AIR POLLUTION CONTROL PERMIT APPLICATION FOR THE PHASE VI LANDFILL

CENTRAL LANDFILL
JOHNSTON, RHODE ISLAND

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1.0 INTRODUCTION

The Central Landfill is an integrated solid waste management facility owned and operated by the Rhode Island Resource Recovery Corporation (RIRRC). The primary solid waste management activity at the site is the operation of a municipal solid waste landfill. To date, the landfill has been developed in five operational phases. RIRRC is now proposing to develop a sixth phase (Phase VI) of the landfill in order to meet future capacity needs. This pre-construction application addresses the construction of Phase VI of the landfill.

1.1 FACILITY DESCRIPTION

The Central Landfill is reportedly the largest municipal solid waste landfill in New England. It is located on a site comprising approximately 1,100 acres off Shun Pike in Johnston, Rhode Island. The landfill has been developed in four phases to date. The location of the Central Landfill is shown in **Figure 1**.

Phase I consists of 121 acres of unlined landfill opened in 1955 and closed in 1993.

Phases II and III consist of double-lined landfills with a total footprint of 33 acres. Both phases were approved in July 1991. Phase II first received waste in September 1993. Phase III first received waste in May 1997. Phases II and III piggy-back onto Phase I and permanently stopped receiving waste in 2003. Phases II and III are considered a single emissions unit for the purposes of RIAPC Regulation 9 and are referred to throughout this document as Phase II/III.

Phase IV consists of a double-lined landfill with a footprint of 45 acres that was approved on June 26, 1998 and began receiving waste in September of 2000. Areas within Phase IV are currently being brought to final grade and are in the process of closure and capping.

Phase V consists of a double-lined landfill with a footprint of 32 acres and began receiving waste in July of 2005. Phase V is expected to hold an estimated 7,572,000 tons of solid waste at closure in 2011.

Phase I and Phase II/III of the Central Landfill will contain an estimated 20 million tons of solid waste at the time Phase II/III is closed. Phases IV and V are projected to contain approximately 12 million tons when closed.

Phase VI will consist of a double-lined landfill with an approximate footprint of 98 acres, with an additional 45 acres of area overlapping Phase I, and is proposed to begin construction in June of 2009. Phase VI is expected to hold an estimated 12,000,000 tons of solid waste at closure in 2020.

Other activities at the site include:

- RIRRC Offices;
- Landfill equipment maintenance garage;
- Leachate storage and treatment;
- Recovery of refrigerant from air conditioners and refrigerators prior to disposal;

- Materials Recovery Facility;
- Active soil borrow operations; and
- Miscellaneous waste management activities.

Although the Central Landfill itself is owned and operated by RIRRC, the landfill gas is collected and combusted by unrelated third parties and used to generate electricity. Ridgewood Gas, d/b/a Newgenco, is the owner of the gas rights for the Central Landfill. The gas collection system is operated and maintained by Ridgewood Gas Services, LLC (RGS). The gas collected from Phases I through V is combusted by either Ridgewood Providence Power Partners Limited (RPPP) or Ridgewood Rhode Island Generation, LLC (RRIG), which own the two electric generating plants located on leased sites within the Central Landfill property. The electric generating plants are operated by Ridgewood Power Management, LLC (RPM).

Landfill gas flares are used to combust landfill gas that is not combusted in the RPPP and RRIG facilities. These flares are owned by RIRRC, but by contractual agreement are operated by RGS.

This application addresses only the construction of the Phase VI landfill expansion.

1.2 PERMITTING REQUIREMENTS

Based on the initial landfill gas generation and VOC emission estimates documented in ***Tables 1*** through ***5***, RIRRC presently anticipates that Phase VI will be subject to the major source permitting requirements of Rhode Island Air Pollution Control (RIAPC) Regulation 9.

These requirements include:

1. Lowest Achievable Emission Rate (LAER): For each non-attainment pollutant for which the proposed Phase VI Landfill would have the potential to emit resulting in a significant net emissions increase, RIRRC must apply the most stringent emission rate achieved in practice or contained in the implementation plan of any state for the same class or category of stationary source;
2. Best Available Control Technology (BACT): For each attainment pollutant for which the proposed Phase VI Landfill would have the potential to emit resulting in a significant net emissions increase, RIRRC must apply the maximum degree of reduction on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs. LAER is a more stringent control standard than BACT and for pollutants for which LAER is achieved, BACT is presumed to be met;
3. Compliance Certification: RIRRC must certify that all existing major stationary sources it owns or operates (including entities that control, are controlled by, or are under common control with RIRRC) located within Rhode Island are in compliance with all applicable state and federal air pollution rules and regulations under the Clean Air Act and federally enforceable compliance schedules;
4. Air Quality Impacts Analysis: RIRRC must demonstrate that the allowable emissions increases from the proposed modification, in conjunction with all other applicable increases and decreases (including secondary emissions) would not cause or contribute to air pollution in violation of any National Ambient Air Quality Standards (NAAQS), or any increase in ambient concentrations exceeding the remaining available increment for the specified air contaminant;

5. Additional Impact Analysis: RIRRC must provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the modification and general commercial, residential, industrial, and other growth associated with the modification;

6. Welfare Impacts: RIRRC must apply the applicable procedures of and meet the criteria contained in the *Guidelines for Assessing the Welfare Impacts of Proposed Air Pollution Sources*;

7. Offsets: RIRRC must offset the total tonnage of pollutants of the applicable non-attainment pollutants allowed from the net emissions increase from the proposed Phase VI Landfill at a ratio of 1.2 to 1;

8. Alternative Analysis: RIRRC must submit an analysis of alternative sites, sizes, production processes, and environmental control techniques to demonstrate the benefits of the proposed Phase VI Landfill significantly outweigh the environmental and social cost imposed as a result of its location, construction, or modification;

9. Regulation 22: RIRRC must demonstrate that emissions from the proposed Phase VI Landfill will not cause an impact on the ground level ambient concentration at or beyond the property line in excess of that allowed by RIAPC Regulation 22 and any Calculated Acceptable Ambient Levels;

10. Health Risks: The proposed modification does not meet the applicability criteria contained in the Health Risk Assessment Guidelines; and

11. Compliance Demonstration: RIRRC must demonstrate that the stationary source will be in compliance with all applicable state and federal air pollution control regulations at the time that the Phase VI Landfill commences operation.

These permitting requirements are specifically addressed in ***Sections 4.0*** through ***8.0*** of this application submittal. ***Appendix A*** contains the completed application forms for the Phase VI Landfill.

2.0 LANDFILL GAS EMISSIONS

Landfill gas is generated as a result of the anaerobic decomposition of organic wastes in the landfill. The gas consists primarily of methane and carbon dioxide, but also includes ethane, nitrogen, oxygen, water and a variety of volatile organic compounds (VOC), toxic air pollutants (TAPs), and hazardous air pollutants (HAPs) that are present in low concentrations. The VOCs, HAPs, and TAPs are emitted primarily from materials disposed of at the landfill rather than being the result of anaerobic decomposition.

There is a time lag of six to twelve months between the placement of waste and the generation of significant quantities of landfill gas. Gas generation in a landfill normally peaks from 12 to 18 months after the last placement of waste and declines thereafter.

2.1 LANDFILL GAS GENERATION

It is not possible to measure the total amount of gas generated by a landfill, as a portion of it is lost as fugitive emissions. Gas generation rates can be estimated using EPA's LANDGEM model or proprietary variations of it. The primary input parameters for the landfill gas generation model

consist of waste acceptance data, the methane generation potential of the waste (L_0), and a rate constant, k. Gas generation rates at the Central Landfill have been estimated by Dufresne-Henry, Inc. (Dufresne-Henry) using a site-specific model.

Although the model can account for site-specific conditions to a certain extent, site conditions vary over time, and gas generation rates can deviate substantially from rates estimated using average site conditions. For this reason, Dufresne-Henry has prepared landfill gas generation rates for three cases, referred to as the Base Case, Accelerated Case, and Decelerated Case. These cases represent average site conditions, site conditions leading to an accelerated rate of waste decomposition, and site conditions leading to a retarded rate of waste decomposition. It should be noted that the Base Case model is considered the best estimate of expected gas generation rates, but the Accelerated Case and Decelerated Case represent the extreme range of gas generation rates at any one time.

Landfill gas generation rates for Phases I – VI prepared by Dufresne-Henry are included in ***Table 1***. Base Case landfill gas generation rates have been used for all phases except Phase V. The Accelerated Case landfill gas generation model is more representative of the current Phase V gas generation rates.

A detailed discussion of the landfill gas model used by Dufresne-Henry is included in the Phase VI Landfill Operational and Closure/Post Closure Landfill Gas Management Plan (Gas Management Plan), which is included as Appendix N to the Phase VI Solid Waste Permit Application.

2.2 LANDFILL GAS COLLECTION

The amount of gas recoverable from a landfill by a properly designed gas collection system is estimated to vary between 80 and 95 percent. The lower value is considered representative of an uncapped landfill, where more gas escapes because of the lack of an impermeable barrier and because lower collection system vacuum levels must be used to prevent intrusion of air into the landfill. To achieve collection efficiencies of 80% and higher in uncapped landfill areas (including areas where on-going filling activities occur), RIRRC utilizes horizontal gas collection systems. In Phases IV and V, the horizontal gas collectors have been installed as the landfill is filled, beginning in the second lift of waste and placed in alternating lifts thereafter. For Phase VI, RIRRC proposes to use a horizontal gas collection system with the option to replace or supplement the horizontal collection system with a network of vertical extraction wells. The decision to supplement or replace the horizontal collection system with vertical extraction wells will be based on performance testing and an operational assessment of the Phase IV and Phase V systems.

The Phase VI gas collection system will consist of horizontal gas collect trenches located approximately every 100 feet in the horizontal plane. Trenches will be installed in every other lift of waste in a staggered pattern, and will be separated vertically by 24 to 30 feet. Horizontal collection trenches allow the recovery of gas in areas where vertical wells cannot be placed due to ongoing waste filling activities. The spacing of the horizontal collectors may be modified based on the results of radius of influence performance testing of the system currently installed on Phases IV and V. A detailed discussion of the landfill gas collection system for Phase VI is included in the Gas Management Plan (Appendix N to the Phase VI Solid Waste Permit Application).

The horizontal collection systems are estimated to increase the amount of gas recovered to 85 percent once adequate coverage is established throughout the landfill. The upper limit of 95 percent is considered representative of a landfill constructed with a synthetic membrane cap. The collection system and synthetic cover must be in place to actually recover gas at this rate.

For the purposes of estimating actual emissions, the 2003 Consent Decree contains a schedule of collection efficiencies for Phase IV, based on the use of the horizontal collection system and a synthetic cap. The collection efficiency was estimated as 80 percent for the first three years of operation, 82 percent for the fourth year of operation and 85 percent in the fifth year of operation. As the landfill capping begins, the collection efficiency is estimated to increase by one percent for each ten percent of surface area capped, until the collection efficiency reaches 95 percent when 100 percent of the landfill is capped.

As Phase VI and Phase V are of a similar design to Phase IV, the estimated collection efficiencies will be the same. The estimated collection efficiency in the peak gas generation year (one year after the last placement of waste) is estimated to be 85 percent.

Estimated gas collection efficiencies are presented in ***Table 1***. Landfill gas emissions based on the gas generation rates and collection efficiencies in ***Table 1*** are presented in ***Table 2***.

2.3 POTENTIAL VOC AND NMOC EMISSIONS

Current and future emissions of VOC and individual organic constituents in the landfill gas have been estimated based on actual VPC concentrations (as hexane) observed in samples of the landfill gas analyzed in May of 2000, September of 2005, and May of 2006. VOC emissions for Phase VI were based upon the Phase V landfill gas VOC concentration of 1,525 ppmv as hexane. VOC emission estimates by phase and year are presented in ***Table 3***.

Estimated maximum emissions for Phases I - VI individually and in aggregate are presented in ***Tables 4*** and ***5***. These estimates have been prepared using the current or future year in which maximum emissions occur, using 98 percent destruction efficiency of collected landfill gas, which is the minimum destruction efficiency allowable under Subpart WWW. Since fugitive emissions are far greater than point source emissions, the year in which maximum emissions occur correspond to the year in which maximum fugitive emissions occur. Based on the Base Case gas generation estimates and estimated gas collection efficiencies, peak emissions for the Phase VI will occur in 2020 and peak emissions for the Central Landfill as a whole will occur in 2011.

As seen in ***Table 3***, the Central Landfill up to and including Phase V has potential VOC emissions in excess of 50 tons per year (185.9 tons per year), but potential NMOC emissions are less than 250 tons per year (186.0 tons per year). Potential carbon monoxide (CO) and sulfur dioxide (SO_2) emissions from the Central Landfill exceed 250 tons per year. Therefore, the Central Landfill is a major source for VOC, CO, and SO_2, but not NMOC. The Central Landfill is also not a major source of HAP[1].

3.0 APPLICATION REQUIREMENTS

The Central Landfill is currently a major stationary source of NO_X emissions and has potential VOC emissions which exceed major source levels. The proposed construction of the Phase VI Landfill is estimated to have potential VOC emissions of 131.3 tons per year. The Phase VI landfill will constitute a major modification and is subject to the requirements of Section 9.4 of RIAPC Regulation 9. The prior modification associated with the construction of the Phase V

[1] There are other sources of VOC and HAP at the Central Landfill, but they are insignificant compared to the emissions from the landfill.

landfill included an increase in permit allowable VOC emissions to just below the major modification significance level of 25 tons per year. The Phase V landfill began operation in early 2005 and VOC emissions first occurred in July of 2005. Phase VI is scheduled to begin accepting waste in June of 2010. Based on the emissions increase occurring six months after the first placement of waste, the emissions increase associated with Phase VI is expected to occur in December of 2010. Therefore, the emissions increase associated with Phase V occurred before the 5-year contemporaneous period preceding the proposed emissions increase (the contemporaneous period is the five calendar years that include the year in which an emissions increase occurs[2]).

