

EXHIBIT A 1

TO

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

SCOPE OF SERVICES

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Environmental Monitoring, Laboratory Analysis and Reporting - Ellington Landfill

BACKGROUND

The Ellington Landfill is a closed solid waste disposal facility located on the eastern side of Sadds Mill Road (Route 140) in Ellington, Connecticut. A general location plan showing the Ellington Landfill is included as **Figure 1**. The site is 800 to 1,200 feet east of the Ellington/East Windsor town line. The landfill is bounded by the land of the N/F Thompson Family Trust to the north, the Connecticut Resources Recovery Authority (CRRA)/Ellington Transfer Station to the east, residentially-zoned land owned by CRRA to the south and Sadds Mill Road to the west. Gravel excavation and composting (Greencycle) operations are performed on the Thompson Family Trust property. Two occupied, single-family homes, 204 Sadds Mill Road and 208 Sadds Mill Road, are located on the western side of Route 140, across from the southern end of the landfill. The remainder of the land on the western side of Route 140 is primarily undeveloped and wooded, except for a recent gravel extraction to the northwest of the landfill.

CRRA purchased the Ellington Landfill property in 1986. Landfilling reportedly began on this property in 1966, and waste disposal ceased on June 29, 1993. During its active life, the Ellington Landfill received municipal solid waste (MSW) and bulky waste (demolition debris and land clearing debris), as defined by the Connecticut Department of Environmental Protection (CTDEP). The majority of the landfill received final cover material in the summer of 1993, and has established vegetative growth. Final closure activities were completed in the fall of 1996, with touch-up work completed in the spring and summer of 1997. The current water quality monitoring program was most recently modified with CTDEP approval in July 2008.

The CRRA Ellington Transfer Station, located immediately to the east of the landfill, is currently accepting MSW for transfer to the Mid-CT Resource Recovery Facility, and is permitted separately from the landfill.

A detailed site plan showing environmental sampling locations is included as **Figure 2**. The site is equipped with various environmental control systems, including:

- (a) A landfill gas collection system located primarily along the northern and western property lines,
- (b) A landfill gas oxidizer, located in the northeastern corner of the property, and
- (c) A stormwater collection and discharge system (overall site).

Groundwater, surface water, and potable water monitoring at the Ellington Landfill is conducted in accordance with a conditional approval from the CTDEP dated July 24, 2008 that modified the

water quality monitoring program under the solid waste permit issued by the CTDEP's Waste Management Bureau. Copies of the letter of conditional approval and of the solid waste permit are included in **Appendix A**. Stormwater monitoring is conducted in accordance with the General Permit for the Discharge of Stormwater Associated with Industrial Activities, issued by the CTDEP on October 1, 2002, revised on July 15, 2003, and re-issued on April 14, 2009.

SCOPE OF SERVICES

Consultant's work shall be inclusive of all environmental monitoring and reporting required at the Ellington 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, potable water, and stormwater. All sampling at the Ellington Landfill will be performed to meet the requirements of all applicable regulations and permits issued to the Ellington 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.

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 Ellington Landfill, and shall prepare monitoring reports consistent in format with past monitoring reports. Consultant shall provide summary tables of data results, and reference, as applicable, drinking water standards and Connecticut Remediation Standards for monitoring wells and potable wells, and surface water Numerical Criteria contained in the Connecticut Water Quality Standards. Consultant shall also be responsible for the timely submittal of stormwater discharge data to CRRA so that CRRA can meet its regulatory reporting obligations.

In accordance with the permits for the Ellington Landfill, Consultant shall conduct the monitoring program for the sampling points and parameters as summarized in **Tables 1** through **3**, on a quarterly basis except as otherwise indicated. In some instances, monitoring points may be inaccessible for regularly-scheduled monitoring, such that Consultant shall make arrangements to sample the location(s) at other times. If it is not possible to sample in a timely manner within the monitoring event timeframe, CRRA will not be charged for sample collection and laboratory analysis for those portions of work not completed.

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

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

- Completion of field 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 semi-annual monitoring event to determine the groundwater elevations at all 45 monitoring wells installed at the site. 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 CTDEP's Solid Waste Management Program and EPA's Subtitle "D" regulations.
- 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 Services).
- 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, duplication, and distribution of reports following incorporation of CRRA comments.

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 ID numbers) to assist field personnel in locating the wells.

The environmental monitoring program is outlined by task and description below. 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 CRRA for the Ellington Landfill require that water quality monitoring activities be conducted on a quarterly basis. The activities under Task 1 of this Scope of Services describe the monitoring activities, which vary in frequency and monitoring parameters by type of media (groundwater, surface water and potable water) and sampling point.

Task 1.1: Sampling and Documentation of Field Activities

Sampling Schedule

Quarterly sampling of select groundwater and potable water wells is to be performed in the following months:

- January
- April
- July
- October

Semi-annual sampling of select additional groundwater wells and surface water is to be performed in the following months:

- April
- October

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

Monitoring of Groundwater Wells

There are twelve (12) groundwater monitoring wells at the Ellington Landfill that are monitored on either a quarterly or a semi-annual 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.

More specifically, the following items are highlighted for each quarterly sampling event:

- Keyed-alike well locks will be provided for all wells by CRRA.
- Permission to access off-site monitoring wells, surface waters, and potable water 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 twelve (12) monitoring wells that are in the sampling program. At each monitoring well, the depth to groundwater and the depth to the bottom of the well 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.
- Measure depth to water at all 12 monitoring wells that are included in the groundwater sampling program 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 field meter(s) to concurrently measure pH, temperature, specific conductivity, dissolved oxygen (DO), turbidity, and redox potential (RP), as applicable, during monitoring well purging. A minimum of four (4) readings of each parameter shall be taken and recorded during purging.
- Perform purging using pre-cleaned and/or disposable bailers, or submersible, variable speed positive-displacement pumps at each sampled monitoring well. The Consultant must extract at least three (3) well volumes from each groundwater monitoring well prior to sample collection. The purged groundwater may be discarded to the ground at the landfill.
- Sample collection should proceed from high parameter volatility to low parameter volatility. 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 a 0.45-micron filter.

