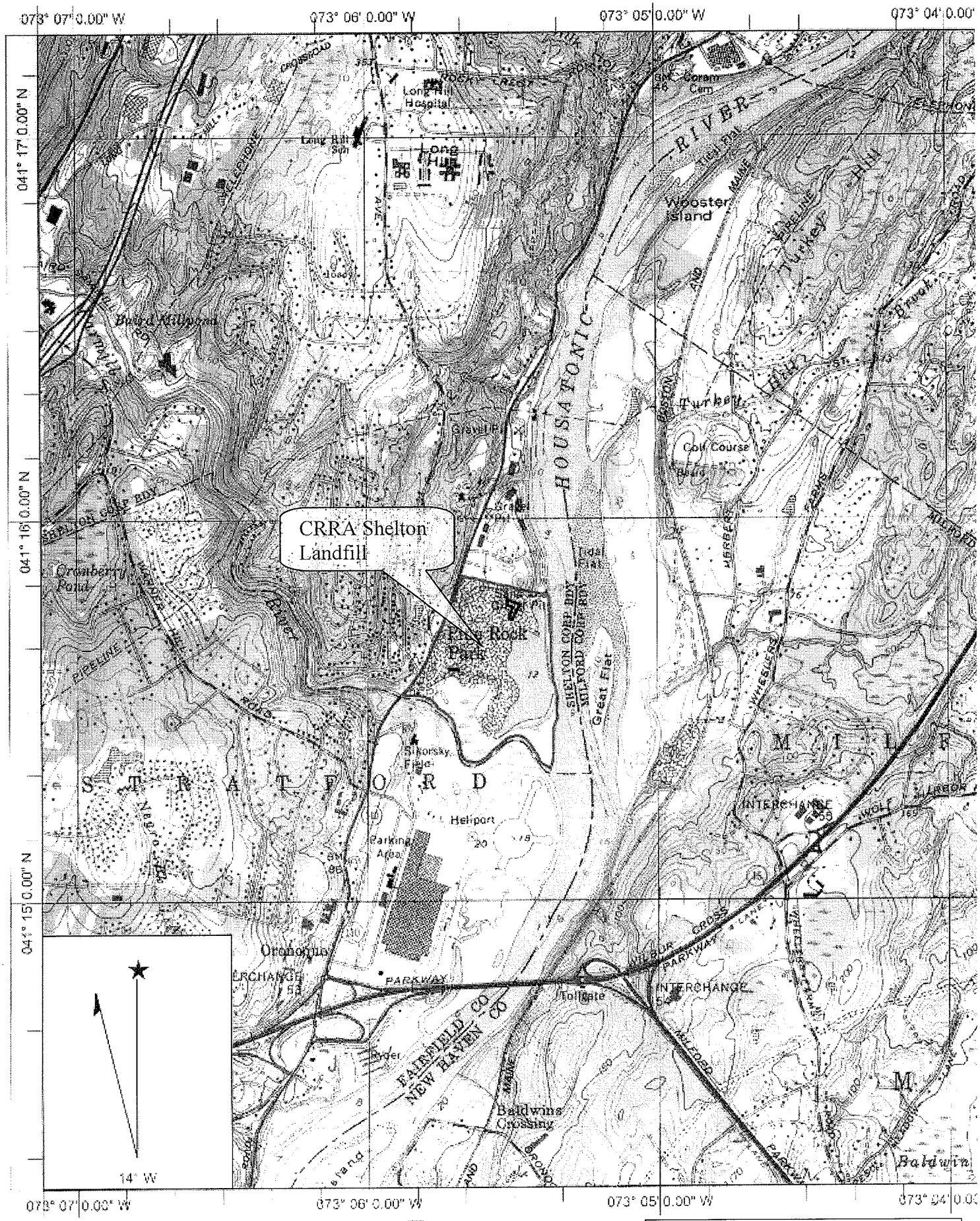
Notes:

1. Four (4) samples from the Shelton Landfill are to be analyzed for both the General Permit parameters and the parameters listed in 40 CFR 445.
2. All chemical analyses shall be performed using methods approved by the USEPA under 40 CFR 136.
3. All chemical analyses shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health.

FIGURES

Figure 1: Site Location Plan

Figure 2: Water Quality Monitoring Site Plan



USGS Topo Quad Name: ANSONIA
Source: Maptech, Inc. (1997)

Figure 1 – Site Location
CRRA Shelton Landfill
866 River Road
Shelton, Connecticut
Scale: 1" = 2,000'±

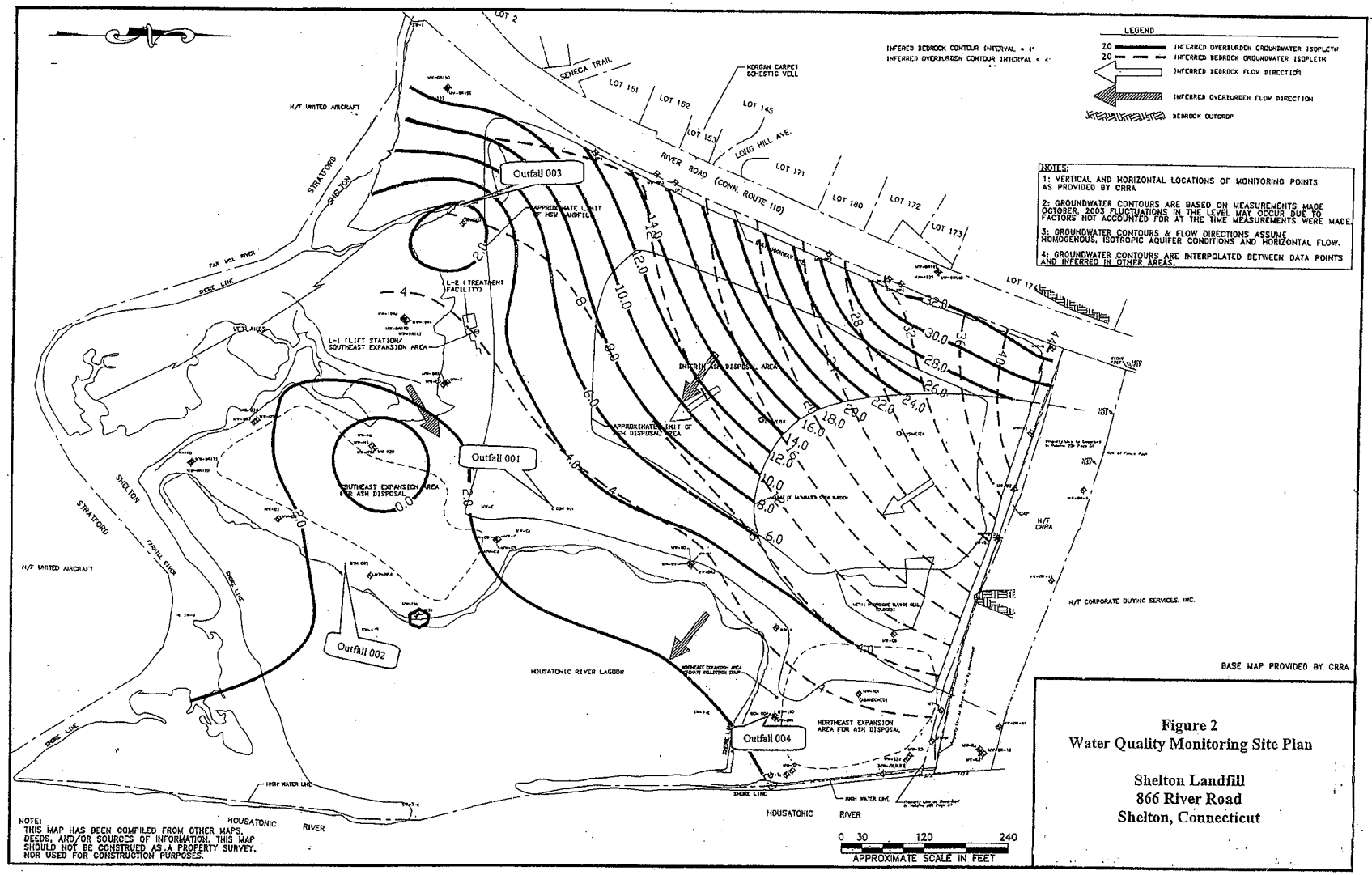


Figure 2
Water Quality Monitoring Site Plan

Shelton Landfill
866 River Road
Shelton, Connecticut

APPENDIX A - Permits

DEP/HWM/CS-126-005	Stewardship Permit (Dated September 16, 2009) 69 Pages
LF0000052	Discharge of Leachate from Municipal Solid Waste Ash Residue to Ground Water (Dated August 27, 1996, with Modification Dated September 5, 1997) 30 Page Permit, plus 3 Page Modification
LF0000023	Discharge of Sanitary Landfill Leachate to Ground Water (Dated January 11, 1985) 4 Pages
SP0001459	Pretreatment Permit for Discharge of Pre-Treated Leachate to the Sanitary Sewer (Dated June 27, 2001) 6 Pages
No Number	Special Permit to Discharge to the Sanitary Sewer of the Town of Stratford (Dated June 16, 2009) 1 Page

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. Peter W. Egan
Director of Environmental Affairs
Connecticut Resource Recovery Authority
100 Constitution Plaza, 6th Floor
Hartford, CT 06103

September 16, 2009

Re: Transmittal Letter- Shelton Landfill Stewardship Permit
EPA ID No. CTD000604546
Permit No. DEP/HWM/CS-126-005

Dear Mr. Egan:

The Commissioner of the Department of Environmental Protection ("DEP') has made a final permit decision in accordance with Chapters 439 and 446k of the Connecticut General Statutes ("CGS") to issue the Stewardship Permit to the Connecticut Resources Recovery Authority ("CRRA") for the Shelton Landfill. This permit became effective on the date it was signed by the Commissioner and shall expire ten (10) years from that date. Included with this letter you will find the signed Stewardship Permit.

The permit regulates and authorizes CRRA to complete post-closure care inclusive of water quality monitoring, landfill gas decomposition monitoring, leachate collection; and environmental investigation and cleanup ("corrective action" measures) at the Shelton Landfill. The permit does not authorize CRRA to accept waste or to operate the facility. The permit requires CRRA to complete the post-closure care and corrective action activities in accordance with a schedule, fulfill its cleanup obligations, and provide financial assurance for environmental cleanup.

The draft Stewardship Permit was public noticed on July 7, 2009 and the comment period closed at the end of the business day on August 20, 2009. The DEP received comments from the United States Environmental Protection Agency ("US EPA") dated August 17, 2009 addressing the draft permit. The comments have been evaluated and are addressed by the DEP in the Response to Comments, Attachment A pursuant to Section 22a-449(c)-110(a)(2)(a)(KKK) of the Regulations of Connecticut State Agencies, incorporating 40 CFR 124.179(a). The Response to Comments specifies which provisions of the draft permit have been changed in the final permit decision, the reasons for the change to the final permit and also provides the reasons for not making other revisions which were requested.

The permit includes a Compliance Schedule, Section III, which identifies the submittals that CRRA must complete within specific timeframes. Failure to fulfill these conditions may result in violations, suspension or revocation of the permit.

The permit is transferrable upon the Commissioner's written authorization, provided the Permittee and potential transferee have complied with the requirements set forth for permit transfer in the permit and CGS Section 22a-6o.

If you have any questions or need additional information regarding this transmittal letter, please contact Lauren Kostiuk of my staff at (860) 424-3155 or e-mail Lauren.Kostiuk@ct.gov.

Sincerely,

Diane W. Duva

Diane W. Duva
Assistant Director
Waste Engineering and Enforcement Division
Bureau of Materials Management and Compliance Assurance

Encl.(3): Stewardship Permit
Certificate of Stewardship
Response to Comments, Attachment A

cc: Stuart Gray, Chief Hazardous Waste Unit, Compliance Enforcement Section, EPA Region I, 1 Congress Street, Suite 1100 (CHW), Boston, MA 02114-2023
James Chow, EPA Region I, 1 Congress Street, Suite 1100 (CHW), Boston, MA 02114-2023

ATTACHMENT A
RESPONSE TO COMMENTS

Connecticut Resources Recovery Authority, Shelton Landfill
Stewardship Permit No. DEP/HWM/CS-126-005

Comments from the United States Environmental Protection Agency ("US EPA") Dated August 17, 2009, Followed by DEP Responses

1. Page 13 – Section II.A.9.(b) – The condition notes the requirement for the repair/replacement of malfunctioning equipment but there was no schedule for the repair or replacement of the malfunctioning equipment. A repair/replacement condition should be included in the permit.

   Comment accepted.

   The condition has been revised to state: "The Permittee shall remove and inspect each primary and secondary leachate collection system sump pump on a semi-annual basis. Such inspections shall be recorded on an inspection log in accordance with the requirements of Condition No. II.A.7. of this permit. The Permittee shall repair or replace any malfunctioning pump within seventy-two (72) hours after the date of the inspection or the date the Permittee is made aware of the need for repair. When conditions arise which do not allow for the repair or replacement to be completed within seventy-two (72) hours, the Permitteee shall notify the Department in writing. Such notification shall include a description of the repair to be made, the date the repair will be made and the interim measures taken until the repair is completed. This information shall also be recorded in the inspection records."

2. Page 20 – Section III.A.1 – Consultant – In addition to the naming and designation of the "Consultant" as required in the compliance schedule, the language in this condition should be revised to include clearer language noting that the CTDEP will be notified in writing for approval whenever there is a change in the "Consultant" during the life of the permit.

   Comment accepted.

   The condition has been revised to state: "The Permittee shall designate and assign an environmental compliance expert who may be a full-time employee of the Permitee, and/or retain one or more qualified consultants, acceptable to the Commissioner to prepare the documents required by Condition Nos. II.B.2. and III.C.2. and shall, by that date, notify the Commissioner in writing of the identity of such environmental compliance expert and/or consultants. The Permiteee shall assign such environmental compliance expert and/or retain such qualified consultant, acceptable to the Commissioner, until Condition No. III.C.1. of this permit is fully complied with. The Permittee shall notify the Commissioner in writing of the identity of any environmental compliance expert or consultant otherthan the one approved by the Commissioner, within ten (10) days after assigning or retaining any environmental compliance expert or consultant for the purpose of addressing the actions required by this permit. The Permittee shall submit to the Commissioner a description of the assigned environmental compliance expert's and/or consultant's education, experience and training which is relevant to the work required by this permit within ten (10) days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable environmental compliance expert or consultant unacceptable."

CERTIFICATE OF STEWARDSHIP

The Commissioner of Environmental Protection has made a final administrative decision to issue a Stewardship Permit to the **Connecticut Resources Recovery Authority** for the Shelton Landfill, EPA ID No. CTD000604546, located at 866 River Road, Shelton, Connecticut.

This permit is for the continuation of facility post-closure care inclusive of water quality monitoring, landfill decomposition gas monitoring, leachate collection; and corrective action activities, meaning environmental investigation and remediation, at the facility and may be transferred upon the written authorization of the Commissioner. Opportunity for public comment has been provided in accordance with state and federal requirements.

This action is based on the obligation to initiate and complete post-closure care and environmental clean-up work required by state laws and regulations, including RCRA Corrective Action and Closure, and requires compliance with Connecticut's Solid Waste Management Regulations and Hazardous Waste Management Regulations, as well as state and federal guidance.

September 16, 2009

Amey W. Marrella
Commissioner

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Stewardship Permit

Pursuant to Chapters 439 and 446k of the Connecticut General Statutes, a permit is issued to:

Permittee:
Connecticut Resources Recovery Authority
Shelton Landfill
866 River Road, Shelton, CT 06484

Facility Identification:
EPA ID No. CTD000604546
Permit Number: DEP/HWM/CS-126-005

To perform site-wide environmental investigation and cleanup ("post-closure care" and "corrective action measures") at the hazardous and solid waste disposal facility in accordance with Connecticut General Statutes ("CGS") Sections 22a-6, 22a-449(c) and 22a-454, and Section 22a-449(c)-110 of the Regulations of Connecticut State Agencies ("RCSA") as specified in the conditions set forth in this permit.

This permit regulates and authorizes the Permittee to perform post-closure care and corrective action measures at the facility. The permit does not authorize operation of a hazardous and solid waste management facility in the sense of treating, storing, or disposing of hazardous and solid wastes generated off-site.

All terms in this permit are defined in the permit or if not defined in the permit are as defined in Section 22a-449(c)-100 of the RCSA or in Title 40 of the Code of Federal Regulations ("CFR") Parts 260, 261, 262, 264, 268, 270, 273 or 279.

This permit is based on the information described in the Resource Conservation and Recovery Act ("RCRA") Part A filed by the applicant on November 7, 2002 and the Stewardship application filed on May 5, 2009. The Permittee must keep records of all data used to complete the permit application and any supplemental information submitted for the effective term of this permit. The permit application and RCRA Part A filing are incorporated by reference as part of the permit. Any false statements or inaccuracies contained in the information submitted by the Permittee may result in the suspension, revocation or modification of this permit and civil or criminal enforcement action.

The Permittee shall comply with all terms and conditions contained in the following sections of the permit: Section I (Standard Facility Conditions) pages 1 through 10; Section II (Authorized Activities) pages 11 through 19; Section III (Compliance Schedule) pages 20 through 21; Appendices A-1, and B-1; and the information contained in the Permittee's permit application, except where the application is superseded by the more stringent conditions contained herein. Any violation of any provision of this permit may subject the Permittee to enforcement action pursuant to the CGS including but not limited to Sections 22a-6a and 22a-131.

This permit is transferrable upon the Commissioner's written authorization, provided the Permittee and potential transferee have complied with the requirements set forth in CGS Section 22a-6o.

This permit may be revoked, suspended, modified, transferred, or reissued, in order to comply with applicable law. The Commissioner may also modify this permit when it is deemed necessary to do so.

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The Permittee shall submit a revised permit application to the Commissioner at least one hundred and eighty (180) calendar days before making any changes to any of the permitted areas or activities. Any application shall be approved in writing by the Commissioner prior to the Permittee implementing such change. The Permittee shall submit an application for a renewal of this permit to the Commissioner at least one hundred eighty (180) calendar days prior to its expiration date.

The terms and conditions of the permits listed below are hereby superseded with the terms and conditions of this permit. Subsequently, the permits listed below are hereby revoked for administrative purposes.

1. Approval of the Plans and Operational Specifications of Municipal Bulky Waste Disposal Area for the Town of Shelton, CT dated June 1969;
2. Permit to Operate No. 126-1 issued on October 6, 1977;
3. Approval for the metal hydroxide sludge disposal at the Shelton municipal landfill dated January 4, 1980;
4. Permit to Operate No. 126-1E issued on August 12, 1983;
5. Permit Modification No. 126-1EM issued on December 24, 1984;
6. Permit to Operate No. 126-1-E issued on November 14, 1986;
7. Permit Modification No. 126-1E-M issued on February 22, 1988;
8. Minor Permit Amendment No. 126-1E issued on September 1, 1988;
9. Minor Permit Amendment No. 126-1E issued on May 11, 1989;
10. Permit Variance No. 126-1VA issued on September 1, 1989;
11. Minor Permit Amendment No. 126-1E issued on February 25, 1993;
12. Permit to Operate No. 1260227 issued on April 19, 1994; and
13. Permit Modification No. 1260399 issued on August 25, 1998.

In the event of a conflict between any previously issued solid waste permit and the terms and conditions of this permit, the terms and conditions of this permit shall supersede.

Condition No. 3(B)(iii) of Groundwater Discharge Permit No. LF0000052 issued on August 27, 1996 and Condition No. 3E of Groundwater Discharge Permit No. LF0000023 issued on January 11, 1985 are superseded by the requirements of this permit.

This permit is hereby in effect and shall expire ten (10) years from this date.

September 16, 2009
Date

Amey W. Marella
Amey W. Marrella
Commissioner

STEWARDSHIP PERMIT
Connecticut Resources Recovery Authority
Shelton Landfill

866 River Road
Shelton, CT

EPA ID No. CTD000604546
Permit No. DEP/HWM/CS-126-005

SECTION I

Stewardship Permit
Standard Facility Conditions

Connecticut Resources Recovery Authority
Shelton Landfill

EPA ID No. CTD000604546
Permit No. DEP/HWM/CS-126-005

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Section I – Standard Facility Conditions

STEWARDSHIP PERMIT
SECTION I
STANDARD FACILITY CONDITIONS

A. EFFECT OF PERMIT

Except as is provided in the Regulations of Connecticut State Agencies (RCSA) Section 22a-449(c)-110(a)(2) and except for any federally enforceable requirement(s), compliance with this permit during its term constitutes compliance, for purposes of enforcement, with Connecticut General Statutes (CGS) Section 22a-449(c). This permit may be modified, revoked and reissued, or terminated during its term as set forth in RCSA Section 22a-449(c)-110(a)(1), which incorporates by reference Title 40 of the Code of Federal Regulations (40 CFR) Parts 270.41, 270.42 and 270.43.

The Permittee shall perform post-closure care inclusive of surface and groundwater monitoring, landfill decomposition gas monitoring, leachate collection and corrective action in accordance with its application (Application No. 200901273 and 200100602) received by the Department of Environmental Protection ("the Department") on May 5, 2009 and February 28, 2001, respectively, and the requirements of this permit. In the event of a conflict between the Permittee's application and the requirements of this permit, the requirements of this permit shall take precedence and apply.

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state, federal or local law or regulations.

Term (Duration) - The effective date of this permit is the date on which the permit is signed by the Commissioner. This permit is in effect for a term of ten (10) years and may be renewed at the end of the term, in accordance with the requirements described in Condition No. I.E.2., "Duty to Reapply."

In accordance with 40 CFR 270.73(a), upon issuance of this permit the Permittee's Interim Status granted under the Resource Conservation and Recovery Act ("RCRA") is hereby terminated. In addition, upon the Commissioner's determination that the Permittee has satisfied the requirements of this permit, a Certificate of Completion shall be issued to the Permittee.

B. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

C. CONFIDENTIAL INFORMATION

The Permittee may claim that any information required to be submitted by this permit contains or constitutes confidential information in accordance with CGS Section 1-210(b).

D. IMMINENT HAZARD ACTIONS

Notwithstanding any provision of this permit, enforcement actions may be brought pursuant to Section 7003 of the Resource Conservation and Recovery Act, CGS Section 22a-6, or any other applicable law.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply with all conditions of this permit except that the Permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an Emergency Permit that explicitly authorizes any such noncompliance. Noncompliance by the Permittee with the terms of this permit, except under the terms of an Emergency Permit, shall constitute a violation of this permit and any applicable laws or regulations and is grounds for enforcement action, for permit termination, revocation and reissuance or for denial of a permit renewal. Emergency Permit as used herein shall mean Emergency Permit as identified in RCSA Section 22a-449(c)-110(a)(1) incorporating 40 CFR 270.61.

   A violation of this permit for purposes of state and federal law constitutes a violation of a RCRA permit.

2. Duty to Reapply. This permit shall expire ten (10) years after the effective date of this permit. If the Permittee wishes to continue engaging in an activity regulated by this permit after the expiration date of this permit, the Permittee shall apply for renewal of this permit one hundred eighty (180) calendar days prior to the date of expiration of this permit, in accordance with the requirements of RCSA Sections 22a-449(c)-104(a) and 22a-449(c)-110 incorporating 40 CFR 264.101, 270.10(h) and any other applicable law.

3. Obligation for Post-Closure Care and Corrective Action. The Permittee is required to continue this permit for any period necessary to comply with the post-closure care and corrective action requirements of this permit.

4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce any activity authorized by this permit in order to maintain compliance with the conditions of this permit, unless otherwise required to do so by another state or federal authority.

5. Duty to Mitigate. In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent its noncompliance from having significant adverse impacts on human health or the environment. No action taken by the Permittee pursuant to this section of this permit shall affect or limit the Commissioner's authority under any other statute or regulation.

6. Permit Actions. This permit may be modified, revoked and reissued, or terminated as provided for in 40 CFR 270.41, 270.42 or 270.43, and in accordance with all applicable law, including but not limited to, CGS Sections 22a-6g and 6h and RCSA Sections 22a-3a-5 and 22a-449(c)-110. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any condition of this permit.

7. Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege to the Permittee.

8. Duty to Provide Information. The Permittee shall furnish to the Commissioner, within a reasonable time, any information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Commissioner, upon request, copies of records required to be kept by this permit.

9. Post-Closure Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance, at a minimum, includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate laboratory quality assurance procedures. This provision requires the operation of backup, auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

10. Inspection and Entry. The Permittee shall allow the Commissioner, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

(a) Enter at reasonable times upon the Site where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, operations regulated or required under this permit; and

(d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substance or parameters at any location.

11. Security. Pursuant to RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.14, the Permittee shall prevent the unknowing entry, and minimize the possibility for unauthorized entry, of persons or livestock onto the active portion of the Facility. The Permittee shall secure the Facility to the extent necessary to protect human health.

12. Preparedness, Prevention, Contingency Plan and Emergency Procedures.

(a) The Permittee shall comply with the requirements of RCSA Section 22a-449(c)-104(a)(1) incorporating 40 CFR 264 Subpart C "Preparedness and Prevention" and 40 CFR 264 Subpart D "Contingency Plan and Emergency Procedures" until the termination of this permit.

(b) The Permittee shall choose an entity to provide emergency response services at the Site from the Department of Administrative Services contract (Contract No. 04PSX0275) and ensure that such entity has a permit issued by the Commissioner pursuant to CGS Section 22a-454 authorizing such entity to provide emergency response services. The Permittee shall ensure that any action(s) taken by an entity (including such entity's officers, employees, agents

and subcontractors) providing emergency response services at its Facility conform to the requirements of this permit.

13. Monitoring and Records.

(a) The Permittee shall ensure that samples and measurements taken for the purpose of monitoring are representative of the monitored activity.

(b) The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit (i.e. records from groundwater monitoring, landfill gas monitoring and groundwater surface elevations), the certification required by RCSA Section 22a-449(c)-104 incorporating 40 CFR 264.73(b)(9), and records of all data used to complete the application for this permit, for the Post-Closure Period. This period may be extended by request of the Commissioner at any time.

(c) Records for monitoring information shall include:
- (i) The date, exact place and time of sampling or measurements;
- (ii) The individual(s) or company who performed the sampling or measurements;
- (iii) The date(s) analyses were performed;
- (iv) The individual(s) or company who performed the analyses;
- (v) The analytical techniques or methods used; and
- (vi) The results of such analyses.