Based on the landfill gas collection records and the estimated landfill gas collection efficiencies for each landfill phase, baseline VOC and non-methane organic compounds (NMOC) emissions are 90.6 and 90.7 tons per year, respectively. Baseline VOC/NMOC emissions were calculated as the average of calendar years 2005 and 2006 VOC emissions. A summary of the baseline emissions calculation is provided in and a summary of historical actual emissions for the Central Landfill are included in ***Appendix B***. The resulting estimated peak year VOC/NMOC emissions for the Central Landfill, including the proposed Phase VI landfill, are 189.7/189.7 tons per year. This represents a net VOC/NMOC emissions increase of 99.1/99.0 tons per year, and therefore the Phase VI landfill will result in a significant net increase in VOC and NMOC emissions. Please note that, RIRRC intends to revise its baseline VOC/NMOC emissions to incorporate the most recent actual VOC /NMOC emissions data prior to issuance of the Phase VI permit approval.

Similarly, the proposed Phase VI landfill will have potential hydrogen sulfide (H_2S) emissions of 62.0 tons per year. Baseline H_2S emissions are 31.8 tons per year. Baseline H2S emissions were calculated in the same manner as baseline VOC emissions. A summary of the baseline emissions calculation and a summary of historical actual emissions for the Central Landfill are included in ***Appendix B***. The resulting estimated peak year H_2S emissions, including the proposed Phase VI landfill, are 174.1 tons per year. This represents a net H_2S emissions increase of 142.3 tons per year.

Because secondary impacts associated with the project are unknown at this time and the beneficial re-use projects and the additional back-up capacity have not yet been selected for the Phase VI landfill, RIRRC is proposing to evaluate secondary emissions associated with the control of landfill gas separately from the air permit application for the construction of the Phase VI landfill. RIRRC anticipates that an evaluation of secondary emissions from the Phase VI landfill will be conducted as part of the permitting for the additional backup flaring capacity needed to accommodate the proposed Phase VI landfill.

The following conditions must be met in order RIRRC to be issued a Major Source permit for the Phase VI Landfill:

3.1 LOWEST ACHIEVABLE EMISSION RATE / BEST AVAILABLE CONTROL TECHNOLOGY

Based upon current permitted emission levels, the Central Landfill has potential peak year (2010) VOC emissions of approximately 185.9 tons per year (not including the proposed Phase VI Landfill). There is some uncertainty relative to the actual emissions from the Central Landfill due to the emissions calculation methodology that was imposed on Phases I - IV by the 2003 Consent Decree between RIRRC and EPA. The Consent Decree methodology was voluntarily adopted by

[2] For example, for an emissions increase that occurs in Calendar Year 2010, the contemporaneous period includes calendar years 2006 – 2010.

RIRRC for the Phase V landfill, however higher than anticipated gas generation rates from Phase V have resulted in improbable estimates of site-wide VOC emissions. For the purposes of this application and in consideration the uncertainty inherent in the Consent Decree VOC calculation methodology, RIRRC has elected to discontinue the use of the Consent Decree emissions estimation methodology for Phase VI and apply LAER to the emissions of landfill gas (i.e., VOC, NMOC, and H_2S) from the proposed Phase VI landfill. Please note that LAER is a more stringent standard than BACT and the control technologies for landfill gas are equally effective for VOC, NMOC and H_2S because both all of these pollutants are constituents of landfill gas. Section 4 (below) contains a discussion of LAER as it applies to the control of landfill gas for the proposed Phase VI Landfill.

3.2 COMPLIANCE CERTIFICATION

RIRRC must certify that all existing major stationary sources owner or operated by RIRRC located within Rhode Island are in compliance with all applicable state and federal air pollution rules and regulations under the Clean Air Act and federally enforceable compliance schedules. This certification is found in ***Appendix C***.

3.3 AIR QUALITY IMPACTS ANALYSIS

RIRRC must demonstrate the allowable emissions increases from the proposed modification, in conjunction with all other applicable increases and decreases (including secondary emissions) would not cause or contribute to air pollution in violation of any NAAQS, or any increase in ambient concentrations exceeding the remaining available increment for the specified air contaminant. NAAQS or increment standards do not exist for the pollutants emitted from the proposed Phase VI landfill. A further discussion of the air quality impacts from the proposed Phase VI Landfill outlined in ***Section 6.0***, below.

3.4 ADDITIONAL AND WELFARE IMPACTS

RIRRC must provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the modification and general commercial, residential, industrial, and other growth associated with the modification and must apply the applicable procedures of and meet the criteria contained in the *Guidelines for Assessing the Welfare Impacts of Proposed Air Pollution Sources*. Section 6 contains a discussion of additional and welfare impacts associated with the proposed Phase VI landfill.

3.5 OFFSETS

In order to demonstrate that the total tonnage of VOC emissions will be offset by a greater reduction in the actual emissions of VOC from another source, RIRRC has secured sufficient VOC emission reduction credits (ERC) to offset the proposed increase in VOC emissions that will result from the construction and operation of the Phase VI landfill. ***Section 7.0*** contains the emissions offset demonstration in accordance with Subsection 9.4.3 of Regulation 9.

3.6 ALTERNATE ANALYSES

An analysis of alternative sites, sizes, production processes and environmental control techniques is found in ***Section 8.0***, below. The analysis demonstrates that the benefits of the proposed modification significantly outweigh the environmental and social cost imposed as a result of its location, construction or modification.

3.7 REGULATION NO. 22

A demonstration that the emissions from the Central Landfill will not cause an increase in ground level ambient concentrations of toxic air pollutants in excess of that allowed by Regulation 22 and has been prepared for the Phase V Landfill. A similar analysis is in progress for the Phase VI landfill and will be submitted separately to RIDEM in the near future. No other studies required by the *Guidelines for Assessing Health Risks form Proposed Air Pollution Sources* apply to the proposed modification. The Regulation 22 Air Toxics Impact Assessment will be submitted as a separate document to supplement this application.

3.8 COMPLIANCE DEMONSTRATION

Section 8.0 contains a demonstration that the Central Landfill will be in compliance with all applicable state and federal air pollution control rules or regulations at the time the Phase VI landfill is proposed to commence operation.

4.0 LOWEST ACHIEVABLE EMISSION RATE

RIRRC must demonstrate that the required air pollution control technology for the proposed Phase VI landfill constitutes LAER and includes certain minimum requirements. LAER is the most stringent rate of emissions based upon either the most stringent emissions limitation found in any state implementation plan for the particular class or category of sources or the most stringent emission limitation that is achieved in practice by the particular class or category of sources. LAER also may not be any less stringent than emissions allowable under any applicable new source performance standard, such as Subpart WWW.

Air pollution control for an expanding and developing landfill relies upon an integrated system of collection and control devices, which are improved, replaced, installed, and relocated over time as portions of the facility are capped and other sections are developed. For this reason, RIRRC believes that any demonstration of LAER must consider that the highest level of emissions control at a landfill is achieved though utilization of a multitude of collection and control techniques which in combination achieve LAER. This approach may include the use of existing and/or new devices, as well as enhancements or modifications of existing equipment and techniques.

Although landfill gas control relies upon a combination of gas collection and control techniques, ensuring the highest degree of landfill gas collection is the most effective means to achieve the greatest degree of emission control. This is true because uncollected landfill gas (fugitive) emissions are the largest component of post-control emissions, exceeding emissions from control equipment by a factor of approximately 20 at the Central Landfill. For this reason, the amount by which the destruction efficiency of the control equipment exceeds the requirements of

subpart WWW (98-percent minimum destruction or less than 20 ppmv NMOC exhaust concentration) can only have a minimal impact on the overall emissions from the landfill. A discussion of LAER is provided below.

4.1 SUBPART WWW REQUIREMENTS

40 CFR 60, Subpart WWW prescribes minimum standards for the collection and destruction or treatment of landfill gas at the Central Landfill. In general, Subpart WWW requires:

- Collection of gas from all sections of landfill where the waste has been in place for five years or more for an active landfill or two years or more after reaching final grade;
- Operation of the landfill to prevent surface concentrations of methane from exceeding 500 ppm from areas required to have a collection system in place. Other operational standards relative to wellhead pressure, oxygen or nitrogen content, and gas temperature are included to assure that the collection system is functioning adequately and that landfill conditions are favorable for methanogenesis and unfavorable for the development of fires; and
- Destruction of collected gas in a utility flare or removal of 98 percent of NMOC or achieving 20 ppmv NMOC at the outlet of an enclosed combustor or treatment of the gas prior to use or sale.

As a federal regulation applicable to the Central Landfill, the emission limitations and operational standards of Subpart WWW represent the minimum control level for the proposed Phase VI landfill. Therefore, this evaluation of LAER has been based on measures beyond the requirements of Subpart WWW.

Reducing emissions of landfill gas beyond the requirements of Subpart WWW would require improving the removal or destruction efficiency of the gas control or treatment equipment and/or increasing the landfill gas collection efficiency. Increasing landfill gas collection efficiency has a much greater effect on landfill gas emissions than the slight increase in destruction efficiency that might be possible over the Subpart WWW requirements.

The following measures have been identified as potentially feasible options to improve gas collection efficiency above and beyond the requirements of Subpart WWW:

- Operation of gas collection and control equipment at the earliest point feasible during active landfilling and prior to when required by Subpart WWW;
- Attainment of landfill surface methane concentrations of 500 ppm or less over the entire surface area of the Landfill, not just those areas mandated by Subpart WWW;
- Installation of landfill caps earlier than required by regulation;
- Use of a synthetic geomembrane as the permanent cap for the landfill, rather than clay or other more permeable materials; and
- Maintaining a negative pressure in active gas collection wells after installation of a synthetic geomembrane cap.

4.2 PROVISIONS OF THE 2003 CONSENT DECREE

RIRRC believes that the 2003 Consent Decree reflects the minimum level of emission control technology that USEPA Region 1 may consider to be LAER for a municipal solid waste landfill such as the Central Landfill. The Consent Decree specifically incorporates the following requirements that exceed the requirements of Subpart WWW:

- Application of the 500 ppm surface methane standard to all landfill phases in their entirety, not just those areas where waste has been in place for five years or more or two years or more after reaching final grade;
- Installation and operation of collection system concurrent with active filling consisting of horizontal collectors. This provides collection and control of landfill gas in active areas of the landfill in place of vertical collection wells which are typically not installed until filling operations have ceased within a given area; and
- Monitoring of settling in the unclosed landfill phases to identify side slope areas that have stopped settling and may be suitable for installing a partial cap prior to full closure.

The provisions of the Consent Decree for Phase IV require that RIRRC commit to a minimum destruction efficiency of 98 percent as required by Subpart WWW for the gas combusted by RIRRC, but otherwise do not specify the type of control that will be required. The Consent Decree contemplates that a variety of emission control devices could potentially be used to control emissions from the landfills and meet LAER.

4.3 LANDFILL GAS COLLECTION

Fugitive emissions account for the majority of VOC, NMOC, and other emissions from landfills. Therefore, improvements in collection efficiency above and beyond the requirements of Subpart WWW would be expected to have a significant impact on overall emissions, much more so than a nominal increase in the destruction efficiency of the control equipment.

To achieve the maximum degree of landfill gas collection, collection equipment must be in place and in operation in all areas of gas generation within the landfill; this includes areas of active filling. RIRRC will accomplish this level of enhanced gas collection by installing and horizontal gas collection trenches in the manner described in its current landfill gas collection plans, which are incorporated by reference and appended to the Consent Decree. It should be noted that RIRRC may alter the spacing of its horizontal collection systems to be used in the proposed Phase VI landfill based upon the results of radius of influence testing. To ensure that gas collection is optimized, RIRRC will comply with the 500-ppm surface methane emission standard over the entire surface area of the landfill.

RIRRC has considered whether a surface methane concentration threshold lower than 500 ppm would be appropriate for the surface emissions monitoring program for a landfill that must meet LAER. RIRRC believes that 500 ppm is the appropriate threshold, since the purpose of the surface emissions monitoring program is to identify areas where gas is leaking from the landfill so that corrective action can be taken. Based on the surface emission monitoring performed to date, surface methane concentrations are typically many times higher than 500 ppm in areas where fissures, cracks, or poor collection efficiency result in excess gas emissions from the landfill. Therefore, RIRRC believes that the 500-ppm action level provided for in Subpart WWW is adequate to meet LAER.

A review of USEPA and state clearinghouse data, as well as available landfill permits, identified one source (Tullytown Resource Recovery Facility, Tullytown, Pennsylvania) that has capture efficiency requirements established in its permits. Although not established as LAER, a collection efficiency of 92% was established for the landfill based upon the final gas collection well configuration. The 92% collection efficiency was calculated as the percentage of the landfill's footprint that is covered by the overlapping radii of influence (ROI) of the collection wells. Similar approaches have been used with other landfills in Pennsylvania. Since the ROI approach is only theoretical and can only be achieved once all wells are installed (after the landfill reaches final grade), RIRRC does not believe the ROI approach is applicable to determining LAER for landfills. The ROI approach does not account for other collection enhancements such as the impermeable cap and liner, which induce landfill gas flow to the collection wells, nor does it account for the enhanced collection achieved by the horizontal collectors used prior to final capping. The ROI approach is not comparable to the collection efficiency estimates developed for the Central Landfill, which are based on employing sufficient collection technologies to control landfill gas to the greatest extent practical. Instead, RIRRC proposes to achieve the maximum degree of gas collection through the use of collection equipment and methodologies throughout all areas of landfill gas generation (including areas of active filling) as part of its LAER demonstration.

As discussed in the Gas Management Plan, RIRRC will install a permanent horizontal gas collection system as Phase VI is filled to allow for earlier gas collection and higher gas collection efficiency prior to final capping. RIRRC will perform surface emission monitoring of methane over the entire landfill surface area of Phases I-VI, not just those areas for which gas collection is required under Subpart WWW.

In summary, RIRRC is proposing to implement every feasible option for ensuring the highest level of gas collection at the Central Landfill. Therefore, the proposed collection equipment and methodology are sufficient for RIRRC to achieve LAER for the proposed Phase VI landfill.

4.3.1 Phase VI Gas Collection

LAER for the proposed Phase VI collection system includes:

- A landfill surface emission limit of 500 ppm, as methane;
- Installation of horizontal landfill gas collection wells and trenches in accordance with the Phase VI Landfill gas collection and control system design plan (see Appendix N of the Phase VI Solid Waste Application)
- Maintenance and operation of the horizontal gas collection wells upon installation of a final cap for Phase VI in accordance with the outline presented in the Post-Closure Gas Management Plan for Phase VI presented in Appendix N of the Phase VI Solid Waste Application (Note: The final capping and gas collection system design may be modified to reflect current practices and will be subject to approval by RIDEM); and
- Gas collection wells and trenches located in the portion of Phase VI that overlaps existing landfill phases will be protected and buried in such a way as to maximize their ability to continue to collect landfill gas.