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

Surface Water Sampling

Surface water sampling consists of grab sample collection from six (6) surface water sampling locations on a semi-annual basis. The six surface water sampling locations are designated as:

- SW-1 - located on Thompson Brook to the northwest of the landfill.
- SW-2 - located downstream of the confluence of Thompson and Broad Brooks to the northwest of the landfill
- SW-4 - located on Creamery Brook, upstream of the landfill.
- SW-5 - located on Creamery Brook, downstream and to the southwest of the landfill.
- SW-6 - located on Broad Brook, upstream from the confluence of Creamery and Broad Brooks.
- SW-12 - located on Broad Brook between Creamery and Thompson Brooks to the southwest of the landfill.

Surface water sampling shall consist of the collection of one grab sample from each surface water sampling location. A field data sheet shall be completed for each sample location. Field measurements of water temperature, air temperature, pH, specific conductance, and dissolved oxygen shall be recorded. Sampling equipment (i.e., peristaltic pump, dipper sampler, etc.), time and date of sample collection, sampler's name, depth of water, sample identification, and other pertinent information shall also be recorded on the field data sheet. All surface water samples collected for analysis of dissolved metals will be filtered in the field prior to acid preservation.

Domestic Well Sampling

There are nine (9) domestic water supply wells that are included in the environmental monitoring program for the Ellington Landfill. Seven (7) of these wells are associated with residences/third parties located in the vicinity of the Ellington Landfill, while the two remaining wells are associated with the scalehouse for the Ellington Transfer Station and with the Ellington Transfer Station itself. Six (6) of the domestic wells are sampled on a quarterly basis, while the other three (3) domestic wells are only sampled annually (in January of each year).

When possible, domestic water well samples are collected from the first spigot in line from the well pump, prior to any filtration or treatment systems, and any aeration heads are removed. When sampling domestic wells, the tap water is allowed to run for a minimum of five minutes before the water samples are obtained. The flow from the tap is then reduced in order to collect samples directly into the sample containers with a minimum of mixing and aeration. No filtering of domestic well samples is to occur.

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.

Sample event 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, trip blanks and duplicate samples as part of the sampling quality assurance program. In addition to any other approved EPA or CTDEP protocols, equipment blanks are required when non-dedicated sampling equipment is used, with laboratory-supplied reagent water poured over the sampling equipment 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 VOC analyses are collected, and returned with the samples for analysis of USEPA's Appendix I VOC's. Duplicate samples are to be collected at one of the quarterly-monitored groundwater well locations during each sampling event and analyzed for all the same parameters as the sampled well.

It shall be the Consultant's responsibility to provide all field equipment, including but not limited to well bailers, rope, pumps, tubing, etc., that the Consultant deems necessary to conduct the field sampling activities. 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 Ellington 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 domestic water. 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.

Monitoring and Sampling Techniques for groundwater and surface water locations 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 equipment purging, monitoring of field parameters, method of filtering for dissolved metals and sample collection techniques.

Domestic well monitoring and sample techniques shall describe tap water run time prior to sampling, monitoring of field parameters, 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, and duplicate samples. The trip blank is only associated with days when groundwater well and domestic well monitoring is performed, because VOC's are not analyzed in surface waters. Collection and analysis of two (2) equipment blanks per quarter is necessary to document what analytical interferences or sample cross-contamination, if any, may result from the use of non-dedicated groundwater well purging and sample collection equipment, and from the surface water sample collection equipment. Duplicate samples are to be collected at one of the quarterly-monitored groundwater well locations during each sampling event and analyzed for all the same parameters as the sampled well.

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; and USEPA's "RCRA Ground Water Monitoring Technical Enforcement Guidance Document", September 1986.

Task 1.2: Quarterly Laboratory Analysis

All sample analyses required under this Scope of Services 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 CTDEP Reasonable Confidence protocols, 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

Given the site setting, the minimum detection limit for each analyzed parameter in groundwater monitoring well samples will have to be at least as low as the Surface Water Protection Criteria (SWPC) or the Groundwater Protection Criteria (GWPC) from the State's Remediation Standard Regulations, whichever is lower.

For potable water samples, the minimum detection limit for each analyzed parameter will have to be at least as low as the Maximum Contaminant Level (MCL) established for that parameter by either the USEPA or the Connecticut Department of Public Health, whichever is lower; or, the National Secondary Drinking Water Regulations for that parameter, if applicable.

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.

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. Where applicable, specific laboratory analytical methods listed in **Table 2** must be utilized.

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 by the Consultant 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 following deadlines apply to the submission of finalized quarterly reports to the appropriate regulatory agencies:

Sampling Event	Report Deadline
January	March 1
April	June 1
July	September 1
October	December 1

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 in the monitoring results an indication of parameters that 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 and permit requirements), groundwater/surface water protection criteria per CTDEP regulations in accordance with the classifications of the same, and acute aquatic life criteria for surface water locations.

The quarterly reports must include assessment of conditions at groundwater monitoring wells and other sampling locations as applicable. The quarterly reports will also include a summary table of groundwater well construction details, and site maps which show groundwater contours in both the overburden and the bedrock aquifers across the monitored area. The groundwater contours shall be developed on an AutoCAD drawing of the sites that includes site features and topography. CRRA will provide an AutoCAD disk of the 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 "Significant Environmental Hazard" reporting guidelines under Public Act 98-134.

A copy of the draft quarterly report, including sampling details and supporting analytical data, sample chains of custody, completed Laboratory Analysis QA/QC Certification Forms, Field Data Sheets (for monitoring well sampling, surface water sampling, and domestic well sampling), 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. Six (6) finalized 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 & Water Elevations

There are twenty-one (21) ground water monitoring wells included in this monitoring program that are not part of the quarterly or semi-annual sampling program as outlined herein. During the April and October sampling events, the ground water elevation shall be measured at each of the twenty-one (21) 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 for the non-sampled wells shall also be included in the applicable environmental monitoring report.