14. Operating Record. The Permittee shall maintain, in writing, the following information in the Facility's operating record until termination of this permit:

(a) Summary reports and details of all incidents that require implementing the Contingency Plan pursuant to 40 CFR 264 Subpart D;

(b) Records and results of inspections as required by this permit, except this data need only be kept for three (3) years from the date of any such inspection;

(c) Monitoring, testing or analytical data, and corrective action where required by 40 CFR 264 Subpart F or any regulatory section noted in 40 CFR 264.73(b)(6);

(d) All post-closure and corrective action cost estimates, as applicable, under RCSA Section 22a-449(c)-104 and 40 CFR 264.142 and 40 CFR 264 Subpart H; and

(e) Any other information required by this permit or by any applicable law to be maintained in the Facility operating record.

15. Signatory Requirements. The Permittee's application and all reports or information submitted to the Commissioner by the Permittee pursuant to this permit shall be signed by the person specified in and contain the certification prescribed in RCSA Section 22a-449(c)-110 incorporating 40 CFR 270.11.

16. Transfers. This permit is not transferable to any person without the advanced written authorization of the Commissioner. The Commissioner may request any information deemed necessary regarding the potential transferee. Before any such transfer, the Permittee and any proposed transferee shall fully comply with the requirements of CGS Section 22a-6o. The Commissioner may require modification or revocation and reissuance of this permit to change the name of the Permittee and as an incident to any such transfer, incorporate such other requirements, as the Commissioner deems necessary.

In advance of transferring ownership or operation of its Facility prior to the termination of this permit, the Permittee shall notify the prospective new owner or operator in writing of the requirements of this permit, 40 CFR 264 through 270, and of the RCSA Section 22a-449(c)100 et. al. The Permittee shall provide such prospective new owner or operator with a copy of this permit.

The Permittee's failure to notify the new Permittee of the requirements of this permit in no way relieves the new Permittee of his obligations to comply with all applicable requirements.

If the transfer of the property takes place and the Permittee retains the permit, an access agreement between the Permittee and the prospective new owners of the Facility shall be approved by the Commissioner prior to the sale of the Facility/Site. The agreement shall include the anticipated times, locations and frequency of access needed in order for the Permittee to complete closure, post-closure care and corrective action activities and conduct inspection, operation and management activities for all remedial systems. A copy of the Post Closure Plan, referenced in Condition No. II.A.1., and the Water Quality Monitoring Plan, referenced in Condition No. II.B.1 of this permit, shall be provided to the prospective new owner prior to transfer of the property.

17. Reporting Requirements.

(a) Anticipated Non-Compliance. The Permittee shall give as much advance written notice as possible to the Commissioner of any planned changes in the Facility or activity, which may result in non-compliance with any requirement of this permit.

(b) Compliance Schedules. Except where otherwise provided for in this permit, reports of compliance and non-compliance with, or any progress reports on, interim and final requirements contained in any Compliance Schedule (Section III) of this permit, shall be submitted no later than fourteen (l4) calendar days following each schedule date, to the extent such reports are required herein.

(c) Twenty-four Hour Reporting.

(i) The Permittee or designee shall orally report to the Commissioner any condition resulting from remedial activity or waste related activity at its Facility, irrespective of whether such activity is in compliance with the requirements of this permit, which does or may pose an imminent and substantial endangerment to human health or the environment, immediately but not later than twenty-four (24) hours from the time the Permittee becomes aware or should be aware of the circumstances causing such endangerment.

The report to the Commissioner shall include:

(A) Name, address, and telephone number of the Permittee;
(B) Name, address, and telephone number of the Facility;
(C) Date, time and type of incident;
(D) Description of the occurrence and its cause;
(E) Name and quantity of waste(s) or constituents thereof involved;
(F) The extent of injuries, if any;
(G) An assessment of actual or potential hazards to human health and the environment;
(H) Estimated quantity and disposition of recovered waste that resulted from the incident;
(I) All information concerning the release of any waste or constituents thereof that may cause an endangerment to public drinking water supplies; and
(J) All information concerning a release or discharge of waste or constituents thereof or of a fire or explosion from the Facility, which could threaten human health or the environment

(ii) A written submission shall also be provided within five (5) calendar days of the time the Permittee becomes aware of the circumstances described in subdivision (i) above. The written submission shall contain a description of the endangerment and its cause; the period of endangerment including exact dates and times, if the endangerment has been abated, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the endangerment. The Permittee shall maintain in the operating record of its Facility a copy of all such written reports. The Commissioner may waive the five (5) day written notice requirement in favor of a written report within fifteen (15) days of the incident requiring reporting.

(iii) Nothing in this section shall effect or relieve the Permittee of its obligations under CGS Sections 22a-6u or 22a-450.

(d) Other Noncompliance. The Permittee shall report all instances of noncompliance with this permit not otherwise required to be reported by this permit to the Commissioner along with any other required monitoring report, no later than thirty (30) days after the date the Permittee is aware, or reasonably should have been aware of any such noncompliance. Any such report shall contain, at a minimum, the information listed in Condition No. I.E.17.(c)(i) of this permit.

(e) Other Information. When the Permittee becomes aware that it failed to submit any relevant facts or information in a permit application, or submitted incorrect information in a permit application, report or other document provided to the Commissioner regarding this permit, it shall submit such relevant facts or correct information to the Commissioner within thirty (30) calendar days of becoming aware of such facts or information.

18. Computation of Time.
    (a) Except as is expressly provided for in this permit, the computation of time periods set forth in this permit shall be as follows:
        (i) Any time period scheduled to begin on the occurrence of an act or event shall begin on the day after the act or event.
        (ii) Any time period scheduled to begin before the occurrence of an act or event shall be computed so that the period ends on the day before the act or event.
        (iii) If the final day of any time period falls on a Saturday, Sunday or a federally or state recognized legal holiday or state mandated furlough day, the time period shall be extended to the next working day.

    (b) Submission of Reports. Where this permit requires the submission of a written report, a notification or other information or documentation to the Commissioner, the report or notification shall be deemed submitted on the date such report, notification or other information is received by the Department.

19. Availability, Retention and Disposition of Records. The Permittee shall ensure that all records required under RCSA Sections 22a-449(c)-100 to 119 et. seq. or this permit, including all plans, are furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the Department or the U.S. Environmental Protection Agency ("EPA").

    The retention period for all records required under RCSA Sections 22a-449(c)-100 to 119 and this permit is extended automatically during the course of any unresolved enforcement action regarding the Facility or as requested by the Commissioner or Regional Administrator of EPA.

20. Additional Requirements. Requirements not included in this permit, which become effective by statute or regulation, and not made specifically inapplicable to facilities with a permit, shall apply to the Permittee's Facility. In the event of any conflict between this permit and any such requirement, the Permittee shall comply with the more stringent requirement. If the Permittee does not fully comply with the more stringent requirement, the Department may enforce either requirement.

21. Federal, State and Local Laws. Nothing in this permit shall be construed to prohibit any federal, state or political subdivision thereof from imposing any requirements to the extent authorized by law which are more stringent than those imposed by this permit. In addition, nothing in the permit shall relieve the Permittee of its obligation to comply with any other applicable federal, state, or local statute, regulation or ordinance.

22. Modification of the Compliance Schedule.
    (a) The Permittee may request to modify the submittal due dates of the Compliance Schedule (Section III) of this permit at any time. Such requests shall be submitted for the Commissioner's review and written approval and shall include sufficient justification for such request(s).

    (b) The Commissioner may grant extensions of submittal due dates based on the Permittee's demonstration that sufficient justification for the extension exists. Extensions to due dates, which this permit explicitly defines as being due by a

certain time or during a certain time interval, may be granted by the Commissioner if sufficient justification for the extension is demonstrated by the Permittee.

F. DEFINITIONS

Any term not otherwise defined herein shall be defined as that term is defined in RCSA 22a-449(c)-100 thru 119 incorporating 40 CFR 264 through 279.

1. "Annual" means that sampling and analysis shall occur no later than December 31st of the calendar year. The results of such sampling and analysis shall be submitted to the Commissioner no later than March 1st of the subsequent year.

2. "CFR" means the Code of Federal Regulations in effect on the date that this permit is issued.

3. "Commissioner" means the Commissioner of Environmental Protection as defined in the CGS Section 22a-2 or the Commissioner's duly authorized designee.

4. "Facility" shall mean, pursuant to 40 CFR 261.10, all contiguous land, structures, other appurtenances and improvements on the land, used for treating, storing or disposing of hazardous and solid waste and all contiguous property in control of the owner or operator.

   For the purposes of this permit, Facility shall mean the 110-acre parcel of land located at 866 River Road in Shelton, CT and subject to the requirements of this permit. Facility does not include the Former Crump Property.

5. "Former Crump Property" means the 6.3-acre parcel of land to the north of the Municipal Solid Waste/Ash Area.

6. "Hazardous Waste" or "Hazardous Wastes" shall mean hazardous waste as identified or listed as hazardous waste pursuant to 42 U.S.C. Section 6901 et. seq. and RSCA Section 22a-449(c)-101.

7. "Metal Hydroxide Sludge Cell Area" means the 1.7-acre area located in the northeast quadrant of the Facility atop the Municipal Solid Waste/Ash Area. This area was used for the disposal of approximately 10,000 to 16,000 cubic yards of hazardous wastes (EPA hazardous waste code F006) consisting of metal finishing wastewater treatment sludge and iron oxide from local industries.

8. "Municipal Solid Waste / Ash Area" means the 37-acre area located in the central portion of the Facility that was used for the disposal of municipal solid wastes and ash residue.

9. "Northeast Lined Ash Area" or "Northeast Expansion Area" means the 3.1 acre area located in the northeast corner of the Facility adjacent to the Housatonic River lagoon. This area consists of three double lined cells used for the disposal of ash residue.

10. "Period of Active Remediation" shall mean the period of time prior to the completion of remedial activity conducted pursuant to this permit, with the exception of that period when the only remaining activity is post-remediation monitoring and monitored natural attenuation.

11. "Permittee" shall mean the person responsible for the overall operation of the facility who has been issued a license by the Commissioner. As used herein "person" is defined

in Section 22a-423, Chapter 446k, of the CGS and "license" is defined in Section 4-166, Chapter 54 of the CGS.

12. "Post-Closure Period" means a minimum of thirty (30) years from the date of certification of closure of the Facility. This period may be extended or shortened by the Commissioner in accordance with 40 CFR 264.117(a)(2). For the purposes of this permit, the start date of the post-closure period is April 27, 2001.

    Please note: For sites in which waste will remain in place, the post-closure period shall be extended at the Commissioner's discretion. In the event the waste is removed, an alternate post-closure period may be approved by the Commissioner.

13. "Quarterly" means that sampling and analysis shall occur once every three (3) consecutive months in a calendar year (i.e. January, April, July and October). The results of the sampling and analysis shall be submitted to the Commissioner within sixty (60) calendar days of the date of sampling.

14. "Semi-annual" means that sampling and analysis shall occur during the months of April and October each calendar year. The results of the sampling and analysis shall be submitted to the Commissioner within sixty (60) calendar days of the date of sampling.

15. "Site" means the same or geographically contiguous property which may be divided by public and private right-of-way, provided the entrance and exit between the properties is at a cross-road intersection, and access is by crossing opposed to going along, the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way that he controls and to which the public does not have access, is also considered part of the Site property.

    For the purposes of this permit, there are five areas that comprise the Site: "Metal Hydroxide Sludge Cell Area", "Municipal Solid Waste / Ash Area", "Northeast Lined Ashe Area", "Southeast Lined Ash Area", and "Former Crump Property". Herein after the term "Site" shall refer to all five areas.

16. "Southeast Lined Ash Area" or "Southeast Expansion Area" means the 6.5 acre area located in the southeast corner of the Shelton Landfill Property near the confluence of the Housatonic River and Farmill River. This area consists of four double lined cells used for the disposal of ash residue.

17. "Weekly" means once every seven (7) calendar days.

SECTION II

Stewardship Permit
Authorized Activities

Connecticut Resources Recovery Authority
Shelton Landfill

EPA ID No. CTD000604546
Permit No. DEP/HWM/CS-126-005

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Section II – Authorized Activities

SECTION II
AUTHORIZED ACTIVITIES

A. POST-CLOSURE REQUIREMENTS

1. Post-Closure Care Plan. The Permittee shall perform post-closure care of the Site in accordance with the Post-Closure Plan, included in CRRA's application (included as Appendix A-1 of this permit). Herein after, the "approved Post-Closure Plan".

2. Modifications of Post-Closure Plan. The Permittee shall submit a written notification or request for a permit modification to authorize a change in the approved Post-Closure Plan in accordance with the applicable requirements of 40 CFR 124 and 40 CFR 270. The written notification or request must include a copy of the amended post-closure plan for the Commissioner's review and written approval.

3. Copy of Post-Closure Plan. The Permittee shall ensure that a copy of the approved Post-Closure Plan is kept at CRRA Headquarters or at an alternate location acceptable to the Commissioner, until the Post-Closure Period has been completed and certified in accordance with the requirements of this permit.

4. Completion of Post-Closure Period.
   (a) The Permittee shall notify the Commissioner in writing two (2) calendar years prior to the anticipated end date of the Post-Closure Period for the Northeast and Southeast Lined Ash Areas.

   (b) Within sixty (60) calendar days after the completion of the Post-Closure Period, the Permittee shall submit to the Commissioner by registered mail or equivalent means, a certification signed by both the Permittee and by an independent registered professional engineer stating that the post-closure care for the Site, was performed in accordance with the specifications in the approved Post-Closure Plan. Documentation supporting the independent, registered professional engineer's certification shall be furnished to the Commissioner upon request.

5. Ecological Risk Assessment. Pursuant to RCSA Section 22a-133k-1 et. seq. ("Remediation Standard Regulations"), the Permittee shall prepare and submit for the Commissioner's review and written approval an Ecological Risk Assessment evaluating the potential for ecological receptors to be exposed to contaminants and to ensure that any remedial goals and objectives address protection for those receptors from existing or potential contaminant exposures.

6. Notification Requirements for Newly Discovered Releases.
   (a) The Permittee shall notify the Commissioner in writing of any newly discovered release(s) of hazardous waste or hazardous waste constituents discovered during the course of post-closure care, surface and groundwater monitoring, environmental audits, or other means, within fifteen (15) calendar days of the date of discovery.

(b) If the Commissioner determines that further investigation of the Site is needed, the Permittee shall be required to prepare a plan for further investigation within sixty (60) calendar days of notification by the Commissioner.

7. Inspections.

(a) The Permittee shall inspect the Facility for malfunctions, deterioration, and discharges, which may lead to any release of hazardous or solid wastes. The Permittee shall remedy any deterioration which an inspection reveals, to ensure that the problem does not lead to an environmental hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately.

(b) The Permittee shall ensure that inspections are performed on a quarterly basis by a registered professional engineer. Such inspections shall include, but not be limited to:

(i) Odors and dust control;
(ii) Condition of the access road;
(iii) Erosion, settling, subsidence or other events that may affect the grading;
(iv) Integrity of the final cover soils and vegetation;
(v) Integrity of the containment structure and benchmarks;
(vi) Drainage control; and
(vii) Leachate seeps.

(c) The Permittee shall record all inspections on an inspection log. Such inspection logs shall include: the date and time of the inspection, the name of the inspector and company affiliation, a notation of the observations made, and the date and nature of any repairs. Inspection logs shall be kept for at least three (3) years from the date of the inspection or for longer if a more stringent condition applies; and maintained in either an electronic format with a hard copy available to the Commissioner upon request, or as a written copy in the Facility's operating record.

8. Maintenance of Final Cover. The Permittee shall ensure that the final cover for the Site is properly maintained and repaired when necessary in accordance with the approved Post-Closure Plan. Proper maintenance shall include, but not be limited to, ensuring that:

(a) Established vegetation is cut to the proper length to ensure that the root depth is less than six inches for the Metal Hydroxide Sludge Cell Area, Northeast Lined Ash Area and Southeast Lined Ash Area;

(b) For areas in which erosion has occurred, the lost material shall be replaced and the area re-seeded; and

(c) Obstructions to the drainage structures are removed and properly disposed.

9. Leak Detection System.

(a) The Permittee shall ensure that the leak detection systems for the Southeast Lined Ash Area and Northeast Lined Ash Area are properly maintained and operational at all times. The Permittee shall ensure that any hazard that is identified is immediately corrected and noted in the inspection logs maintained pursuant to Condition No. II.A.7. of this permit.

(b) The Permittee shall remove and inspect each primary and secondary leachate collection system sump pump on a semi-annual basis. Such inspections shall be recorded on an inspection log in accordance with the requirements of Condition No. II.A.7. of this permit. The Permittee shall repair or replace any malfunctioning pump within seventy-two (72) hours after the date of the inspection or the date the Permittee is made aware of the need for repair. When conditions arise which do not allow for the repair or replacement to be completed within seventy-two (72) hours, the Permitteee shall notify the Department in writing. Such notification shall include a description of the repair to be made, the date the repair will be made and the interim measures taken until the repair is completed. This information shall also be recorded in the inspection records.

(c) The Permittee shall inspect and monitor the flow meters for the pumps of the leak detection system on a monthly basis. During such inspections, the Permittee shall record a reading of the flow meter; and shall submit such records on a quarterly basis to the Department.

10. Leachate Collection and Removal System

(a) The Permittee shall maintain and operate the leachate collection and removal systems for the Northeast Lined Ash Area and the Southeast Lined Ash Area in accordance with the requirements of the Pretreatment Permit (Permit No. SP0001459) issued by the Department on June 27, 2001 or as renewed or modified by the Commissioner.

11. Landfill Decomposition Gas System.

(a) The Permittee shall operate and monitor the landfill decomposition gas collection system in accordance with the requirements of:

(i) 40 CFR 258.23;

(ii) The New Source Review Permit to Construct and Operate the Shelton Landfill Gas Collection System and Enclosed Flare (Permit No. 163/0119-0091), herein after the "Flare Permit" or as renewed or modified by the Commissioner; and

(iii) The CRRA Shelton Landfill Gas Systems Operation and Gas Migration Monitoring Plan originally issued April 20, 2000 and revised on February 27, 2002, herein after the "approved Gas Monitoring Plan" or as renewed or modified by the Commissioner.

In the event of a conflict between the requirements of the Flare Permit and the approved Gas Monitoring Plan, the requirements of the Flare Permit shall take precedence.

(b) The Permittee shall prepare and submit for the Commissioner's review and written approval a revised gas monitoring plan for the Site to reflect current site conditions.

(c) The Permittee shall submit a written notification or request for a permit modification to authorize a change in the approved Gas Monitoring Plan in accordance with the applicable requirements of 40 CFR 124 and 270. The written

notification or request must include a copy of the amended gas monitoring plan for the Commissioner's review and written approval.

(d) The Permittee shall ensure that the landfill decomposition gas collection system and associated equipment are properly operated and maintained at all times in accordance with the Flare Permit and approved Gas Monitoring Plan.

(e) The Permittee shall monitor and inspect the landfill decomposition gas monitoring system in accordance with the requirements of the Flare Permit and approved Gas Monitoring Plan.

(f) The Permittee shall inspect and test all on-site and off-site soil gas probes and continuous monitoring devices in accordance with the requirements of the Flare Permit and approved Gas Monitoring Plan to confirm proper operation of the sensors and to test for the presence of methane gas.

12. Public Participation Plan. The Permittee shall develop and implement a Public Participation Plan. Such plan shall, at a minimum, include provisions for:
(a) A public notice prior to the start of or completion of remedial activities or the completion of post-closure care inclusive of landfill decomposition gas and surface and groundwater monitoring at the Site or area affected by the Site or any portion thereof consistent with Condition No. II.A.13. of this permit and the requirements of CGS Section 22a-134(i);
(b) The submittal of a copy of such notice to the Commissioner ten (10) calendar days prior to the date of the publication; and
(c) The submittal of a written summary of all comments received and responses thirty (30) calendar days after the end of the comment period.

The Commissioner shall review the summary of the comments and the Permittee's responses and shall either: adopt the responses, adopt the responses with modifications, or reject the responses and prepare a response to each comment.

In the event of substantial changes in the remedial or post-closure care approach, the Commissioner may require an additional opportunity for public comment with respect to such changes.

13. Public Notice Requirements. The Permittee shall provide public notice of any proposed remediation and the Commissioner's tentative determination that remediation and/or post-closure care inclusive of landfill gas decomposition and surface and groundwater monitoring is complete. Each public notice must provide a forty-five (45) calendar day comment period and a public information meeting no earlier than thirty (30) calendar days from the date of the public notice and no later than forty five (45) days after the date of the public notice.
(a) Prior to the commencement of any proposed remedial action, the public notice shall summarize the investigations undertaken, the results of the investigations, clearly identify the proposed remedial activities, and include an address and telephone number for a contact person. The Permittee shall:
(i) Publish the notice in a newspaper having substantial circulation in the municipality in which the Site or the affected area is located;

(ii) Broadcast the notice on a radio station during the high volume listening times on the same day the notice is published;

(iii) Provide a copy of the notice to the Chief Elected Official and the Director of Health of the municipality where the Site or affected area is located;

(iv) Provide a copy of the notice to the owner or operator of the Site (if the Permittee is not the Site owner or operator) and to all persons on the Facility mailing list maintained pursuant to 40 CFR 124.10(c)(1)(ix); and

(v) Erect and maintain a sign at least six (6) feet by four (4) feet for at least thirty (30) calendar days in a legible condition at the Site, clearly visible from the public highway and including the words "ENVIRONMENTAL CLEAN_UP IN PROGRESS AT THIS SITE. FOR FURTHER INFORMATION CONTACT:", and a telephone number at which any interested person may obtain additional information about the remediation.

(b) Prior to the Commissioner's final determination that remediation and/or post-closure care inclusive of landfill decomposition gas monitoring and surface and groundwater monitoring is complete, the Permittee shall:

(i) Publish the notice in a newspaper having substantial circulation in the municipality in which the Site or the affected area is located;

(ii) Broadcast the notice on a radio station during the high volume listening times on the same day the notice is published;

(iii) Provide a copy of the notice to the owner or operator of the Site (if the Permittee is not the Site owner or operator) and to all persons on the Facility mailing list maintained pursuant to 40 CFR 124.10(c)(1)(ix); and

(iv) Include a summary of the basis for the Commissioner's determination.

(c) Upon the completion of the public comment period the Commissioner shall make a final determination. If the final determination is that the post-closure period and remediation is complete then the Stewardship Permit will be terminated and a Certificate of Completion will be issued.

B. WATER QUALITY MONITORING REQUIREMENTS

1. Water Quality Monitoring Plan. The Permittee shall perform surface water and groundwater monitoring in accordance with the Groundwater Monitoring Plan, included in CRRA's application (included as Appendix B-1 of this permit) until it is superseded by the approval of a revised Water Quality Monitoring Plan submitted pursuant to Condition No. II.B.2. of this permit. Herein after, the "approved Water Quality Monitoring Plan".

2. Revised Water Quality Monitoring Plan. The Permittee shall prepare and submit for the Commissioner's review and written approval a revised water quality monitoring plan for the Site that incorporates the requirements of CGS Section 22a-430 and the Groundwater Discharge Permit (Permit Nos. LF0000023 andLF0000052) issued on January 11, 1985 and August 27, 1996 respectively.

3. Modifications of Approved Water Quality Monitoring Plan. The Permittee shall submit a written notification or request for a permit modification to authorize a change in the approved Water Quality Monitoring Plan in accordance with the applicable requirements of 40 CFR 124 and 270. The written notification or request must include a copy of the amended water quality monitoring plan for the Commissioner's review and written approval.

4. Copy of Approved Water Quality Monitoring Plan. The Permittee shall ensure that a copy of the approved Water Quality Monitoring Plan is kept at CRRA Headquarters or at an alternate location acceptable to the Commissioner, until the groundwater monitoring has been completed and certified in accordance with the requirements of this permit.

5. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all monitoring wells which are installed or used by the Permittee to achieve compliance with this permit. Proper maintenance, at a minimum, includes inspections to detect existing and potential problems and adequate funding to maintain proper conditions and repair any problems at the Site.

6. Quality Assurance Project Plan. The Permittee shall prepare and submit for the Commissioner's review and written approval a Quality Assurance Project plan ("QAPP"), prepared in accordance with the document titled: *Quality Assurance Guidance for Conducting Brownfield's Site Assessments*, US Environmental Protection Agency OSWER Directive No. 9230.0-83P, and incorporating Connecticut's Reasonable Confidence Protocols. The Permittee shall ensure that the data is of sufficient quality to make decisions regarding the investigation, potential remediation and monitoring of the Site.

7. Monitoring Frequency. The Permittee shall perform surface and groundwater monitoring on a quarterly basis until the Commissioner approves in writing the Ecological Risk Assessment submitted in accordance with Condition No. II.A.5. of this permit. After the Commissioner has approved the Ecological Risk Assessment, the Permittee may re-evaluate the Water Quality Monitoring Plan. If such re-evaluation results in proposed changes to the approved Water Quality Monitoring Plan, the Permittee shall submit

written notification of such changes and an amended plan for the Commissioner's review and written approval.

8. Future Corrective Action. If the Commissioner determines that the surface and groundwater monitoring data indicates the soil and/or groundwater remediation was not effective, the Permittee shall within one hundred eighty (180) days of the Commissioner's notice, submit for the Commissioner's review and written approval, a plan for additional soil, surface water and groundwater characterization and establishment of a corrective action program consistent with the objectives of 40 CFR 264.100.

9. Completion of Water Quality Monitoring. Within sixty (60) calendar days after the completion of surface and groundwater monitoring (i.e. end of the Post-Closure Period), the Permittee shall submit to the Commissioner by registered mail or equivalent means, a certification signed by both the Permittee and by an independent registered professional engineer stating that the surface and groundwater monitoring for the Site, was performed in accordance with the specifications in the approved Water Quality Monitoring Plan. Documentation supporting the independent, registered professional engineer's certification shall be furnished to the Commissioner upon request.

C. FINANCIAL RESPONSIBILITY

1. The Permittee shall submit for the Commissioner's review and written approval written estimate(s) of the current cost to performing post-closure care inclusive of surface and groundwater monitoring, landfill decomposition gas monitoring, and leachate collection of the Site for the Post-Closure Period in accordance with the requirements of this permit. The Permittee shall ensure that such written estimates are prepared in accordance with the methodology specified in RCSA 22a-449(c)-104 incorporating 40 CFR 264.142(a) and 40 CFR 264.144(a), as applicable. Note a fifteen percent (15%) contingency shall be applied to the estimates for unforeseeable elements or events which may increase the cost of performing corrective action.

2. Upon request by the Permittee, the Commissioner may approve periodic reductions in the amount of financial assurance commensurate with the completion of corrective action activities. Such request shall include a revised cost estimate and demonstration of completed work activities which equates to at least a fifteen percent (15%) reduction in the estimated costs.