4.3.2 Landfill Cap

Federal and Rhode Island solid waste regulations allow the use of a landfill cap consisting of either a synthetic geomembrane or low permeability soil (clay). Subpart WWW

does not specify the cap material. However, a synthetic geomembrane cap is more effective in preventing the loss of landfill gas as fugitive emissions than a clay cap. To date, the permanent cap installed at the Central Landfill has consisted of synthetic geomembrane. A cap made of clay may not be considered sufficient as LAER because of its higher permeability to landfill gas. Therefore, RIRRC will install a synthetic geomembrane cap rather than a clay cap or other more permeable material.

Installation of the final landfill cap significantly reduces the potential for fugitive emission losses from the landfill. Rhode Island solid waste regulations require that the final cap be installed beginning one year after the landfill reaches final grade. Although it would be desirable to install the landfill cap earlier, it is not practical to do so. The cap must be designed based on the final grade; therefore, the design cannot be completed until final grade is reached. The design plans for the cap must receive approval from the Solid Waste Division of the RIDEM. Procurement of the cap contractor and completion of installation cannot be initiated until this approval is received. Therefore, as a practical matter, installation of the final cap cannot be completed in substantially less time than required by regulation.

RIRRC will monitor the settling in Phase VI, in anticipation of the possibility that a partial cap could be installed in areas around the perimeter of Phase VI where filling has been completed. The partial cap could not be installed where significant settling is still occurring because landfill space is a limited resource, and some degree of settling is anticipated and necessary to achieve the full design capacity of the landfill. In addition, settling that occurs in areas that have already been capped creates problems during installation of the balance of the cap after closure, because the grades do not match and extensive filling is necessary to match the grades.

Accelerated capping of perimeter side slope areas does offer some advantages where it is feasible, because it reduces maintenance requirements on the landfill side slopes. It also expedites the process of capping after closure because the entire landfill could not be capped in a single construction season.

Subpart WWW requires that active gas collection wells be maintained at a negative pressure with a few exceptions. One exception is that Subpart WWW does not require that active collection wells be maintained at negative pressure after installation of a synthetic geomembrane cap. However, maintaining negative pressure in active gas wells reduces the risk of leakage and results in higher collection efficiencies. RIRRC intends to maintain active gas collection wells at negative pressure even after installation of the synthetic geomembrane cap is complete and until such time as Subpart WWW allows for removal or cessation of operation of the gas collection system.

4.4 CONTROL EQUIPMENT

Subpart WWW allows wide latitude in the selection of gas control equipment. Allowable options under Subpart WWW include open flares, enclosed flares, turbines, reciprocating engines, heat recovery boilers, and treatment of the gas for subsequent sale. Gas vented from a treatment process to convert the gas to a saleable product must be controlled using one of the other control options. All of these control options can achieve 98-percent to 99-percent destruction efficiency, but are typically guaranteed by vendors to meet the requirements of Subpart WWW (i.e., 98-percent destruction or 20 ppmv). Although some regulatory agencies prefer enclosed flares to open flares (emission levels from open flares cannot be verified by stack testing), open flares are presumed to have destruction efficiencies comparable to enclosed flares (98% destruction or better) provided that they meet the specifications in 40 CFR §60.18. USEPA's New Source

Review/RACT/BACT/LAER Clearinghouse database does not list any landfill gas control devices with a destruction efficiency of greater than 98 percent.[3]

In order to maintain a highly effective gas collection system and to have available gas combustion capacity to address landfill growth or emergency situations, a landfill must employ a variety of gas control equipment, including fixed and portable devices. At the Central Landfill, this will be achieved by using a combination of fixed enclosed flares, portable open flares and fixed internal combustion engines, all of which meet or exceed the destruction requirements of Subpart WWW.

Control devices for landfills have typically been permitted separately from the landfills themselves. This is true for a number of reasons. First, the need for controls occurs from one to several years after waste is first placed in a landfill, and the lead time required for permitting and constructing a landfill is generally longer than the lead time required to permit and install control equipment. Second, landfills generally consist of multiple cells whose emissions peak at different times. Landfill gas is managed on a facility-wide basis, with gas piped to central areas to multiple control devices. Third, virtually all landfill gas control devices require a pre-construction permit of their own, and permitting agencies have issued permits for control devices even where the landfill itself was not required to obtain a permit.

It is anticipated that the primary landfill gas control methodology for the Central Landfill will involve beneficial reuse of the gas. In addition to the existing beneficial reuse capacity, RIRRC is in the process of evaluating several additional beneficial reuse options for Phase VI and the existing gas flows. Both open and enclosed flares will be used as backup to the primary control methodology. The selection of control equipment is also governed to some extent by market conditions and the economics of generating electricity or other means of recovering energy. Although secondary NO_X emissions from engines and turbines are generally higher than for other control equipment, the generation of electricity provides a substantial benefit and displaces the use of other fuels. Therefore, where economically feasible, the benefits of generating electricity offset the higher secondary emissions of engines and turbines.

To accommodate gas flows from Phases I–V, RIRRC is projecting a total available gas destruction capacity of 20,952 scfm, not including any new beneficial reuse facilities. The existing RPPP and RRIG facilities are capable of destroying 7,952 scfm of landfill gas. Flare capacity consists of two existing 2,000-scfm utility flares, one existing 400-scfm utility flare, and one 6,000-scfm enclosed ULE flare. The existing Perennial flares (2,600 scfm, combined) are available as backup capacity to the RPPP engine plan or the ULE flare. RIRRC also intends to provide additional capacity to serve Phase VI and the existing gas flows in the form of a new beneficial reuse project and additional back-up flaring capacity. RIRRC is actively pursuing options to develop such capacity.

A ULE flare achieves a higher VOC destruction efficiency than other types of control devices, but it provides no other benefit. Beneficial reuse of the gas to generate electricity, steam, heat, or fuel for sale displaces the need for other sources of these resources.

[3] One permit obtained from another source for a landfill in the San Diego Air Quality Control Region requires a VOC destruction efficiency of 99.64%, which is a higher destruction efficiency than offered by any vendors approached by RIRRC. However, this emission limit is based on the assumption that VOC destruction efficiency is equivalent to overall gaseous organic compound destruction efficiency (presumably this includes methane), which may not, in fact, be equivalent. Furthermore, it is unlikely that this destruction efficiency could be verified because of the limitations of the test methods. Although not explicitly stated in the permit, this control device was apparently considered LAER, which is a higher standard than BACT.

The ULE flare achieves low emissions by using a pre-mix burner. The piping, burners, controls, and flare body must be sized for both the fuel and combustion air, meaning that the flare is substantially larger than a utility flare or enclosed flare of comparable capacity. It is not adaptable to temporary installation or being moved from time to time because of its size and weight. It must be field-erected on a permanent foundation.

Utility flares, while typically permanently installed, can be skid or trailer mounted to make them portable. This makes it possible for them to be leased for periods of under a year, ordered as an off-the-shelf item, and installed on short notice. Because of its portability and availability, the utility flare is an important gas management option for a landfill. RIRRC currently utilizes three skid-mounted utility flares to manage landfill gas at remote locations at the Central Landfill, one of which (Remote Flare #1) is currently in operation on the Phase IV Landfill.

The need to manage gas on a site-wide basis, the potential for beneficial reuse of the landfill gas, the need for temporary or portable flares under some circumstances, and the need for backup capacity all indicate that no one control technology can be prescribed as LAER. LAER for a landfill must consist of an integrated gas collection and control strategy that employs the most effective means to control the maximum quantity of landfill gas. Subpart WWW clearly contemplates these circumstances and provides considerable flexibility in the selection of control equipment for landfill gas. RIRRC believes that such flexibility is not only desirable, but also necessary to the proper management of landfill gas at the site. For this reason, RIRRC believes that any LAER strategy for the Central Landfill must include NMOC destruction efficiencies equivalent to that required by Subpart WWW.

4.5 LAER PROPOSAL

Based on the above considerations, RIRRC proposes the following, in addition to meeting the NSPS requirements of 40 CFR 60, Subpart WWW, as LAER for Phase VI of the Central Landfill:

- A 500-ppm surface methane emission standards for all areas of the proposed Phase VI landfill;
- An integrated system of horizontal collection trenches used to collect landfill gas in all areas of gas generation, including areas undergoing active filling, and
- A synthetic geomembrane cap;
- Monitoring for the potential to begin partial, accelerated capping of landfill surfaces and side slopes upon final settling prior to the landfill reaching final grade;
- Maintaining negative pressure on all gas collection wells, even after installation of synthetic geomembrane cap; and
- Destruction efficiency (by engine, flare, or other means) of VOCs in landfill gas of at least 98 percent or such that the outlet concentration of VOCs does not exceed 20 ppmvd as hexane at 3-percent oxygen, or sale of landfill gas to third parties for treatment and/or combustion in accordance with the provisions of Subpart WWW.

5.0 EMISSION OFFSET DEMONSTRATION

Subsection 9.4.2(c) of Regulation 9 requires that this application include evidence that the total tonnage of VOC emissions from the proposed construction of the Phase VI landfill will be offset

by a greater reduction in VOC emissions from the same or other sources. RIRRC has secured sufficient ERCs to offset the proposed increase in VOC emissions from the Phase VI Landfill.

5.1 SOURCE

RIRRC has secured sufficient tons of VOC ERCs from Quebecor Printing, Inc. (Quebecor) for use in offsetting the emissions increase from the proposed Phase V landfill. The Quebecor ERCs were generated from emission reductions that occurred as a result of the 1998 closing of Quebecor's rotogravure printing facility located at 369 Prairie Avenue in Providence. Providence is within the same non-attainment area as Johnston.

5.2 APPROVAL

RIRRC received approval of the transfer of the Quebecor ERCs from the RIDEM, Air Resources Division Director in a letter dated January 24, 2002. A copy of the approval letter is included in ***Appendix E***.

5.3 FEDERAL ENFORCEABILITY

The Quebecor facility in Providence was permanently shut down in 1998. Quebecor no longer holds permits allowing the emission of VOC from the site and could not emit VOC from the site without complying with requirements of Regulation 9 which has been incorporated in the Rhode Island State Implementation Plan. As a component of the SIP, Regulation 9 is federally enforceable. This makes the Quebecor shut down and the resulting emission reductions federally enforceable.

5.4 OFFSET RATIO

As required by Regulation 9, the VOC emissions increases from the proposed Phase V Landfill must be offset at a ratio of at least 1.2 to 1. Maximum predicted net VOC emissions increase from the proposed landfill are 75.5 tons per year. RIRRC has set aside 90.6 tons of VOC ERCs to offset the proposed increase. In the event that the actual net VOC emissions increase from Phase VI exceed 75.5 tons per year, due to the uncertainty of estimating landfill gas emissions, RIRRC will set aside additional offsets at a 1.2 to 1 ratio as necessary to cover the maximum annual net VOC emissions increase from the Phase VI landfill.

5.5 FUTURE USE OF CREDITS

At a landfill, generation of landfill gas, including VOC emissions, begins slowly and increases gradually as more waste in added to the landfill. Emissions from a landfill peak shortly after filling ceases and gradually decline thereafter. In years prior to and after the peak emission year, RIRRC will not need all of the 90.6 tons of ERCs to offset VOC emissions increases from the Phase VI Landfill. After the peak year, the quantity of surplus ERCs will increase as emissions decline as a result of the natural attenuation of gas generation. It is RIRRC's understanding that once a portion of these ERCs are no longer relied upon as offsets, that portion becomes available for resale or reuse on site.

6.0 IMPACT ANALYSES FOR PSD

6.1 AMBIENT AIR IMPACT ANALYSIS

Although the proposed Phase VI landfill will result in significant net emissions increases for NMOC and H_2S, there are no NAAQS or PSD Increment Standards for these pollutants. In addition, because the landfill gas beneficial reuse projects and the additional back-up control capacity have not yet been selected, the secondary impacts associated with the project are unknown at this time. RIRRC is not proposing any additional landfill gas destruction capacity as part of this application, but anticipates that additional capacity will be the subject of a future permit application. As was done for the permitting of the Phase V landfill, RIRRC intends to address the impacts of secondary pollutants in conjunction with subsequent permit applications for the landfill gas control capacity necessary to accommodate the anticipated gas flows from the proposed Phase VI landfill.

6.2 AMBIENT AIR MONITORING

Pre-construction ambient air monitoring can be required for criteria pollutants which are proposed to be emitted in significant amounts. Neither NMOC nor H_2S is a criteria pollutant. There are no State or federal ambient air quality standards for NMOC. There are no NAAQS or PSD increment standards that apply to H_2S, however H_2S is regulated as a toxic air pollutant under RIAPC Regulation 22. Additionally, H_2S emissions from the proposed landfill are anticipated to result in ambient impacts which exceed the ambient air monitoring level specified in Section 9.5.2(b)(2)d. Consistent with EPA guidance, monitoring data for NMOC would not be required in cases where there are no applicable standards. Similarly, RIRRC believes that pre-construction air monitoring for H_2S is unnecessary because ambient air quality for H_2S will be assessed as part of the Regulation 22 compliance demonstration which is currently being performed for the Phase VI landfill.

6.3 ADDITIONAL AND WELFARE IMPACTS

RIRRC must provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the modification and general commercial, residential, industrial, and other growth associated with the modification and must apply the applicable procedures of and meet the criteria contained in the *Guidelines for Assessing the Welfare Impacts of Proposed Air Pollution Sources*.

6.3.1 Visibility

There are currently no anticipated visibility impacts associated with the proposed Phase VI landfill. Primary emissions (i.e., NMOC, VOC, and H_2S) from the proposed landfill are not known to impair visibility. As discussed above, secondary pollutant impacts associated with the facility are unknown at this time and will be addressed under a separate permitting action for the landfill gas combustion capacity necessary to accommodate the increased landfill gas flows from the proposed landfill.

6.3.2 Soils and Vegetation Impacts

The PSD program requires a review of impacts on sensitive vegetation and soils. In accordance with RIDEM's *Guidelines for Assessing the Welfare Impacts of Proposed Air Pollution Sources*, the assessment of impacts must be performed using the screening procedures and

concentrations in *A Screening Procedure for the Impacts of Air Pollution on Plants, Soils, and Vegetation* (USEPA, 1980).