Task 1.5: 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 landfill stormwater;
- (b) Evaluation of surface water and groundwater quality, including graphical representations of monitoring results for at least the past three (3) 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 or domestic well water quality was detected or could reasonably be expected to occur;
- (e) Written request for modification of the surface water and/or ground water monitoring program, as warranted by the data generated through the monitoring.

Although the solid waste permit for the Ellington Landfill allows for submission of the annual report by September 1st of the following year, the submission deadline for the finalized annual reports under this Scope of Services is April 1st. Draft versions of the annual reports are to be submitted to CRRA for review at least ten (10) working days prior to the April 1st submittal deadline. CRRA shall be supplied with electronic copies of all information included in the final annual reports, 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. Six (6) finalized copies of the annual report plus one electronic copy (PDF format) are required to be generated by the Consultant. Consultant is responsible for mailing reports directly.

TASK 2: STORMWATER DISCHARGE SAMPLING, ANALYSIS & REPORTING

The Ellington Landfill and the Ellington Transfer Station are 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 on April 14, 2009. The permit registration numbers are GSI000815 (Ellington Landfill) and GSI000520 (Ellington Transfer Station).

In accordance with the General Permit, stormwater samples are to be collected from both the Landfill and the Transfer Station on an annual basis and analyzed for those parameters specified in **Table 3**. Under this Scope of Services, annual sampling is to be completed by June 30th of each year. There are a total of two (2) locations that must be sampled annually: outfall 001 from the Ellington Landfill (or outfall 001A if there is insufficient flow at outfall 001), and outfall 001 from the Ellington Transfer Station. Refer to Figure 2 for a map depicting the sampling locations.

Task 2.1: 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 Plans (SPPP's) that have been prepared for the landfill and transfer station (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 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. Both chemical analyses and acute toxicity bio-monitoring shall be completed at each sampled outfall per the General Permit requirements. The monitoring parameters are specified in **Table 3**.

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 2.3: Reporting

CRRA is required to submit Stormwater Monitoring Reports (SMR's) to the CTDEP within ninety (90) days of the sampling event. In order to meet this reporting requirement, the Consultant shall provide finalized laboratory reports, including 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.) to CRRA within forty-five (45) days after the sampling event.

TABLE 1
Summary of Monitoring Well Construction

Ellington Landfill
Ellington, Connecticut

Monitoring Well	North Coord. (ft)	East Coord. (ft)	Ground Elevation (ft)	PVC Elevation (ft)	Casing Elevation (ft)	Well Diameter (in)	Well Depth (ft)	Screen Length (ft)	Screen Depth (ft)	Bedrock Elevation (ft)	Date Installed
MW-2S	398778.8	665516.7	188.9	189.74	190.12	2	23.05	10	12.5-22.5	-	Jan-91
MW-2B	398790.3	665516.5	190.9	192.14	192.41	2	81.8*	10	73-83*	120.26	Feb-88
MW-6S	398851.6	664933.4	190.7	193.57	No survey	2	46.1	10	35-45	141.4	Feb-88
MW-6B	398848.4	664936.6	191.1	193.65	No survey	2	65.5	15	48-63	141	Feb-88
MW-7	400576.1	665144	181.7	183.08	183.56	2	32.5	10	20-30	148.8	Feb-88
MW-8S	400336.6	664420.1	189.9	191.53	191.57	2	53	10	40-50	139.8	Feb-90
MW-8B	400326	664413.2	189.8	191.6	191.64	2	73	10	60-70	137.6	Mar-90
MW-12	400261.6	665088.5	182.1	182.91	184.45	2	20.4	10	8-18	164.3	Mar-91
MW-15	399316.6	666225.8	188.2	191.44	190.49	2	48	10	37-47	140.9	Mar-90
MW-16	399503.8	665244.1	215.7	217.06	217.1	2	57.8	10	49-59	156.8	Mar-90
MW-17	-	-	189.54	190.59	190.46	2	29	10	19-29	160.54	Jun-94
MW-18	-	-	179.34	180.28	180.5	2	38	10	28-38	141.34	Jun-94
MW-3B	-	-	186.64	188.19	188.43	2	90	10	80-90	121.64	Feb-88
MW-5	-	-	-----	187.84	No survey	2	56	10	46-56	151.69	Feb-88
MW-5B	-	-	-----	189.2	No survey	2	63	5	58-63	152.29	Feb-88
MW-9	-	-	-----	161.35	161.95	2	42	10	32-42	122.2	Feb-90
MW-10	-	-	174.3	175.72	175.84	2	58	10	48-58	116.3	Mar-90
MW-10B	-	-	174.4	175.97	176.09	2	80	10	70-80	110.4	Mar-90
MW-11	-	-	163.35	164.8	164.98	2	48	10	38-48	115.35	Mar-90
MW-13	-	-	195.9	199.06	199.18	2	10	5	5-10	185.9	Mar-90
MW-14	-	-	179.4	181.1	181.33	2	49	10	39-49	130.4	Feb-90
MW-19	-	-	167.44	169.49	169.31	2	69	10	59-69	103.44	Jun-94
MW-19B	-	-	167.24	169.08	199.66	2	90	10	80-90	103.24	Jun-94
MW-20	-	-	147.64	149.47	149.54	2	58	10	48-58	88.64	Jul-94
MW-20B	-	-	147.64	149.87	149.56	2	76	10	66-76	88.74	Jul-94
MW-21			165.78	167.92	-	2	16	10	5-15	-	Oct-04
MW-22			161.02	163.77	-	2	15	10	5-15	-	Oct-04
MW-23			161.90	163.76	-	2	29	10	19-29	-	Oct-04
MW-24			163.50	165.72	-	2	26	10	16-26	-	Oct-04
MW-25			196.69	198.80	-	2	24	10	14-24	-	Oct-04
MW-100	-	-	184.44	187.27	None	2	29.8	10	19.8-29.8	-	Apr-87
MW-101	-	-	198.3	199.74	200.06	2	55.3	10	45.3-55.3	-	Feb-85
MW-103	-	-	225.49	228.23	228.23	2	52	10	42-52	-	Apr-87

Notes:

- (1) Horizontal and vertical elevations surveyed by Fuss & O'Neill, Inc., Spring 1995.
- (2) Vertical datum is NGVD 1929 and horizontal datum is AND 1927.
- (3) Well and screen depths measured from ground.
- * CRRA corrections made after re-examination of well logs and installation details.