3. The Permittee shall maintain such financial assurances in effect until the Commissioner notifies the Permittee in writing that it is no longer required to maintain such a mechanism for financial assurances as provided for in Condition No II.C.6. of this permit.

4. Within sixty (60) calendar days after receiving the certification, submitted pursuant to Condition Nos. II.A.4.(b) and II.B.9., that post-closure care inclusive of surface and groundwater monitoring and landfill decomposition gas monitoring of the Site has been completed in accordance with the approved Post-Closure Plan, approved Water Quality Monitoring and approved Gas Monitoring Plan, the Commissioner will notify the Permittee in writing that it is no longer required to maintain financial assurance for post-closure care of the Site, unless the Commissioner has reason to believe that post-closure care has not been performed and/or completed in accordance with the approved Post-Closure Plan, approved Water Quality Monitoring Plan and approved Gas Monitoring Plan. The Commissioner shall provide the Permittee with a detailed written statement of any such reason(s) to believe that post-closure care has not been performed and/or completed in accordance with the approved plans.

5. If the Permittee fails to perform any of the terms or conditions of this permit, the financial assurance shall be available to the Commissioner to perform such terms or conditions of this permit provided that, prior to drawing upon any mechanism(s) for financial assurance, the Commissioner shall notify Permittee, in writing, of the alleged failure to perform and provide Permittee with a reasonable period of not less than fifteen (15) calendar days in which to remedy the alleged non-performance.

D. MISCELLANEOUS

1. The Permittee shall not operate the Facility in any manner that stores, treats, or disposes of hazardous or solid wastes or in any way manages hazardous or solid wastes other than hazardous or solid wastes that may be generated during Facility maintenance, authorized closure and/or corrective action activities. Such waste shall be managed in accordance with all applicable regulations. The Permittee shall comply with all applicable requirements of RCSA Section 22a-449(c)-102 incorporating 40 CFR Part 262 "Standards Applicable to Generators of Hazardous Waste".

PART 1: POST-CLOSURE PLAN

1. GENERAL REQUIREMENTS

1.1 Location and Number of Post Closure Plans

There are three Post-Closure Plans for the Shelton Landfill. The Plans are assigned to the following at the indicated locations:

Peter W. Egan
Director of Environmental Affairs and Development
Connecticut Resources Recovery Authority
100 Constitution Plaza, 6th Floor
Hartford, CT 06103

Connecticut Resources Recovery Authority Environmental Files
Connecticut Resources Recovery Authority
100 Constitution Plaza, 6th Floor
Hartford, CT 06103

1.2 Identification and Location of Person Responsible for Facility During Post-Closure Period

The person responsible for the Shelton Landfill during the post-closure period is Peter W. Egan, CRRA Director of Environmental Affairs and Development. Mr. Egan is located as follows:

Peter W. Egan
Director of Environmental Affairs and Development
Connecticut Resources Recovery Authority
100 Constitution Plaza, 6th Floor
Hartford, CT 06103
(860) 757-7725

1.3 Procedures for Updating Post-Closure Plan

When updates of the Post-Closure Plan are required, CRRA prepares the update and distributes copies to the appropriate personnel at CRRA Headquarters. In addition, copies of the updated Plan are forwarded to the United States Environmental Protection Agency ("USEPA") and the Connecticut Department of Environmental Protection ("CTDEP").

1.4 General Description of the Closed Facility

The Shelton Landfill is located in southwestern Connecticut in the City of Shelton. A site plan for the Landfill is Exhibit 1 to this Plan. The Housatonic River and an interconnected lagoon abut the facility to the east and the Farmill River and it associated tidal wetlands bound the facility to the south. The western portion of the facility is

bounded by River Road (State Route 110), and the commercially zoned Former Crump Parcel (now owned by CRRA) borders the northern property boundary. The general area surrounding the facility is primarily commercial/industrial. Sikorsky Aircraft is located in the Town of Stratford, approximately one mile south of the facility.

The Shelton Landfill consists of 110 acres of land. The early site history is only partially known and only since circa 1892 when Charles Wakelee owned the property. It is not known if Mr. Wakelee ever developed the property. Mr. Wakelee owned the site until circa 1927. Site ownership is unknown from circa 1927 until circa 1955. In 1955, the site was owned by Alfred Gallucci and members of his family who operated a sand and gravel pit and construction company on site. It was also noted that an asphalt plant was in operation on site from circa 1945 until circa 1981. In 1967 the town of Shelton leased the property from Mr. Gallucci to run a municipal landfill. In 1977, the town hired William Archer and/or Archer Landfill Services Corporation to operate the landfill activities. Mr. Archer operated the landfill until 1983, when operations were taken over by Connecticut Resources Recovery Authority ("CRRA"). CRRA bought the site in August 1983 and continued active landfilling activities onsite until February 1998. CRRA continues to perform post-closure care and environmental monitoring, including operation of a landfill gas collection system, a landfill gas flare, and an ash leachate collection and pretreatment system.

1.4.1 Shelton Landfill

The Shelton Landfill consists of four parts, described below.

(a) The Municipal Solid Waste/Ash Area consists of 37 acres of the property. The City of Shelton initially received a permit in October of 1977 for the disposal of municipal solid waste ("MSW"). In August of 1983, just prior to CRRA's purchase of the Shelton Landfill, CTDEP issued a solid waste permit to CRRA for expansion and operation of the solid waste disposal area at the Landfill. The solid waste permit was modified in 1988 to allow CRRA to dispose of ash residue from waste-to-energy facilities on top of the existing MSW landfill. The ash residue was added in a roughly 22-acre parcel on top of the original 37-acre footprint. Ash disposal in this area occurred from February 1988 until August 1994, and this area received final cover from the winter of 1996 to 1997. Final CTDEP approval for the closure was obtained on March 30, 1999.

(b) The Southeast Lined Ash Area is located at the southeast corner of the landfill property, near the confluence of the Housatonic River and the Farmill River, along the Housatonic River Lagoon. It covers approximately 6.5 acres of land. The Southeast Lined Ash Area consists of four double-lined cells with leachate collection systems, which discharge to the sanitary sewer via a leachate pretreatment (pH-adjustment) system. The Southeast Lined Ash Area accepted ash residue from August 1994 until June 1996, when the Area received a Posishell® interim cover. The base pad (beneath the liner layers) of the Southeast Lined Ash Area was constructed partly from dredged spoils from Bridgeport Harbor, which were contaminated with volatile organic compounds (VOC's). The final cover for the Southeast Lined Ash Area

was completed at the end of May 2000 and CTDEP approved closure of the Area in April 2001.

(c) The Northeast Lined Ash Area is located at the northeast corner of the landfill, adjacent to the Housatonic River and the Housatonic River Lagoon. It covers approximately 3.1 acres of land. The Northeast Lined Ash Area consists of three double-lined cells with a leachate collection system that discharges through the same leachate pretreatment system that treats the Southeast Lined Ash Area leachate. Ash residue was landfilled in the Northeast Lined Ash Area from June 1996 until February 1998 and received final cover in October 1999. CTDEP approved closure of the Area in April 2001.

(d) The Metal Hydroxide Sludge Area/Cell is a former hazardous waste disposal area that covers approximately 1.7 acres atop the 37-acre MSW landfill. The Metal Hydroxide Sludge Area/Cell is located in the northeastern quadrant of the site. The Metal Hydroxide Sludge Area/Cell is comprised of metal-finishing wastewater treatment sludge (i.e. metal hydroxide sludge [MOH], RCRA-Listed Waste Code F006). It has also been reported that iron-hydroxide sludge from lime treatment of spent pickle liquor from steel finishing operations, which was generated historically by Raymark, Inc. (or Raybestos Friction Materials Company), was also landfilled in the Metal Hydroxide Sludge Area/Cell. The iron hydroxide sludge was generated through the operation of a surface impoundment located in the central-southeast side of the property between 1975 and 1983. On March 18, 1981, USEPA granted a temporary exclusion to the Raybestos facility in Stratford, Connecticut for the treated spent pickle liquor, so the USEPA returned Mr. Gallucci's Part A application that was submitted for operation of the surface impoundment. The Metal Hydroxide Sludge Area/Cell last received hazardous waste in April, 1983, and was certified closed by CTDEP in October 1989.

1.4.2 Shelton Transfer Station

In March 1991, CTDEP issued to CRRA a "Permit to Construct" (SW-1260136) a transfer station on approximately one/half acre in the southwestern portion of the Shelton Landfill. CTDEP issued to CRRA a "Permit to Operate" (SW-1260154) for the transfer station in October 1991. While CRRA held the permits for the transfer station and owned it, the transfer station was operated by the City of Shelton and was available only for the use of Shelton residents to drop-off their waste.

In January 2009, CRRA leased the transfer station to the City of Shelton for its continued operation. In February 2009, the City of Shelton registered the transfer station under the Municipal Transfer Station General Permit (Registration No. 1260902-MTSGP) and, subsequently CRRA surrendered the "Permit to Construct" and the "Permit to Operate" the transfer station. In March 2009, CTDEP acknowledged CRRA's surrender of the permits.

To CRRA's knowledge, no materials were ever disposed on the portion of the Landfill where the transfer station is located.

1.4.3 Former Crump Parcel

CRRA purchased the adjacent northerly property (the 200-foot wide Former Crump Parcel) in February 1996. The purchase was in part to obtain the groundwater rights of the parcel. A plume investigation at the north end of the landfill had indicated that there was contamination in the bedrock on the adjacent parcel. The contamination was in one location near a dip in the bedrock at the north central part of the Landfill. This contamination was attributed to leachate from the MSW/Ash Area or to off-site sources from the north or northwest. The investigation concluded that even under a worst-case scenario, a failure of the Northeast Lined Ash Area's liner(s) would not impact groundwater beyond the landfill's original northern boundary. To CRRA's knowledge, no landfilling activities have ever been conducted on the Former Crump Parcel.

The Former Crump Parcel has now been leased for use as a golf driving range and miniature golf course and batting cages. CRRA retains the groundwater rights to that parcel.

CRRA has also obtained the groundwater rights to the parcel north of the Former Crump Parcel, which has been developed for an indoor ice rink.

1.5 Documentation of Facility Relative to 100-Year Flood Plain Level

The 100- and 500-year flood elevation for the Housatonic River is 13.8 feet and 21.0 feet, respectively (FIRM Flood Insurance Study, Shelton, CT; US Department of Housing and Urban Development, July 1991). These elevations reflect the tidal influences in addition to stormwater elevations, thereby representing worst case conditions. At a minimum elevation of 64 MSL, the hazardous waste management unit will not be impacted by either the 500-year flood or the 100-year flood.

1.6 Description of Groundwater Monitoring Activities and Frequencies

Pursuant to the Groundwater Discharge Permits (LF0000023 for the MSW/Ash Area and LF0000052 for the Northeast and Southeast Lined Ash Areas) for the Shelton Landfill, quarterly monitoring of groundwater is required. In addition to submitting quarterly reports of the monitoring, CRRA also is required to submit an annual report summarizing the results of the quarterly monitoring.

Until October 1994, two separate quarterly groundwater monitoring reports were required, one for the MSW/Ash Area for CTDEP and another for the Metal Hydroxide Sludge Area/Cell for CTDEP and USEPA. With CTDEP's approval, the reports were combined beginning with the October 1994 quarterly report.

The hazardous waste monitoring program for the Metal Hydroxide Sludge Area/Cell has historically had statistically significant levels of several parameters at two downgradient wells. The MSW/Ash Area plume investigation that was completed in March 2003, however, concluded that the existing monitoring program needs to be

revised to account for the fact that the groundwater up-gradient of the cell has been impacted by the MSW/Ash Area plume. The five wells used for sampling under this program include two that are also used under the groundwater discharge permit monitoring program.

Domestic wells across River Road (State Route 110) from the Landfill and lysimeters had previously been monitored under the groundwater discharge permit. However, the properties where the domestic wells were monitored have been provided with a pubic drinking water supply and the lysimeters dried up years ago. Neither is monitored any longer.

When the Southeast Lined Ash Area opened in 1994, CRRA was required to sample, on a quarterly basis, eight additional groundwater monitoring wells, six surface water locations and two ash leachate sewer discharge locations.

CRRA began implementing some of the USEPA Subtitle D measures in its monitoring program during FY 1995. This resulted in sampling and testing for additional field parameters and expanding the list of metals for analysis. During FY 1996, an engineer consultant requested a lower flow rate for sample collection to obtain more accurate results. This increased field-sampling time and costs.

When the Northeast Lined Ash Area was developed, CTDEP revised the groundwater discharge permit to establish a comprehensive monitoring program that met USEPA's Subtitle D MSW landfill requirements. The amended permit provided for monitoring of well clusters wherever possible, added ash leachate sampling locations, expanded the surface water monitoring program and added USEPA Appendix II VOC monitoring for two sampling events. Also added was a quantitative and qualitative habitat characterization of the Farmill River and Housatonic Lagoon. The modified permit requires the following:

(a) Monitoring a total of 30 groundwater wells;

(b) Monitoring one water supply well (no longer in use);

(c) Monitoring two ash leachate sample locations;

(d) Monitoring 12 surface water sampling points;

(e) An expanded list of parameters to be monitored;

(f) Lower laboratory analysis detection levels; and

(g) Two detailed habitat characterizations.

1.7 Description of the Maintenance Activities and Frequencies for the Final Containment Structures and Facility Monitoring Equipment

1.7.1 Final Containment Structures

The final cover of the MSW/Ash Area of the Shelton Landfill consists of an 18-inch (minimum) layer of low permeability soil, a 6-inch layer of topsoil and

dense vegetation. The final cover of the Southeast and Northeast Lined Ash Areas consists of a sand bedding layer, a geomembrane cap, a drainage layer, a topsoil layer and vegetation. The final cover of Metal Hydroxide Sludge Area/Cell consists of a soil layer, a bentonite liquid containment liner, a synthetic membrane cap, a sand drainage layer, filter fabric, a cover soil layer and vegetation.

The Landfill is inspected quarterly by physically walking the site and making observations regarding the integrity of the cover and drainage facilities. Specifically, the inspector (required to be a professional engineer) notes evidence of erosion, settling, subsidence or other events affecting the cover, objects obstructing the drainage/run-off systems and disturbance to the cover. These constitute are the containment structures requiring maintenance or inspection. Any deficiencies are noted in the inspection report which is submitted to CTDEP and, if required, immediately repaired.

1.7.2 Facility Monitoring Equipment

The Shelton Landfill has monitoring equipment associated with the groundwater monitoring program, the leachate collection and pretreatment system and the landfill gas collection and monitoring system.

1.7.2.1 Groundwater Monitoring

The groundwater monitoring wells at the Landfill are discussed in Section 1.6, above. The groundwater is monitored quarterly by a contractor retained by CRRA (currently, Fuss & O'Neill). The condition of each well and well appurtenances are inspected during each monitoring event by the contractor and CRRA staff is notified of any wells requiring repair.

1.7.2.2 Leachate Collection and Pretreatment System

The Northeast and Southeast Lined Ash Areas are equipped with leachate collection systems and a pretreatment system for pH adjustment prior to discharge to the sanitary sewer. Leachate in the lined ash disposal cells is pumped to the pretreatment system by CRRA using automatic actuation features of the pumps. Data and maintenance records are maintained on-site by CRRA. CRRA conducts operation and maintenance of this system, typically on a weekly basis. CRRA contracts with vendors as necessary to maintain the system in operating condition.

1.7.2.3 Landfill Gas Collection and Monitoring System

CRRA operates an enclosed, "John Zink" flare to control landfill gas at the Shelton Landfill. Landfill gas is collected under vacuum through a number of central and perimeter extraction wells and associated header piping and directed to the enclosed flare for combustion. Vacuum is provided by one of two blowers connected to the system in parallel.

CRRA uses a contractor (currently, SCS Field Services) to perform gas monitoring and operation and maintenance of the gas system and flare. The contractor is on-site a minimum of once each week performing these services.

Perimeter soil gas concentrations on the west and north sides of the property are monitored by 12 continuous monitoring probes located on the property boundary and connected to an autodialer system. Seven non-continuous soil gas probes located on the property boundary are monitored quarterly (at a minimum), using a hand held instrument. In addition, 16 bar-punch soil gas probes located on both sides of the River Road right-of-way are monitored quarterly (at a minimum) using a hand held instrument. The south and east sides of the Landfill are bounded by the Housatonic and Farmill Rivers respectively, which provide a barrier to landfill gas migration.

On-site structure monitoring is performed quarterly (at a minimum). Although only required to monitor quarterly, CRRA typically monitors all on-site structures weekly as an added measure of safety. Many on-site structures are equipped with a continuous methane monitoring device. CRRA's contractor tests the continuous monitors at least monthly to ensure proper operation

Off-site structure monitoring for businesses and residences across River Road from the Landfill is performed quarterly (at a minimum). Although only required to monitor quarterly, CRRA typically monitors all off-site businesses monthly as an added measure of safety. For businesses, CRRA's contractor performs a monthly inspection and test to confirm operation of the sensor and to check for the presence of methane with a hand-held instrument. Six off-site businesses are currently equipped with continuous methane monitoring sensors.

Two residences located west of the landfill are also equipped with continuous methane monitoring sensors. CRRA's contractor performs a quarterly inspection and test to confirm operation of the sensor and to check for the presence of methane with a hand-held instrument. Recently, the occupants of the residences have not returned telephone calls from the contractor requesting permission to inspect and test the sensors and, therefore, the inspection and testing has not occurred.

1.8 Documentation of the Notice on the Deed

Documentation on the land records that the land was used to manage hazardous wastes and that the area has restricted use in included in Exhibit 2.

2. INSPECTION PROCEDURES AND SCHEDULE

2.1 Inspection Procedures

2.1.1 Quarterly Landfill Inspections

Pursuant to the Solid Waste Permits (SW-126-1E, SW-126-1VA, 1260181 and 1260227) for the Shelton Landfill, quarterly landfill inspections by a professional engineer are required. The inspections cover subject such as

- odors,
- dust control,
- final cover soils, vegetation and grading,
- drainage and erosion control,
- leachate seeps,
- access roads
- groundwater monitoring, and
- gas collection and monitoring.

The landfill inspections are conducted by David Bodendorf, CRRA's Senior Environmental Engineer and reports of the inspections are submitted to CTDEP.

2.1.2 Quarterly Groundwater Monitoring

Pursuant to the Groundwater Discharge Permits (LF0000023 and LF0000052) for the Shelton Landfill, quarterly monitoring of groundwater is required. The groundwater monitoring system is described in Section 1.6 above. The Groundwater Monitoring Plan for the Shelton Landfill provides a detailed description of the subject.

CRRA uses a contractor (currently, Fuss & O'Neill) to conduct the groundwater monitoring. On a periodic basis, CRRA conducts a competitive bid process to select a consultant to conduct the groundwater monitoring. The condition of each well and well appurtenances are inspected during each monitoring event by the contractor and CRRA staff is notified of any wells requiring repair.

2.1.3 Leachate Collection System Inspections

Pursuant to the Pretreatment Permit (SP0001459) for the Shelton Landfill, ash leachate from the Northeast and Southeast Lined Ash Areas is collected and, after pH adjustment, discharged to the Stratford sanitary sewer system. Leachate is sampled and analyzed on a quarterly basis. In addition, pursuant to a "Special Permit to Discharge to the Sanitary Sewer" issued to CRRA by the Town of Stratford, leachate is sampled and analyzed on a monthly basis for parameters not included by CTDEP in the sampling and analysis under the Pretreatment Permit.

CRRA uses a contractor (currently, Fuss & O'Neill) for the monthly (Stratford) and quarterly (CTDEP) leachate sampling and analysis. CRRA operates and

maintains the system itself with maintenance and inspection typically conducted on a weekly basis.

2.1.4 Landfill Gas System Monitoring and Inspection

Pursuant to CRRA's "Permit to Construct and Operate Gas Collection and Control System" (163-119-091) and Consent Order 1590, CRRA is responsible for a variety of monitoring and inspection activities related to landfill gas (methane) at the Shelton Landfill. CRRA uses a consultant (currently, SCS Field Services) to conduct monitoring and inspection activities. The landfill gas collection and monitoring system is described in Section 1.7.2.3 above.

CRRA's contractor performs gas monitoring, inspection and operation and maintenance of the gas system and flare. The contractor is on-site a minimum of once each week performing these services.

Perimeter soil gas concentrations on the west and north sides of the property are monitored by 12 continuous monitoring probes located on the property boundary and connected to an autodialer system. Seven non-continuous soil gas probes located on the property boundary are monitored and inspected quarterly (at a minimum), using a hand held instrument. In addition, 16 bar-punch soil gas probes located on both sides of the River Road right-of-way are monitored and inspected quarterly (at a minimum) using a hand held instrument.

On-site structure monitoring and inspection is performed quarterly (at a minimum). Although only required to monitor quarterly, CRRA typically monitors all on-site structures weekly as an added measure of safety. Many on-site structures are equipped with a continuous methane monitoring device. CRRA's contractor tests the continuous monitors at least monthly to ensure proper operation

Off-site structure monitoring for businesses and residences across River Road from the Landfill is performed quarterly (at a minimum). Although only required to monitor quarterly, CRRA typically monitors all off-site businesses monthly as an added measure of safety. For businesses, CRRA's contractor performs a monthly inspection and test to confirm operation of the sensor and to check for the presence of methane with a hand-held instrument. Six off-site businesses are currently equipped with continuous methane monitoring sensors.

Two residences located west of the landfill are also equipped with continuous methane monitoring sensors. CRRA's contractor performs a quarterly inspection and test to confirm operation of the sensor and to check for the presence of methane with a hand-held instrument. Recently, the occupants of the residences have not returned telephone calls from the contractor requesting permission to inspect and test the sensors and, therefore, the inspection and testing has not occurred.

2.1.5 Stormwater Semi-Annual Comprehensive Site Compliance Evaluations and Annual Monitoring

Pursuant to the "General Permit for the Discharge of Stormwater Associated with Industrial Activities" (Issued 10/01/02, Modified 07/15/03 and Re-Issued 10/02/08), as registered by Permit No. GSI000512 for the Shelton Landfill, Comprehensive Site Compliance Evaluations are performed semi-annually and stormwater samples are taken and analyzed on an annual basis. The results of the annual sampling and analysis are reported to CTDEP. During the Comprehensive Site Compliance Evaluations, there must be visual inspection of potential sources of pollution for evidence of, or the potential for, pollutants entering the stormwater drainage system. Structural stormwater management measures, erosion control measures and other structural pollution prevention measures must be observed to ensure that they are operating correctly.

The Comprehensive Site Compliance Evaluations are conducted by David Bodendorf, CRRA's Senior Environmental Engineer or Christopher Shepard, CRRA's Environmental Engineer.

2.2 Statement as to Where the Inspection Schedule and Logs Will Be Kept

The inspection schedule and logs will be kept at CRRA Headquarters, 100 Constitution Plaza, 6th Floor, Hartford, Connecticut 06103.

3. ADDITIONAL REQUIREMENTS FOR LANDFILLS

3.1 List of Hazardous Wastes Placed in Each Cell

Between 1980 and 1983, approximately 10,685 to 16,028 cubic yards of metal hydroxide sludge was disposed in the Metal Hydroxide Sludge Area/Cell before it was closed. These sludges are listed hazardous wastes which have been assigned the EPA hazardous waste number F006, "Wastewater Treatment Sludge from Electro Plating Operations." The hazardous waste is an alkaline composition of metal hydroxide sludges primarily comprised of the metals cadmium, chromium, lead, nickel and zinc.

The Metal Hydroxide Sludge Area/Cell was placed directly on top of the MSW landfill in an area of no saturate overburden groundwater. During the RCRA closure of the Area/Cell, a portion of the sludge cell ("Area 1") was excavated and the metal hydroxide sludge was consolidated in "Area 2" of the Area/Cell. MSW was then disposed in and above "Area 1" and "Area 1" was capped with a modified RCRA cap. "Area 2," which contains all the metal hydroxide sludge that was landfilled in the hazardous waste cell, was then capped with a synthetic membrane cap.

3.2 Description of the System for Controlling Run-On and Run-Off

An evaluation of the volume and flow rate of surface infiltration was conducted to determine the drainage requirements for the final landform of the Metal Hydroxide Sludge Area/Cell. This evaluation was conducted in part by using data obtained from the "Hydrologic Evaluation of Landfill Performance" ("HELP") Model published by USEPA. Based on this evaluation, the measures which were proposed and ap-

proved for both surface and subsurface drainage will handle all surface infiltration with a significant factor of safety.

There are five stormwater outfalls for the Shelton Landfill. Pursuant to the CTDEP general permit for stormwater discharges, four representative locations are sampled on an annual basis. The discharges lead to the Far Mill River (a tidal tributary to the Housatonic River), or the Housatonic Lagoon, which is hydraulically connected to the Housatonic River. The sedimentation basins for the five stormwater outfalls are cleaned on an as needed basis.

3.3 Procedures for Maintenance and Repair of the Final Cover

The primary maintenance activity of the final cover required at those portions of the Shelton Landfill that have a synthetic cover (i.e., the Metal Hydroxide Sludge Area/Cell and the Northeast and Southeast Lined Ash Areas), consists of cutting the vegetative growth in order to limit the root depth to less than six inches and eliminate any observed obstructions of drainage facilities.

Repair of the cover typically consists of replacement of any lost material and reseeding. Drainage facility repair consists of removal and proper disposal of any obstruction objects. If the obstruction object is silt or soil material that has eroded off the surface of the Landfill, the material is used to repair the erosional feature and the area is re-seeded. However, since the last area of the Landfill that was closed was closed over seven years ago, the vegetative cover is mature and there are seldom erosional features that require repair.

3.4 Procedures for Monitoring and Maintenance of the Leak Detection System

There is no leak detection system for the MSW/Ash Area or the Metal Hydroxide Sludge Area/Cell at the Shelton Landfill.

The Southeast and Northeast Lined Ash Areas have a leak detection system. There are in-line flow meters just downstream from the pumps for the secondary liner system. The pumps are operated by CRRA using automatic actuation features of the pumps. These flow meters record the flow from the pumps. The meters are read on a monthly basis by a CRRA employee and the results are reported on a quarterly basis to CTDEP.

3.5 Procedures for Operation of the Leachate Collection/Removal System

There is no leachate collection/removal system for the MSW/Ash Area or the Metal Hydroxide Sludge Area/Cell at the Shelton Landfill.