The proposed Phase VI landfill results in a significant net increase of NMOC and H_2S. NMOC is not subject to the procedures and criteria established in these documents. H_2S is identified as having potential impacts on plants through direct ambient impact at four-hour average concentrations ranging between 28,000 and 84,000 micrograms per cubic meter. This range of concentrations far exceeds any likely ambient concentration from the proposed landfill. Additionally, the Allowable Ambient Levels for H_2S established in Regulation 22 are well below the screening concentrations for H_2S.

6.3.3 Growth

The proposed Phase VI landfill will have minimal growth impact. The facility will be operated by RIRRC and RGS, which currently operate the existing landfill facilities. The permanent workforce is not to increase as a result of the project. No increase in site operational activities or waste disposal activities is expected as a result of the project. The solid waste acceptance rate for the Central Landfill is not anticipated to change as a result of the construction of the proposed landfill.

The duration and intensity of construction is expected to be minimal in comparison to the on-going construction activities associated with the existing landfill facilities. Initial construction of the Phase VI landfill is anticipated to occur over a period of 12 to 18 months and will require a peak construction workforce of approximately 50 workers.

The project is located within the Providence metropolitan area and within 50 miles of Boston. Both metropolitan areas support well developed housing markets and possess an ample supply of construction workers and skilled tradesmen. Therefore, both the construction and operation of the proposed landfill can be supported within the existing housing and labor markets.

Based on the relatively small projected peak construction force, the small increase in permanent workforce, and the size and diversity of the region's housing and labor markets, no impact on local housing markets in expected to occur as a result of the project and no impact on the area's commercial, industrial, or transportation infrastructure is anticipated as a result of the project.

7.0 ALTERNATIVE ANALYSES

The siting, size, processes, and environmental controls of the Central Landfill and the proposed Phase VI expansion are necessitated by the waste management needs and limitations of the State of Rhode Island. Because RIRRC serves the waste disposal needs of most of the municipal and commercial solid waste generators in Rhode Island, the size of the proposed landfill is determined based upon the quantity of waste requiring disposal in the state.

The Central Landfill currently receives approximately 4000 tons per day of municipal and commercial solid waste. At this rate, the presently licensed landfill areas are expected to be full sometime in 2011. The proposed Phase VI Landfill will provide additional capacity of approximately 12,000,000 tons of solid waste. This is approximately 10 years of additional capacity.

Appendix D contains the Interim Rhode Island Comprehensive Solid Waste Management Plan – Landfill Siting. The plan includes information that supports this demonstration that the benefits of the proposed Phase VI landfill significantly outweigh the environmental and social cost imposed as a result of its location and construction.

7.1 ALTERNATE SITES

The Landfill Siting Plan (***Appendix D***) describes the need for landfill space within the state, describes the methodology used to select landfill sites, and contains recommendations for developing additional landfill capacity. The existing infrastructure at the Central Landfill site makes it the most appropriate location for the Phase VI Landfill. The location of the Phase VI Landfill will allow RIRRC the efficiency of continuing to utilize the existing landfill operation's equipment, infrastructure, support buildings, and experienced staff after other portions of the property have ceased waste disposal operations. In addition to the landfills, the RIRRC property in Johnston includes the Materials Recycling Facility, landfill gas destruction and energy recovery facilities, and other RIRRC projects related to solid waste and recycling. Construction of the Phase VI landfill is consistent with the current and future use of the Central Landfill site.

7.2 ALTERNATE SIZES

Sizing of the Phase VI landfill is driven by the available location at the site and the need for additional landfill space. The proposed Phase VI Landfill shares its perimeter with the existing Phase I and V Landfills. An expansion landfill (one that shares a perimeter with existing landfills) is preferential to a stand-alone landfill because it affords greater capacity within a smaller footprint. Alternate sizing of the proposed Phase VI landfill would either fail to adequately use the available location by being too small to meet the State's future waste management needs or require more space than is available at the selected location.

7.3 ALTERNATE PROCESSES

In Rhode Island, alternatives to landfilling of solid waste are limited by state law. Waste-to-energy facilities are prohibited and participation in the RIRRC system is required of most municipalities within the state. Source reduction activities are also required by state law and are conducted on an ongoing basis by RIRRC and by the solid waste generators.

7.4 ALTERNATE ENVIRONMENTAL CONTROLS

The environmental controls proposed for the Phase V landfill meet or exceed existing state and federal requirements governing the construction and operation of new solid waste landfills. The proposed Phase VI Landfill will include a double composite liner system, primary and secondary leachate collection, gas collection and control, and a final synthetic geomembrane cap. Generally, alternatives to these environmental controls would not achieve the same level of environmental protection and emissions control. These environmental controls were selected because of their ability to adequately protect groundwater from contamination and to effectively control air emissions of landfill gas and the associated toxic air pollutants.

8.0 COMPLIANCE DEMONSTRATION

8.1 APPLICABLE REQUIREMENTS

Applicable requirements refer to all State and federal regulations and conditions of State and federal permits that are federally enforceable through the State Implementation Plan. State and federal regulations that would be considered applicable requirements and their applicability to the Central Landfill are summarized in ***Tables 6*** through ***10***.

8.1.1 State Regulations

Table 6 lists all current RIAPC Regulations and the current compliance status of the landfill. Based on current operations, the Central Landfill is subject to the following state regulations:

- The opacity limitations of Regulation 1;
- The fugitive dust control requirements of Regulation 5;
- Regulation 6 requires that the heating boiler in the main building be equipped with an opacity monitor with an audible alarm;
- The prohibitions on emissions harmful to persons or property and objectionable odors in Regulations 7 and 17;
- The fuel sulfur limitations of Regulation 8;
- Certain permitting requirements under Regulation 9;
- The particulate emission standards of Regulation 13;
- The recordkeeping and reporting requirements of Regulation 14;
- Certain requirements under Regulation 15 apply to the Phase I Landfill;
- The operational standards for pollution control equipment contained in Regulation 16;
- Certain requirements under Regulation 22;
- The NO_X emission standards contained in Regulation 27;
- The operating permit fees in Regulation 28;
- The operating permit requirements of Regulation 29; and
- The design and operational standards for cold cleaners in Regulation 36.

8.2 FEDERAL REGULATIONS

Tables 7 and ***8*** list all federal air pollution control regulations that impose requirements on facilities or emission units. ***Tables 7*** and ***8*** also include a determination as to whether the regulation is an applicable requirement with respect to the Central Landfill and the specific requirements imposed on the facility or its emission units; the reference test method specified by the rule for requirements applicable to the Central Landfill; the compliance status of the Central Landfill with respect to the requirement; and the compliance schedule for those requirements that mandate corrective or follow-up action.

The Central Landfill is subject to the NSPS for municipal solid waste landfills contained in 40 CFR 60, Subpart WWW.

The Central Landfill does not accept regulated asbestos-containing materials. Therefore, the National Emissions Standards for HAPs for asbestos contained in 40 CFR 61, Subpart M is not applicable.

The Central Landfill is subject to National Emissions Standards for HAPs for the Municipal Solid Waste Landfill Source Category, 40 CFR 63, Subpart AAAA.

The facility is not believed to be subject to the Compliance Assurance Monitoring (CAM) Requirements of 40 CFR 64. The CAM rule applies only to emission units using pollution control equipment to meet an applicable requirement. The Central Landfill uses pollution control equipment only for landfill gas emissions, which are subject to a post-1990 NSPS. Emission units subject to a post-1990 NSPS are exempt from the CAM rule.

The Central Landfill is not subject to regulation under the Accidental Release Prevention program contained in 40 CFR 68.

The Central Landfill is not an acid rain affected source and is not subject to any of the acid deposition control requirements contained in 40 CFR 72, 73, 75, 76, or 77.

The Central Landfill does not conduct any manufacturing operations and, therefore, is not subject to the manufacturing and use restrictions and labeling requirements contained in 40 CFR 82, Subparts A, C and E. Central Landfill personnel do not service motor vehicle air conditioning or space cooling air conditioning units, but these activities may be performed on site by outside contractors using certified technicians. There is no process-related chilling equipment at the facility. Therefore, the Central Landfill is in compliance with Subparts B and D. The Central Landfill is subject to certain requirements under Subpart F, relating to the reclamation of ozone depleting substances from discarded refrigerators, dehumidifiers and air conditioners.

8.3 PERMIT REQUIREMETS

Table 9 lists the requirements contained in the air permits currently issued to RIRRC by RIDEM. For each permit requirement, Table 9 includes a description of the requirement, the units subject to the requirement, the reference test method used to demonstrate compliance, the compliance status, and the method used to demonstrate compliance.

8.4 SUPPLEMENTAL ENVIRONMENTAL PROJECTS

Table 10 lists the supplemental environmental projects (SEPs) that were required by the 2003 Consent Decree between RIRRC and the EPA For each SEP, ***Table 10*** includes a description of the requirement, the units subject to the requirement, the reference test method used to demonstrate compliance, the compliance status, and the method used to demonstrate compliance.

8.5 COMPLIANCE SCHEDULE

In its Title V application, RIRRC included a compliance schedule for attainment of compliance with certain applicable requirements. RIRRC believes it has completed the corrective actions contained in the compliance plan and that no further actions are required under the plan.

TABLES

TABLE 1
ESTIMATED GAS GENERATION RATES AND COLLECTION EFFICIENCIES

Central Landfill
Johnston, Rhode Island

ESTIMATED GAS GENERATION (SCFM) AND COLLECTION EFFICIENCY

	Phase I		Phase II & III		Phase IV		Phase V		Phase VI		Phases I - VI	
Year	Gen.	Coll. Ef.	Gen.	Coll. Ef.	Gen.	Coll. Ef.	Gen.	Coll. Ef.	Gen.	Coll. Ef.	Gen.	Coll. Ef.
2007	2,188	95%	3,535	95%	4,313	87%	5,819	85%	-	-	15,854	89.2%
2008	1,993	95%	3,222	95%	3,882	90%	7,868	85%	-	-	16,965	89.2%
2009	1,819	95%	2,938	95%	3,528	92%	9,271	85%	-	-	17,556	89.1%
2010	1,667	95%	2,681	95%	3,208	94%	10,340	85%	0	80%	17,896	89.0%
2011	1,521	95%	2,444	95%	2,924	94%	10,063	85%	535	80%	17,486	88.6%
2012	1,389	95%	2,229	95%	2,667	95%	8,146	85%	2,049	80%	16,479	88.2%
2013	1,264	95%	2,035	95%	2,431	95%	6,097	87%	3,778	85%	15,604	89.5%
2014	1,153	95%	1,854	95%	2,222	95%	4,611	90%	5,146	85%	14,986	90.0%
2015	1,056	95%	1,694	95%	2,028	95%	3,500	92%	6,271	85%	14,549	90.0%
2016	965	95%	1,542	95%	1,847	95%	2,660	94%	7,208	85%	14,222	89.7%
2017	882	95%	1,410	95%	1,688	95%	2,028	95%	7,986	85%	13,993	89.3%
2018	806	95%	1,285	95%	1,542	95%	1,549	95%	8,639	85%	13,819	88.7%
2019	736	95%	1,174	95%	1,410	95%	1,181	95%	9,188	85%	13,688	88.3%
2020	674	95%	1,069	95%	1,285	95%	903	95%	9,639	85%	13,569	87.9%
2021	611	95%	979	95%	1,174	95%	694	95%	9,486	85%	12,944	87.7%
2022	563	95%	896	95%	1,076	95%	528	95%	8,292	87%	11,354	89.2%
2023	514	95%	813	95%	979	95%	410	95%	6,826	90%	9,542	91.4%
2024	472	95%	743	95%	896	95%	313	95%	5,681	92%	8,104	92.9%
2025	431	95%	681	95%	819	95%	243	95%	4,736	95%	6,910	95.0%
2026	396	95%	618	95%	750	95%	188	95%	3,958	95%	5,910	95.0%
2027	361	95%	569	95%	688	95%	153	95%	3,306	95%	5,076	95.0%
2028	326	95%	521	95%	625	95%	118	95%	2,764	95%	4,354	95.0%
2029	299	95%	472	95%	576	95%	90	95%	2,306	95%	3,743	95.0%
2030	278	95%	431	95%	528	95%	76	95%	1,931	95%	3,243	95.0%
Max Year and Rate	2007	2,188	2003	4,944	2006	4,583	2010	10,340	2020	9,639	2010	17,896

TABLE 2
LANDFILL GAS EMISSION ESTIMATES

Central Landfill
Johnston, Rhode Island

ESTIMATED GAS EMISSIONS (scfm)