TABLE 2
WATER QUALITY MONITORING PROGRAM
Ellington Landfill
Ellington, Connecticut

Parameter ¹	Domestic Wells ^{2,3}	Quarterly Monitoring Wells ^{2,4}	Semi-Annual Monitoring Wells ^{2,5}	Surface Waters ^{2,6}
pH (Field Measured)	Q	Q	S	S
Specific Conductivity (Field Measured)	Q	Q	S	S
Turbidity (Field Measured)	Q	Q	S	S
Redox Potential (Field Measured)	Q	Q	S	S
Dissolved Oxygen (Field Measured)	Q	Q	S	S
Temperature (Field Measured)	Q	Q	S	S
pH (Lab-Measured)	Q	Q	S	S
Specific Conductivity (Lab-Measured)	Q	Q	S	S
Alkalinity (as CaCO ₃)	Q	Q	S	S
Ammonia (as N)	Q	Q	S	S
BOD-5 Day	Q	Q	S	S
Chloride	Q	Q	S	S
COD	Q	Q	S	S
Hardness (as CaCO ₃)	Q	Q	S	S
Nitrate (as N)	Q	Q	S	S
Nitrite (as N)	Q	Q	S	S
TDS	Q	Q	S	S
TSS	Q	Q	S	S
Iron, Dissolved		Q	S	S
Iron, Total	Q			
Lead, Dissolved		Q	S	S
Lead, Total	Q			
Manganese, Dissolved		Q	S	S
Manganese, Total	Q			
Sodium, Dissolved		Q	S	S
Sodium, Total	Q			
Antimony, Dissolved		Q	S	
Antimony, Total	Q			
Barium, Dissolved		Q	S	
Barium, Total	Q			
Chromium, Dissolved		Q	S	
Chromium, Total	Q			
Cyanide, Total	Q	Q	S	

TABLE 2
WATER QUALITY MONITORING PROGRAM
Ellington Landfill
Ellington, Connecticut

Parameter ¹	Domestic Wells ^{2,3}	Quarterly Monitoring Wells ^{2,4}	Semi-Annual Monitoring Wells ^{2,5}	Surface Waters ^{2,6}
VOC's via EPA Method 524.2 (See Note 7)	Q	Q	S	
1,2-Dibromoethane (EDB) and 1,2-Dibromo-3-Chloropropane (DBCP) via EPA Method 504.1	Q ⁸	Q ⁸		
Chlorinated herbicides (See Note 8)	Q ⁸	Q ⁸		

Notes:

1. Groundwater and surface water sample analyses to be conducted in accordance with CTDEP Reasonable Confidence Protocol (RCP) analytical methods, where published. Domestic Well (potable water) samples to be analyzed in accordance with methods in 40 CFR 141 and 40 CFR 143, as applicable.
2. Q = Quarterly, in January, April, July and October
S = Semi-Annually, in April and October
A blank cell indicates that the specified parameter is not monitored at the specified sample location.
3. Domestic Wells = Scalehouse, Transfer Station, N/F Kolesinski, N/F Latulippe, N/F Downer, N/F DeCarli (January only), N/F L. DeCarli (January only), and N/F R. DeCarli (January only).
4. Quarterly Monitoring Wells = MW-2S, MW-2B, and MW-16.
5. Semi-Annual Monitoring Wells = MW-6S, MW-6B, MW-7, MW-8S, MW-8B, MW-12, MW-15, MW-17, and MW-18.
6. Surface Waters = Surface Water Sampling Locations SW-1, SW-2, SW-4, SW-5, SW-6, and SW-12
7. Analysis of VOC's to be completed in accordance with EPA Method 524.2. The 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.
8. EDB, DBCP, and Chlorinated Herbicides will only be analyzed at the following five locations: MW-2S, MW-2B, MW-16, N/F Kolesinski Domestic Well, and N/F Latulippe Domestic Well.

TABLE 3
STORMWATER SAMPLING PARAMETERS
Ellington Landfill and Ellington Transfer Station
Ellington, Connecticut

Parameter	Units	Required Analytical Method(s) ^{1,2}	Landfill (Outfall 001)	Transfer Station Outfall 001
Total Oil and Grease	mg/L	Per 40 CFR 136	✓	✓
Chemical Oxygen Demand	mg/L	Per 40 CFR 136	✓	✓
Total Suspended Solids	mg/L	Per 40 CFR 136	✓	✓
Total Phosphorous	mg/L	Per 40 CFR 136	✓	✓
Total Kjeldahl Nitrogen	mg/L	Per 40 CFR 136	✓	✓
Nitrate as Nitrogen	mg/L	Per 40 CFR 136	✓	✓
Total Copper	mg/L	Per 40 CFR 136	✓	✓
Total Lead	mg/L	Per 40 CFR 136	✓	✓
Total Zinc	mg/L	Per 40 CFR 136	✓	✓
Aquatic Toxicity (LC ₅₀)	%	See Note 3	✓	✓
pH	S.U.	Per 40 CFR 136	✓	✓
pH of Uncontaminated Rainfall	S.U.	Per 40 CFR 136	✓	✓

Notes:

1. All chemical analyses shall be performed using methods approved by the USEPA under 40 CFR 136 unless otherwise specified.
2. All chemical analyses shall be performed by a laboratory certified for such analyses by the Connecticut Department of Public Health.
3. Acute toxicity biomonitoring shall be conducted according to the procedures specified in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition (EPA 821-R-02-012), under the specific conditions listed in the General Permit.