The Southeast and Northeast Lined Ash Areas have a leachate collection and pretreatment system. Leachate is collected from the two Areas (each of which has its own lift station) and is conveyed to a 30,000-gallon underground storage tank. From there the leachate is piped to the pretreatment facility (for pH adjustment only) and final lift station before discharge to the sanitary sewer leading to the Stratford Water Pollution Control Facility. The ash leachate collection and pretreatment system began operation in August 1994 when the Southeast Lined Ash Area went into operation.

All of the pumps associated with the ash leachate collection and pretreatment system are operated by CRRA by using automatic actuation features on the pumps. The pH adjustment system is also operated by CRRA by using automatic actuation features of the system. While sampling and analysis of the leachate is only required on a monthly (Town of Stratford) and quarterly (CTDEP) basis, CRRA staff typically inspect and monitor the system on a weekly basis

3.6 Procedures for Maintenance of the Groundwater Monitoring System

The groundwater monitoring system is inspected during the quarterly landfill inspections and the periodic groundwater monitoring events (see Section 2.1.3 and the Groundwater Monitoring Plan for additional details). During both of these types of inspections, any damage to the wells or impairment to the drainage system is noted and corrective action is immediately undertaken if warranted.

3.7 Procedures for Ensuring Compliance with 40 CFR 264 Subpart F

A quarterly groundwater monitoring program has been instituted at the Shelton Landfill (see Section 2.1.3 and the Groundwater Monitoring Plan for additional details). The groundwater monitoring program will continue throughout the post-closure period. If any statistically significant change to the groundwater is detected, appropriate action will be taken immediately.

3.8 Procedures for Preventing Erosion of the Final Cap Due to Run-On and Run-Off

The final grading of the MSW/Ash Area and the Metal Hydroxide Sludge Area/Cell of the Shelton Landfill were designed with a three percent slope on the top surface and side slope of 3:1, which is conducive to preventing excess run-on and promoting run-off. The Northeast and Southeast Lined Ash Areas have a three percent slope on the top surface, but the side slopes have 2:1 grades with benching. This is also conducive to preventing excess run-on and promoting run-off.

The Landfill is designed so that run-off from disposal areas is collected in swales and diverted away from disposal areas to the five point source stormwater discharge points for the Landfill (see Section 3.2) from which it is discharged to off-site wetlands/surface waters.

The final cap on each of the four Areas of the Landfill has an established vegetative cover to protect it from erosion. The condition of the vegetation is one of the items monitored during the quarterly landfill inspections (see Section 2.1.1). For areas other than the MSW/Ash Area, in the event the inspector identifies the presence of deep-rooting plants or bare spots, corrective action is immediately taken. In addition, vehicular access is prohibited on the top of the Metal Hydroxide Sludge Area/Cell and the Northeast and Southeast Lined Ash Areas.

3.9 Procedures for the Protection and Maintenance of Benchmarks

During the quarterly landfill inspections (see Section 2.1.1), the benchmarks are checked to assure that no damage to the permanently surveyed benchmarks has

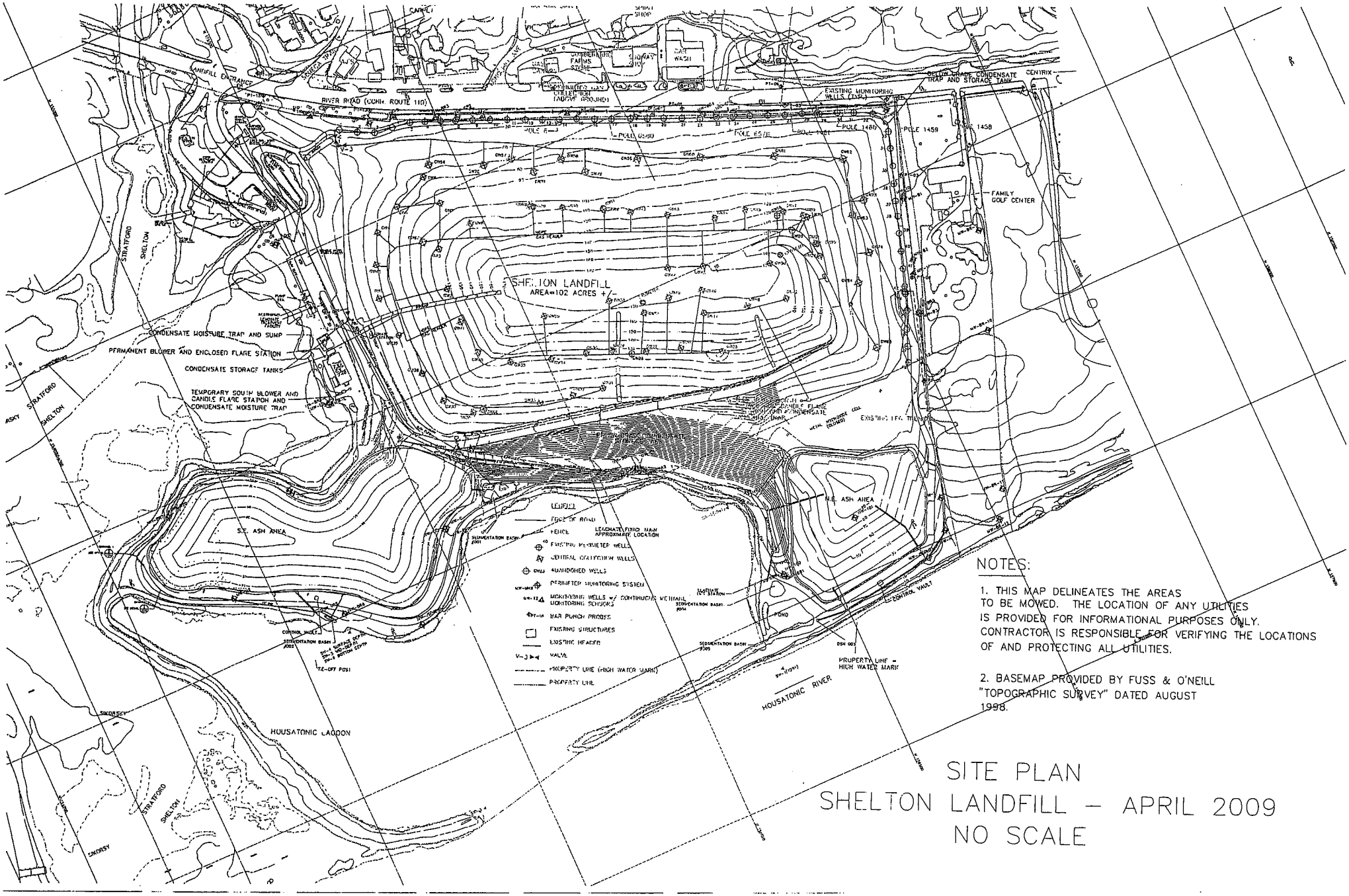
occurred. In the event that a problem is noted, corrective action will be undertaken as soon as possible.

3.10 Procedures for Inspecting Weekly and After Storms

The Shelton Landfill, including the Metal Hydroxide Sludge Area/Cell, is subject to four different types of inspections/monitoring, including landfill inspections on a quarterly basis (see Section 2.1.1), quarterly landfill gas monitoring (see Section 2.1.2), quarterly groundwater monitoring (see Section 2.1.3) and semi-annual stormwater evaluations (see Section 2.1.4). Based on the results of all of these types on inspections over the past ten years and on the maturity of the cover systems for all of the landfill units, CRRA does not consider it necessary to conduct weekly inspections of the Metal Hydroxide Sludge Area/Cell or inspections of the Area/Cell after storms.

EXHIBIT 1
TO
POST-CLOSURE PLAN

SITE PLAN



NOTES:

1. THIS MAP DELINEATES THE AREAS TO BE MOWED. THE LOCATION OF ANY UTILITIES IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATIONS OF AND PROTECTING ALL UTILITIES.

2. BASEMAP PROVIDED BY FUSS & O'NEILL "TOPOGRAPHIC SURVEY" DATED AUGUST 1998.

SITE PLAN
SHELTON LANDFILL – APRIL 2009
NO SCALE

EXHIBIT 2
TO
POST CLOSURE PLAN

DOCUMENTATION OF THE NOTICE ON THE DEED

I, PAUL R. MAZZACCARO, hereby certify on behalf of the CONNECTICUT RESOURCES RECOVERY AUTHORITY that a notation on the deed to the Shelton Landfill property located in Shelton, Connecticut, has been recorded with the Town of Shelton. The notation on the deed was recorded on May 25, 1989, Volume 903 pages 299-300. The notation was submitted in accordance with the requirements of 40 CFR 265.119(b)(1).

For THE CONNECTICUT RESOURCES RECOVERY AUTHORITY

Signature: Paul R. Mazzaccaro

Paul R. Mazzaccaro

Title: Project Manager

Date: 6/16/89

TO WHOM IT MAY CONCERN:

I, PAUL R. MAZZACCARO, the undersigned, on behalf of the Connecticut Resources Recovery Authority, 179 Allyn Street, City of Hartford, County of Hartford, State of Connecticut, hereby gives the following notice as required by 40 CFR 265.119 of the Federal Regulations:

1. The Connecticut Resources Recovery Authority is, and since November, 1983 have been in possession in fee simple of the following described lands located in the Town of Shelton, State of Connecticut, as being shown as Area 1 and Area 2 on a map entitled "Survey Plat, Shelton Landfill, 866 River Road (Route 110) Shelton, Connecticut", Scale 1" = 100', Dated February 1989 by Fuss & O'Neill, Inc., said parcel being more particularly bounded and described as follows:

   Commencing at a point, said point being the northerly corner of the herein described parcel, said point further having the coordinates North 156,850.20 and East 505,931.94 based on the U.S.C.G.S. datum:

   Thence running South 72°-19'-43" East, 61.98 feet to a point;
   Thence running South 80°-39'-23" East, 70.00 feet to a point;
   Thence running South 68°-39'-01" East, 92.62 feet to a point;
   Thence running South 05°-01'-41" East, 56.17 feet to a point;
   Thence running South 23°-01'-49" East, 86.78 feet to a point;
   Thence running South 33°-17'-50" West, 76.43 feet to a point;
   Thence running South 70°-38'-53" West, 95.88 feet to a point;
   Thence running North 09°-09'-37" East, 40.49 feet to a point;
   Thence running North 07°-59'-04" West, 43.14 feet to a point;
   Thence running North 52°-05'-07" East, 42.83 feet to a point;
   Thence running North 02°-26'-40" East, 104.81 feet to a point;
   Thence running South 85°-55'-11" West, 85.34 feet to a point and North 04°-15'-15" West, 87.96 feet to the point and place of commencement.

2. Since 1980 and until April, 1983, hazardous chemical wastes have been disposed under the terms of regulations promulagted by the United States Environmental Protection Agency on/in the above-described land.

3. The future use of the above-described land is restricted under the terms of 40 CFR 265 Subpart G of the Federal Regulations.

4. Any and all future purchasers of this land should inform themselves of the requirements and ascertain the amount and nature of wastes disposed on the above-described property.

5. The Connecticut Resources Recovery Authority have filed a survey plat with the Town Clerk of Shelton and with the Regional Administrator of the Environmental Protection Agency showing the location and dimensions of landfill cells and a record of the type, location and quantity of waste disposal within each area of the facility.

For the CONNECTICUT RESOURCES RECOVERY AUTHORITY

Signature: Paul R. Mazzaccaro
PAUL R. MAZZACCARO

Title: Project Manager

Date: 5/5/89

IN WITNESS WHEREOF, I hereunto set my hand.

Thelma C. McCarry
NOTARY PUBLIC

My Commission Expires: 3/31/92

SEAL

VERIFIED

Received for Record 5/25/89
At 2 H 12 M. P M. and Recorded by
Ass't Town Clerk

WATER QUALITY MONITORING PLAN AND COST ESTIMATE

Connecticut Resources Recovery Authority RCRA Stewardship Application For The Shelton Landfill

1. GENERAL INFORMATION

The groundwater, surface water and untreated ash residue leachate monitoring program for the Shelton Landfill has been conducted since October 1996 in accordance with the requirements specified in paragraphs 3, 4 and 5 of modified Groundwater Discharge Permit LF0000052, which was issued to CRRA by the CTDEP on August 27, 1996. The modified Groundwater Discharge Permit authorized the discharge of leachate to groundwater from the Southeast Expansion Area (SEEA) and the Northeast Expansion Area (NEEA) at the Shelton Landfill. This water quality monitoring program is a site-wide program that also incorporated the monitoring of the municipal solid waste (MSW)/Interim Ash Disposal Area (conducted previously under Groundwater Discharge Permit LF0000023 and Solid Waste Permit to Construct No. 126-1VA). All wells associated with the RCRA hazardous waste disposal area are also sampled as part of the current sitewide water quality monitoring program. Groundwater Discharge Permit LF0000052 expired on August 27, 2001; however, CRRA did submit a timely application for renewal that was not acted upon by CTDEP. It is CRRA's understanding that a renewed Groundwater Discharge Permit is not required for the Shelton Landfill because the landfill is no longer operational and all solid waste disposal units have been closed.

CRRA has continued to conduct water quality monitoring activities at the Shelton Landfill on a quarterly basis since the expiration of Groundwater Discharge Permit LF0000052. This groundwater monitoring plan proposes to continue with quarterly monitoring activities at least until a Screening Level Ecological Risk Assessment (SLERA) is completed and approved by the Connecticut Department of Environmental Protection. Following completion and approval of the SLERA, CRRA may re-evaluate this water quality monitoring program and propose modifications to the program. Such proposed modifications may include, but not necessarily be limited to, reductions in monitoring frequency, monitoring parameters, and/or monitoring locations.

1.1 Site Setting

The Shelton Landfill covers approximately 110 acres and is located on the east side of River Road (Rte. 110) in the southeast portion of Shelton, Connecticut. The landfill is located in the Housatonic River Valley, immediately upstream and north of the confluence of the Housatonic and Farmill Rivers. The landfill is owned and managed by the Connecticut Resources Recovery Authority (CRRA). The landfill property is bordered to the west by River Road/commercial properties, to the north by a miniature golf course/driving range, to the south by the Farmill River and United Technologies-Sikorsky Aircraft property and to the east by the Housatonic Lagoon and River (see Topographic Map in Attachment H).

The topography of the property ranges from near mean sea level (MSL) in the east along the Housatonic River to 170 feet above MSL at the peak of the landfill. From this point, the land slopes westward to an elevation of approximately 60 feet above MSL along River Road.

1.2 Site Activities

The Shelton Landfill consists of several parts (see Site Plan in Attachment H). The first part includes 37 acres located along the western edge of the property which is known as the existing municipal solid waste (MSW)/interim ash residue landfill. The initial permit to operate the municipal solid waste landfill at this location was issued to CRRA by the CTDEP in August 1983. In February of 1988, this permit was modified to allow CRRA to dispose of ash residue on top of the existing municipal solid waste. From February of 1988 to August of 1994, only ash residue was landfilled on-site in a roughly 22-acre parcel atop the 37-acre footprint. The interim ash residue landfilling operations ceased in August of 1994 and final cover was applied in the winter of 1996/1997, with DEP approval of the final closure on March 30, 1999.

The Southeast Expansion Area (SEEA) consists of about 6.5 acres in the southeast corner of the landfill property, near the confluence of the Housatonic and Farmill Rivers, along the Housatonic River Lagoon. According to previous consultant reports, the SEEA base pad (beneath the liner layers) was constructed partly of dredge spoils from Bridgeport Harbor, which were contaminated with VOCs. The SEEA consists of four (4) lined cells equipped with a leachate collection system on top of the pnmary liner and between the primary and secondary liners. Landfilling of ash residue in this lined area began in August 1994 and ended in November 1996. The SEEA is covered to prevent erosion, lined, and has a leachate collection system. In October 1999, the HDPE geomembrane was completely installed over the area and final cover soils (18 inches protective cover plus 6 inches topsoil) and hydroseed was applied. Final cover, including topsoil and seeding, of the SEEA was completed at the end of May 2000. CRRA continues to maintain and monitor the leachate collection system.

The Northeast Expansion Area (NEEA) comprises approximately 3.1 acres in the northeastern corner of the landfill, adjacent to the Housatonic River and the Housatonic River Lagoon. The NEEA consists of three lined cells and a leachate collection system that serves both the primary and secondary cell liners. Ash residue was landfilled in the NEEA from November 1996 to February 1998 when capacity was reached (with a temporary diversion of the ash to the Hartford Landfill beginning in October 1997; re-depositing of ash in the NEEA restarted in December 1997). The NEEA received final cover at the end of October 1999 and closure of the ash expansion area was approved by CTDEP in October 2001.

The fourth part is a closed hazardous waste disposal area of about 2 acres, located atop the 37-acre footprint, in the north central corner of the MSW Landfill area. The closed hazardous waste disposal area was certified closed by the CTDEP in October of 1989.

All disposal activities at the Shelton Landfill have ceased and all disposal units have been closed. The only activities currently performed at the Shelton Landfill are post-closure activities, primarily operation and maintenance of the ash leachate collection

and pretreatment system, and operation and maintenance of the landfill gas collection and flaring system. CRRA also conducts regular landfill inspections to ensure the integrity of all landfill caps. There is also an active residential drop-off center/transfer station for municipal solid waste, bulky waste, and scrap metal that is operated on the landfill property. The residential drop-off center/transfer station is permitted and operated by the City of Shelton, and is located outside of all disposal units at the landfill.

Future use of the Shelton Landfill property is governed by a "Future Use Plan" that has been developed by CRRA with input and approval from both the CTDEP and the City of Shelton. Proposed future site uses would include the post-closure activities that are currently conducted, as well as passive recreation areas, such as a walking trail, wildlife viewing areas, and a boat launch onto the Housatonic River lagoon for non-motorized boats.

1.3 Surficial and Bedrock Geology

The surficial geology of the Shelton Landfill property was mapped between 1964 and 1967, and the results were published in 1968 (Flint, 1968). In 1968 the entire site is shown as Pine Rock Park on U.S.G.S. mapping. Human modifications include sand and gravel pits, and artificial fill, especially in the south part of the site and around the lagoon to prepare the sub-base pad for the SEEA. Most of the remaining site is mapped as ice-contact stratified drift, consisting of sand, gravel, silt and clay deposited in streams and ephemeral lakes commonly in contact with glacier ice. Post-glacial swamp deposits are mapped at the south end of the site abutting the Farmill and Housatonic Rivers.

The materials are mainly sand, silt, clay and organic matter in poorly drained fresh water and tidal areas. Till is mapped on the north part of the site in an area corresponding with the bedrock high point shown on Figures 3 and 4 of Attachment H as an area of no saturated overburden. This is also the area of the closed hazardous waste cell, which reportedly is underlain by no native surficial deposits, only the MSW material. In contrast to the ice-contact stratified drift and swamp deposits, till is a compact and non-sorted sediment deposited by glacier ice, with little to no water sorting.

From west to east, bedrock underlying the western third of the site consists of the Oronoque Schist and the combined Maltby Lakes and Allingtown Metavolcanics. The Maltby Lakes is a metamorphosed diabase, and the Allingtown a metamorphosed basalt (greenstone). The Oronoque Schist is a fine-grained, slabby to thinly laminated, schistose to phyllitic paragneiss. Bedrock underlying the eastern two-thirds of the site consists of the Wepawaug Schist. This rock unit is mainly interlayered medium light-gray to dark-gray phyllitic schist and medium to dark-gray quartz-rich paragneiss, with local, thin beds of crystalline limestone.

These crystalline metamorphic rocks have no mapped faults and fractures, and possess a north-northeasterly lineation (Fritts 1965). There is typically little to no intergranular porosity in such rocks, and any groundwater is derived almost exclusively from local fractures and joints.

1.4 Hydrogeology

Several hydrologic features potentially influence the groundwater flow system. These features include: (1) the Housatonic River, (2) the Farmill River and its associated tidal wetlands, and (3) the Housatonic River Lagoon. The Housatonic River is a tidally influenced river located along the eastern boundary of the site. The Farmill River is a minor tributary of the Housatonic River and flows southeastward along the southern boundary of the site. The Housatonic River Lagoon is a 23-acre lagoon that forms the eastern boundary of the site and is the primary receptor of groundwater discharge from the site. Natural groundwater flow within the area is from west to east (from the upland areas toward the landfill and Housatonic River). Based on the wells screened in shallow surficial deposits, groundwater flow within the unconsolidated deposits at the Shelton Landfill is predominantly in an east-southeasterly direction towards the Housatonic River Lagoon. Groundwater flow in the surficial deposits is controlled by shallow bedrock to the west of the property and within the northern portion of the landfill (Figure 3 and 4 of Attachment H). This shallow bedrock precludes the presence of an overburden aquifer beneath the northeastern portion of the MSW/interim ash disposal area and the metal hydroxide sludge cell.

The bedrock aquifer groundwater flow direction is generally from northwest to southeast (Figures 5 and 6 of Attachment H), which is controlled by the slope of bedrock fractures to the southeast in the site vicinity.

Groundwater beneath the MSW/Interim Ash Disposal Area, and metal hydroxide waste cell at the site is classified "GC" by the CTDEP. The "GC" portion of the site, pursuant to a CTDEP Final Decision dated July 17, 1997, is bordered by a "GB" area that includes wetlands to the south, wetlands and the Housatonic River Lagoon to the east, and commercial land to the north, including the former Crump Parcel which is owned by CRRA but is not part of the landfill. To the west, the site is bounded by River Road and then commercial properties, all of which overlay groundwater which is classified "GA".

1.5 Surface Water

The Housatonic River and the Housatonic River Lagoon are tidally-influenced surface water bodies located to the east of the site. The CTDEP has classified the surface water within the Housatonic River and the Housatonic River Lagoon as "SC/SB." An "SC/SB designation indicates that the water is saline in nature, and that certain Water Quality Criteria or one or more designated uses assigned to Class "SB" waters may not be currently met due to point or non-point sources of pollution. The water quality goal is achievement of Class "SB" criteria and attainment of Class "SB" designated uses, which uses are marine fish, shellfish and wildlife habitat; shellfish harvesting for transfer to a depuration plant or relay (transplant) to approved areas for purification prior to human consumption; and recreation, industrial supply, and other legitimate uses including navigation.

Surface water within the Farmill River, located south of the Shelton Landfill, is classified as "SB" near the confluence with the Housatonic River, "B" further upstream. A Class "B" designation indicates that the Farmill River is known or presumed to meet Water Quality Criteria which support the following designated uses: recrea-

tional use; fish and wildlife habitat; agricultural and industrial supply; and other legitimate uses including navigation.

2. GROUNDWATER, SURFACE WATER AND UNTREATED LEACHATE MONITORING SYSTEMS

2.1 Summary of Groundwater Sampling Locations

A total of thirty groundwater monitoring wells are have been included in the groundwater monitoring system for sampling. Twenty-one (21) of the monitoring wells are overburden wells (ranging from 6 to 85 feet deep) and nine (9) of the monitoring wells are bedrock wells (ranging from 36 to 124 feet deep). The overburden wells are designated as: MW-100, MW-A, MW-Bd, MW-Bs, MW-C, MW-Cd, MW-Cs, MW-D2, MW-D2d, MW-E, MW-Ed, MW-GP4, MW-H2d, MW-Hs, MW-I3s, MW-Rs, MW-Rd, MW-Ts, MW-Td, MW-S2d and MW-S2s. The bedrock wells are designated as: MW-BR1, MW-BR2, MW-BR4, MW-BR6, MW-BR7, MW-BR8, MW-BR9, MW-BR12 and MW-Qb. Monitoring well completion details are summarized in Table 1. The locations of the wells are presented on the Site Plans in Attachment H of this Stewardship Permit Application.

The sampled wells at the site are characterized in Groundwater Discharge Permit #LF0000052 as follows:

Up-gradient Monitoring Wells:

MW-GP4	MW-BR6	MW-ED
MW-E	MW-BR4	MW-QB

Compliance Monitoring Wells:

MW-RS	MW-D2d	MW-BR9
MW-BR12	MW-Rd	MW-BR7

Plume Characterization Wells:

MW-S2D	MW-I3S	MW-BR2
MW-S2S	MW-TS	MW-D2
MW-TD	MW-100	MW-BR8
MW-BR1	MW-C	MW-A
MW-Cd	MW-CS	MW-HS
MW-BS	MW-BD	MW-H2D

The following wells have also been designated as Surface Water Protection Wells:

MW-TS	MW-100	MW-D2
MW-CS	MW-A	

2.2 Monitoring Well Locations in Relation to Landfill Disposal Areas

The hydrogeologic locations of the thirty monitoring wells with respect to the four landfill disposal areas are as follows:

(a) The MSW/Interim Ash Residue Landfill:

- MW-A,

- MW-BD,
- MW-C,
- MW-E,
- MW-BS,
- MW-BR2,
- MW-BR4 (upgradient),
- MW-GP4 (upgradient), and
- MW-BR9 (upgradient).

(b) The SEEA:

- MW-BR7,
- MW-BR8,
- MW-C,
- MW-CD,
- MW-CS,
- MW-D2,
- MW-D2D,
- MW-HS,
- MW-H2D,
- MW-I3S
- MW-BR6 (upgradient), and
- MW-ED (upgradient).

(c) The NEEA:

- MW-100,
- MW-BR1,
- MW-RS,
- MW-RD,
- MW-S2D,
- MW-S2S,
- MW-TD,
- MW-TS,
- MW-BR12, and
- MW-QB (upgradient).
  [Note: Monitoring wells MW-S2S and MW-S2D were installed to replace MW-Ss and MW-Sd (based upon poor groundwater yields) on January 7, 1997.]

(d) The Closed Hazardous Waste Disposal Area:

- MW-A,
- MW-BR1,
- MW-100,
- MW-QB, and
- MW-GP4 (upgradient).
  (Note: Monitoring well MW-QB is a bedrock well, installed in February 1996 in an area without saturated overburden, to replace MW-101, which was in the footprint of the NEEA and has been abandoned. Monitoring well MW-QB was replaced on July 12-14, 1999

with a similarly-named and constructed bedrock well located 50 feet south of the former MW-QB location.)

2.3 Aquifer Characteristics

Groundwater flow within the unconsolidated deposits at the Shelton Landfill is predominantly in an east-southeasterly direction towards the Housatonic River Lagoon. This overburden groundwater flow is controlled by shallow bedrock to the west of the property and within the northern portion of the landfill (Figures 3 and 4 of Attachment H). This shallow bedrock precludes the presence of an overburden aquifer beneath the northeastern portion of the MSW/interim ash disposal area and the metal hydroxide sludge cell.

The bedrock aquifer groundwater flow direction is generally from northwest to southeast (figures 5 and 6 of Attachment H), which is controlled by the slope of bedrock fractures to the southeast in the site vicinity.