Year	Phase I			Phase II &III			Phase IV			Phase V			Total Phases I -V			Phase VI			Total Phases I -IV		
	Coll.	Fug.	Emit.	Coll.	Fug.	Emit.	Coll.	Fug.	Emit.	Coll.	Fug.	Emit.	Coll.	Fug.	Emit.	Coll.	Fug.	Emit.	Coll.	Fug.	Emit.
2007	2,078	109	151	3,358	177	244	3,752	561	636	4,947	873	972	14,135	1,720	2,002	0	0	0	14,135	1,720	2,002
2008	1,893	100	138	3,061	161	222	3,494	388	458	6,688	1,180	1,314	15,136	1,829	2,132	0	0	0	15,136	1,829	2,132
2009	1,728	91	126	2,791	147	203	3,246	282	347	7,880	1,391	1,548	15,645	1,911	2,224	0	0	0	15,645	1,911	2,224
2010	1,583	83	115	2,547	134	185	3,016	193	253	8,789	1,551	1,727	15,935	1,961	2,280	0	0	0	15,935	1,961	2,280
2011	1,445	76	105	2,322	122	169	2,748	175	230	8,553	1,509	1,680	15,068	1,883	2,184	428	107	116	15,496	1,990	2,300
2012	1,319	69	96	2,118	111	154	2,533	133	184	6,924	1,222	1,360	12,894	1,536	1,794	1,639	410	443	14,533	1,946	2,237
2013	1,201	63	87	1,933	102	140	2,309	122	168	5,305	793	899	10,747	1,079	1,294	3,211	567	631	13,958	1,646	1,925
2014	1,095	58	80	1,761	93	128	2,111	111	153	4,150	461	544	9,118	723	905	4,374	772	859	13,492	1,494	1,764
2015	1,003	53	73	1,610	85	117	1,926	101	140	3,220	280	344	7,759	519	674	5,330	941	1,047	13,089	1,460	1,721
2016	917	48	67	1,465	77	106	1,755	92	127	2,500	160	210	6,637	377	510	6,127	1,081	1,204	12,764	1,459	1,714
2017	838	44	61	1,339	70	97	1,603	84	116	1,926	101	140	5,707	300	414	6,788	1,198	1,334	12,495	1,498	1,748
2018	765	40	56	1,220	64	89	1,465	77	106	1,471	77	107	4,922	259	357	7,343	1,296	1,443	12,265	1,555	1,800
2019	699	37	51	1,115	59	81	1,339	70	97	1,122	59	81	4,275	225	311	7,809	1,378	1,534	12,084	1,603	1,845
2020	640	34	46	1,016	53	74	1,220	64	89	858	45	62	3,734	197	271	8,193	1,446	1,610	11,927	1,642	1,881
2021	581	31	42	930	49	68	1,115	59	81	660	35	48	3,285	173	239	8,063	1,423	1,584	11,349	1,596	1,823
2022	534	28	39	851	45	62	1,023	54	74	501	26	36	2,909	153	211	7,214	1,078	1,222	10,123	1,231	1,434
2023	488	26	35	772	41	56	930	49	68	389	20	28	2,580	136	187	6,144	683	806	8,723	818	993
2024	449	24	33	706	37	51	851	45	62	297	16	22	2,302	121	167	5,226	454	559	7,529	576	726
2025	409	22	30	647	34	47	778	41	57	231	12	17	2,065	109	150	4,499	237	327	6,564	345	477
2026	376	20	27	587	31	43	713	38	52	178	9	13	1,854	98	135	3,760	198	273	5,614	295	408
2027	343	18	25	541	28	39	653	34	47	145	8	11	1,682	89	122	3,140	165	228	4,823	254	350
2028	310	16	23	495	26	36	594	31	43	112	6	8	1,511	80	110	2,626	138	191	4,136	218	300
2029	284	15	21	449	24	33	548	29	40	86	5	6	1,366	72	99	2,190	115	159	3,556	187	258
2030	264	14	19	409	22	30	501	26	36	73	4	5	1,247	66	91	1,834	97	133	3,081	162	224

2007	2007	2007	2007	2007	2007	2007	2007	2007	2010	2010	2010	2010	2010	2010	2020	2020	2020	2010	2011	2011
2,078	109	151	3,358	177	244	3,752	561	636	8,789	1,551	1,727	15,935	1,961	2,280	8,193	1,446	1,610	15,935	1,990	2,300

Estimated Destruction Efficiency: 98%

Note: Landfill gas emission estimates based on generation rates and collection efficiencies presented in Table 1.

TABLE 3
ESTIMATED VOC EMISSIONS BY PHASE AND YEAR

Central Landfill
Johnston, Rhode Island

Year	Phase I VOC Emissions (tons/yr)			Phase II/III VOC Emissions (tons/yr)			Phase IV VOC Emissions (tons/yr)			Phase V VOC Emissions (tons/yr)			Phases I - V VOC Emissions (tons/yr)			Phase VI VOC Emissions (tons/yr)			Total Phases I - VI VOC Emissions (tons/yr)		
	Point	Fugitive	Total	Point	Fugitive	Total	Point	Fugitive	Total	Point	Fugitive	Total	Point	Fugitive	Total	Point	Fugitive	Total	Point	Fugitive	Total
2007	1.6	4.3	6.0	2.7	7.0	9.7	5.0	37.4	42.4	9.0	79.4	88.4	18.3	128.2	146.5	0.0	0.0	0.0	18.3	128.2	146.5
2008	1.5	3.9	5.4	2.4	6.4	8.8	4.7	25.9	30.6	12.2	107.4	119.6	20.8	143.7	164.4	0.0	0.0	0.0	20.8	143.7	164.4
2009	1.4	3.6	5.0	2.2	5.8	8.0	4.3	18.8	23.2	14.3	126.6	140.9	22.3	154.8	177.1	0.0	0.0	0.0	22.3	154.8	177.1
2010	1.3	3.3	4.6	2.0	5.3	7.3	4.0	12.9	16.9	16.0	141.1	157.1	23.3	162.6	185.9	0.0	0.0	0.0	23.3	162.6	185.9
2011	1.1	3.0	4.2	1.8	4.8	6.7	3.7	11.7	15.4	15.6	137.4	152.9	22.2	156.9	179.1	0.8	9.7	10.5	23.0	166.7	189.7
2012	1.0	2.8	3.8	1.7	4.4	6.1	3.4	8.9	12.3	12.6	111.2	123.8	18.7	127.3	146.0	3.0	37.3	40.3	21.7	164.6	186.2
2013	1.0	2.5	3.5	1.5	4.0	5.6	3.1	8.1	11.2	9.7	72.1	81.8	15.2	86.8	102.0	5.8	51.6	57.4	21.1	138.4	159.4
2014	0.9	2.3	3.2	1.4	3.7	5.1	2.8	7.4	10.2	7.6	42.0	49.5	12.6	55.3	68.0	8.0	70.2	78.2	20.6	125.6	146.2
2015	0.8	2.1	2.9	1.3	3.4	4.6	2.6	6.8	9.3	5.9	25.5	31.3	10.5	37.7	48.2	9.7	85.6	95.3	20.2	123.3	143.5
2016	0.7	1.9	2.6	1.2	3.1	4.2	2.3	6.2	8.5	4.6	14.5	19.1	8.8	25.7	34.4	11.2	98.4	109.5	19.9	124.1	144.0
2017	0.7	1.7	2.4	1.1	2.8	3.9	2.1	5.6	7.8	3.5	9.2	12.7	7.4	19.4	26.8	12.4	109.0	121.4	19.7	128.4	148.1
2018	0.6	1.6	2.2	1.0	2.5	3.5	2.0	5.1	7.1	2.7	7.0	9.7	6.2	16.3	22.5	13.4	117.9	131.3	19.6	134.3	153.8
2019	0.6	1.5	2.0	0.9	2.3	3.2	1.8	4.7	6.5	2.0	5.4	7.4	5.3	13.9	19.1	14.2	125.4	139.6	19.5	139.3	158.8
2020	0.5	1.3	1.8	0.8	2.1	2.9	1.6	4.3	5.9	1.6	4.1	5.7	4.5	11.8	16.4	14.9	131.6	146.5	19.4	143.4	162.8
2021	0.5	1.2	1.7	0.7	1.9	2.7	1.5	3.9	5.4	1.2	3.2	4.4	3.9	10.2	14.1	14.7	129.5	144.2	18.6	139.7	158.3
2022	0.4	1.1	1.5	0.7	1.8	2.4	1.4	3.6	5.0	0.9	2.4	3.3	3.4	8.9	12.3	13.1	98.1	111.2	16.5	107.0	123.5
2023	0.4	1.0	1.4	0.6	1.6	2.2	1.2	3.3	4.5	0.7	1.9	2.6	2.9	7.8	10.7	11.2	62.1	73.3	14.1	69.9	84.0
2024	0.4	0.9	1.3	0.6	1.5	2.0	1.1	3.0	4.1	0.5	1.4	2.0	2.6	6.8	9.4	9.5	41.4	50.9	12.1	48.2	60.3
2025	0.3	0.9	1.2	0.5	1.3	1.9	1.0	2.7	3.8	0.4	1.1	1.5	2.3	6.0	8.3	8.2	21.6	29.7	10.5	27.6	38.1
2026	0.3	0.8	1.1	0.5	1.2	1.7	1.0	2.5	3.5	0.3	0.9	1.2	2.0	5.4	7.4	6.8	18.0	24.9	8.9	23.4	32.3
2027	0.3	0.7	1.0	0.4	1.1	1.6	0.9	2.3	3.2	0.3	0.7	1.0	1.8	4.8	6.7	5.7	15.0	20.8	7.6	19.9	27.4
2028	0.2	0.6	0.9	0.4	1.0	1.4	0.8	2.1	2.9	0.2	0.5	0.7	1.6	4.3	5.9	4.8	12.6	17.4	6.4	16.9	23.3
2029	0.2	0.6	0.8	0.4	0.9	1.3	0.7	1.9	2.7	0.2	0.4	0.6	1.5	3.9	5.3	4.0	10.5	14.5	5.5	14.4	19.8
2030	0.2	0.6	0.8	0.3	0.9	1.2	0.7	1.8	2.4	0.1	0.3	0.5	1.3	3.5	4.8	3.3	8.8	12.1	4.7	12.3	17.0

Estimated VOC content for Phase I, II and III:	663.9	ppmv (as hexane)
Estimated VOC Content for Phase IV:	1119	ppmv (as hexane)
Estimated VOC Content for Phases V:	1525	ppmv (as hexane)
Estimated VOC Content for Phases VI:	1525	ppmv (as hexane)

TABLE 4
PEAK LANDFILL GAS POTENTIAL ANNUAL EMISSIONS FOR PHASES I - VI

Central Landfill
Johnston, Rhode Island

							Phase	**Phase I**		**Phase II/III**		**Phase IV**		**Phase V**		**Phases I- V**		**Phase VI**		**Phase I-VI**	
							Emissions Type	**Point**	**Fugitive**	**Point**	**Fugitive**	**Point**	**Fugitive**	**Point**	**Fugitive**	**Point**	**Fugitive**	**Point**	**Fugitive**	**Point**	**Fugitive**
							Destruction Efficiency Efficiency	**98%**	**0%**	**98%**	**0%**	**98%**	**0%**	**98%**	**0%**	**98%**	**0%**	**98%**	**0%**	**98%**	**0%**
							Year of Max. Emissions (May not correspond to peak gas generation year)	**2007**		**2007**		**2007**		**2010**		**2012**		**2020**		**2011**	
							Landfill Gas (sft^3/min), Collected and Fugitive	**2,078**	**109**	**3,358**	**177**	**3,752**	**561**	**8,789**	**1,551**	**12,894**	**1,536**	**8,193**	**1,446**	**15,496**	**1,990**
Pollutant	**CAS Number**	**HAP**	**TAP**	**Mol. Weight**	**Conc. In Phase V Gas (ppm)**	**Conc. In Phase IV Gas (ppm)**	**Conc. in Phase I/II/III Gas (ppm)**	**Annual Amounts in Tons**													
Methane	74-82-8			16.03	500,000	500,000	500,000	230.7	607.2	372.8	981.2	416.6	3,112.4	975.9	8,610.9	1,996.1	12,935.2	909.7	8,026.8	2,905.8	20,962.0
1,1 Dichloroethane	75-34-3	x		98.97	0.22	0.22	0.22	0.001	0.002	0.001	0.003	0.001	0.008	0.003	0.023	0.005	0.035	0.002	0.022	0.008	0.056
1,2,4-Trimethylbenzene	95-63-6			120.19	1.82	1.82	1.82	0.006	0.017	0.010	0.027	0.011	0.085	0.027	0.235	0.055	0.353	0.025	0.219	0.079	0.572
1,3,5 Trimethylbenzene	108-67-8			120.19	0.66	0.66	0.66	0.002	0.006	0.004	0.010	0.004	0.031	0.010	0.086	0.020	0.129	0.009	0.080	0.029	0.208
1,4-Dichlorobenzene	106-46-7	x		147.01	0.54	0.54	0.54	0.002	0.006	0.004	0.010	0.004	0.031	0.010	0.086	0.020	0.129	0.009	0.080	0.029	0.209
2-Propanol	67-63-0			60.11	5.95	5.95	5.95	0.010	0.027	0.017	0.044	0.019	0.139	0.044	0.384	0.089	0.577	0.041	0.358	0.130	0.935
4-Ethyltoluene	622-96-8			120.19	1.91	1.91	1.91	0.007	0.017	0.011	0.028	0.012	0.089	0.028	0.246	0.057	0.370	0.026	0.230	0.083	0.600
Acetone	67-64-1			58.08	8.08	8.08	8.08	0.014	0.036	0.022	0.057	0.024	0.182	0.057	0.504	0.117	0.757	0.053	0.470	0.170	1.227
Benzene	71-43-2	x		78.11	0.60	0.60	0.60	0.001	0.004	0.002	0.006	0.002	0.018	0.006	0.050	0.012	0.075	0.005	0.047	0.017	0.122
Carbon Disulfide	75-15-0	x	x	76.14	0.887	0.588	2.36	0.005	0.014	0.008	0.022	0.002	0.017	0.008	0.073	0.024	0.117	0.006	0.056	0.030	0.173
Carbonyl Sulfide	463-58-1	x	x	60.07	2.638	1.651	0.95	0.002	0.004	0.003	0.007	0.005	0.039	0.019	0.170	0.029	0.217	0.015	0.129	0.043	0.346
Chlorobenzene	108-90-7	x		112.56	0.32	0.32	0.32	0.001	0.003	0.002	0.004	0.002	0.014	0.004	0.038	0.009	0.057	0.004	0.036	0.013	0.093
Chloroethane	75-00-3	x		64.52	0.19	0.19	0.19	0.000	0.001	0.001	0.002	0.001	0.005	0.002	0.013	0.003	0.020	0.001	0.012	0.005	0.033
cis-1,2-Dichloroethene	156-59-2			96.94	0.65	0.65	0.65	0.002	0.005	0.003	0.008	0.003	0.025	0.008	0.068	0.016	0.102	0.007	0.063	0.023	0.166
Cyclohexane	110-82-7			84.16	1.17	1.17	1.17	0.003	0.007	0.005	0.012	0.005	0.038	0.012	0.106	0.025	0.159	0.011	0.099	0.036	0.257
Dichlorodifluoromethane	75-71-8			120.91	1.59	1.59	1.59	0.006	0.015	0.009	0.024	0.010	0.075	0.023	0.206	0.048	0.310	0.022	0.192	0.070	0.502
Dimethyl Sulfide	75-18-3			62.13	1.786	2.706	0.96	0.002	0.005	0.003	0.007	0.009	0.065	0.014	0.119	0.027	0.194	0.016	0.140	0.043	0.333
Ethanol	64-17-5			46.08	38.71	38.71	38.71	0.051	0.135	0.083	0.218	0.093	0.693	0.217	1.916	0.444	2.879	0.202	1.786	0.647	4.665
Ethylbenzene	100-41-4	x		106.16	5.20	5.20	5.20	0.016	0.042	0.026	0.068	0.029	0.214	0.067	0.593	0.137	0.891	0.063	0.553	0.200	1.444
Dichlorotetrafluoroethane	76-14-2			170.93	0.12	0.12	0.12	0.001	0.001	0.001	0.002	0.001	0.008	0.002	0.021	0.005	0.032	0.002	0.020	0.007	0.051
Heptane	142-82-5			100.2	1.47	1.47	1.47	0.004	0.011	0.007	0.018	0.008	0.057	0.018	0.158	0.037	0.237	0.017	0.147	0.053	0.384
Hexane	110-54-3	x		86.17	1.25	1.25	1.25	0.003	0.008	0.005	0.013	0.006	0.042	0.013	0.116	0.027	0.174	0.012	0.108	0.039	0.282
Hydrogen Sulfide	7783-06-4		x	34.08	2412.5	852.3	116.30	0.114	0.300	0.184	0.485	1.510	11.279	10.011	88.330	11.819	100.209	6.314	55.714	18.133	155.923
Isopropyl Mercaptan	75-33-2			76.16	11.438	5.294	0.75	0.002	0.004	0.003	0.007	0.021	0.157	0.106	0.936	0.131	1.101	0.072	0.638	0.204	1.739
Methyl Mercaptan	74-93-1			48.11	4.481	3.788	1.35	0.002	0.005	0.003	0.008	0.009	0.071	0.026	0.232	0.041	0.312	0.023	0.199	0.063	0.511
Methylene Chloride	75-09-2	x	x	89.94	0.43	0.43	0.43	0.001	0.003	0.002	0.005	0.002	0.015	0.005	0.041	0.010	0.062	0.004	0.038	0.014	0.100
Methylethyl Ketone	78-93-3	x		72.11	11.33	11.33	11.33	0.024	0.062	0.038	0.100	0.042	0.317	0.099	0.877	0.203	1.318	0.093	0.818	0.296	2.136
Methylisobutyl ketone	108-10-1	x		100.16	0.95	0.95	0.95	0.003	0.007	0.004	0.012	0.005	0.037	0.012	0.102	0.024	0.153	0.011	0.095	0.034	0.248
Styrene	100-42-5	x	x	104.2	0.99	0.99	0.99	0.003	0.008	0.005	0.013	0.005	0.040	0.013	0.110	0.026	0.166	0.012	0.103	0.037	0.269
Terahydrofuran	109-99-9			72.06	2.08	2.08	2.08	0.004	0.011	0.007	0.018	0.008	0.058	0.018	0.161	0.037	0.242	0.017	0.150	0.054	0.392
Tetrachloroethene	127-18-4	x	x	165.83	0.43	0.43	0.43	0.002	0.005	0.003	0.009	0.004	0.028	0.009	0.077	0.018	0.115	0.008	0.071	0.026	0.186
Toluene	108-88-3	x	x	92.13	20.13	20.13	20.13	0.053	0.140	0.086	0.227	0.096	0.720	0.226	1.992	0.462	2.992	0.210	1.857	0.672	4.849
Trichloroethene	79-01-6	x	x	131.4	0.42	0.42	0.42	0.002	0.004	0.003	0.007	0.003	0.021	0.007	0.059	0.014	0.089	0.006	0.055	0.020	0.144
Trichlorofluoromethane	75-69-4			137.38	0.50	0.50	0.50	0.002	0.005	0.003	0.008	0.004	0.026	0.008	0.073	0.017	0.110	0.008	0.068	0.025	0.178
Vinyl Chloride	75-01-4	x		62.47	0.72	0.72	0.72	0.001	0.003	0.002	0.006	0.002	0.018	0.005	0.049	0.011	0.073	0.005	0.045	0.016	0.118
Xylenes	1330-20-7	x	x	106.16	12.02	12.02	12.02	0.037	0.097	0.059	0.156	0.066	0.496	0.155	1.371	0.318	2.059	0.145	1.278	0.463	3.337
Total Chloride	NA			35.45	12.79	12.79	12.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP								0.157	0.413	0.253	0.667	0.278	2.079	0.662	5.840	1.350	8.743	0.612	5.403	1.963	14.146
Total HAP (Point + Fugitive)								0.570		0.920		2.357		6.502		10.094		6.015		16.109	
ALL Reg. 22 TAP								0.219	0.576	0.353	0.930	1.694	12.655	10.452	92.223	12.718	106.027	6.721	59.302	19.439	165.329