FIGURES

Figure 1: Site Location Plan

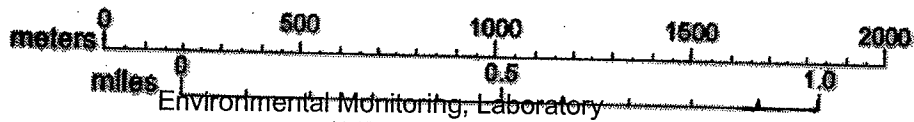
Figure 2: Water Quality Monitoring Site Plan



Target is 41° 55' 48"N, 72° 30' 22"W - BROAD BROOK quad



Figure 1
 Site Location
 Ellington Landfill
 Sadd's Mill Road (Route 140)
 Ellington, Connecticut



Environmental Monitoring, Laboratory
 Analysis And Reporting Services

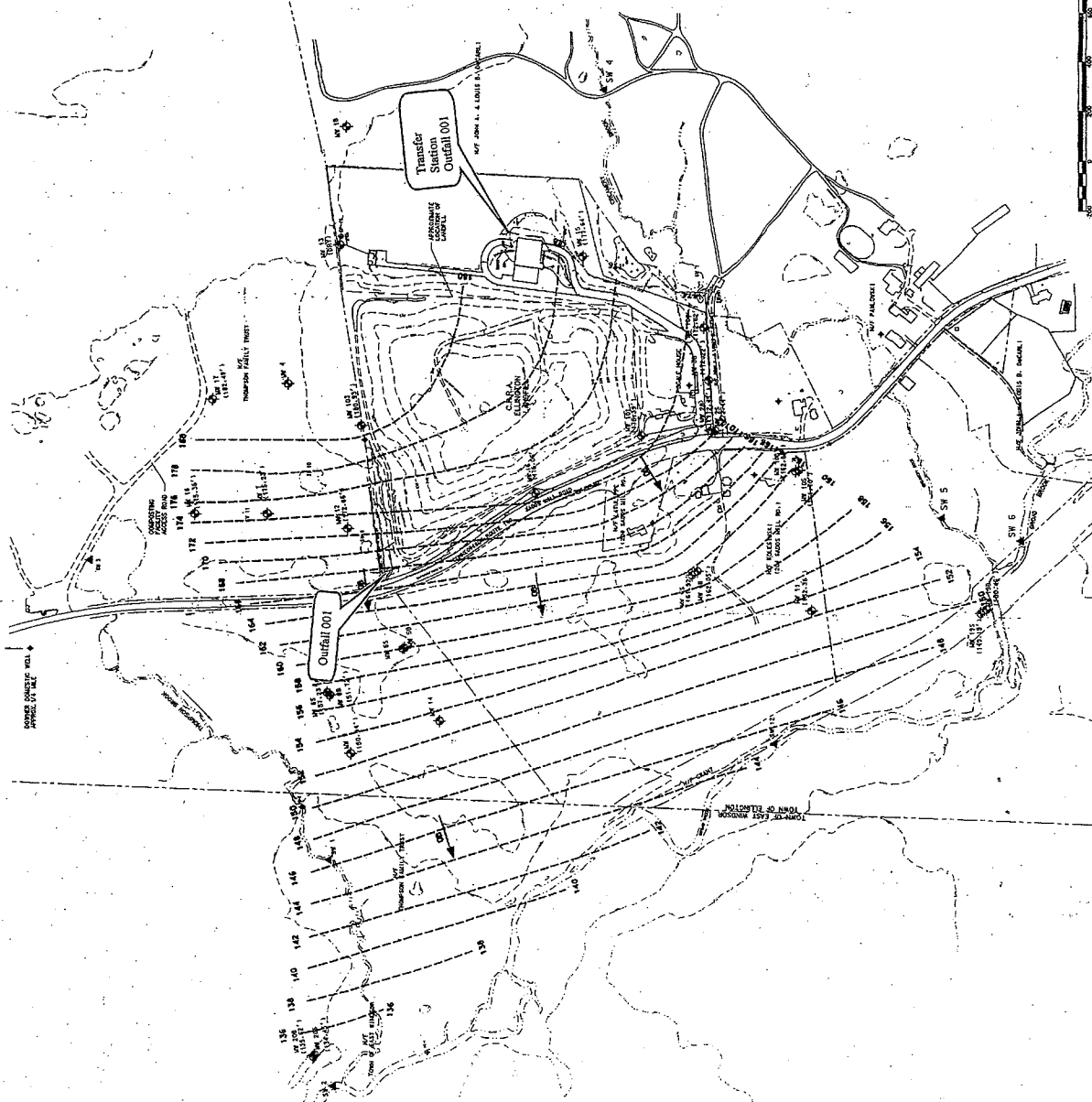
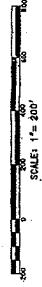
Agreement
 Scope of Services



- LEGEND:**
- ◊ EXISTING MONITORING WELL
 - ▲ SURFACE WATER SAMPLING POINT
 - △ DOMESTIC SUPPLY WELL SAMPLING POINT
 - GAS POST
 - OVERBURDEN GROUNDWATER ELEVATION CONTOUR (INFERRED)
 - APPROXIMATE OVERBURDEN GROUNDWATER FLOW DIRECTION

NOT RELEASED FOR CONSTRUCTION

Figure 2
Water Quality Monitoring Site Plan
Ellington Landfill
Sadd's Mill Road (Route 140)
Ellington, Connecticut