In its March 19, 2003 report entitled "Study to Determine the Zone of Influence at the CRRA Shelton Landfill," HRP Associates, Inc. (HRP) concluded that that the primary surface water receptor of site groundwater is the Housatonic River Lagoon, located proximal to the site's eastern boundary. HRP concluded that the Farmill River, located proximal to the site's southern boundary, is not an evident surface water receptor of site groundwater because there is a preferential west to east groundwater flow pathway at the southern end of the site that conducts groundwater away from the Farmill River and toward the Housatonic River Lagoon. This preferential flow pathway results from (1) the local tidal cycle, (2) a bedrock high point at the southern end of the SEEA, (3) a channel in the bedrock surface that runs from the Farmill River wetlands through the center of the SEEA toward the Housatonic River Lagoon, and (4) the presumed limited compaction of dredge spoils that form the base of the SEEA.

The March 19, 2003 HRP report also concluded that the deep overburden and the shallow bedrock zones at the site are the most appropriate for monitoring groundwater quality. This conclusion was based in part on vertical gradients observed in well clusters installed at the site, as well as significant observed secondary porosity in the shallow bedrock at the site. This conclusion was also supported by the following historic hydraulic conductivity data that was previously determined by Fuss & O'Neill, Inc.:

Well	Aquifer	Hydraulic Conductivity (K), ft/day
MW-D2d	Deep Overburden	17.89
MW-Ed	Deep Overburden	37.49
MW-E	Shallow Overburden	6.01
MW-100	Shallow Overburden	6.84
MW-BR4	Bedrock	1.10

In addition to the hydraulic conductivity data summarized above, additional hydraulic conductivity testing was completed in 1996 at the following monitoring wells located in the vicinity of the NEEA:

Well	Aquifer	Hydraulic Conductivity (K), ft/day
MW-Qb	Bedrock	0.72
MW-Rs	Shallow Overburden	18.33
MW-Rd	Deep Overburden	14.18
MW-S2s	Shallow Overburden	33.08
MW-Ts	Shallow Overburden	35.69

2.4 Proposed Revisions to Current Groundwater Monitoring Network

In its March 19, 2003 report entitled "Study to Determine the Zone of Influence at the CRRA Shelton Landfill," HRP Associates, Inc. (HRP) had the following recommendations regarding the monitoring well network at the Shelton Landfill:

1. Install a deeper bedrock monitoring well proximal to the closed metal hydroxide sludge cell in order to supplement MW-QB and better evaluate the vertical limit of the plume in this area;

2. Install a shallow bedrock monitoring well to the southeast of the closed metal hydroxide sludge cell;

3. Add the following four shallow bedrock monitoring wells to the network of sampled wells:
   a. MW-BR-14S,
   b. MW-BR-15S,
   c. MW-BR-16S, and
   d. MW-BR-17S.

4. HRP also recommended that an upgradient bedrock monitoring well be utilized to better evaluate impacts to the bedrock aquifer from the metal hydroxide sludge cell. CRRA believes that the addition of existing bedrock monitoring well MW-BR-5 to the network of sampled wells could serve this purpose.

2.5 Summary of Surface Water Sampling Locations

Based on surface water monitoring that has been conducted under Groundwater Discharge Permit No. LF0000052, CRRA proposes to continue to sample a total of five surface water locations each quarter. At one of these locations (SW-1), samples are collected from mid-depth of the surface water. At the second location (SW-2), discrete grab samples are proposed for collection from two distinct depths – one from 0.5 meters below the water surface, and one from 0.5 meters above the stream bed. At the other three surface water sample locations (SW-3, SW-4, and SW-5), discrete grab samples are proposed from three distinct depths – one from 0.5 meters below the water surface, one from 0.5 meters above the bottom of the lagoon,

and one from the mid-depth of the surface water. These five surface water sampling locations are summarized as follows:

Surface Water Sample Location	Sample Depth
SW-1: *Farmill River upstream of landfill and dam. Sample from Mid-Stream.*	Mid-Depth
SW-2: *Farmill River downstream of O&G expansion area but upstream of the confluence with the Housatonic River; approximately 1,000 feet southeast of MW-D2d. Sample from Mid-Stream.*	
• **SW-2(T)***	Within 0.5 m of water surface
• **SW-2(B)***	Within 0.5 m of stream bed
SW-3: *Housatonic River Lagoon – South Side of the Inlet.*	
• **SW-3(T)**	Within 0.5 m of water surface
• **SW-3(M)**	Mid-Depth
• **SW-3(B)**	Within 0.5 m of Lagoon Bottom
SW-4: *Housatonic River Lagoon Mid-Point. Approximately 200 feet east of shoreline opposite MW-BR8 and Sediment Pool No. 2.*	
• **SW-4(T)**	Within 0.5 m of water surface
• **SW-4(M)**	Mid-Depth
• **SW-4(B)**	Within 0.5 m of Lagoon Bottom
SW-5: *Housatonic River Lagoon Northeast. Approximately 200 feet south of MW-100 and MW-BR1.*	
• **SW-5(T)**	Within 0.5 m of water surface
• **SW-5(M)**	Mid-Depth
• **SW-5(B)**	Within 0.5 m of Lagoon Bottom
***Note:** The shallow depth at SW-2 often precludes the collection of both top and bottom samples. When this occurs, only one sample is collected from mid-depth at location SW-2.	

2.6 Summary of Untreated Ash Residue Leachate Sampling Locations

As has been conducted under Groundwater Discharge Permit No. LF0000052, CRRA proposes to continue to collect and analyze a total of two untreated ash residue leachate grab samples each quarter. One untreated ash residue leachate grab

sample will be collected from the NEEA lift station into which both the primary and secondary ash residue leachate liners discharge (Sample L-1N). The other untreated ash residue leachate grab sample will be collected from the SEEA lift station into which both the primary and secondary ash residue leachate liners discharge (Sample L-1S).

3. SAMPLING AND ANALYSIS PROCEDURES

The following sections describe the sample collection, preservation and analytical procedures which are employed to ensure that all collected samples are representative of the sampled media.

3.1 Determination of Groundwater Elevations

A synoptic groundwater measurement will be completed on the first day of each semi-annual monitoring event to determine the groundwater elevations at all sampled monitoring wells prior to any purging and sampling activities. At each monitoring well, the depth to groundwater and the depth to the bottom of the will be measured with either an electronic water level indicator or a steel tape accurate to within 0.01 feet. All measurements will be made relative to the surveyed measurement point at each well, i.e., the top of the PVC casing.

The water level measuring device will be decontaminated between monitoring wells to ensure that cross-contamination of the monitoring wells does not occur. The decontamination will consist of rinsing the measuring device with deionized water.

3.2 Groundwater Sample Collection Methods

A total of thirty groundwater monitoring wells are included in the current groundwater monitoring system for sampling; however, the addition of seven bedrock wells to the network of sampled wells has been recommended (see Section 2.4). Twenty-one of the sampled monitoring wells are screened within the overburden aquifer and nine sampled monitoring wells are screened within the bedrock aquifer. All monitoring parameters are listed in Table 2.

The following sample collection procedures will be followed during each sampling event:

- A "Monitoring Well Field Data Sheet" which summarizes well elevation data, well condition, purge data, observed water yield and quality comments, sampling data, and results of measured field parameters will be completed for each monitoring well sampled.

- Measure well's water depth using decontaminated equipment (depth to water, depth to bottom, depth of sample) referenced to top of PVC (or casing) and record on the data sheet.

- Provide an in-line meter (or equivalent methodology which mitigates exposure to the atmosphere) to concurrently measure pH, temperature, specific conductivity, dissolved oxygen (DO), and redox potential (RP), as applicable, during purging. Also, provide a device to measure turbidity. A minimum of

four (4) readings of each parameter shall be taken and recorded during purging.

- Perform purging using dedicated bladder pump equipment at all wells at low flow rates, not taking the first reading until at least one pump volume plus one discharge tubing volume have passed. (Note: Due to its shallow depth and typically low water column height, MW-RS is equipped with dedicated tubing that is connected to a peristaltic pump for purging.) The purged groundwater may be discarded to the ground. Sampling personnel are to monitor the drawdown in the wells and ensure that the drawdown is maintained at less than or equal to 0.3 feet during the entire purging and sampling process. Wells shall be purged at a rate of less than or equal to 300 ml/minute. Field parameter readings shall be recorded at a minimum of three minute intervals, until turbidity is stabilized such that three consecutive reading are within 10% of each other for readings >10 NTU, or readings are within 2 NTU of each other for readings <10 NTU. Per US EPA Region I Standard Operating Procedure GW-0001 – "Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells" (July 30, 1996 – Revision 2), if the turbidity has not stabilized after four hours of purging or after at least five well volumes have been purged, collect samples and provide full explanation of attempt to achieve stabilization. Provide a summary of periodic readings and time of reading for all parameters.

- Sample collection should proceed from high parameter volatility to low parameter volatility at a low flow rate. Samples for volatile parameters should be transferred slowly to the sample container to eliminate creation of air bubbles. Samples are to be collected in proper containers and properly preserved in the field, as summarized in Table 3.

- No filtering of samples is to occur, except where analysis of dissolved metals is specified. Where analysis of dissolved metals is specified, sample filtration is to be performed in the field during sample collection with an in-line 0.45-micron filter.

- All observations relating to the well sampling, well conditions and any deviations from the sampling plan are to be recorded on the Monitoring Well Data Sheet.

3.3 Surface Water Sample Collection Methods

A total of twelve surface water grab samples are proposed to be collected each quarter from a total of five surface water sampling locations. Two surface water sample locations are from the Farmill River: SW-1 is from the freshwater portion of the Farmill River upstream of the landfill, and SW-2 is from the tidal portion of the Farmill River to the south of the landfill. The remaining three surface water sample locations are from the Housatonic River Lagoon, located in the eastern portion of the landfill property. All surface water monitoring parameters are listed in Table 2.

Samples from tidally-influenced sample locations (i.e., SW-2, SW-3, SW-4, and SW-5) are to be collected at "ebb flow" conditions (between one-half hour and two hours

after low tide for Bridgeport) after at least 72 hours of no precipitation. The following sample collection procedures will be followed during each sampling event:

- A Field Data Sheet will be utilized at each surface water sample location to record all applicable field observations and data, such as weather and water conditions, water clarity, field measurements, Farmill River flow (location SW-1), and sample collection times.

- A rowboat will preferably be used to access the sampling locations in the Housatonic Lagoon and Far Mill River, as necessary. If a motor boat is used, samples must be taken upward and upstream of the outboard gasoline engine.

- Sampling will proceed from downstream locations to upstream locations.

- Care must be taken to not disturb sediments when collecting surface water samples.

- At each sampling location, the water clarity will be measured with a Secchi disk and recorded.

- The depth of the Lagoon or River at the sampling locations will be measured using a weighted tape measure and recorded. Based on this information, depths of water collection for top samples (0.5 m below the surface), mid-level samples, and bottom samples (0.5 m above the water/sediment interface) are to be determined.

- New, clean tubing will be used for each sampling location, including the inlet tubing, pump chamber tubing and outlet tubing of a peristaltic pump. The inlet end of the tubing will be weighted and sufficient tubing will be released to collect the sample at the appropriate depths.

- The pump will be operated at a slow rate - 300 to 500 milliliters per minute. At each sample depth, at least one (1) pump and tubing volume will be pumped through the tubing before collection of that depth's field measurements and samples.

- Field measurements of water temperature, air temperature, pH, specific conductance, salinity and dissolved oxygen shall be recorded.

- The appropriate sample containers will then be filled from the pump outlet tubing and properly preserved in the field, as summarized in Table 3.

- No filtering of samples is to occur, <u>except</u> where analysis of dissolved metals is specified. Where analysis of dissolved metals is specified, sample filtration is to be performed <u>in the field</u> during sample collection with an in-line 0.45-micron filter prior to acid preservation of the samples.

3.4 Untreated Ash Residue Leachate Sample Collection Methods

The untreated ash residue leachate samples will consist of grab samples collected from the NEEA lift station and the SEEA lift station. The following sample collection procedures will be followed during each sampling event:

- A Field Data Sheet will be utilized at each ash residue leachate sample location to record all applicable field observations and data, such as weather conditions, field measurements, and sample collection times.
- Disposable or decontaminated bailers and clean rope will be utilized to collect each untreated ash residue leachate sample.
- Field measurements of pH, specific conductance, dissolved oxygen, turbidity, and leachate temperature shall be recorded.
- The appropriate sample containers will be filled from the bailer and properly preserved in the field, as summarized in Table 3.
- No filtering of samples is to occur, except where analysis of dissolved metals is specified. Where analysis of dissolved metals is specified, sample filtration is to be performed in the field during sample collection with an in-line 0.45-micron filter prior to acid preservation of the samples.

3.5 Proposed Modifications to Sampling Schedule

The current Water Quality Monitoring Program specifies that groundwater, surface water and untreated ash residue leachate sampling activities be conducted between the 15th and the 30th day of the sampling month (January, April, July and October). CRRA proposes that this restriction be removed, and that sampling be allowed to proceed beginning with the 1st day of each sampling month. The primary reason for this request is that the availability of surface water sample collection days is already limited by the local tidal cycles and by precipitation events, and further limiting the surface water sampling activities to only two weeks within the sampling month causes an undue burden.

3.6 Sample Preservation and Submission

All samples are to be preserved in the field at the time of sample collection, as summarized in Table 3. All sample containers are to be labeled in the field with the sample/well identification, sample date and time, type of preservation, and parameters to be analyzed. Following collection of the samples in the proper containers, all samples are to be placed into a cooler with ice/ice packs and maintained at a temperature of 4°C until submitted to the analytical testing laboratory. All samples are to be submitted to the testing laboratory as soon as possible after collection to ensure that all applicable testing method holding times are met. Proper chain of custody protocols will be followed to document the sample collection and submission.

3.7 Laboratory Analyses

All sample analyses will be performed only by environmental testing laboratories that are certified by the State of Connecticut Department of Public Health. Where published by CTDEP, laboratory analyses will be conducted in accordance with Reasonable Confidence Protocol (RCP) analytical methods. In those circumstances where an RCP method has not been published by CTDEP, the applicable method from the most-recent edition of EPA SW-846 ("Test Methods for Evaluating Solid Waste, Physical/Chemical Methods") will utilized. In the absence of RCP and SW-846 analytical methods, the laboratory analytical procedure from the most recent edition of "Standard Methods for the Examination of Water and Wastewater" will be utilized. Table 4 provides a summary of parameters to be analyzed and their acceptable method(s) of analysis.

3.8 Laboratory Reporting of Analytical Results

Laboratory reports must include sampling date, sample identification numbers, analytical results, sample specific reporting limits, preparation date, and analysis date for each sample. When an analyte is not detected or when the result for an analyte is below the reporting limit, the result will be reported as "ND," along with the sample-specific reporting limit. Reporting limits must be corrected to take into account any dilutions that were performed, the exact volume of the sample, and any other factors that would affect the actual reporting limit for specific sample(s). The reasons for any dilutions that were performed must be reported in the narrative that will accompany the RCP Laboratory Analysis QA/QC Certification Form.

The laboratory reports will also include a table listing field sample identification numbers that are cross-referenced to laboratory sample identification numbers, matrix, date of collection, and date of receipt at the laboratory.

3.9 Quality Assurance/Quality Control

In order to establish and document the reliability and quality of the field and laboratory data, quality assurance/quality control (QA/QC) procedures will be followed both in the field and in the testing laboratory.

3.9.1 Field Quality Assurance/Quality Control

Monitoring events will include trip blanks and field duplicate samples. The trip blanks are only associated with days when groundwater samples are collected for analysis of volatile organic compounds (VOC's), and are utilized to ascertain if sample containers may have been contaminated during transport or storage. Trip blanks will originate within the laboratory, and will consist of sample containers that are filled with analyte-free reagent water, transported with other sample containers out to the field, and then returned to the laboratory without being exposed to sampling procedures.

A total of two field duplicate samples will be collected during each semi-annual sampling event to document the precision of the sample collection procedures. One field duplicate sample will be collected from a ground water monitoring well, and one field duplicate sample will be collected from a surface water sampling location.

The use of equipment blanks is not necessary because all well purging and sample collection is completed with either dedicated sampling equipment or disposable, one-time-use equipment.

3.9.2 Laboratory Quality Assurance/Quality Control

In order to ensure that the analytical testing laboratory provides analytical data of known and documented quality, the applicable laboratory quality assurance and quality control (QA/QC) criteria from the RCP's will be met. All laboratory reports will be accompanied by the RCP Laboratory Analysis QA/QC Certification Form and required narrative that provides a detailed explanation of any non-conformances that occurred.

For those analytical methods for which no RCP method has been established, the laboratory will submit QC data deemed equivalent to a similar RCP method. In general, the QC data will include the following, as appropriate to the method:

- Method blank results;
- Sample duplicate results, identified as a duplicate;
- Matrix spike results;
- Matrix spike duplicate results;
- Surrogate recovery results; and
- Laboratory control sample results.

3.10 Minimum Detection Limits

Given the site setting, the discharge of groundwater from the site to the Housatonic River Lagoon will have to comply with the Surface Water Protection Criteria (SWPC) from the State's Remediation Standard Regulations. Therefore, the minimum detection limits for all groundwater analyses will have to be at least as low as the SWPC numeric criteria. For surface water samples, the minimum detection limits need to be at least as low as the Chronic Aquatic Life Criteria (CALC) from the State's Surface Water Quality Standards.

4. COST ESTIMATE

As summarized in Attachment P of this Stewardship Permit Application, the estimated current annual cost of (quarterly) groundwater and surface water monitoring for the Shelton Landfill is $95,400 per year. This annual cost covers monitoring of all disposal areas at the site. CRRA provides financial assurance for quarterly groundwater and surface water monitoring at the Shelton Landfill through June 2016. Continued semi-annual monitoring of all disposal areas has been assumed through June 2027 at an annual cost of $47,700 per year. The 30-year post-closure monitoring period for the MSW/Interim Ash Area ends in September 2027, with an estimated $5,963 to be incurred for monitoring costs between July 2027 and September 2027. For the NEEA and the SEEA, post-closure monitoring is expected to continue semi-annually from July 2027 until June 2030 at an annual cost of

$23,850. The 30-year post closure monitoring period for the NEEA and the SEEA ends in March 2031, with an estimated $17,888 to be incurred for monitoring costs between July 2030 and March 2031. The total estimated cost for the post-closure monitoring through March 2031 is $1,383,301.

TABLE 1

Summary of Monitoring Well Construction

Shelton Landfill
Shelton, Connecticut

Sampled Monitoring Wells

Well No.	Screen Interval	Hydraulic Conductivity (Year of Test), K, in ft/day	Measuring Point (Top of PVC) Elevation, ft.	Top of Screen Elevation, ft.	Screen Length, ft.	Depth to Bottom, ft.
GP-4	S	---	56.72	42.52	20	36.12
BR-4	B	1.10 (1988)	55.32	-4.45	10	70.62
E	S	6.01 (1988)	9.47	-7.34	10	27.45
Ed	D	37.49 (1988)	8.97	-52.66	10	71.34
BR-6	B	---	9.06	-66.46	10	84.2
Qb	B	0.72 (1996)	71.48	2.16	10	74.43
Rs	S	18.33 (1996)	17.17	7.1	10	20.04
Rd	D	14.18 (1996)	16.22	-17.3	5	37.82
BR-12	B	---	16.75	-19.63	10	46
BR-9	B	---	72.38	Open Borehole	Open Borehole	49.18
D2d	D	17.89 (1988)	21.61	-9.81	10	42.49
BR-7	B	---	19.96	-34.3	20	103.85
S2s	S	33.08 (1996)	17.67	5.85	5	22.5
S2d	D	---	17.11	-6.73	15	35.93
Ts	S	35.69 (1996)	12.75	6.75	5	18.24
Td	D	---	12.68	-41.32	5	64.05
100	S	6.84 (1988)	14.08	-2.2	10	26.43
BR-1	B	---	13.26	-57.43	10	80.62
A	D	---	16.22	-6.6	10	32.59
Bs	S	---	11.30	4.32	10	16.8
Bd	D	---	11.50	-5.33	10	26.62
BR-2	B	---	10.26	-28.38	10	50.03
Cs	S	---	22.34	-3.78	15	40.88
C	D	---	22.37	-27.98	5	54.83
Cd	D	---	22.33	-54.08	10	85.83
I3s	S	---	9.98	0.96	10	21.43
BR-8	B	---	11.98	-99.02	10	123.88
D2	D	---	15.52	5.13	10	20.04
Hs	S	---	22.85	4.25	10	28.02
H2d	D	---	21.59	-14.41	10	45.68

TABLE 1

Summary of Monitoring Well Construction

Shelton Landfill
Shelton, Connecticut

Non-Sampled Monitoring Wells

Well No.	Screen Interval	Hydraulic Conductivity (Year of Test), K, in ft/day	Measuring Point (Top of PVC) Elevation, ft.	Top of Screen Elevation, ft.	Screen Length, ft.	Depth to Bottom, ft.
BR-14D	B	---	59.74	-3.48	10	79.5
BR-14S*	B	---	59.62	10.44	10	61
102S	S	---	59.65	31.93	10	39
BR-15D	B	---	25.38	-20.54	10	57
BR-15S*	B	---	24.49	-1.77	10	35
103	S	---	24.56	19.31	10	15
BR-16D	B	---	9.12	-99.45	10	120
BR-16S*	B	---	8.16	-83.95	10	100.5
104D	D	---	7.91	-62.09	10	79
104S	S	---	9.64	4.48	10	12
BR-17D	B	---	14.43	-36.79	10	65
BR-17S*	B	---	13.88	-21.81	10	44.5
105	S	---	14.15	4.80	10	25
BR-3	B	---	58.37	NA	NA	NA
BR-5*	B	---	69.02	30.02	NA	NA
BR-10	B	---	70.27	29.27	10	51
BR-11	B	---	23.74	5.14	NA	NA
B1	S	---	60.86	NA	NA	NA
B2	S	---	66.99	NA	NA	NA
B3	S	---	67.83	NA	NA	NA
D1	S	---	10.36	NA	NA	NA
Gd	S	---	14.54	NA	NA	NA
GP1	S	---	60.60	NA	NA	NA
GP2	S	---	57.07	NA	NA	NA
GP3	S	---	53.43	NA	NA	NA
L	S	---	16.75	4.75	NA	NA
M	S	---	60.82	40.32	NA	NA
N	D	---	13.07	-11.43	NA	NA

S = Shallow Overburden
D = Deep Overburden
B = Bedrock
* - It has been recommended that these 5 shallow bedrock monitoring wells be added to the network of sampled monitoring wells.
Depth to Bottom measurements of sampled wells were measured during pump installations in October 1996.

TABLE 2
MONITORING PARAMETERS

SHELTON LANDFILL
SHELTON, CONNECTICUT

(1)	(2)	(3)	(4)	(5)	(6)
Parameters		**Surface Water**		**Groundwater**	**Leachate**
Description: **Number of Sample Locations:**	**MDL**	**T/B** **9 ea + 1 QA/QC**	**MID** **3 ea**	**Wells** **30 ea + 1 QA/QC**	**Untreated** **2 ea**
Field Measured					
Time of Collection		X	X	X	X
Sample Depth		X	X	X	X
Total Water Column Depth		X	X	X	X
Water Level Elevation				X	
Water Temp.		X	X	X	X
Air Temp.		X	X		X
PH		X	X	X	X
Spec. Cond.		X	X	X	X
Salinity		X	X		X
Dissolved Oxygen (D)		X	X		X
ORP				X	
Turbidity - (NTU)				X	
Water Clarity-Secchi Disk		X	X		X
Lab Measured					
Spec. Cond.		X	X	X	X
PH		X	X	X	X
TDS		X	X	X	X
TSS		X	X	X	X
Chloride		X	X	X	X
Alkalinity		X	X	X	X
Hardness as CaCO3		X	X	X	X
BOD - 5-day		X	X		X
COD		X	X	X	X
Ammonia - (T)		X	X	X	X
TKN (T)		X			X
Nitrate (T)		X		X	X
Nitrite (T)		X			X
Phosphorus (T)		X			X
Aluminum (T)	10 ug/L	X			X
Antimony (T)				X-1	
Arsenic (T)	4 ug/L	X		X	X
Barium (T)	10 ug/L	X		X	X
Beryilium				X	
Cadmium (T)	0.5 ug/L	X		X	X
Chromium (T)	5 ug/L	X		X	X
Cobalt (T)				X	
Copper (T)	5 ug/L	X		X	X
Copper (D)	5 ug/L	X			X
Iron (T)	5 ug/L	X		X	X
Iron (D)	5 ug/L	X			X
Lead (T)	5 ug/L	X		X-1	X
Lead (D)	5 ug L	X			X
Manganese (T)	1 ug/L	X		X	X
Manganese (D)	1 ug L	X			X
Mercury (T)	0.2 ug/L	X			X
Nickel (T)	5 ug/L	X		X-1	X
Potassium (T)				X	
Selenium (T)				X	

TABLE 2
MONITORING PARAMETERS

SHELTON LANDFILL
SHELTON, CONNECTICUT

(1)	(2)	(3)	(4)	(5)	(6)
Parameters		**Surface Water**		**Groundwater**	**Leachate**
Description: **Number of Sample Locations:**	**MDL**	**T/B** **9 ea + 1 QA/QC**	**MID** **3 ea**	**Wells** **30 ea + 1 QA/QC**	**Untreated** **2 ea**
Silver (T)	1 ug/L	X		X	X
Sodium (T)				X	
Sulfate (T)				X	
Thallium (T)				X-1	
Vanadium (T)				X-1	
Zinc (T)	10 ug/L	X		X-1	X
Zinc (D)	10 ug/L	X			X
VOCS via EPA Method 8260				X	X
Additional Parameters to be monitored only at listed locations:					
Phenols				5 RCRA Wells	
Radium (Radium-226 and Radium-228 combined via EPA Method 9320 of SW-846)				5 RCRA Wells	
Gross Alpha				5 RCRA Wells	
Gross Beta				5 RCRA Wells	
Silica				5 RCRA Wells	
Calcium				5 RCRA Wells	
Cyanide (T)				5 RCRA Wells	
TOC				5 RCRA Wells	
TOX				5 RCRA Wells	
Chromium, Hexavalent				See Note Below	
PCB's via EPA Method 608					X-July
Dioxins and Furans via EPA Method 8280					X-July

NOTES:

Column 2
If a parameter's Groundwater Protection Criterion (GWPC) and/or Surface Water Protection Criterion (SWPC) is lower than the listed MDL, then the MDL must be at least as low as the lower of the GWPC and the SWPC.