Estimated Control Eff.: 98%

Notes:
1. Landfill gas constituents based on site average landfill gas concentrations measured in May 2000 and sulfur compound monitoring conducted on Phases IV and V in 2006.
2. Phase VI sulfur compound data was estmiated based upon the average of 2006 Phase IV and V sulfur compound monitoring results.

TABLE 5
PEAK LANDFILL GAS POTENTIAL HOURLY EMISSIONS FOR PHASES I - IV

Central Landfill
Johnston, Rhode Island

								Phase	Phase I		Phase II/III		Phase IV		Phase V		Phases I - V		Phase VI		Phases I - VI	
								Emissions Type	Point	Fugitive	Point	Fugitive	Point	Fugitive	Point	Fugitive	Point	Fugitive	Point	Fugitive	Point	Fugitive
								Destruction Efficiency Efficiency	98%	0%	98%	0%	98%	0%	98%	0%	98%	0%	98%	0%	98%	0%
								Year of Max. Emissions (May not correspond to peak gas generation year)	2007		2007		2007		2010		2012		2020		2011	
								Landfill Gas (sft^3/min), Collected and Fugitive	2,078	109	3,358	177	3,752	561	8,789	1,551	12,894	1,536	8,193	1,446	15,496	1,990
Pollutant	**CAS Number**	**HAP**	**TAP**	**Mol. Weight**	**Conc. In Phase V Gas (ppm)**	**Conc. In Phase IV Gas (ppm)**	**Conc. in Phase I/II/III Gas (ppm)**	**Hourly Amounts in Pounds**														
Methane	NA			16.03	500,000	500,000	500,000	52.7	138.6	85.1	224.0	95.1	710.6	222.8	1,966.0	455.7	3,039.2	207.7	1,832.6	663.4	4,871.8
1,1 Dichloroethane	75-34-3	x		98.97	0.22	0.22	0.22	0.0001	0.0004	0.0002	0.0006	0.0003	0.0019	0.0006	0.0053	0.0012	0.0081	0.0006	0.0049	0.0018	0.0131
1,2,4-Trimethylbenzene	95-63-6			120.19	1.82	1.82	1.82	0.0014	0.0038	0.0023	0.0061	0.0026	0.0194	0.0061	0.0537	0.0124	0.0830	0.0057	0.0500	0.0181	0.1330
1,3,5 Trimethylbenzene	108-67-8			120.19	0.66	0.66	0.66	0.0005	0.0014	0.0008	0.0022	0.0009	0.0071	0.0022	0.0195	0.0045	0.0302	0.0021	0.0182	0.0066	0.0484
1,4-Dichlorobenzene	106-46-7	x		147.01	0.54	0.54	0.54	0.0005	0.0014	0.0008	0.0022	0.0009	0.0071	0.0022	0.0196	0.0045	0.0303	0.0021	0.0183	0.0066	0.0486
2-Propanol	67-63-0			60.11	5.95	5.95	5.95	0.0023	0.0062	0.0038	0.0100	0.0042	0.0317	0.0099	0.0877	0.0203	0.1355	0.0093	0.0817	0.0296	0.2172
4-Ethyltoluene	622-96-8			120.19	1.91	1.91	1.91	0.0015	0.0040	0.0024	0.0064	0.0027	0.0203	0.0064	0.0563	0.0130	0.0870	0.0059	0.0524	0.0190	0.1394
Acetone	67-64-1			58.08	8.08	8.08	8.08	0.0031	0.0081	0.0050	0.0131	0.0056	0.0416	0.0130	0.1151	0.0267	0.1779	0.0122	0.1073	0.0388	0.2852
Benzene	71-43-2	x		78.11	0.60	0.60	0.60	0.0003	0.0008	0.0005	0.0013	0.0006	0.0041	0.0013	0.0114	0.0027	0.0177	0.0012	0.0107	0.0039	0.0284
Carbon Disulfide	75-15-0	x		76.14	0.887	0.588	2.36	0.0012	0.0031	0.0019	0.0050	0.0005	0.0040	0.0019	0.0166	0.0055	0.0287	0.0015	0.0128	0.0070	0.0415
Carbonyl Sulfide	463-58-1	x		60.07	2.638	1.651	0.95	0.0004	0.0010	0.0006	0.0016	0.0012	0.0088	0.0044	0.0389	0.0066	0.0503	0.0033	0.0295	0.0099	0.0797
Chlorobenzene	108-90-7	x		112.56	0.32	0.32	0.32	0.0002	0.0006	0.0004	0.0010	0.0004	0.0032	0.0010	0.0087	0.0020	0.0135	0.0009	0.0081	0.0029	0.0216
Chloroethane	75-00-3	x		64.52	0.19	0.19	0.19	0.0001	0.0002	0.0001	0.0003	0.0001	0.0011	0.0003	0.0031	0.0007	0.0047	0.0003	0.0029	0.0010	0.0076
cis-1,2-Dichloroethene	156-59-2			96.94	0.65	0.65	0.65	0.0004	0.0011	0.0007	0.0018	0.0008	0.0056	0.0018	0.0155	0.0036	0.0240	0.0016	0.0145	0.0052	0.0385
Cyclohexane	110-82-7			84.16	1.17	1.17	1.17	0.0006	0.0017	0.0010	0.0028	0.0012	0.0087	0.0027	0.0241	0.0056	0.0373	0.0026	0.0225	0.0081	0.0598
Dichlorodifluoromethane	75-71-8			120.91	1.59	1.59	1.59	0.0013	0.0033	0.0020	0.0054	0.0023	0.0170	0.0053	0.0471	0.0109	0.0728	0.0050	0.0439	0.0159	0.1168
Dimethyl Sulfide	75-18-3			62.13	1.786	2.706	0.96	0.0004	0.0010	0.0006	0.0017	0.0020	0.0149	0.0031	0.0272	0.0061	0.0448	0.0036	0.0319	0.0097	0.0767
Ethanol	64-17-5			46.08	38.71	38.71	38.71	0.0117	0.0309	0.0189	0.0499	0.0212	0.1581	0.0496	0.4375	0.1014	0.6764	0.0462	0.4078	0.1476	1.0842
Ethylbenzene	100-41-4	x		106.16	5.20	5.20	5.20	0.0036	0.0095	0.0059	0.0154	0.0066	0.0489	0.0153	0.1354	0.0314	0.2093	0.0143	0.1262	0.0457	0.3355
Dichlorotetrafluoroethane	76-14-2			170.93	0.12	0.12	0.12	0.0001	0.0003	0.0002	0.0005	0.0002	0.0017	0.0005	0.0048	0.0011	0.0075	0.0005	0.0045	0.0016	0.0119
Heptane	142-82-5			100.2	1.47	1.47	1.47	0.0010	0.0025	0.0016	0.0041	0.0017	0.0130	0.0041	0.0360	0.0083	0.0557	0.0038	0.0336	0.0122	0.0893
Hexane	110-54-3	x		86.17	1.25	1.25	1.25	0.0007	0.0019	0.0011	0.0030	0.0013	0.0096	0.0030	0.0264	0.0061	0.0409	0.0028	0.0247	0.0089	0.0655
Hydrogen Sulfide	7783-06-4			34.08	2412.5	852.3	116.30	0.0261	0.0686	0.0421	0.1108	0.3447	2.5752	2.2856	20.1668	2.6984	22.9213	1.4416	12.7201	4.1400	35.6414
Isopropyl Mercaptan	75-33-2			76.16	11.438	5.294	0.75	0.0004	0.0010	0.0006	0.0016	0.0048	0.0357	0.0242	0.2137	0.0300	0.2520	0.0165	0.1457	0.0465	0.3977
Methyl Mercaptan	74-93-1			48.11	4.481	3.788	1.35	0.0004	0.0011	0.0007	0.0018	0.0022	0.0162	0.0060	0.0529	0.0093	0.0720	0.0052	0.0455	0.0144	0.1175
Methylene Chloride	75-09-2	x	x	89.94	0.43	0.43	0.43	0.0003	0.0007	0.0004	0.0011	0.0005	0.0034	0.0011	0.0094	0.0022	0.0145	0.0010	0.0087	0.0032	0.0232
Methylethyl Ketone	78-93-3	x		72.11	11.33	11.33	11.33	0.0054	0.0141	0.0087	0.0228	0.0097	0.0724	0.0227	0.2003	0.0464	0.3097	0.0212	0.1867	0.0676	0.4964
Methylisobutyl ketone	108-10-1	x		100.16	0.95	0.95	0.95	0.0006	0.0016	0.0010	0.0026	0.0011	0.0084	0.0026	0.0232	0.0054	0.0359	0.0025	0.0217	0.0078	0.0576
Styrene	100-42-5	x	x	104.2	0.99	0.99	0.99	0.0007	0.0018	0.0011	0.0029	0.0012	0.0091	0.0029	0.0252	0.0058	0.0390	0.0027	0.0235	0.0085	0.0625
Terahydrofuran	109-99-9			72.06	2.08	2.08	2.08	0.0010	0.0026	0.0016	0.0042	0.0018	0.0133	0.0042	0.0367	0.0085	0.0568	0.0039	0.0343	0.0124	0.0911
Tetrachloroethene	127-18-4	x	x	165.83	0.43	0.43	0.43	0.0005	0.0012	0.0008	0.0020	0.0008	0.0063	0.0020	0.0175	0.0041	0.0270	0.0018	0.0163	0.0059	0.0433
Toluene	108-88-3	x	x	92.13	20.13	20.13	20.13	0.0122	0.0321	0.0197	0.0518	0.0220	0.1644	0.0515	0.4548	0.1054	0.7031	0.0480	0.4239	0.1535	1.1270
Trichloroethene	79-01-6	x	x	131.4	0.42	0.42	0.42	0.0004	0.0010	0.0006	0.0015	0.0007	0.0049	0.0015	0.0135	0.0031	0.0209	0.0014	0.0126	0.0046	0.0335
Trichlorofluoromethane	75-69-4			137.38	0.50	0.50	0.50	0.0004	0.0012	0.0007	0.0019	0.0008	0.0060	0.0019	0.0167	0.0039	0.0258	0.0018	0.0156	0.0056	0.0414
Vinyl Chloride	75-01-4	x		62.47	0.72	0.72	0.72	0.0003	0.0008	0.0005	0.0013	0.0005	0.0040	0.0013	0.0111	0.0026	0.0171	0.0012	0.0103	0.0037	0.0275
Xylenes	1330-20-7	x	x	106.16	12.02	12.02	12.02	0.0084	0.0221	0.0136	0.0357	0.0151	0.1131	0.0355	0.3130	0.0726	0.4839	0.0331	0.2918	0.1056	0.7756
Total Chloride	NA			35.45	12.79	12.79	12.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Estimated Control Eff.: 98%

Notes:
1. Landfill gas constituents based on site average landfill gas concentrations measured in May 2000 and sulfur compound monitoring conducted on Phases IV and V in 2006.
2. Phase VI sulfur compound data was estmiated based upon the average of 2006 Phase IV and V sulfur compound monitoring results.