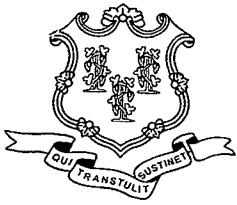


APPENDIX A - Permits

SW-048-2(E)

**Conditional Approval to Modify Post-Closure Water
Quality Monitoring Program
(Dated July 24, 2008)
5 Pages**

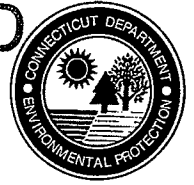
**Modified Permit to Anthony Botticiello for Expanding
a Solid Waste Disposal Area
(Dated June 27, 1984)
5 Pages**



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

RECEIVED

JUL 28 2008



CONDITIONAL APPROVAL

CRRA
ENVIRONMENTAL

July 24, 2008

Mr. Christopher R. Shepard, P.E.
Environmental Engineer
Connecticut Resources Recovery Authority
100 Constitution Plaza, 6th Floor
Hartford, Connecticut 06103-1722

Re: CRRA Ellington Landfill
Request to Modify Post Closure Water Quality Monitoring Program

Dear Mr. Shepard:

This letter serves to provide notification that Waste Engineering and Enforcement Division staff have completed a review of a CRRA proposal (dated October 25, 2007) to modify the post closure water quality monitoring program at the CRRA Ellington Landfill located on Sadds Mill Road in Ellington, Connecticut. This water quality monitoring program is currently conducted on a quarterly basis pursuant to the requirements of solid waste permit number SW-048-2E. The program currently includes collection of water samples from twelve groundwater monitoring wells, six surface water locations, and six domestic water supply wells on a quarterly basis (three additional domestic wells are sampled annually).

The modification proposal includes a request to reduce the frequency of sampling at all groundwater monitoring and surface water sampling locations from a quarterly to semi-annual basis (in April and October). No changes are proposed regarding the frequency of sampling at any of the domestic water supply wells. Additionally, no changes are proposed regarding required monitoring parameters except that several parameters are proposed for addition to the parameter list based upon data collected during four consecutive quarterly sampling events that occurred between April 2006 and January 2007. The additional parameters include dissolved antimony, dissolved barium, dissolved chromium (total), and cyanide (total) and are proposed for monitoring at all groundwater and domestic well sample locations. Additionally, CRRA has proposed to add chlorinated herbicides to the monitoring program at several sampling locations (including MW-2S, MW-2B, MW-16, the domestic well at 204 Sadds Mill Road, and the domestic well at 208 Sadds Mill Road).

On January 3, 2008, CRRA submitted an addendum to the October 25th proposal outlined above to address concerns identified by Remediation Division staff regarding the designation of groundwater monitoring wells located upgradient of the drinking water wells as 'sentinel' monitoring wells, which would continue to be monitored on a quarterly basis, along with the drinking water supply wells. The addendum identifies monitoring wells MW-2S, MW-2B, and MW-16 as appropriate wells for this purpose.

Additional supporting information was submitted by CRRA (via email) on June 2, 2008 in response to questions raised by Waste Engineering and Enforcement Division staff regarding the reduced monitoring frequency of the domestic wells located at 152, 189, and 191 Sadds Mill Road, which are each monitored on an annual basis (collectively referred to as the N/F DeCarli Wells). The information contained within the submittal indicates that an additional domestic supply well was recently installed (during October of 2007) between the N/F DeCarli wells and the landfill leachate plume, that is used solely for the purpose of providing water for irrigation ('N/F DeCarli Irrigation Well'). The submittal indicates that CRRA has begun monitoring this well on a quarterly basis so that it can serve as a 'sentinel' well for the three domestic N/F

Decarli Wells. According to the submittal, these four wells are located outside of and side-gradient to the landfill leachate plume.

The monitoring data submitted in support of this request appears to indicate that, with some exceptions, relatively stable conditions exist within the groundwater and surface water at this landfill and that the parameter trends associated with each monitoring location are, in most cases, well defined. Therefore, the proposed modifications to the water quality monitoring program at the Ellington Landfill are hereby approved.

CRRA shall implement the following changes to the water quality monitoring program at the CRRA Ellington Landfill, which will supersede the relevant conditions in the present program as required in the above referenced permit.

Quarterly Monitoring Locations

Water quality monitoring shall be conducted on a quarterly basis at each of the following groundwater and domestic well monitoring locations.

Groundwater Monitoring Wells:

- MW-2S
- MW-2B
- MW-16

Domestic Monitoring Wells:

- N/F Kolesinski well, 204 Sadds Mill Road
- N/F Downer well, 300 Sadds Mill Road
- N/F Latulippe well, 208 Sadds Mill Road
- Scalehouse well
- Transfer Station well
- N/F DeCarli Irrigation Well

Unless otherwise approved by the commissioner, quarterly monitoring events shall occur during the months of January, April, July, and October for the remainder of the post-closure monitoring period.

Semi-Annual Monitoring Locations

Water quality monitoring shall be conducted on a semi-annual basis at each of the following groundwater and surface water monitoring locations.

Groundwater Monitoring Wells:

- MW-6S
- MW-6B
- MW-7
- MW-8S
- MW-8B
- MW-12
- MW-15
- MW-17
- MW-18

Surface Water Monitoring Locations:

- SW-1
- SW-2
- SW-4
- SW-5
- SW-6
- SW-12

Unless otherwise approved by the commissioner, the semi-annual monitoring events shall occur during the months of April and October for the remainder of the post-closure monitoring period.

Annual Monitoring Locations

Water quality monitoring shall be conducted on an annual basis at each of the following domestic well monitoring locations.

Domestic Monitoring Wells:

- N/F DeCarli well, 152 Sadds Mill Road
- N/F DeCarli well, 189 Sadds Mill Road
- N/F DeCarli well, 191 Sadds Mill Road

Unless otherwise approved by the commissioner, the annual monitoring events shall occur during the month January for the remainder of the post-closure monitoring period.