Surface Water

Column 3 - T/B = Top and Bottom Surface Water Samples at the Following Locations

SW-1 SW-2T SW-2B SW-3T SW-3B
SW-4T SW-4B SW-5T SW-5B

Column 4 – MID = Mid-Depth Surface Water Samples at Locations:

SW-3M SW-4M SW-5M

Columns 5-6 - Notes: "X-1" = Inorganic listed in Appendix I of 40 CFR 258
"X-July" indicates that sampling for these parameters is only required on an annual basis between July 15 and July 30.

Ground Water

Column 5 – The well designations in Groundwater Discharge Permit LF0000052 are as follows:

"Upgradient" Wells:
MW-GP-4 MW-E MW-BR-6 MW-BR4 MW-Ed MW-Qb

"Compliance" Wells:
MW-RS MW-BR-12 MW-D2d MW-Rd MW-BR-9 MW-BR7

"Plume Characterization" Wells:
MW-Td MW-C MW-Bs MW-BR-2 MW-Hs MW-BR-8 Sd (a.k.a. S2d)
MW-BR1 MW-Cd MW-Bd MW-H2d I2s (a.k.a. I3s) Ss (a.k.a. S2s)

"Surface Water Protection" Wells
MW-Ts MW-CS MW-D2 MW-100 MW-A

The 5 RCRA Wells are:
MW-GP-4 MW-A MW-BR1 MW-100 MW-Qb

Hexavalent Chromium is analyzed at the following monitoring wells:
MW-Qb MW-Rs MW-Rd MW-D2d MW-BR-9 MW-S2s MW-S2d MW-Td
MW-Ts MW-Cs MW-D2 MW-I3s MW-BR-12

Untreated Leachate

Column 6 – The following 2 locations represent the sample locations for untreated ash residue leachate from the SEEA and the NEEA, respectively:
L-1S (SEEA Lift Station) L-1N (NEEA Lift Station)

Table 3
Required Containers, Preservation Techniques, and Holding Times
Shelton Landfill
Shelton, Connecticut

Parameters	Minimum Sample Size	Container	Preservation	Maximum holding time
Inorganic Leachate Indicator Parameters:				
pH (Lab Analysis)	100 mL	Plastic†	None Required	Analyze within 15 minutes
Specific Conductance (Lab Analysis)	100 mL	Plastic†	Cool to 4 ± 2° C	28 Days
Total Dissolved Solids (TDS)	100 mL	Plastic†	Cool to 4 ± 2° C	7 Days
Total Suspended Solids (TSS)	100 mL	Plastic†	Cool to 4 ± 2° C	7 Days
Alkalinity, Total	100 mL	Plastic†	Cool to 4 ± 2° C	14 Days
Hardness	100 mL	Plastic†	Nitric Acid or Sulfuric Acid to pH <2	6 Months
Biochemical Oxygen Demand (BOD5)	1 L	Plastic†	Cool to 4 ± 2° C	48 Hours
Chemical Oxygen Demand (COD)	100 mL	Plastic†	Sulfuric Acid to pH <2, Cool to 4 ± 2° C	28 Days
Chloride	100 mL	Plastic†	None Required	28 Days
Nitrate (N)	100 mL	Plastic†	Cool to 4 ± 2° C	48 Hours
Nitrite (N)	100 mL	Plastic†	Cool to 4 ± 2° C	48 Hours
Ammonia (N)	500 mL	Plastic†	Sulfuric Acid to pH <2, Cool to 4 ± 2° C	28 Days
Total Kjeldahl Nitrogen (TKN)	1 L	Plastic†	Sulfuric Acid to pH <2, Cool to 4 ± 2° C	28 Days
Phosphorus, Total	100 mL	Plastic†	Sulfuric Acid to pH <2, Cool to 4 ± 2° C	28 Days
Total Organic Halogens (TOX)	250 mL	Plastic†	Cool to 4 ± 2° C	7 Days
Total Organic Carbon (TOC)	100 mL	Plastic†	Hydrochloric Acid or Sulfuric Acid to pH <2, Cool to 4 ± 2° C	28 Days
Sulfate, Total	100 mL	Plastic†	Cool to 4 ± 2° C	28 Days
Cyanide, Total	1L	Plastic†	NaOH to pH >12, Cool to 4 ± 2° C	14 Days
Metals:				
Mercury, Total	500 mL	Plastic†	Nitric Acid to pH <2	28 days
Chromium, Hexavalent	500 mL	Plastic†	Cool to 4 ± 2° C	24 hours
All Other Total Metals	1 L	Plastic†	Nitric Acid to pH <2	180 days
All Dissolved Metals	1 L	Plastic†	Field-Filter with a 0.45 µm Membrane Filter, then Nitric Acid to pH <2	180 days
Volatile Oragnic Compounds:				
VOC's in Appendix I of 40 CFR 258 via EPA Method 8260	(2) x 40-mL	VOC vials with Teflon lined screw caps protected from light	Adjust to pH < 2 with either HCl or sodium bisulfate at time of collection (Note 1). Store at 4 ± 2° C.	14 days (Note 1)

Table 3
Required Containers, Preservation Techniques, and Holding Times
Shelton Landfill
Shelton, Connecticut

Parameters	Minimum Sample Size	Container	Preservation	Maximum holding time
Phenol & Total Phenolics:				
Total Phenols	250 mL	Glass with Teflon lined screw caps	Store at 4 ± 2° C.	7 days to extraction. 40 days from extraction to analysis.
Radionuclides:				
Gross Alpha	1 L	Plastic†	Nitric Acid to pH <2	6 months
Gross Beta				
Radium-226	1 L	Plastic†	Nitric Acid to pH <2	6 months
Radium-228	1 L	Plastic†	Nitric Acid to pH <2	6 months
Dioxins / Furans:				
Polychlorinated Dibenzo-*p*-Dioxins and Polychlorinated Dibenzofurans	1 L	Amber glass bottle with Teflon lined cap	Store at 4 ± 2° C.	7 days to extraction. 40 days from extraction to analysis.
PCB's:				
Polychlorinated Biphenyls	1 L	Amber glass bottle with Teflon line cap	Store at 4 ± 2° C.	7 days to extraction. 40 days from extraction to analysis.

Notes:

† Plastic bottles must be acid rinsed and either high density polyethylene or Teflon

Note 1: If samples effervesce upon addition of hydrochloric acid, samples must be collected unpreserved and stored at 4 ± 2° C. Holding time is 7-days from collection.

Table 4 Laboratory Analytical Procedures Shelton Landfill Shelton, Connecticut			
Parameters	**RCP Method Number(s)**	**EPA Method Number**	**Standard Methods Test Number**
Inorganic Leachate Indicator Parameters:			
pH (Lab Analysis)		9045	SM4500-H B
Specific Conductance (Lab Analysis)			SM2510B
Total Dissolved Solids (TDS)			SM2540C
Total Suspended Solids (TSS)			SM2540D
Alkalinity, Total			SM2320B
Hardness		200.7	
Biochemical Oxygen Demand (BOD5)			SM5210B
Chemical Oxygen Demand (COD)			SM5220D
Chloride		300.0	
Nitrate (N)		300.0; 9056	4500-NO3
Nitrite (N)		300.0	4500-NO2
Ammonia (N)		350.1	
Total Kjeldahl Nitrogen (TKN)		351	
Phosphorus, Total		365	4500-P
Total Organic Halogens (TOX)		9020	
Total Organic Carbon (TOC)			SM5310B
Sulfate, Total		300.0	
Cyanide, Total	9010; 9012; 9014		
Metals:			
Aluminum, Total		6010; 6020; 7000	
Aluminum, Dissolved		6010; 6020; 7000	
Antimony, Total	6010; 6020; 7000		
Arsenic, Total	6010; 6020; 7000		
Barium, Total	6010; 6020; 7000		
Barium, Dissolved	6010; 6020; 7000		
Beryllium, Total	6010; 6020; 7000		
Cadmium, Total	6010; 6020; 7000		
Cadmium, Dissolved	6010; 6020; 7000		
Calcium, Total		6010; 6020; 7000	
Chromium, Total	6010; 6020; 7000		
Chromium, Hexavalent	7196		
Cobalt, Total		6010; 6020; 7000	
Copper, Total	6010; 6020; 7000		
Copper, Dissolved	6010; 6020; 7000		
Iron, Total		6010; 6020; 7000	
Iron, Dissolved		6010; 6020; 7000	
Lead, Total	6010; 6020; 7000		
Lead, Dissolved	6010; 6020; 7000		
Magnesium, Total		6010; 6020; 7000	
Magnesium, Dissolved		6010; 6020; 7000	

Table 4 Laboratory Analytical Procedures Shelton Landfill Shelton, Connecticut			
Parameters	**RCP Method Number(s)**	**EPA Method Number**	**Standard Methods Test Number**
Manganese, Total		6010; 6020; 7000	
Manganese, Dissolved		6010; 6020; 7000	
Mercury, Total	6020; 7470; 7471		
Nickel, Total	6010; 6020; 7000		
Potassium, Total		6010; 6020; 7000	
Potassium, Dissolved		6010; 6020; 7000	
Selenium, Total	6010; 6020; 7000		
Silver, Total	6010; 6020; 7000		
Sodium, Total		6010; 6020; 7000	
Sodium, Dissolved		6010; 6020; 7000	
Thallium, Total	6010; 6020; 7000		
Vanadium, Total	6010; 6020; 7000		
Zinc, Total	6010; 6020; 7000		
Zinc, Dissolved	6010; 6020; 7000		
Volatile Oragnic Compounds:			
VOC's in Appendix I of 40 CFR 258 via EPA Method 8260	8260		
Phenol &Total Phenolics:			
Method		9065	
Radionuclides			
Gross Alpha		9310;900.0	7110B
Gross Beta		9310; 900.0	7110B
Radium (Radium-226 and Radium-228)		9320; 903.0 & 904.0	7500-Ra B & 7500-Ra D
Dioxins / Furans:			
Polychlorinated Dibenzo-*p*-Dioxins and Polychlorinated Dibenzofurans		1613B; 8280B; 8290A	
PCB's:			
Polychlorinated Biphenyls	8082		

Note:
Where an RCP Method is specified, that method is to be utilized for sample analyses. The listed EPA Methods and/or Standard Methods Tests will only be used if an RCP Method is not available.

SECTION III

Stewardship Permit
Compliance Schedule

Connecticut Resources Recovery Authority
Shelton Landfill

EPA ID No. CTD000604546
Permit No. DEP/HWM/CS-126-005

SECTION III
COMPLIANCE SCHEDULE

A. All conditions set forth in Section III.A. of this permit, shall be conducted within thirty (30) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Consultant. The Permittee shall designate and assign an environmental compliance expert who may be a full-time employee of the Permitee, and/or retain one or more qualified consultants, acceptable to the Commissioner to prepare the documents required by Condition Nos. II.B.2. and III.C.2. and shall, by that date, notify the Commissioner in writing of the identity of such environmental compliance expert and/or consultants. The Permitee shall assign such environmental compliance expert and/or retain such qualified consultant, acceptable to the Commissioner, until Condition Nos. II.B.2. and III.C.2. of this permit is fully complied with. The Permittee shall notify the Commissioner in writing of the identity of any environmental compliance expert or consultant other than the one approved by the Commissioner, within ten (10) days after assigning or retaining any environmental compliance expert or consultant for the purpose of addressing the actions required by this permit. The Permittee shall submit to the Commissioner a description of the assigned environmental compliance expert's and/or consultant's education, experience and training which is relevant to the work required by this permit within ten (10) days after a request for such a description has been made. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable environmental compliance expert or consultant unacceptable.

2. Cost Estimate. The Permittee shall submit for the Commissioner's review and written approval the cost estimate for performing post-closure care inclusive of surface and groundwater monitoring, landfill decomposition gas monitoring, and leachate collection in accordance with the requirements of Condition No. II.C.1. of this permit.

B. All conditions set forth in Section III.B. of this permit, shall be conducted within one hundred twenty (120) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Contingency Plan. The Permittee shall prepare and submit for the Commissioner's review and written approval a Contingency Plan in accordance with the requirements of Condition No. I.E.12. of this permit. The Permittee shall submit a revised plan within sixty (60) calendar days whenever there are any significant changes to the condition of the Site.

2. Ecological Risk Assessment. The Permittee shall prepare and submit for the Commissioner's review and written approval a Screening Level Ecological Risk Assessment in accordance with the requirements of Condition No. II.A.5. of this permit.

3. Public Participation Plan. The Permittee shall submit for the Commissioner's review and written approval the public participation plan prepared in accordance with the requirements of Condition No. II.A.13. of this permit.

C. All conditions set forth in Section III.C. of this permit, shall be conducted within one hundred eighty (180) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Quality Assurance Project Plan. The Permittee shall prepare and submit for the Commissioner's review and written approval a Quality Assurance Project Plan prepared in accordance with the requirements of Condition No. II.B.6. of this permit.

2. Revised Water Quality Monitoring Plan. The Permittee shall submit for the Commissioner's review and written approval a revised Water Quality Monitoring Plan prepared in accordance with the requirements of Condition No. II.B.2. of this permit.

3. Revised Gas Monitoring Plan. The Permittee shall submit for the Commissioner's review and written approval a revised Gas Monitoring Plan prepared in accordance with the requirements of Condition No. II.A.11.(b) of this permit.

D. All conditions set forth in Section III.D. of this permit, shall be conducted within three hundred sixty five (365) calendar days of the effective date of this permit. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Progress Reports. The Permittee shall submit a progress report for the Commissioner's review describing the actions which the Permittee has taken to date to comply with the terms and conditions of this permit and annually thereafter until all actions required by this Permit have been completed to the Commissioner's satisfaction.

2. Installation of Additional Wells. The Permittee shall install the additional groundwater monitoring wells as proposed in the Groundwater Monitoring Plan specified in Condition No. II.B.1. of this permit.

E. All conditions set forth in Section III.E. of this permit, shall be conducted within the timeframe specified. Otherwise, the Permittee may be subject to formal enforcement actions.

1. Financial Assurance. Within one hundred fifty (150) calendar days of the Commissioner's approval of the cost estimate submitted in accordance with Condition No. III.A.1. of this permit, the Permittee shall establish and continually maintain financial assurance using one or more of the instrument formats prescribed by the Commissioner for post-closure care inclusive of surface and groundwater monitoring, landfill decomposition gas monitoring and leachate collection of the Site or areas affected by.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT

Connecticut Resources Recovery Authority
179 Allyn Street
Hartford, Connecticut 06103

Attention: Mr. William R. Darcy
President

Re: Facility ID: 126-104
City of Shelton
Housatonic River Watershed

I CERTIFY THAT THIS DOCUMENT IS A TRUE COPY OF THE ORIGINAL
Pamela D. Burney
NAME
Processing Technician
TITLE
DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER MANAGEMENT

This permit is issued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes, and regulations adopted thereunder, as amended.

Your permit application (Application No. 199502403 received on June 28, 1995), supporting documents, addenda, letters and plates identified in Appendix A attached to this permit; and supplemental documents have been reviewed by the Connecticut Department of Environmental Protection.

The Commissioner of Environmental Protection (hereinafter "the Commissioner") has found that the proposed system to treat the discharge to ground water of leachate from an existing 6.3-acre lined ash residue disposal area (the southeast expansion area), if the liner and collection system fail, and a proposed 3.1-acre lined ash residue disposal area (the northeast expansion area), if the liner and collection system fail, both located at 866.River Road, Shelton, will protect the waters of the state from pollution. The proposed system includes the construction of a new, 3.1 acre, lined municipal solid waste ash residue disposal area.

The Commissioner, acting under Section 22a-430, hereby permits the Connecticut Resources Recovery Authority (CRRA) (hereinafter "the permittee") to discharge leachate from the southeast expansion area and the proposed northeast expansion area, both located at 866 River Road, Shelton, Connecticut, to the ground waters of the state in accordance with the following conditions.

1) Permitted discharges:

(A) Discharge Serial No. 301 (southeast expansion area)
Description - Leachate from Municipal Solid Waste Ash Residue (Discharge code 305002d)

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79 Elm Street • Hartford, CT 06106 - 5127

Discharge Location - Ground water in the watershed of the Housatonic River (Basin Code 6000) and the Farmill River (Basin Code 6025).
Disposal Area Design Size - 6.3 acres, lined, municipal solid waste ash residue

(B) Discharge Serial No. 302 (northeast expansion area)
Description - Leachate from Municipal Solid Waste Ash Residue (Discharge code 305002a)
Discharge Location - Ground water in the watershed of the Housatonic River (Basin Code 6000) and the Farmill River (Basin Code 6025).
Disposal Area Design Size - 3.1 acres, lined, municipal solid waste ash residue

2) The southeast expansion area shall be operated and maintained in accordance with the permit to construct a solid waste disposal area No. 1260181 issued on August 5, 1992, and in accordance with plans and specifications described in application No. 90-579, approved by the Commissioner on April 19, 1994. The northeast expansion area shall be operated and maintained in accordance with the permit to construct a solid waste disposal area No. 1260181 issued on August 5, 1992, and in accordance with plans and specifications described in the application, and the detailed plans and specifications identified in Appendix A.

3) The surface and groundwaters shall be monitored in accordance with the following submittals listed below and collectively identified as the "Groundwater and Surface Water Monitoring Program":

Groundwater and Surface Water Monitoring Program

Pages 1 to 39 from "Groundwater and Surface Water Quality Monitoring Program for the Northeast Expansion Area and Southeast Expansion Area in Support of an Amendment of the CTDEP Groundwater Discharge Permit No. LF0000052," prepared by CRRA, submitted to the Commissioner on September 18, 1995, as revised to June 12, 1996.

Tables No. 1 and 2 from submittal dated May 31, 1996 prepared by CRRA.

Table No. 3 from "Groundwater and Surface Water Quality Monitoring Program for the Northeast Expansion Area and Southeast Expansion Area in Support of an Amendment of the CTDEP Groundwater Discharge Permit No.

LF0000052," prepared by CRRA, submitted to the Commissioner on September 18, 1995, as revised to June 12, 1996.

Figures No. 1, 2, and 3 from "Groundwater and Surface Water Quality Monitoring Program for the Northeast Expansion Area, Southeast Expansion Area and MSW/Ash Area in Support of the CTDEP Groundwater Discharge Permit," submitted to the Commissioner on September 18, 1995, as revised to May 1996.

Appendices A, B, C, D, E, F, G, H, and I from submittal dated May 31, 1996 prepared by CRRA.

Appendix J from letter and attachments submitted by CRRA dated June 14, 1996 and facsimile submitted by CRRA dated June 17, 1996.

(A) Surface Water Quality Monitoring

(i) Locations - Surface water quality monitoring shall be conducted at the following locations as shown on Figure 2, entitled "Water Quality Monitroing Site Plan," (sic) contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above.

SW-1: Farmill River upstream of the CRRA Shelton Landfill. Samples to be collected from mid-stream and mid-depth.

SW-2: Farmill River downstream of the O&G expansion area, but upstream of the confluence of the Farmill and Housatonic Rivers.

SW-2T: Samples to be collected from mid-stream and within 0.5 meter of the water surface.

SW-2B: Samples to be collected from mid-stream and within 0.5 meter of the stream bed.

SW-3: Housatonic River Lagoon inlet. Station is located to the southern side of the inlet.

SW-3T: Samples to be collected within 0.5 meter of the water surface.

SW-3M: Samples to be collected from mid-depth.

SW-3B: Samples to be collected within 0.5 meter of the bottom of the lagoon.

SW-4: Housatonic River Lagoon mid-point. Station is located about 200 feet east of the shoreline opposite MW-BR8 and Sediment Pool No. 2.

SW-4T: Samples to be collected within 0.5 meter of the water surface. This location was formerly known as S-4.

SW-4M: Samples to be collected from mid-depth. This location was formerly known as S-5, and prior to that was known as S-2.

SW-4B: Samples to be collected within 0.5 meter of the bottom of the lagoon. This location was formerly known as S-6.

SW-5: Housatonic River Lagoon northeast. Station is located approximately 200 feet south of MW-100 and MW-BR1.

SW-5T: Samples to be collected within 0.5 meter of the water surface.

SW-5M: Samples to be collected from mid-depth.

SW-5B: Samples to be collected within 0.5 meter of the bottom of the lagoon.

(ii) Each surface water sample collected from the stations designated in paragraph 3(A)(i) shall be sampled quarterly between the 15th and 30th day of January, April, July, and October, except as provided by paragraph 3(A)(iv)(f).

(iii) Each surface water sample shall be analyzed for the following parameters:

(a) Surface water samples collected from SW-1, SW-2T and SW-2B, SW-3T and SW-3B, SW-4T and SW-4B, and SW-5T and SW-5B shall be analyzed for the parameters numbered 1-32.

(b) Surface water samples collected from SW-3M, SW-4M and SW-5M shall be analyzed for the parameters numbered 1-10.

	Parameter	Minimum Level
1.	Specific Conductance	
2.	pH	
3.	Total Dissolved Solids	
4.	Total Suspended Solids	
5.	Chloride	
6.	Alkalinity	
7.	Hardness as $CaCO_3$	
8.	BOD, 5-day	
9.	COD	
10.	Ammonia-N, total	
11.	Kjeldahl-N, total	
12.	Nitrate-N, total	
13.	Nitrite-N, total	
14.	Phosphorus, total	
15.	Aluminum, total	10 µg/L
16.	Arsenic, total	5 µg/L
17.	Barium, total	10 µg/L
18.	Cadmium, total	0.5 µg/L
19.	Chromium, total	5 µg/L
20.	Copper, total	5 µg/L
21.	Copper, dissolved	5 µg/L
22.	Iron, total	5 µg/L
23.	Iron, dissolved	5 µg/L
24.	Lead, total	5 µg/L
25.	Lead, dissolved	5 µg/L
26.	Manganese, total	1 µg/L
27.	Manganese, dissolved	1 µg/L
28.	Mercury, total	0.2 µg/L
29.	Nickel, total	5 µg/L
30.	Silver, total	1 µg/L
31.	Zinc, total	10 µg/L
32.	Zinc, dissolved	10 µg/L

(iv) Sampling Conditions

(a) The Farmill River flows shall be gauged and reported for each day of sample collection.

(b) Surface water samples shall be collected only when no measurable precipitation has fallen on the site during the previous 72 hours.

(c) Sampling locations that are tidally influenced, (e.g. SW-2, SW-3, SW-4, and SW-5) shall be sampled at low ebb, defined here as between one-half hour and two hours after the published time of low tide for Bridgeport corrected to local mean time (NOAA Tide Tables).

(d) Except as provided by sub-paragraph (f) of this section, all samples to be collected from the monitoring locations identified in paragraph 3(A)(i) shall be collected on the same day.

(e) Time of collection, water clarity, sample depth, total water column depth (distance to river bottom), water and air temperature, pH, specific conductance, salinity and dissolved oxygen shall be measured in the surface water body for each sample collected in accordance with the requirements of paragraph 3(A). Results shall be reported together with the results of laboratory analyses, and for those parameters required to be measured in the field and in the laboratory, both values shall be reported.

(f) During periods when surface water conditions would be unsafe for field personnel (e.g. icing conditions in the lagoon), DEP shall be contacted to discuss whether a particular surface water sampling event may be rescheduled.

(B) Ground Water Quality Monitoring

(i) Locations - Ground water quality monitoring shall be conducted at the following locations as shown on Figure 2, entitled "Water Quality Monitroing Site Plan," (sic) contained in the monitoring plan contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above.

(a) Upgradient Monitoring Wells

U-1: MW-GP4
U-2: MW-BR4
U-3: MW-E
U-4: MW-ED
U-5: MW-BR6
U-6: MW-QB

(b) Compliance Monitoring Wells:

C-1: MW-RS
C-2: MW-RD
C-3: MW-BR12
C-4: MW-BR9
C-5: MW-D2D
C-6: MW-BR7

(c) Plume Characterization Wells:

W-1: MW-SD (formerly MW-Js old)
W-2: MW-SS
W-3: MW-TS
W-4: MW-TD
W-5: MW-100
W-6: MW-BR1
W-7: MW-C
W-8: MW-CD
W-9: MW-CS
W-10: MW-BS
W-11: MW-BD
W-12: MW-BR2
W-13: MW-D2
W-14: MW-I2S (formerly MW-Js new)
W-15: MW-BR8
W-16: MW-A
W-17: MW-HS
W-18: MW-H2D

(d) The following wells have also been designated as Surface Water Protection Wells:

W-3: MW-TS
W-5: MW-100
W-9: MW-CS
W-16: MW-A
W-13: MW-D2

(e) Water Supply Wells:

PW-1: 153 River Road

(ii) Parameter list

Parameter

1. Total Dissolved Solids
2. Total Suspended Solids
3. Alkalinity
4. COD
5. Iron (Total)
6. Manganese (Total)
7. Specific Conductance
8. Nitrate (as N)
9. Chloride
10. Hardness (as $CaCO_3$)
11. pH
12. Ammonia (as N)
13. Sodium (Total)
14. Potassium (Total)
15. Sulfate (Total)
16. All inorganics identified in Appendix I of 40 CFR Part 258 of the Federal Register, Vol. 56, No. 196, October 9, 1991, beginning page 51032 using EPA method 6010.
17. Volatile Organic Compounds identified in Appendix I of 40 CFR Part 258 of the Federal Register, Vol. 56, No. 196, October 9, 1991, beginning page 51032 using EPA method 8260
18. Beginning the first quarter after the Commissioner's approval of the report required under paragraph 3(C)(iv), any supplemental parameters identified in accordance with the requirements of paragraph 3(C).

(iii) Schedule - The ground water quality monitoring program shall begin 30 days after confirmation that all monitoring wells, sampling devices and associated appurtenances have been installed, but not later than 90 days after permit issuance. Thereafter, the ground water quality monitoring locations in paragraph 3(B)(i) shall be monitored four times per year in accordance with the following schedule:

Sampling Periods

January
April
July
October

(a) Each ground water sample collected from the monitoring wells designated in paragraph 3(B)(i)(a) as U-1, U-2, U-3, U-4, U-5, and U-6 shall be analyzed for the parameters listed in paragraph 3(B)(ii), items 1 through 17.

(b) Each ground water sample collected from the monitoring wells designated in paragraph 3(B)(i)(b) as C-1, C-2, C-3, C-4, C-5, and C-6 shall be analyzed for the parameters identified in paragraph 3(B)(ii), items 1 through 18.

(c) Each ground water sample collected from the monitoring wells designated in paragraphs 3(B)(i)(c) as W-1, W-2, W-4, W-6, W-7, W-8, W-10, W-11, W-12, W-14, W-15, W-17, and W-18 shall be analyzed for the parameters listed in paragraph 3(B)(ii), items 1 through 17.