TABLE 6
APPLICABLE REQUIREMENTS - STATE REGULATIONS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Regulation 1 Visible Emissions	Opacity may not exceed 20 percent for more than 3 minutes per hour	Facility	Method 9	In compliance	Visual observation
Regulation 2 Hand Firing of Soft Coal	Prohibits hand firing of soft coal	Not applicable	-	-	-
Regulation 3 Particulate Emissions from Industrial Processes	Establishes particulate matter emission limits for industrial processes	Not applicable	NA	NA	NA
Regulation 4 Open Fires	Prohibits open burning	Facility	-	In compliance	Facility policy
Regulation 5 Fugitive Dust	Require reasonable precautions to prevent fugitive dust	Facility	NA	In compliance	visual observation
Regulation 6 Opacity Monitors	Requires opacity monitors for certain combustion devices. Requires facilities subject to 40 CFR 51, Appendix P to install continuous emission monitors and report quarterly.	Opacity monitor with audible alarm required for Main Heating Boiler (B001)	NA	In compliance	Facility records
Regulation 7 Emission of Air Contaminants Detrimental to Persons or Property	Prohibits emissions of contaminants that may be injurious to human, plant or animal life, cause property damage or unreasonably interferes with enjoyment of life or property.	Facility	NA	In compliance	Not specified
Regulation 8 Sulfur Content of Fuels	Prohibits combustion or storage of fuel with a sulfur content greater than 0.55 lb/MMBTU or 1.0 percent by weight.	Facility	40 CFR 60, Appendix A or ASTM methods approved by the Director	In compliance	Facility records
Regulation 9 Air Pollution Control Permits	Requires permit for construction, installation or modification of certain devices and facilities. Requires air toxics operating permit for facilities notified by the Director.	Certain boilers, generators, flares and the landfills.	NA	See compliance plan	Facility records
Regulation 10 Air Pollution Episodes	Outlines actions required during declared air pollution episodes. Facility may be required to curtail operations.	Facility	NA	In compliance. Applicable only during declared episodes.	NA
Regulation 11 Petroleum Liquids Marketing and Storage	Outlines requirements for the storage and distribution of gasoline and other petroleum liquids having a vapor pressure exceeding 1.52 psia.	Not applicable - No gasoline storage at this site.	NA	NA	NA
Regulation 12 Incinerators	Emission standards for incinerators.	Not applicable - no incinerators at this facility.	NA	NA	NA
Regulation 13 Particulate Emissions from Fossil Fuel Fired Steam or Hot Water Generating Units	Emission standards for fossil fuel or wood fired combustion devices with greater than 1 MMBTU/hr heat input. Prohibits rotary cup burners unless approved by the Director. Requires that facility maintain maintenance records and operating procedures.	Applicable to generators and boilers that are not insignificant activities.	40 CFR 60, Appendix A, Method 5	In compliance	Published emission factors. Emissions tests not specifically required for existing devices, except rotary cup burners. There are no rotary cup burners at this facility.
Regulation 14 Record Keeping and Reporting	At request of Director, facility must record and report data related to air contaminant emissions. Facilities with VOC or NO_x emissions greater than 25 tons must report annually.	Facility	NA	In compliance	Facility records
Regulation 15 Control of Organic Solvent Emissions	Emission standards for organic solvent emissions from major sources not regulated elsewhere.	Applicable to Phase I of Landfill	40 CFR 60, Method 24, 25 or other approved method	In compliance - RACT plan submitted in March 2003.	See compliance plan.
Regulation 16 Operation of Air Pollution Control Systems	Requires that air pollution control systems be operated as designed whenever the process served is operating. Also requires approval to operate process when pollution control equipment malfunctions more than 24 hours.	Facility	NA	In compliance - all flares are equipped with automatic re-ignition and flame failure shutoffs.	NA
Regulation 17 Odors	Prohibits objectionable odors	Landfills	Evaluation by Division of Air Resources	In compliance	Facility records
Regulation 19 Control of Volatile Organic Compounds from Surface Coating Operations	Emission limits for surface coating operations	Not applicable - no surface coating operations at this facility	NA	NA	NA
Regulation 20 Burning of Alternative Fuels	Specifications, testing, recordkeeping and reporting, requirements and other compliance criteria for burning alternative fuels	None	NA	NA	NA
Regulation 21 Control of Volatile Organic Compound Emissions from Printing Operations	Emission limits for printing operations	Not applicable - no subject printing operations at this facility.	NA	NA	NA

TABLE 6
APPLICABLE REQUIREMENTS - STATE REGULATIONS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Regulation 22 Air Toxics	Requirements for facilities emitting air toxics	Notification of subject emissions required. Dispersion modeling may be required.	Modeling	Compliance Evaluation is Pending	Facility records
Regulation 24 Removal of Lead Paint	Compliance standards for removal of lead-based paint from exterior surfaces	Not applicable at the present time - no lead paint removal operations in process	NA	NA	NA
Regulation 25 Control of VOC Emissions from Cutback and Emulsified Asphalt	Limits manufacture, storage and use of cutback and emulsified asphalt to certain times of year.	Not applicable - facility does not manufacture, store or routinely use asphalt products.	NA	NA	NA
Regulation 26 Control of Organic Solvent Emissions from Manufacture of Synthesized Pharmaceutical Products	Limits VOC emissions from pharmaceutical manufacturing facilities.	Not applicable - no pharmaceutical manufacturing operations at this facility.	NA	NA	NA
Regulation 27 Control of Nitrogen Oxides Emissions	Facility must submit compliance plan and meet RACT requirement of annual boiler tune-ups	Facility	Provided in Appendix A of Regulation 27	In compliance. RACT plan submitted in December 2000	varies
Regulation 28 Operating Permit Fees	Requires emissions-based fees to be paid for major sources and certain other sources.	Facility	NA	In compliance	Facility records
Regulation 29 Operating Permits	Requires operating permits for major sources and certain other facilities	Facility must obtain operating permit	NA	In compliance by submittal of this application	NA
Regulation 30 Control of VOCs from Automobile Refinishing Operations	Emission standards for VOC emissions from automobile refinishing operations	Not applicable - no automobile refinishing operations at this facility	NA	NA	NA
Regulation 31 Control of VOCs from Commercial and Consumer Products	Restricts VOC content of certain consumer products	Not applicable. Facility does not manufacture any of the products subject to this regulation.	NA	NA	NA
Regulation 32 Control of VOCs from Marine Vessel Loading Operations	Emission standards for marine vessel loading operations	Not applicable - no marine vessel loading operations at this facility	NA	NA	NA
Regulation 33 Control of VOCs from Architectural Coatings and Industrial Maintenance Coatings	Restricts VOC content of architectural and industrial maintenance coatings sold or applied in Rhode Island.	Not effective until USEPA takes certain actions	NA	NA	NA
Regulation 34 Vehicle Emissions Inspection Program	Vehicle Inspection-Maintenance. Not an applicable requirement for stationary sources	Not an applicable requirement for stationary sources	NA	NA	NA
Regulation 35 Control of Volatile Organic Compounds and Volatile Hazardous Air Pollutants from Wood Products Manufacturing Operations	VOC emission limits for wood products manufacturing	Not applicable - no wood products manufacturing at this facility	NA	NA	NA
Regulation 36 Control of Emissions from Organic Solvent Cleaning	Design and operating standards for solvent cleaning operations - supersedes Regulation 18	Cold Cleaner in maintenance garage (P005)	NA	In compliance	Equipment review
Regulation 37 Rhode Island's Low Emissions Vehicle Program	Requires new vehicle to be LEVs. Not an applicable requirement for stationary sources	Not an applicable requirement for stationary sources.	NA	NA	NA
Regulation 38 Nitrogen Oxides Allowance Program	Requires emission allowances for certain NO_x sources.	Not applicable to any devices at this facility.	NA	NA	NA
Regulation 39 Hospital/ Medical/ Infectious Waste Incinerators	Places restrictions on waste incinerators	Not applicable - no waste incinerators on site	NA	NA	NA
Regulation 41 NOx Budget Trading Program	Applies to generators with a capacity above 15 MWe. Regulates NOx credit trading.	Not applicable	NA	NA	NA
Regulation 42 Heavy-Duty Diesel Engine Standards	Additional requirements for registering a heavy duty diesel engine with the Department of Motor Vehicles	Not applicable - Subject engines are not part of the stationary source	NA	NA	NA

TABLE 7
APPLICABLE REQUIREMENTS - FEDERAL REGULATIONS - GENERAL APPLICABILITY

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	APPLICABILITY
40 CFR 60, New Source Performance Standards		
Subpart A	**General Provisions**	**Applicable - See Table A2b**
Subpart B	Adoption and Submittal of Plans	Not an Applicable Requirement
Subparts C - CE	Emissions Guidelines and Compliance Times	Not directly applicable to stationary sources
Subpart D	NSPS for Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	Not applicable to any operations at this facility
Subpart Da	NSPS for Electric Utility Steam Boilers Constructed After September 18, 1978	Not applicable to any units at this facility
Subpart Db	NSPS for Industrial-Commercial-Institutional Steam Generating Units	Not applicable to any units at this facility
Subpart Dc	NSPS for Small Industrial-Commercial-Institutional Steam Generating Units	Not applicable to any units at this facility
Subpart E	NSPS for Incinerators	Not applicable to any operations at this facility
Subpart Ea	NSPS for Municipal Waste Combustors	Not applicable to any operations at this facility
Subpart Eb	NSPS for Municipal Waste Combustors which Commenced Construction After September 20, 1994	Not applicable to any operations at this facility.
Subpart Ec	NSPS for Medical Waste Incinerators	Not applicable to any operations at this facility.
Subpart F	NSPS for Portland Cement Plants	Not applicable to any operations at this facility
Subpart G	NSPS for Nitric Acid Plants	Not applicable to any operations at this facility
Subpart H	NSPS for Sulfuric Acid Plants	Not applicable to any operations at this facility
Subpart I	NSPS for Asphalt Concrete Plants	Not applicable to any operations at this facility
Subpart J	NSPS for Petroleum Refineries	Not applicable to any operations at this facility
Subpart K	NSPS for Petroleum Liquid Storage Vessels Constructed or Modified between June 11, 1973 and May 19, 1978	Not applicable. No petroleum tanks at this facility with a capacity of 40,000 gallons or greater
Subpart Ka	NSPS for Volatile Organic Liquid Storage Vessels Constructed or Modified Between May 18, 1978 and July 23, 1984	Not applicable. No petroleum tanks at this facility with a capacity of 40,000 gallons or greater
Subpart Kb	NSPS for Volatile Organic Liquid Storage Vessels Constructed or Modified After July 23, 1984	Not applicable. No volatile organic liquid storage tanks with a capacity of 40 cubic meters or greater at this facility.
Subpart L	NSPS for Secondary Lead Smelters	Not applicable to any operations at this facility
Subpart M	NSPS for Secondary Brass and Bronze Production	Not applicable to any operations at this facility
Subpart N	NSPS for Basic Oxygen Process Furnaces Constructed After June 11, 1973	Not applicable to any operations at this facility
Subpart Na	NSPS for Basic Oxygen Process Steelmaking Facilities Constructed After January 20, 1983	Not applicable to any operations at this facility
Subpart O	NSPS for Sewage Treatment Plants	Not applicable to any operations at this facility
Subpart P	NSPS for Primary Copper Smelters	Not applicable to any operations at this facility
Subpart Q	NSPS for Zinc Smelters	Not applicable to any operations at this facility
Subpart R	NSPS for Primary Lead Smelters	Not applicable to any operations at this facility
Subpart S	NSPS for Primary Aluminum Reduction Plants	Not applicable to any operations at this facility
Subpart T	NSPS for Wet Process Phosphoric Acid Fertilizer Plants	Not applicable to any operations at this facility
Subpart U	NSPS for Superphosphoric Acid Fertilizer Plants	Not applicable to any operations at this facility
Subpart V	NSPS for Diammonium Phosphate Fertilizer Plants	Not applicable to any operations at this facility
Subpart W	NSPS for Triple Superphosphate Fertilizer Plants	Not applicable to any operations at this facility
Subpart X	NSPS for Granular Triple Superphosphate Plants	Not applicable to any operations at this facility
Subpart Y	NSPS for Coal Preparation Plants	Not applicable to any operations at this facility
Subpart Z	NSPS for Ferroalloy Production Plants	Not applicable to any operations at this facility
Subpart AA	NSPS for Electric Arc Furnaces Constructed Between October 21, 1974 and August 17, 1983	Not applicable to any operations at this facility
Subpart AAa	NSPS for Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983	Not applicable to any operations at this facility
Subpart BB	NSPS for Kraft Pulp Mills	Not applicable to any operations at this facility
Subpart CC	NSPS for Glass Manufacturing Plants	Not applicable to any operations at this facility
Subpart DD	NSPS for Grain Elevators	Not applicable to any operations at this facility
Subpart EE	NSPS for Surface Coating of Metal Furniture	Not applicable to any operations at this facility
Subpart GG	NSPS for Stationary Gas Turbines	Not Applicable to any operations at this facility
Subpart HH	NSPS for Lime Manufacturing Plants	Not applicable to any operations at this facility
Subpart KK	NSPS for Lead-Acid Battery Manufacturing Plants	Not applicable to any operations at this facility
Subpart LL	NSPS for Metallic Minerals Processing Plants	Not applicable to any operations at this facility
Subpart MM	NSPS for Automobile and Light Truck Surface Coating Operations	Not applicable to any operations at this facility
Subpart NN	NSPS for Phosphate Rock Plants	Not applicable to any operations at this facility
Subpart PP	NSPS for Ammonium Sulfate Manufacture	Not applicable to any operations at this facility
Subpart QQ	NSPS for Publication Rotogravure Printing	Not applicable to any operations at this facility
Subpart RR	NSPS for Pressure Sensitive Tape and Label Surface Coating Operations	Not applicable to any operations at this facility
Subpart SS	NSPS for Coating Large Appliances	Not applicable to any operations at this facility
Subpart TT	NSPS for Metal coil Surface Coating	Not applicable to any operations at this facility
Subpart UU	NSPS for Asphalt Processing and Asphalt Roofing Manufacture	Not applicable to any operations at this facility
Subpart VV	NSPS for Equipment Leaks of VOC in SOCMI Plants	Not applicable to any operations at this facility
Subpart WW	NSPS for Beverage Can Surface Coating Industry	Not applicable to any operations at this facility