Water Quality Monitoring Parameters

Water quality monitoring samples shall be analyzed in accordance with the parameter list and analytical requirements specified in Table 1 (Required Monitoring Parameters), which has been included as Attachment 1 to this approval letter.

Nothing in this approval shall affect the Commissioner's authority to institute any proceeding, or take any action to prevent or abate pollution, to recover costs and natural resource damages, and to impose penalties for violations of law. If at any time the commissioner determines that the approved actions have not fully characterized the extent and degree of pollution or have not successfully abated or prevented pollution, the commissioner may institute any proceeding, or take any action to require further investigation or further action to prevent or abate pollution. In addition, nothing in this approval shall relieve any person of his or her obligations under applicable federal, state and local law.

If you have any questions regarding this decision, please contact William Sigmund at (860) 418-5924 of the Waste Engineering and Enforcement Division.

Sincerely,



Robert C. Isner
Director
Waste Engineering and Enforcement Division
Bureau of Materials Management and Compliance Assurance

RCI/wjs

cc: Michelle Bedson, CTDEP, Remediation Division

REMEMBER TO REDUCE, REUSE, AND RECYCLE; it's a *first* step towards a more sustainable world and in Connecticut, it's the Law. To learn more about what you can do, go to www.ct.gov/dep/swmp, or call (860) 424-3365.

ATTACHMENT 1
TABLE 1 – REQUIRED MONITORING PARAMETERS
One (1) Page Follows

**TABLE 1
 REQUIRED MONITORING PARAMETERS
 WATER QUALITY MONITORING PROGRAM
 CRRA Ellington Landfill**

Parameter ¹	Domestic Wells ^{2,3}	Monitoring Wells ^{2,4}	Surface Waters ^{2,5}
pH	X	X	X
Specific Conductivity	X	X	X
Turbidity	X	X	X
Redox Potential	X	X	X
Dissolved Oxygen	X	X	X
Temperature	X	X	X
pH (Lab Measured)	X	X	X
Specific Conductivity (Lab Measured)	X	X	X
Alkalinity (as CaCO ₃)	X	X	X
Ammonia (as N)	X	X	X
BOD-5 Day	X	X	X
Chloride	X	X	X
COD	X	X	X
Hardness (as CaCO ₃)	X	X	X
Nitrate (as N)	X	X	X
Nitrite (as N)	X	X	X
Total Dissolved Solids	X	X	X
Total Suspended Solids	X	X	X
Iron, Dissolved		X	X
Iron, Total	X		
Lead, Dissolved		X	X
Lead, Total	X		
Manganese, Dissolved		X	X
Manganese, Total	X		
Sodium, Dissolved		X	X
Sodium, Total	X		
Antimony, Dissolved		X	
Antimony, Total	X		
Barium, Dissolved		X	
Barium, Total	X		
Chromium, Dissolved		X	
Chromium, Total	X		
Cyanide, Total	X	X	
VOCs (See Note 6)	X	X	
Chlorinated Herbicides (See Note 7)	X ⁷	X ⁷	

Notes:

- Groundwater samples are to be analyzed in accordance with SW-846 (most recent edition). Surface water and potable water samples are to be analyzed in accordance with 40 CFR 136.
- X = Required monitoring parameter.
- Quarterly Domestic Wells (January, April, July, October) = Scalehouse, Transfer Station, N/F Kolesinski, N/F Latulippe, N/F Downer, N/F DeCarli Irrigation Well.
 Annual Domestic Wells (January only) = N/F DeCarli, N/F L. DeCarli, N/F R. DeCarli.
- Quarterly Groundwater Monitoring Wells (January, April, July, October) = MW-2S, MW-2B, MW-16.
 Semi-Annual Groundwater Monitoring Wells (April, October) = MW-6S, MW-6B, MW-7, MW-8S, MW-8B, MW-12, MW-15, MW-17, MW-18.
- Semi-Annual Surface Water Sampling Locations (April, October) = SW-1, SW-2, SW-4, SW-5, SW-6, and SW-12.
- Analysis of VOCs to include the 47 VOCs listed in Appendix I to 40 CFR 258, Methyl-Tertiary-Butyl Ether (MTBE), 2-Chloroethyl Vinyl Ether, Chloromethyl Methyl Ether, and 1-Chlorohexane.
- Chlorinated Herbicides shall, at a minimum, be analyzed at the following five locations: MW-2S, MW-2B, MW-16, N/F Kolesinski Domestic Well, and N/F Latulippe Domestic Well.



7-1-86

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



MODIFIED PERMIT TO ANTHONY BOTTICIELLO FOR
EXPANDING A SOLID WASTE DISPOSAL AREA

An application for a permit modification dated September 5, 1983 has been submitted by:

Anthony Botticello
President, Refuse Gardens, Inc.,
Perrett Place
Manchester, Connecticut 06040

for expanded operation of a solid waste disposal area on approximately 30 acres of property owned by Mr. Anthony Botticello and located on the eastern side of Sadds Mill Road (CT Rte. 140) in Ellington, Connecticut, as shown on Plate No.2 revised June 21, 1983, and September 2, 1983 of the report prepared by Fuss & O'Neill, Inc., and dated September 1978.

THIS PERMIT IS HEREBY GRANTED in accordance with Section 22a-208, Connecticut General Statutes and based on the following submittals:

1. A report entitled " Report Requesting Modification of Permit for Refuse Gardens Landfill - Ellington, Connecticut, September 1978, "as prepared and revised by Fuss & O'Neill, Inc.,
2. Plates 1-4 of site plans (Plate 2 having been revised June 21, 1983 and September 2, 1983) detailing final contours excavation depths, ground water landfill limits, drainage provisions, site location, and details of the "Transfer and Recovery" facility (dated September 1978).
3. The July 1966 approval by the Commissioner of Health for establishment of the Refuse Gardens site.
4. The Commissioner of Environmental Protection's order to complete transfer of the Approval of Plans and Operation specifications for Refuse Gardens to Anthony Botticello (effective January 19, 1979).