(d) Each ground water sample collected from the monitoring wells designated in paragraphs 3(B)(i)(c) and 3(B)(i)(d) as W-3, W-5, W-9, W-13, and W-16 shall be analyzed for the parameters identified in paragraph 3(B)(ii), items 1 through 17, with the exception that for those parameters in item 16 for which a lower minimum level is specified in paragraph 3(A)(iii), laboratory analyses shall be performed using the lower minimum level.

(e) Each ground water sample collected from the water supply well designated in paragraph 3(B)(i)(e) as PW-1 shall be analyzed for the parameters listed in paragraph 3(B)(ii), items 1 through 17.

(iv) Sampling Conditions - Field measurement of pH, temperature, specific conductance, turbidity, and Oxidation Reduction Potential shall be performed at all ground water monitoring locations in paragraph 3(B)(i) prior to each sample collection. In addition, the water level elevation shall be measured at all ground water monitoring locations in paragraphs 3(B)(i)(a), 3(B)(i)(b), 3(B)(i)(c), and 3(B)(i)(d). These field measurements shall be reported together with the results of analyses of the samples in accordance with paragraph 5.

(v) Ground water monitoring shall be performed as described in the monitoring plan contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above, subject to the modifications listed below. Where the requirements of the permittee's monitoring plan conflict with those of this permit, the permit requirements shall be used.

Where specific sampling or redevelopment procedures are not specified in the monitoring plan or in the following paragraphs, the permittee shall follow applicable procedures identified in the following EPA guidance documents. "Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells", U.S. EPA, EPA/600/4-89/034, 1991; "RCRA Ground-Water Monitoring: Draft Technical Guidance", U.S. EPA, EPA/530-R-93-001, 1992; and the draft document "Low Flow (Minimum Stress) Purging and Sampling Procedure for the Collection of Ground Water Samples From Monitoring Wells", Revision Number 1 draft, U.S. EPA, dated August 3, 1995.

(a) Redevelop all monitoring wells identified in paragraph 3(B)(i) of this permit, with the exception of well MW-HS.

(1) Schedule - Redevelopment shall be completed within 60 days of issuance of this permit.

(2) Methods - Redevelopment shall be performed for each well, using the procedure described below.

Measure the static water level and total well depth.

Set a pump in the well, and begin pumping. The pump must be capable of removing all sediment from the well. Monitor turbidity of the pump discharge using a field turbidimeter, and continue pumping until the turbidity decreases to 5 Nephelometric Turbidity Units (NTU) or stabilizes (defined as less than 10 percent variance in 3 consecutive measurements, taken 3 to 5 minutes apart).

Surge the well using a properly designed surge block and proper surging technique. Perform surging throughout the screened or open interval. Record total well depth.

Continue alternating cycles of pumping and surging as described above until the initial turbidity during the second of two consecutive pumping cycles, separated by a sufficient period of well recharge (with the pump shut off and left in place), does not exceed 5 NTU. The recharge period shall be at least the period of time needed for the water level in the well to return to within 0.5 feet of the static level, as corrected for tidal fluctuations.

Record static water level, total well depth, starting and ending time of each pumping and each surging cycle, volume of water pumped during each pumping cycle, water level at the start of each pumping cycle, initial and final turbidity of pump discharge during each pumping cycle, the manufacturer's name and model number of all equipment and instruments used in well development, and the name and address of all contractors and / or consultants involved in the work.

(3) If, after redevelopment a well still yields water with turbidity exceeding 5 NTU, the permittee shall either abandon the well and replace it with a new well constructed in accordance with the "Handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells", U.S. EPA, EPA/600/4-89/034, 1991, or demonstrate to the Commissioner's satisfaction that the well was properly completed and adequately developed, and that turbidity is an artifact of the geologic materials in which the well is installed. Information to be used in such a demonstration shall include, but be limited to, geologic logs, well construction diagrams, grain size analyses, calculations for sizing the sand pack and well screen to the geologic formation, and water quality data including turbidity and total suspended solids.

(4) Within 90 days of issuance of this permit, the permittee shall submit a report for the Commissioner's review and approval which (1) summarizes all well redevelopment efforts, (2) identifies wells which must be replaced in accordance with paragraph 3(B)(v)(a)(3), (3) proposes a schedule, methods, and materials for old well abandonment

and new well construction, and (4) presents any demonstrations of well adequacy vs. persistent turbidity as a geologic artifact..

(b) Within 90 days of issuance of this permit, the permittee shall install permanently dedicated, submersible sampling pumps in all monitoring wells identified in paragraph 3(B)(i) of this permit. All pumps and ancillary support cables, electrical wiring, and discharge tubing shall be new, clean material, constructed and installed such that all parts which may contact groundwater samples contain only stainless steel and / or fluoropolymers. The pumping rate shall be adjustable by means of a controller which controls the operating rate of the pump, and the pump / controller system shall be capable of a minimum flow rate no greater than 100 milliliters per minute with the discharge tubing unobstructed. Each pump shall be installed with the pump intake set at the midpoint of the saturated portion of the screened / open interval of the well.

(c) The maximum pumping rate during purging and sampling shall not exceed 300 milliliters per minute.

(d) During well purging and sample collection, the drawdown induced by pumping shall not exceed a depth of 0.3 feet below the static water level in the well. The following procedure shall be used to maintain a drawdown of less than 0.3 feet:

(1) Using a water level indicator, measure the static depth to water in the well, and set the indicator probe to a depth 0.3 feet below the static water level.

(2) During purging and sampling, verify that the water level indicator produces a continuous audible signal.

(3) If the signal from the water level indicator is interrupted, adjust the pumping rate downward as necessary until the signal returns.

(4) If, at the lowest possible pumping rate, the drawdown still exceeds 0.3 feet, modify the purging and / or sampling procedure by stopping the pump, waiting for the well to recharge, and then operating the pump intermittently such

that drawdown does not exceed 0.3 feet, until purging and / or sampling are completed.

(e) Monitoring of field parameters shall not begin until a minimum volume equivalent to one pump volume plus one discharge tubing volume has been purged from the well. Successive field parameter measurements shall be conducted at time intervals no less than three minutes apart. Purging shall continue until turbidity stabilizes (defined as ten percent variance or, if less than ten NTU, differences of no greater than two NTU) for three successive measurements.

(C) Supplemental Ground Water Quality Monitoring

(i) Location - Supplemental ground water quality monitoring shall be conducted at the following locations identified in paragraph 3(B)(i)

W-1: MW-SD (formerly MW-Js old)
W-2: MW-SS
W-3: MW-TS
W-4: MW-TD
W-5: MW-100
W-6: MW-BR1
W-7: MW-C
W-8: MW-CD
W-9: MW-CS
W-10: MW-BS
W-11: MW-BD
W-12: MW-BR2
W-13: MW-D2
W-14: MW-JS (formerly MW-Js new)
W-15: MW-BR8
W-16: MW-A
W-17: MW-HS
W-18: MW-H2D

(ii) Schedule - Supplemental ground water quality monitoring shall be conducted for two consecutive quarterly sampling periods beginning the first scheduled quarterly sampling period after permit issuance.

(iii) Parameters - Samples collected for supplemental monitoring shall be analyzed for the compounds identified in Appendix II of 40 CFR Part 258 of the Federal Register, Vol. 56, No. 196, October 9, 1991, beginning page 51033.

(iv) Subsequent supplemental monitoring - On or before sixty (60) days after the second supplemental ground water quality monitoring event, the permittee shall submit for the review and approval of the Commissioner a report describing the results of the Appendix II monitoring required by this paragraph, and a plan for amending the ground water quality monitoring parameters at the compliance monitoring wells C-1, C-2, C-3, C-4, C-5, and C-6 identified in paragraph 3(B)(i)(b), and schedule listed in paragraph 3(B)(iii)(b) to include Appendix II compounds detected.

(v) The samples shall be collected from each ground water monitoring location in accordance with the monitoring plan contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above.

(D) Precipitation Monitoring

(i) Precipitation data to be used in preparing precipitation hydrographs shall be obtained from the Department of Environmental Protection's Flood Alert Center, for monitoring location No. 510, located along the Merritt Parkway in Orange.

(ii) Reporting - The first reporting period shall be the period from the date of permit issuance to the following October 30. Thereafter, the reporting period shall be the period from November first to October 30 of the following year. The data to be reported shall be a precipitation hydrograph (in inches of precipitation per hour) for the station identified in paragraph 3(D)(i) above, for the reporting period. Precipitation hydrographs are to be prepared as follows: First, the instantaneous precipitation rate R_t (inches per hour) shall be calculated for each increment I (in inches) of precipitation measured during the reporting period using the formula

$$R_t = \frac{I}{T_t - T_{t-1}}$$

where T_t and T_{t-1} are the time values at which two consecutive increments are recorded. Second, the instantaneous rates shall be plotted using

straight lines joining the data points, but no symbol for the data points themselves. Third, each storm event on the hydrograph shall be labeled with the total precipitation (in inches of water) for that event. The x-axis of the precipitation hydrograph shall be referenced to the date (November first) and year of the start of the monitoring period, and scaled in months. The Y-axis shall be scaled and labeled in inches per hour. The data shall be reported in accordance with paragraph 5(B)(ii) of this permit.

(E) Ground Water Zone of Influence Compliance Monitoring

(i) For ground water, the ground water zone of influence of the discharges for the southeast and northeast expansion areas, as identified in paragraphs 1(A) and 1(B) of this permit, which is hereby permitted shall not extend beyond property owned by the permittee. The ground water zone of influence of the discharge is defined as the soil and ground water area within which the treatment of leachate by soils and mixing of leachate with ground waters occurs and could reasonably be expected to occur and, therefore, within which some degradation of ground water quality has occurred or is anticipated to occur.

(ii) The following requirements of this section will be used to determine whether the discharge of leachate has exceeded the boundaries of the permitted ground water zone of influence. All sampling shall be conducted in accordance with the monitoring plan contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above.

(a) Background Data Base - The compliance ground water quality monitoring wells identified in paragraph 3(B)(i)(b) of this permit shall be sampled monthly for twelve months, beginning with the first ground water quality monitoring event required in paragraph 3(B) of this permit. Sampling shall be conducted in accordance with the sampling conditions in paragraph 3(B)(iv) of this permit. Samples shall be analyzed for alkalinity, ammonia, chemical oxygen demand, chloride, hardness, total iron, potassium, sodium, specific conductance, and total dissolved solids. The results of all sampling and analyses during this twelve month period shall be reported in accordance with paragraph 5 of this permit. No later than 45 days after the collection of the final sample, a report shall be submitted for the review and approval of the Commissioner which describes the results of all sampling and analyses conducted

pursuant to this paragraph, proposes maximum background levels for all ten parameters, and recommends selection of at least four parameters for the ground water zone of influence compliance monitoring program. These parameters will be designated as compliance parameters. The maximum background level is defined for each parameter at each well as the maximum concentration measured during the twelve month monitoring period.

(b) Exceedance - Any analytical result from any sample obtained from the compliance wells for each of the four compliance parameters which exceeds the maximum background level for that parameter as defined in paragraph 3(E)(ii)(a), shall constitute an exceedance.

(c) Confirmed Exceedance - Any well for which an exceedance occurs shall be resampled within forty-five (45) days of the sampling event which established the exceedance and shall be analyzed for the parameter(s) causing the exceedance. If the second result is found to exceed the maximum background level for the same parameter(s), such result will constitute a confirmed exceedance. If the second result for the parameter(s) causing an exceedance does not exceed the maximum background level for that parameter, the ground water zone of influence compliance monitoring program shall resume its normal quarterly schedule. If the next quarterly sampling result is found to exceed the maximum background level for the same parameter(s) at the same compliance well, such result will constitute a confirmed exceedance. The permittee shall assure that the results of all sampling necessary to confirm an exceedance is received from the laboratory no more than 30 days from the date of sample collection.

(d) Within 7 days of becoming aware of an occurrence of a confirmed exceedance as defined in paragraph 3(E)(ii)(c), the permittee shall notify the Commissioner in writing and within 60 days shall submit a report for the Commissioner's review and approval which explains the source and cause of the confirmed exceedance and provides a description of any extenuating circumstances.

(F) Leachate Monitoring

(i) Leachate quality monitoring shall be conducted at the following locations as shown on Figure 2, entitled "Water Quality Monitroing Site Plan," (sic) contained in the monitoring plan contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above.

L-1S: Leachate collected in the liner system of the Southeast Expansion Area prior to the equalization tank.

L-1N: Leachate collected in the liner system of the Northeast Expansion Area prior to the equalization tank.

(ii) Samples of leachate shall be analyzed for the parameters listed in paragraph 3(A)(iii), and with the addition of the following parameters:

33. Volatile organics by EPA Method 8260
34. Polychlorinated Biphenyls (PCBs) by EPA Method 608
35. dioxins and furans by EPA Method 8280

(iii) Leachate samples shall be analyzed for parameters listed in paragraphs 3(A)(iii) and 3(F)(ii) numbered 1-33 between the 15th and 30th day of January, April, and October, and for the parameters numbered 1-35 between the 15th and 30th day of July.

(G) Sediment Monitoring

(i) Two rounds of physical and chemical characterization of sediment quality and chemical analysis of the overlying water column shall be conducted; the first one in July 1997 and the second one in July 1999. Samples shall be collected at the following locations as shown on Figure 2, entitled "Water Quality Monitroing Site Plan," (sic) contained in the monitoring plan contained in the "Groundwater and Surface Water Monitoring Program" identified in paragraph 3 above.

S-1: Monitoring location is in the depositional area immediately upstream of the dam at River Road (Connecticut Route 110).

S-2: Monitoring Location is a transect across the Farmill River downstream of the O&G expansion area, but upstream of the confluence of the Farmill and Housatonic Rivers. The transect is comprised of three stations.

S-2S: Sample to be collected mid-way between the southern waterline and S-2M.

S-2M: Sample to be collected at the mid-point of the transect across the Farmill River, and coincides with the surface water monitoring location SW-2. .

S-2N: Sample to be collected mid-way between the northern waterline and S-2M.

S-3: Monitoring location is in the Housatonic River Lagoon inlet. Station is located in the southern side of the inlet and coincides with the surface water monitoring location SW-3.

S-4: Monitoring location is in the Housatonic River Lagoon and coincides with the surface water monitoring location SW-4.

S-5: Monitoring location is in the Housatonic River Lagoon and coincides with the surface water monitoring location SW-5.

S-6: Monitoring location is mid-stream in the Farmill River south of the Leachate Treatment Facility and the discharge from Sediment Pool No.3.

(ii) Sediment samples from each of the six sampling locations identified in (C)(i) shall be analyzed (on a dry weight basis) for the following parameters:

(a) Samples from S-1, S-3, S-4, S-5, and S-6 shall be analyzed for the parameters 1s - 12s.

(b) Samples from S-2S, S-2M and S-2N shall be analyzed separately for parameters 1s - 9s, but may be composited for parameters 10s - 12s.

1s. Percent Moisture
2s. Grain Size Fractionation (including fines)
3s. Depth to Redox Potential Discontinuity (RPD)
4s. Total Carbon
5s. Total Inorganic Carbon
6s. Total Organic Matter
7s. Copper, total

8s. Lead, total
9s. Zinc, total
10s. Acid Volatile Sulfides, and SEMs by trace-ICP
11s. Polynuclear Aromatic Hydrocarbons
12s. Polychlorinated Biphenyls

(c) Analyses for total copper (7s) and total lead (8s) may be by Graphite Furnace Atomic Absorption Spectroscopy (GFAA) or Inductively Coupled Plasm analysis/Mass Spectroscopy (IAP/MS). Analyses for total zinc (s) may be by Inductively Coupled Plasm analysis (IAP) or IAP/MS. Results of analyses for 7s, 8s and s shall be reported together with the SEM results for these same metals (10s).

(iii) Water samples shall be collected from above each sediment sampling location in accordance with the conditions specified in 3(A)(iv) and the following conditions.

(a) Water samples shall be collected within 0.5m of the sediment/water interface.

(b) Water samples from above each sediment sampling station shall be collected when the sediment samples are collected.

(c) Water samples from above each sediment sampling station shall be analyzed, at a minimum, for the parameters numbered 1 - 10, 20, 21, 24, 25, 31 and 32 in paragraph 3(A)(iii).

(H) Habitat Characterization

(i) A detailed site map of the area in which the Shelton landfill is situated, at a scale of 1 inch equals 100 feet, shall be prepared to depict and identify the Farmill and Housatonic Rivers, flood boundaries, wetlands, anthropogenic structures (e.g. roads, dams, bridges, rail lines, sewer crossings), existing and potential pollutant sources (e.g. sewage treatment plants, gravel mining operations, existing and abandoned or closed landfills, highway garages, storm drainage, etc.). The map shall also depict all current and historical surface water, sediment, and biological monitoring locations, habitat characterization locations, and shall plot submerged aquatic vegetation and sediment type in the Farmill River. Permittee may refer to, and incorporate aerial photographs, local wetlands maps, sewer and

highway department plans, Coastal Area Management maps, etc. This map shall be included in the first annual report, and shall be updated for inclusion in each subsequent annual report, as required in paragraph 5(A).

(ii) Two qualitative habitat characterizations of the area in which the Shelton landfill is situated shall be conducted; the first one in August 1997 and the second one in August 1999. The qualitative habitat characterization shall describe, in particular, the entire area in the vicinity of the Farmill River from River Road (Connecticut Route 110) east to its confluence with the Housatonic River, the shoreline along the Housatonic River Lagoon, and wetland areas in or near the landfill. A descriptive report of upland areas as they contribute to the ecology of the surface water system, and a description of nearby influences shall be included.

(iii) The first annual report shall include the results of a bathymetric survey of the Housatonic River Lagoon. Results shall be presented in the form of a site map, prepared at a scale of one inch equal to one hundred feet, depicting depth contours within the lagoon at a minimum contour interval of five feet.

(iv) Two quantitative habitat evaluations of the area within the statistical mean annual floodplain of the Farmill River shall be conducted; the first one in August 1997 and the second one in August 1999. The habitat characterizations shall be conducted using standardized and reproducible protocols that follow those recommended by Platts et al. (DA GTR INT-138) and incorporate the metrics required by the RBP III described by Plafkin, et al. (EPA/444/4-89-001), and shall include, at a minimum, Stream width; Stream depth and shore water depth; Location and extent of pool, riffle, run, and glide areas; Stream velocity; General channel morphology, elevation, gradient, and sinuosity; Stream bank, stability, vegetation; Stream bottom; Canopy; Submerged and emergent aquatic vegetation (%-cover, type).

(v) Two benthic macro invertebrate community assessments of the Farmill River shall be conducted; the first one during August and October 1997, and the second in August and October 1999. The benthos shall be evaluated using U.S. EPA's Rapid Bioassessment Protocol, Level 3 (RBP III) as described by Plafkin, *et al.*, 1989. At least one kicknet and rock basket sampling location in riffle/run habitat shall be established. Rock baskets shall be deployed during the middle of August, and shall be retrieved during the first week of October. Concurrent with retrieval, kicknet and CPOM samples shall be collected from streambed locations

representative of the channel cross-section at each station. Samples shall be identified to species as required by RBP III and analysis of community structure. The permittee shall consult with DEP prior to initiating the first of the benthic macro invertebrate community assessments to establish the appropriate reference site and conditions.

(vi) Results of the analyses of community structure, and of each habitat evaluation, including field and laboratory data sheets and updating of the map required by paragraph 3(H)(i) shall be submitted for the review and approval of the commissioner by inclusion in the annual reports in accordance with the requirements of paragraph 5(B)(i)(c)

4. Sample Analysis

(A) All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health or approved in writing for monitoring at this facility by the Connecticut Department of Environmental Protection.

(B) Analytical results for each parameter shall be reported together with the actual method detection limits achieved during the analysis. The value of each parameter shall be reported to the maximum level of accuracy and precision possible. Failure to submit data in accordance with the procedures and protocols set forth in this permit shall constitute a permit violation.

(C) Chemical analyses for surface water, ground water, and leachate shall be performed using methods approved pursuant to the Code of Federal Regulations, Part 136 of Title 40, except where otherwise specified in paragraphs 3(B)(ii), 3(C)(iii), and 3(F)(ii), or unless an alternative method has been specifically approved in writing by the Commissioner for monitoring at this facility. Failure to use approved methods shall constitute a permit violation.

(D) Analyses required by paragraphs 3(A), 3(B), and 3(F) shall be conducted to achieve the minimum levels for each of those parameters for which minimum levels are identified in 3(A)(iii), unless an alternative method that is capable of achieving the minimum levels has been specifically approved in writing by the Commissioner.

(E) The minimum levels specified in paragraph 3(A)(iii) represent the concentration at which quantification must be achieved and verified during the chemical analyses for these compounds. Analyses for these compounds must include calibration points at least as low as the specified minimum level. Check standards within ten percent of the specified minimum level may be used in lieu of a calibration point equal to the minimum level.

(F) If any sample analysis indicates that quantification for a particular parameter can not be verified at or below the specified minimum level, a second sample shall be collected and analyzed for that parameter according to the above specified methodology as soon as practicable. The results of the first and subsequent sample analyses shall be submitted to the Commissioner verifying that the appropriate methodology was employed, the minimum level was achieved for quality-control samples and that failure to quantify the parameter at or below the minimum level specified for the analysis was a result of matrix effects which could not be compensated for as part of sample analysis allowed pursuant to 40 CFR Part 136.

(G) If any three (3) samples collected in a twelve-month period indicate that the specified minimum level was not achieved for a particular parameter when using the specified test methodology, the permittee shall submit a report for the review and approval of the Commissioner which justifies and defines the matrix effect upon analyses for that parameter, identifies the level at which quantification can be verified for those specific test conditions, and recommends modification to the method or an alternative method that is sufficiently sensitive and free of the identified matrix effect.

5. Reporting

(A) Schedule

The results of all sampling and analyses required by this permit, unless otherwise specified in writing by the Commissioner, shall be reported in accordance with the following schedule:

Sampling periods	Reporting Dates
January	March 21

April	June 21
July	September 21
October	December 21

(B) Annual Reports

(i) Beginning on the first March 21 following permit issuance, and annually on or before that date thereafter, a summary report for the preceding one year period of the monitoring and inspection programs required by this permit shall be submitted for the review and written approval of the Commissioner.

(a) The report shall include but not be limited to a) an evaluation of leachate quality and quantity, including graphical representation of monitoring results, b) the condition of all monitoring wells and the need for repair or replacement of any wells, c) an evaluation of the extent and potential extent of the ground water zone of influence and whether any impact on the surface water quality of the Housatonic River or Far Mill River, or any other surface waters was detected or could reasonably be expected to occur, and d) a detailed site map of the area in which the Shelton landfill is situated, at a scale of 1 inch equals 100 feet.

(b) For the first annual report only, additional reporting of work required under paragraph 3(H)(iii) shall include a map showing the Housatonic River Lagoon bathymetry with a minimum contour interval of five feet, at a scale of one inch equal to one hundred feet.

(c) For the second and fourth annual reports, the following additional reporting of work required under paragraphs 3(G)(i), 3(H)(ii), 3(H)(iv), and 3(H)(v) shall be included: 1) results of the physical and chemical sediment analyses and accompanying water quality analyses; 2) a qualitative habitat characterization, 3) a quantitative habitat evaluation; and 4) benthic macro invertebrate community assessments.

(d) The second annual report and subsequent annual reports may propose modifications to the monitoring program for the Commissioner's review and written approval.

(ii) For the parameters and monitoring locations identified in this paragraph, additional annual reporting shall be required. The additional reporting shall consist of preparing graphs of parameter history versus precipitation hydrograph.

(a) Parameters and *Locations* -

One graph shall be prepared for each of the four compliance parameters identified in paragraph 3(E)(ii)(a) of this permit, for each of the following five pairs of wells: MW-TS and MW-TD; MW-BS and MW-BD; MW-CS and MW-CD; MW-D2D and MW-BR7; MW-E and MW-ED. In addition, one graph shall be prepared for ground water elevation measurements for each of the five well pairs listed above.

(b) Graph construction -

The graphs shall be constructed by plotting all values for a specific parameter at a specified pair of monitoring locations along the Y - axis, time along the X - axis, and the precipitation hydrograph along a second Y - axis. Data to be used for constructing the precipitation hydrograph shall be that required in paragraph 3(D). The following units shall be used: Parameters shall be plotted using the appropriate units, time shall be plotted as calendar months and years, and precipitation hydrograph shall be plotted in inches per hour. Beside each precipitation event, the graph shall be labeled with the total precipitation (in inches) for that event.

(C) The results of all analyses and measurements required by this permit shall, unless otherwise specified in writing by the Commissioner, be reported to the following three divisions of the Connecticut Department of Environmental Protection at 79 Elm Street, Hartford, Connecticut 06106-5127: 1) the Bureau of Waste Management, Waste Engineering and Enforcement Division; 2) the Bureau of Water Management, Permitting, Enforcement, and Remediation Division, State Remediation Program; and 3) the Bureau of Water Management, Planning and Standards Division, Aquatic Toxicity Program.

(D) The results of all analyses and measurements required by this permit shall also be reported to the Naugatuck Valley Health Department.

The permittee shall pay the annual compliance determination fee as set forth in the Regulations of Connecticut State Agencies including but not limited to Section 22a-430-7.

This permit is issued under Section 22a-430 of the Connecticut General Statutes and shall expire on August 27, 2001.

The Commissioner reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under federal or state law. This permit as modified or reissued under this paragraph may also contain any other requirements of federal or state law then applicable.

This permit shall be subject to the following sections of the Regulations of Connecticut State Agencies which are hereby incorporated into this permit:

Section 22a-430-3 General Conditions

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(l) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

22a-430-4 Procedures and Criteria

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements

(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit issuance or renewal
(o) Permit Transfer
(p) Permit revocation, denial or modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements for Metals and Cyanide
(t) Discharges to POTWs - Prohibitions

Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(6), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of Section 22a-430-3.

Entered as a Permit of the Commissioner of the Department of Environmental Protection on 27 Aug 96.

Sidney J. Holbrook, Commissioner

Application No. 199502403

Permit No. LF0000052

APPENDIX A

LIST OF APPLICATION SUBMITTALS

CRRA Shelton Landfill Northeast Expansion Area Permit No. LF0000052

"Shelton Landfill Groundwater Assessment, Shelton, Connecticut," August 1988, Fuss & O'Neill, Inc. (APP-11)

"Connecticut Resources Recovery Authority, Shelton, Connecticut, Discharge Permit Reapplication, DEP/WCU 126-104," July 1989, Fuss & O'Neill, Inc. (APP-12)

"Connecticut Resources Recovery, Shelton Landfill, 1990 Annual Summary Report," January 1991, Fuss & O'Neill, Inc. (APP-13)

"Connecticut Resources Recovery Authority, Shelton Landfill, Hazardous Waste Disposal Area, 1990 Annual Summary," February 1991, Fuss & O'Neill, Inc. (APP-14)

"Shelton Landfill Horizontal Expansion Development/Design Report Ash Monocells, 866 River Road (Route 110), Shelton, Connecticut, Volume I, Book I of II," July 1990, revised to January 1992, Fuss & O'Neill, Inc. (APP-3A)

"Shelton Landfill Horizontal Expansion Development/Design Report Ash Monocells, 866 River Road (Route 110), Shelton Connecticut, Volume I, Book II of II," June 1990, Revised to January 1992, Fuss & O'Neill, Inc. (APP-3B)

"Certificate of Need Information and Documentation," July 1990, revised to June 1992. (APP-4)

"Shelton Landfill Horizontal Expansion State Discharge Permit Application (SPDES) Pretreated Ash Leachate, 866 River Road (Route 110), Shelton, Connecticut, Volume III," June 1990, Revised to January 1992, Fuss & O'Neill, Inc. (APP-5)

"State Discharge Permit Application (SPDES) Groundwater Discharge, Volume IV," June 1990, Revised to January 1992, Fuss & O'Neill, Inc. (APP-6)

"Shelton Landfill Horizontal Expansion, 866 River Road (Route 110), Shelton, Connecticut, National Pollutant Discharge Elimination System Permit Application (NPDES) Storm Water Discharge, Volume V," January 1991, Revised to January 1992, Fuss & O'Neill, Inc. (APP-7)

"State Structure and Dredging Permit Application, Volume VI," July 1990, Revised to January 1992, Fuss & O'Neill, Inc. (APP-8)

"Future Public Use and Recreation Plan, Volume VII," July 1990, Revised to January 1992, Fuss &O'Neill, Inc. (APP-9)

"Quality Assurance/Quality Control Documentation, Geomembrane Liner Installation, Volume VIII," February 1991, Revised to January 1992, Fuss & O'Neill, Inc. (APP-10)

"Technical Review for Landfill Permit Application for the Shelton Landfill Horizontal Expansion, Shelton, Connecticut," prepared by Roy F. Weston, Inc., January 1992. (APP-15)

Letter from Chris Recchia, CRRA, to Mike Harder, CTDEP, dated September 15, 1995.

Letter from Natural Resources Center, CTDEP, to Chris Recchia, CRRA, dated September 25, 1995.

Letter and attachments to Jim Fitting, CTDEP, from Debbie Denfeld, CRRA, dated September 29, 1995.

"Permit Application for Wastewater Discharge," September 1995, CRRA.

"Groundwater and Surface Water Monitoring Program for the Northeast Expansion Area," September 1995, CRRA.

"Leachate Prevention Plan for the Shelton Landfill," September 1995, CRRA.

"Compilation of Historical Analytical Monitoring Results," September 1995, CRRA.

"Hydrogeologic Investigation in the Northeast Expansion Area of the Shelton Landfill and Two Contiguous Properties to the North, Shelton Landfill, " October 1995, Environmental Risk Limited.

"Precipitation Hydrographs, Northeast Expansion Area Shelton Landfill," October 1995, CRRA.

"Supplemental Information, Northeast Area Horizontal Expansion, CRRA Shelton Landfill Modification to Permit LF0000052," January 1996, CRRA.

"Groundwater and Surface Water Quality Monitoring Program for the Northeast Expansion Area, Southeast Expansion Area and MSW/Ash Area in Support of the CTDEP Groundwater Discharge Permit," September 1995, Revised May 1996, CRRA.

Table No. 1 and No. 2, and Appendices A, B, C, D, E, F, G, H, and I of "Groundwater and Surface Water Quality Monitoring Program for the Northeast Expansion Area, Southeast Expansion Area and MSW/Ash Area in Support of the CTDEP Groundwater Discharge Permit," submitted September 1995, revised to May 1996, May 31, 1996, CRRA.

"Groundwater and Surface Water Quality Monitoring Program for the Northeast Expansion Area and Southeast Expansion Are in Support of an Amendment of the CTDEP Groundwater Discharge Permit No. LF0000052," September 1995, revised June 12, 1996, CRRA.

Letter and attachments to Jim Fitting, CTDEP, from Debbie Denfeld, CRRA, dated June 14, 1996.

Facsimile to Jim Fitting, CTDEP, from Debbie Denfeld, CRRA, dated June 17, 1996.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SEPTEMBER 5, 1997

BUREAU OF WATER MANAGEMENT

MINOR PERMIT MODIFICATION

cc: MT
P.O.
Bob Koch, HRP

Ms. Deborah Denfeld
Connecticut Resources Recovery Authority
179 Allyn Street
Hartford, CT 06103

Re: Shelton Landfill
Permit ID: LF0000052
Facility ID: 126-104
App. No.: 199502403

Dear Ms. Denfeld:

The Connecticut Resources Recovery Authority was issued a permit for the discharge of leachate from a municipal solid waste ash residue to the ground water in watershed of the Housatonic and Farmill Rivers. It has been requested by my staff that the permit be modified to reflect changes in the benthic monitoring program as described in paragraph 3(H)(v) of the permit. The changes to the permit will not result in a permit which is less stringent than the existing permit.

In accordance with the Regulations of Connecticut State Agencies Section 22a-430-4(p)(5)(B)(vi) of the Water Discharge Permit Regulations, I hereby modify the benthic monitoring program as described on pages 20 and 21 paragraph 3(H)(v) of permit LF0000052 and as shown on the attached modified pages of the permit.

If you have any questions regarding this matter, please call Oswald Inglese at (860)424-3725.

Sincerely,

Sidney J. Holbrook
Commissioner

SJH/rel

attachment

highway department plans, Coastal Area Management maps, etc. This map shall be included in the first annual report, and shall be updated for inclusion in each subsequent annual report, as required in paragraph 5(A).

(ii) Two qualitative habitat characterizations of the area in which the Shelton landfill is situated shall be conducted; the first one in August 1997 and the second one in August 1999. The qualitative habitat characterization shall describe, in particular, the entire area in the vicinity of the Farmill River from River Road (Connecticut Route 110) east to its confluence with the Housatonic River, the shoreline along the Housatonic River Lagoon, and wetland areas in or near the landfill. A descriptive report of upland areas as they contribute to the ecology of the surface water system, and a description of nearby influences shall be included.

(iii) The first annual report shall include the results of a bathymetric survey of the Housatonic River Lagoon. Results shall be presented in the form of a site map, prepared at a scale of one inch equal to one hundred feet, depicting depth contours within the lagoon at a minimum contour interval of five feet.

(iv) Two quantitative habitat evaluations of the area within the statistical mean annual floodplain of the Farmill River shall be conducted; the first one in August 1997 and the second one in August 1999. The habitat characterizations shall be conducted using standardized and reproducible protocols that follow those recommended by Platts et al. (DA GTR INT-138) and incorporate the metrics required by the RBP III described by Plafkin, et al. (EPA/444/4-89-001), and shall include, at a minimum, Stream width; Stream depth and shore water depth; Location and extent of pool, riffle, run, and glide areas; Stream velocity; General channel morphology, elevation, gradient, and sinuosity; Stream bank, stability, vegetation; Stream bottom; Canopy; Submerged and emergent aquatic vegetation (%-cover, type).

(v) Two benthic macroinvertebrate community assessments of the Farmill River shall be conducted; the first one during October 1997 and the second in October 1999. The benthos shall be evaluated using U.S.EPA's Rapid Bioassessment Protocol (RBP), Level 3 as described by Plafkin, et al., 1989. At least one kick net sampling location in a riffle/run habitat in the Farmill River shall be established. An ecoregional reference or an upstream reference site shall also be established and sampled concurrently with the other site(s). Kick net and CPOM samples shall be collected from streambed locations representative of the channel cross-section at

each station. Subsampling the material collected, following procedures in RBP, is acceptable as long as a minimum 200 organism subsample is obtained. The number of organisms in the subsample should not be less than 10% of the target subsample value. Samples shall be identified to the lowest taxonomic level possible, preferably to the species level. The permittee shall consult with DEP prior to iniating the first of the benthic macroinvertebrate community assessments to establish the appropriate reference site, and discuss field and laboratory procedures.

(vi) Results of the analyses of community structure, and of each habitat evaluation, including field and laboratory data sheets and updating of the map required by paragraph 3(H)(i) shall be submitted for the review and approval of the commissioner by inclusion in the annual reports in accordance with the requirements of paragraph 5(B)(i)(c)

4. Sample Analysis

(A) All sample analyses required by this permit shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health or approved in writing for monitoring at this facility by the Connecticut Department of Environmental Protection.

(B) Analytical results for each parameter shall be reported together with the actual method detection limits achieved during the analysis. The value of each parameter shall be reported to the maximum level of accuracy and precision possible. Failure to submit data in accordance with the procedures and protocols set forth in this permit shall constitute a permit violation.

(C) Chemical analyses for surface water, ground water, and leachate shall be performed using methods approved pursuant to the Code of Federal Regulations, Part 136 of Title 40, except where otherwise specified in paragraphs 3(B)(ii), 3(C)(iii), and 3(F)(ii), or unless an alternative method has been specifically approved in writing by the Commissioner for monitoring at this facility. Failure to use approved methods shall constitute a permit violation.

(D) Analyses required by paragraphs 3(A), 3(B), and 3(F) shall be conducted to achieve the minimum levels for each of those parameters for which minimum levels are identified in 3(A)(iii), unless an alternative method that is capable of achieving the minimum levels has been specifically approved in writing by the Commissioner.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT

Connecticut Resources Recovery Authority
179 Allyn Street
Hartford, CT 06103

Attention: Mr. David Brown

Re: DEP/WPC-126-104
Town of Shelton
Housatonic River Watershed

Gentlemen:

This PERMIT is issued in accordance with Section 22a-430 of the Connecticut General Statutes, as amended. The Commissioner of Environmental Protection (hereinafter "the Commissioner") has found that the discharge from the operation and maintenance of the sanitary landfill will not cause pollution of the waters of the state. This action is further found to be consistent with the applicable policies of the Connecticut Coastal Management Act (Section 22a-92 of the Connecticut General Statutes as amended by Section 2 of P.A. 79-535).

The Commissioner, acting under Section 22a-430, hereby permits the Connecticut Resources Recovery Authority (CRRA) to operate and maintain a sanitary landfill with the resultant leachate discharged to the groundwaters of the state in accordance with the following conditions:

1) Discharge Serial No. 001
Description - Sanitary Landfill Leachate (code 305002C)
Discharge Location - Groundwaters in the watershed of the Housatonic River (basin code 6000)
Design Flow Rate - 74,000 gallons per day

2) The sanitary landfill shall be operated and maintained in accordance with the plans and specifications approved by the Director of Water Compliance on December 28, 1984. The sanitary landfill site consists of 110 acres of land located to the east of Route 110 in the Town of Shelton. The permitted area of refuse disposal is 37 acres as shown on the site grading plan prepared by Fuss & O'Neill and dated December 4, 1984.

3) The surface and groundwaters shall be monitored as follows:

A) Surface water quality monitoring shall be conducted at the following locations:

S-1: Lagoon inlet (downstream)
S-2: Lagoon mid-point (downstream)

Samples shall be obtained on the falling tide approximately midway between high and low tide and be taken at mid-depth in the lagoon.

Each quarterly sample shall be analyzed for the following leachate indicator parameters.

1. total dissolved solids (613)
2. total suspended solids (614)
3. alkalinity (602)
4. COD (303)
5. total iron (113)
6. total managanese (116)
7. ammonia (201)
8. nitrate (204)
9. chloride (502)
10. organic nitrogen (205)
11. T.O.C. (306)
12. pH (609)
13. conductivity (611)
14. BOD_{20} (302)
15. nitrite (203)
16. TKN (202)
17. copper (111)
18. zinc (127)
19. nickel (119)
20 cadmium(107)
21. lead (114)
22. chromium (109)

B) Groundwaters monitoring shall be conducted at the following locations:

W-1: F (up-gradient)
W-2: As
W-3: Ad
W-4: Bs
W-5: C
W-6: E
W-7:
W-9:
W-10:

Following measurement of the water level in the monitoring wells, the wells shall be pumped immediately prior to sampling until at least three (3) times the volume of water standing in the well is evacuated to insure that a representative sample of the groundwater is obtained. All ground water samples for metals, COD and volatile organics shall be filtered in the field to remove excess suspended solids. A silty water sample will give false results on the COD and metal analyses. The samples shall be analyzed by a laboratory certified by the State Health Department. All samples shall be placed in the appropriate container for the test to be conducted (i.e. BOD bottle, volatile organics bottle, one-half gallon plastic bottle, etc.).

Each quarterly ground water sample shall be analyzed for the previously listed leachate indicator parameters and the following:

water level (706)
volatile organics (annually)

C) The domestic water supply wells at the following addresses shall be sampled quarterly:

PW-1: Lot 5
PW-2: Lot 151
PW-3: Lot 152
PW-4: Lot 153
PW-5: Lot 172
PW-6: Lot 173

Each quarterly water sample shall be analyzed for specific conductance (611), chloride (502), total dissolved solids (613), alkalinity (602), ammonia (201), nitrate (204), iron (113), manganese (116) and pH (609).

Tap water should be run vigorously for five (5) minutes prior to sample collection and from a tap which bypasses holding tanks and water treatment systems. Samples shall be placed in the appropriate bottle.

D) This permit condition (C) is binding only if the property owners grant the applicant permission to collect the well water sample.

E) The sampling and testing performed according to subparagraphs A, B, and C shall be done according to this schedule:

Sampling Date	Reporting Date
January	March 1
April	June 1
July	September 1
October	December 1

The results shall be reported to the Solid Waste and Water Compliance Units of the Department of Environmental Protection at the State Office Building, Hartford, Connecticut 06106. A copy of the sampling results shall also be sent to the Health Officer of the town in which the disposal area is located and copies of the private well sampling results shall be sent to the residences of those properties.

F) Beginning on December 31, 1984 and annually on that date thereafter, a summary report of the monitoring program shall be submitted for the review and approval of the Commissioner. The report shall include an assessment of changing trends in leachate concentration or constituents, impact on adjacent surface waters, changes in plume location, changes in the ground water levels, and impact on nearby water supply wells.

4) The zone of influence of the discharge which is hereby permitted is restricted to the property owned by CRRA. The zone of influence is defined as the soil and groundwater area needed to allow the treatment of leachate by soils and mixing of leachate with groundwaters and in which the groundwaters could be in violation of pertinent Federal and State drinking water standards.

5) Within ninety (90) days of the date of this permit, verify to the Commissioner that notice has been placed by the CRRA on the land records of this area as shown in the engineering report dated Februrary 1982, which indicates that groundwaters beneath this parcel are not suitable for drinking without treatment due to the existence of the landfill.

6) Within ninety (90) days of the date of this permit, verify to the Commissioner that refuse monuments have been installed around the perimeter of the refuse disposal area. Refuse monuments shall be at least six (6) feet high, three (3) inches in diameter and permanently anchored to protect against accidental destruction or vandalism.

7) On or before six (6) months of when the metal hydroxide disposal cell will reach its permitted capacity of 10,000 cubic yards, the CRRA shall submit for the review and approval of the Commissioner, plans and specifications for the final disposition of the metal hydroxide sludge.

8) Within one (1) year of the date of issuance of this permit, verify to the Commissioner that a vegetated buffer zone fifty (50) feet wide has been established between the lagoon and the landfill.

9) The monitoring of this landfill shall continue for at least twenty-five (25) years after full and complete closure has occurred.

The PERMIT is issued under Section 22a-430 and shall expire on January 11, 1990.

The PERMIT shall be subject to all the Section 22a-430 General Conditions dated April 27, 1979 which are hereby incorporated into this PERMIT.

Entered as a PERMIT of the Commissioner on January 11, 1985.

Stanley J. Pac
Stanley J. Pac
COMMISSIONER

LF 0000023

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PRETREATMENT PERMIT

issued to

Connecticut Resources Recovery Authority
100 Constitution Plaza, 17th Floor
Hartford, CT 06103-1722

Location Address:

Shelton Landfill
866 River Road
Shelton, CT

Facility ID: 126-104 **Permit ID:** SP0001459 **Permit Expires:** June 27, 2011

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and a modified Memorandum of Agreement (MOA) dated June 3, 1981, by the Administrator of the United States Environmental Protection Agency which authorizes the State of Connecticut to administer a Pretreatment Program pursuant to 40 CFR Part 403.

(B) Connecticut Resources Recovery Authority, ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

section 22a-430-3 General Conditions

(a)Definitions
(b)General
(c)Inspection and Entry
(d)Effect of a Permit
(e)Duty
(f)Proper Operation and Maintenance
(g)Sludge Disposal
(h)Duty to Mitigate
(i)Facility Modifications; Notification
(j)Monitoring, Records and Reporting Requirements
(k)Bypass
(l)Conditions Applicable to POTWs
(m)Effluent Limitation Violations (Upsets)
(n)Enforcement
(o)Resource Conservation
(p)Spill Prevention and Control
(q)Instrumentation, Alarms, Flow Recorders
(r)Equalization

section 22a-430-4 Procedures and Criteria

(a)Duty to Apply
(b)Duty to Reapply
(c)Application Requirements
(d)Preliminary Review
(e)Tentative Determination
(f)Draft Permits, Fact Sheets
(g)Public Notice, Notice of Hearing
(h)Public Comments
(i)Final Determination
(j)Public Hearings

I CERTIFY THAT THIS DOCUMENT IS A TRUE COPY OF THE ORIGINAL.
Pamela D. Burney
NAME
Processing Technician
TITLE
DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER MANAGEMENT

(k)Submission of Plans and Specifications. Approval.
(l)Establishing Effluent Limitations and Conditions
(m)Case by Case Determinations
(n)Permit issuance or renewal
(o)Permit Transfer
(p)Permit revocation, denial or modification
(q)Variances
(r)Secondary Treatment Requirements
(s)Treatment Requirements for Metals and Cyanide
(t)Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the permittee to enforcement action, including but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the permittee and proposed transferee shall register such proposed transfer with the Commissioner at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure by the transferee to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) Nothing in this permit shall relieve the permittee of other obligations under applicable federal, state and local law.

(G) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the Regulations of Connecticut State Agencies.

(H) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (section 22a-92 of the Connecticut General Statutes).

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA.

(B) In addition to the above the following definitions shall apply to this permit:

"----" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the DMR.

"Average Monthly Limit" means the maximum allowable "Average Monthly Concentration" as defined in section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g. mg/l); otherwise, it means "Average Monthly Discharge Limitation" as defined in section 22a-430-3(a) of the RCSA.

"Daily Concentration" means the concentration of a substance as measured in a daily composite sample, or the arithmetic average of all grab sample results defining a grab sample average.

"Daily Quantity " means the quantity of waste generated during an operating day.

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"Maximum Daily Limit" means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g. mg/l); otherwise, it means the maximum allowable "Daily Quantity" as defined above unless it is expressed as a flow quantity. If expressed as a flow quantity it means "Maximum Daily Flow" as defined in section 22a-430-3(a) of the RCSA.

"NA" as a Monitoring Table abbreviation means "not applicable".

"NR" as a Monitoring Table abbreviation means "not required".

"Quarterly", in the context of a sampling frequency, means sampling is required in the months of January, April, July, and October.

"Range During Sampling" or "RDS", as a sample type, means the maximum and minimum of all values recorded as a result of analyzing each grab sample of; 1) a Composite Sample, or 2) a Grab Sample Average. For those permittees with continuous monitoring and recording pH meters, Range During Sampling shall mean the maximum and minimum readings recorded with the continuous monitoring device during the Composite or Grab Sample Average sample collection.

"Range During Month" or "RDM" , as a sample type, means the lowest and the highest values of all of the monitoring data for the reporting month.

"ug/l" means micrograms per liter.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner of Environmental Protection ("the Commissioner") has made a final determination and found that the continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's decision is based on application #199805177 for permit reissuance received on December 16, 1998 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or his authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

SECTION 4: EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharge shall not exceed and shall otherwise conform to specific terms and conditions listed below. The discharge is restricted by, and shall be monitored in accordance with, the table below.

Table A

Discharge Serial Number: 001-1 | **Monitoring Location:** 1

Wastewater Description: Closed landfill leachate collection wastewater

Monitoring Location Description: After the pH adjustment tank

Discharge is to: The Town of Stratford Water Pollution Control Facility via its conveyance system

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [1]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency	Sample Type or measurement to be reported	
Barium, Total	mg/l	NA	-----	Quarterly	Daily Composite	NA	NR	NA	NA
Chemical Oxygen Demand	mg/l	NA	-----	Quarterly	Daily Composite	NA	NR	NA	NA
Copper, Total	mg/l	NA	-----	Quarterly	Daily Composite	NA	NR	NA	NA
Flow, Average and Maximum [1]	gpd	------	55,000	Quarterly	Total Flow	NA	NR	NA	NA
Flow, Total	gpd	NA	55,000	Quarterly	Daily Flow	NA	NR	NA	NA
Lead, Total	mg/l	NA	-----	Quarterly	Daily Composite	NA	NR	NA	NA
Nickel, Total	mg/l	NA	-----	Quarterly	Daily Composite	NA	NR	NA	NA
pH	S.U.	NA	NA	NR	NA	6.0 - 10.0	Quarterly	RDS	NA
pH, Continuous	S.U.	NA	NA	NR	NA	6.0 - 10.0	Continuous	RDM	NA
Total Volatile Hydrocarbons	ug/l	NA	NA	NR	NA	-----	Quarterly	Grab	NA
Zinc, Total	mg/l	NA	-----	Quarterly	Daily Composite	NA	NR	NA	NA

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Average Daily Flow and the Maximum Daily Flow for each sampling month. (January, April, July and October)

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'

(B) All samples shall be comprised of only those wastewaters described in this schedule, therefore, samples shall be taken prior to combination with wastewaters of any other type and after all approved treatment units, if applicable. All samples taken shall be representative of the discharge during standard operating conditions.

(C) In cases where limits and sample type are specified but sampling is not required, the limits specified shall apply to all samples which may be collected and analyzed by, the Department of Environmental Protection personnel, the permittee, or other parties.

(D) The limits imposed on the discharges listed in this permit take effect on the issuance date of this permit, hence any sample taken after this date which, upon analysis, shows an exceedance of permit limits will be considered non-compliance.

The monitoring requirements of this permit begin on the date of issuance of this permit if the issuance date is on or before the 12th day of a month. For permits issued on or after the 13th day of a month, monitoring requirements begin the 1st day of the following month.

SECTION 5: SAMPLE COLLECTION, HANDLING and ANALYTICAL TECHNIQUES AND REPORTING REQUIREMENTS

(A) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall employ methods approved by the Environmental Protection Agency pursuant to 40 CFR 136 unless an alternative method has been approved in writing in accordance with 40CFR 136.4.

(B) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40CFR136 unless otherwise specified.

(C) The results of chemical analysis required above shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Water Management at the following address. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are taken.

Bureau of Water Management (Attn: DMR Processing)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(D) If this permit requires monitoring of a discharge on a calendar basis (e.g. Monthly, quarterly, etc.) but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR as scheduled, indicating "NO DISCHARGE". For those permittees whose required monitoring is discharge dependent (e.g. per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.

(E) Copies of all DMRs shall be submitted concurrently to the local Water Pollution Control Authority ("WPCA") involved in the treatment and collection of the permitted discharge.

SECTION 6: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

(A) If any sample analysis indicates that an effluent limitation specified in Section 4 of this permit has been exceeded, a second sample of the effluent shall be collected and analyzed for the parameter(s) in question and the results reported to the Bureau of Water Management (Attn: DMR Processing) within 30 days of the exceedance.

(B) The Permittee shall immediately notify the Bureau of Water Management (Attn: Permits, Enforcement and Remediation Division) and the local WPCA of all discharges that could cause problems to the Publicly Owned Treatment Works ("POTW"), including but not limited to slug loadings of pollutants which may cause a violation of the POTW's NPDES permit, or which may inhibit or disrupt the POTW, its treatment processes or operations, or its sludge processes, use or disposal.

This permit is hereby issued on the 27th day of June, 2001.

Arthur J. Rocque, Jr.
Commissioner

AJR/cn

cc: Town of Stratford, POTW

TOWN OF STRATFORD
WATER POLLUTION CONTROL

105 BEACON POINT ROAD
STRATFORD, CT 06615
(203) 385-4065
FAX: (203) 381-2043

Permit Date: June 16, 2009
Permit Expires: June 16, 2014

SPECIAL PERMIT TO DISCHARGE TO THE SANITARY SEWER

Discharge Location:

Connecticut Resources Recovery Authority (C.R.R.A.)

Shelton Landfill Ash Leachate Project

866 River Road, Shelton, CT 06484

Permit Issued To:

Connecticut Resources Recovery Authority (C.R.R.A.)

100 Constitution Plaza-17th Floor

Hartford, CT 06103-1722

1) It shall be required that the discharge be sampled and tested monthly for Biochemical Oxygen Demand (5-day), Total Suspended Solids and Total Nitrogen, with copies of these test results provided to the Town.
2) C.R.R.A. shall utilize a certified laboratory approved by the Town for all sampling required. Copies of any and all testing done at this site for the D.E.P. or the E.P.A. shall be supplied to the Town.
3) C.R.R.A. shall pay all fees associated with the required sampling. The Town reserves the right to change the sampling parameters as needed.
4) Stratford Water Pollution Control shall be notified immediately as to any system malfunctions, system changes or problems, which could impact or adversely affect the discharge to the sanitary sewer line.
5) If for any reason the City of Shelton, the D.E.P. or the E.P.A. disapprove C.R.R.A.'s application/permit, this permit shall also be disapproved/revoked.
6) A control manhole shall be maintained on this discharge line for sampling at a location approved by the Town. This installation shall be per Town Code Chapter 172-23.
7) A non-resettable meter shall record the volume of wastewater discharged. The meter to be used must be approved by the Town and designed for the intended purpose.
8) It shall be the responsibility of the applicant to obtain all permits necessary. It shall also be the applicant's responsibility to pay all costs associated with this.
9) The Town reserves the right to make revisions to this permit at any time and to discontinue this connection into the sanitary sewer line if it is found to affect the operation or discharge permit of the Town's Water Pollution Control Facility or limit the Town's expansion. This right is stated in the Town Code Chapter 172-50.
10) This permit shall expire on June 16, 2014. The Town shall be notified sixty days in advance of this expiration date if renewal is required.