PROVIDED THAT:

1. Solid Waste shall only be deposited in the area of the property delineated for that purpose on Plate No. 2 of the site plan. Only bulky wastes, as defined by the Solid Waste Regulations, shall be disposed of in the bulky waste area delineated on Plate No. 2 of the site plans.
2. The site development and operational plans, as prepared by Fuss & O'Neill, Inc., shall be strictly adhered to throughout the site life.

Phone:

165 Capital Avenue • Hartford, Connecticut 06106

3. The cell method of sanitary landfill operation, involving cell construction and spreading, compacting, and covering of all deposited solid waste daily is conducted only within the delineated limits of the proposed landfill operation.
4. A minimum of five feet of clean fill shall be maintained between the bottom of the deposited solid waste and the maximum high ground water level or bedrock.
5. Prior to commencing any disposal operation, the prepared site shall be inspected by staff members of the Department of Environmental Protection. During the inspection, the operator will be asked to dig a minimum of three (3) test pits approximately five (5) deep to ascertain that a minimum of five (5) feet of separation between refuse and high watertable or bedrock can be maintained.
6. The operator shall furnish certification from land surveyor registered in the State of Connecticut that the compacted base on which refuse is to be placed meets the grades designated on Plate No. 2 plus or minus six (6) inches. Said certification shall be for the entire disposal area and shall be received by the Solid Waste Management Unit prior to the deposition of any solid waste.
7. Bulky wastes shall be compacted and covered daily.
8. The operator will not cause, suffer or otherwise permit open burning of solid waste at this disposal area, unless specifically approved by the Commissioner in accordance with P.A. 81-127.
9. The site access shall be controlled with a locked gate. The site shall have an attendant present when open during the posted hours.
10. Waste processing and disposal operations shall be conducted so as to maximize runoff, minimize infiltration, and prevent erosion and the collection of standing water.
11. A proper sanitary landfill method of operation involving spreading, compacting, and covering daily of all material shall be carried on.
12. Disposal operations are carried on by a certified operator in accordance with Section 19-524-5 of the Solid Waste Management Regulations.
13. No septic tank wastes, liquid, or semi-solid industrial wastes, or hazardous wastes shall be disposed of unless the wastes and the specific disposal methods are approved by the Department.
14. The transfer and recovery facility shall be operated in such a manner as to avoid nuisance and to protect the public health.
15. An adequate potable water supply system shall be provided at the scale house.

16. Bulky waste and roll-off containers containing refuse at the transfer facility shall be emptied daily.
17. Buffer zones, drainage provisions, erosion control measures and operational details proposed in the application shall be established and maintained as specified by Fuss and O'Neill, Inc.
18. Periodic maintenance of the recharge basin shall be carried out as recommended by Fuss and O'Neill, Inc.
19. All monitor wells (including EL 76, EL 77, EL 78) shall be carried out as recommended by Fuss and O'Neill, Inc.
20. The water quality of the surface streams leaving the site shall be monitored annually by the owner for possible leachate contamination. Copies of laboratory analyses of all samples shall be sent to the Department of Environmental Protection.

~~Surface water quality monitoring shall be conducted at the following points:~~

One upstream of the solid waste disposal area on Broad Brook.

One downstream of the solid waste disposal area on Broad Brook.

Ground water quality monitoring shall be conducted at the following locations:

Wells EL 76, EL 77, EL 78, No. 9 and 10 as shown on Plate No. 2 of the site plans.

The two additional points were agreed to by the Department of Environmental Protection and the applicant.

Water quality monitoring shall be performed according to the following specifications and schedule:

Parameter	Sample Ground Water	Location Surface Water	Sampling Frequency		Sampling Period				Reporting Date			
			4yr	1yr	Jan	Apr	July	Oct	Mar 1	June 1	Sept 1	Dec 1
Water level	X		X		X	X	X	X	X	X	X	X
Specific Cond.	X	X	X		X	X	X	X	X	X	X	X
Total Iron	X	X		X			X				X	
Chloride	X	X		X			X				X	
Chemical Oxygen Demand	X	X		X			X				X	
Biochemical Oxygen Demand	X	X		X			X				X	
Total Dissolved Solids	X	X		X			X				X	
Suspended Solids	X	X		X			X				X	

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 groundwater samples should be filtered in the field to remove excess suspended solids. A silty water sample will give false results on the suspended solids, COD, iron and manganese 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, 1/2 gallon plastic bottle, etc.)

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, CT 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.

Beginning on September 1, 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.

The Commissioner may revise this monitoring schedule at any time with regard to locations to be sampled, frequency, or parameters to be tested, as the need arises.

21. Upon completion of an $\frac{1}{2}$ acre portion of the disposal area, that portion shall be graded, covered with two feet of clean soil, and seeded.
22. All major sources of final cover material shall be DEP approved and shall conform to grain size specifications under Section 19-524-2 of the Solid Waste Regulations
23. As required by the Commissioner, the operator shall retain the services of a registered land surveyor to certify the as-built final slopes and elevations are as specified in the site plans.
24. Under no circumstances will the final grades exceed those specified on Plate No. 2 of the application. Landfill closing will be completed over the life of the facility and as approved final grades are reached, filling will cease and the site will be covered and seeded as specified on pages III-9 and III-10 of the report.
25. This permit is subject to and in no way derogates any present or future property rights or other rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected hereby.

26. This permit is transferable only with the prior written permission of the Commissioner of DEP.
27. The operator complies with all rules and regulations of the Department of Environmental Protection applicable to the operation and maintenance of the disposal area as they may be amended from time to time.

Dated in Hartford, Connecticut this 27th day of June, 1984

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STANLEY J. PAC, COMMISSIONER

BY Stanley J. Pac
Stanley J. Pac, Commissioner

Solid Waste
Permit No. 048-2(E) dated