TABLE 7
APPLICABLE REQUIREMENTS - FEDERAL REGULATIONS - GENERAL APPLICABILITY

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	APPLICABILITY
Subpart XX	NSPS for Bulk Gasoline Terminals	Not applicable to any operations at this facility
Subpart AAA	NSPS for Residential Wood Heaters	Not applicable to any operations at this facility
Subpart BBB	NSPS for Rubber Tire Manufacturing Industry	Not applicable to any operations at this facility
Subpart DDD	NSPS for VOC Emissions from Polymer Manufacturing	Not applicable to any operations at this facility
Subpart FFF	NSPS for Vinyl and Urethane Coating and Printing	Not applicable to any operations at this facility
Subpart GGG	NSPS for VOC Equipment Leaks at Petroleum Refineries	Not applicable to any operations at this facility
Subpart HHH	NSPS for Synthetic Fiber Production Facilities	Not applicable to any operations at this facility
Subpart III	NSPS for VOC Emissions from SOCMI Air Oxidation Unit Processes	Not applicable to any operations at this facility
Subpart JJJ	NSPS for Petroleum Dry Cleaners	Not applicable to any operations at this facility
Subpart KKK	NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing Plant	Not applicable to any operations at this facility
Subpart LLL	NSPS for SO2 Emissions from Onshore Natural Gas Processing	Not applicable to any operations at this facility
Subpart NNN	NSPS from VOC Emissions from SOCMI Distillation Operations	Not applicable to any operations at this facility
Subpart OOO	**NSPS for Non-metallic Minerals Processing**	**Applicable to Rock Crusher - See Table A2b**
Subpart PPP	NSPS for Wool Fiberglass Insulation Manufacturing	Not applicable to any operations at this facility
Subpart QQQ	NSPS for VOC Emissions from Petroleum Refinery Wastewater Operations	Not applicable to any operations at this facility
Subpart RRR	NSPS for VOC Emissions from SOCMI Reactor Processes	Not applicable to any operations at this facility
Subpart SSS	NSPS for Magnetic Tape Coating	Not applicable to any operations at this facility
Subpart TTT	NSPS for Surface Coating of Plastic Business Machine Parts	Not applicable to any operations at this facility
Subpart UUU	NSPS for Calciners and Dryers in Mineral Industries	Not applicable to any operations at this facility
Subpart VVV	NSPS for Polymeric Coating of Supporting Substrates	Not applicable to any operations at this facility
Subpart WWW	**NSPS for Municipal Solid Waste Landfills**	**Applicable to Landfills - See Table A2b**
Subpart AAAA	NSPS for Small Municipal Waste Combustion Units for which Construction Commenced after August 30, 1999 of for which Modification or Reconstruction Commenced after June 6, 2001	Not applicable to any operations at this facility
Subpart BBBB	Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed on or before August 30, 1999	Not applicable to any operations at this facility
Subpart CCCC	NSPS for Commercial and Industrial Solid Waste Incineration Units for which Construction Commenced after November 30, 1999 or for which Modification or Reconstruction Commenced on or after June 1, 2001	Not applicable to any operations at this facility
Subpart DDDD	Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction on or before November 30, 1999	Not applicable to any operations at this facility
Subpart HHHH	Emission Guidelines and Compliance Times for Coal-fired Electric Steam Generating Units	Not applicable to any operations at this facility
40 CFR 61, National Emission Standards for Hazardous Air Pollutants		
Subpart A	General Provisions	Not applicable because no other standard is applicable.
Subpart B	NESHAP for Radon Emissions from Underground Mines	Not applicable to any operations at this facility
Subpart C	NESHAP for Beryllium	Not applicable to any operations at this facility
Subpart D	NESHAP for Beryllium Rocket Motor Firing	Not applicable to any operations at this facility
Subpart E	NESHAP for Mercury	Not applicable to any operations at this facility
Subpart F	NESHAP for Vinyl Chloride	Not applicable to any operations at this facility
Subpart H	NESHAP for Emissions of Radionuclides other than Radon from DOE Facilities	Not applicable to any operations at this facility
Subpart I	NESHAP for Emissions of Radionuclides From NRC licensed facilities and Federal Facilities Not Covered by Subpart H	Not applicable to any operations at this facility
Subpart J	NESHAP for Equipment Leaks for Benzene	Not applicable to any operations at this facility
Subpart K	NESHAP for Radionuclide Emissions from Elemental Phosphorus Plants	Not applicable to any operations at this facility
Subpart L	NESHAP for Benzene Emissions from Coke By-Product Recovery Plants	Not applicable to any operations at this facility
Subpart M	NESHAP for Asbestos	Not applicable the Central Landfill does not accept regulated asbestos-containing materials.
Subpart N	NESHAP for Inorganic Arsenic Emissions from Glass Manufacturing Plants	Not applicable to any operations at this facility
Subpart O	NESHAP for Inorganic Arsenic Emissions from Primary Copper Smelters	Not applicable to any operations at this facility
Subpart P	NESHAP for Inorganic Arsenic Emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities	Not applicable to any operations at this facility
Subpart Q	NESHAP for Radon Emissions from DOE Facilities	Not applicable to any operations at this facility
Subpart R	NESHAP for Radon Emissions from Phosphogypsum Plants	Not applicable to any operations at this facility
Subpart T	NESHAP for Radon Emissions from the Disposal of Uranium Mine Tailings	Not applicable to any operations at this facility
Subpart V	NESHAP for Equipment Leaks	Not applicable to any operations at this facility
Subpart W	NESHAP for Radon Emissions from Operating Mill Tailings	Not applicable to any operations at this facility
Subpart Y	NESHAP for Benzene Emissions from Benzene Storage Vessels	Not applicable to any operations at this facility
Subpart BB	NESHAP for Benzene Emissions from Benzene Transfer Operations	Not applicable to any operations at this facility
Subpart FF	NESHAP for Benzene Waste Operations	Not applicable to any operations at this facility
40 CFR 63, National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT Standards)		
Subpart A	General Provisions	Applicable - See Table A2b
Subpart B	Requirements for Control Technology Determinations for Major Sources per CAA Sections 112(g) and (j)	Not applicable because no emissions unit is a major HAP source. See Appendix D for supporting calculations

TABLE 7
APPLICABLE REQUIREMENTS - FEDERAL REGULATIONS - GENERAL APPLICABILITY

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	APPLICABILITY
Subpart D	Requirements for Early Reductions of HAPs	Not applicable. This facility has not applied for early reductions.
Subpart F	NESHAP for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry (SOCMI)	Not applicable to any operations at this facility
Subpart G	NESHAP for SOCMI Process Vents, Storage Vessels, Transfer Operations, and Wastewater	Not applicable to any operations at this facility
Subpart H	NESHAP for Hazardous Organic Air Pollutants for Equipment Leaks	Not applicable to any operations at this facility
Subpart I	NESHAP for Hazardous Organic Air Pollutants for Sources Subject to the Negotiated Regulation Equipment Leaks	Not applicable to any operations at this facility
Subpart J	NESHAP for PVC and Copolymers Production	Not applicable to any operations at this facility
Subpart L	NESHAP for Coke Oven Batteries	Not applicable to any operations at this facility
Subpart M	NESHAP for Perchloroethylene Dry Cleaners	Not applicable to any operations at this facility
Subpart N	NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks	Not applicable to any operations at this facility
Subpart O	NESHAP for Ethylene Oxide Emissions for Sterilization Facilities	Not applicable to any operations at this facility
Subpart Q	NESHAP for Industrial Process Cooling Towers Using Chromium-Based Water Treatment	Not applicable. No cooling towers at this facility.
Subpart R	NESHAP for Gasoline Distribution Facilities	Not applicable to any operations at this facility
Subpart S	NESHAP for Pulp and Paper Industry	Not applicable to any operations at this facility
Subpart T	NESHAP for Halogenated Solvent Cleaning	Not applicable - no halogenated solvent used in cold cleaner.
Subpart U	NESHAP for Elastomer and Synthetic Rubber Production	Not applicable to any operations at this facility
Subpart W	NESHAP for Epoxy Resins Production and Non-nylon Polyamides Production	Not applicable to any operations at this facility
Subpart X	NESHAPS for Secondary Lead Smelting	Not applicable to any operations at this facility
Subpart Y	NESHAP for Marine Tank Vessel Loading Operations	Not applicable to any operations at this facility
Subpart X	NESHAP for Secondary Lead Smelting	Not applicable to any operations at this facility
Subpart AA	NESHAP for Phosphoric Acid Manufacturing	Not applicable to any operations at this facility
Subpart BB	NESHAP for Phosphate Fertilizer Production Plants	Not applicable to any operations at this facility
Subpart CC	NESHAP for Petroleum Refineries	Not applicable to any operations at this facility
Subpart DD	NESHAP for Off-site Waste and Recovery Operations	Not applicable to any operations at this facility
Subpart EE	NESHAP for Magnetic Tape Manufacturing Operations	Not applicable to any operations at this facility
Subpart GG	NESHAP for Aerospace Manufacturing and Rework Facilities	Not applicable to any operations at this facility
Subpart HH	NESHAP for Oil and Gas Production Facilities	Not applicable to any operations at this facility
Subpart II	NESHAP for Shipbuilding and Ship Repair (Surface Coating)	Not applicable to any operations at this facility
Subpart JJ	NESHAP for Wood Furniture Manufacturing Operations	Not applicable to any operations at this facility
Subpart KK	NESHAP for Printing and Publishing Industry	Not applicable to any operations at this facility
Subpart LL	NESHAP for Primary Aluminum Reduction Plants	Not applicable to any operations at this facility
Subpart MM	NESHAP for Chemical Recovery Combustion Sources atKraft, Soda, Sulfite and Stand-alone Semi-chemical Pulp Mills	Not applicable to any operations at this facility
Subpart OO	NESHAP for Tanks- Level 1	Not applicable to any operations at this facility
Subpart PP	NESHAP for Containers	Not applicable to any operations at this facility
Subpart QQ	NESHAP for Surface Impoundments	Not applicable to any operations at this facility
Subpart RR	NESHAP for Individual Drain Systems	Not applicable to any operations at this facility
Subpart SS	NESHAP for Closed Vent Systems, Control Devices, Recovery Devices, and Routing to a Fuel Gas System or Process	Not applicable to any operations at this facility
Subpart TT	NESHAP for Equipment Leaks - Control Level 1	Not applicable to any operations at this facility
Subpart UU	NESHAP FOR Equipment Leaks - Control Level 2	Not applicable to any operations at this facility
Subpart VV	NESHAP for Oil-Water Separators and Organic-Water Separators	Not applicable to any operations at this facility
Subpart WW	NESHAP for Storage Vessels - Control Level 2	Not applicable to any operations at this facility
Subpart XX	NESHAP for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations	
Subpart YY	NESHAP FOR Source Categories: Generic MACT	Not applicable to any operations at this facility
Subpart CCC	NESHAP for Steel Pickling - HCl Process Facilities and Hydrochloric Acid Regeneration Plants	Not applicable to any operations at this facility
Subpart DDD	NESHAP for Mineral Wool Production	Not applicable to any operations at this facility
Subpart EEE	NESHAP for Hazardous Waste Combustors	Not applicable to any operations at this facility
Subpart GGG	NESHAP for Pharmaceuticals Production	Not applicable to any operations at this facility
Subpart HHH	NESHAP for Natural Gas Transmission and Storage Facilities	Not applicable to any operations at this facility
Subpart III	NESHAP for Flexible Polyurethane Foam Production	Not applicable to any operations at this facility
Subpart JJJ	NESHAP for Group IV Polymers and Resins	Not applicable to any operations at this facility
Subpart LLL	NESHAP for Portland Cement Manufacturing	Not applicable to any operations at this facility
Subpart MMM	NESHAP for Pesticide Active Ingredient Production	Not applicable to any operations at this facility
Subpart NNN	NESHAP for Wool Fiberglass Manufacturing	Not applicable to any operations at this facility
Subpart OOO	NESHAP for Manufacture of Amino/Phenolic Resins	Not applicable to any operations at this facility
Subpart PPP	NESHAP for Polyether Polyols Production	Not applicable to any operations at this facility
Subpart QQQ	NESHAP for Primary Copper Smelting	Not applicable to any operations at this facility
Subpart RRR	NESHAP for Secondary Aluminum Production	Not applicable to any operations at this facility

TABLE 7
APPLICABLE REQUIREMENTS - FEDERAL REGULATIONS - GENERAL APPLICABILITY

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	APPLICABILITY
Subpart TTT	NESHAP for Primary Lead Smelting	Not applicable to any operations at this facility
Subpart UUU	NESHAP for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units	Not applicable to any operations at this facility
Subpart VVV	NESHAP for Publicly Owned Treatment Works	
Subpart XXX	NESHAP for Ferroalloys Production: Ferromanganese and Silicomanganese	Not applicable to any operations at this facility
Subpart AAAA	**NESHAP for Municipal Solid Waste Landfills**	**Applicable. See Table A2b.**
Subpart CCCC	NESHAP for Manufacturing of Nutritional Yeast	Not applicable to any operations at this facility
Subpart DDDD	NESHAP for Plywood and Composite Wood Products	Not applicable to any operations at this facility
Subpart EEEE	NESHAP for Organic Liquids Distribution (Non-gasoline)	Not applicable to any operations at this facility
Subpart FFFF	NESHAP for Miscellaneous Organic Chemical Manufacturing	Not applicable to any operations at this facility
Subpart GGGG	NESHAP for Solvent Extraction for Vegetable Oil Production	Not applicable to any operations at this facility
Subpart HHHH	NESHAP for Wet-Formed Fiberglass Mat Production	Not applicable to any operations at this facility
Subpart IIII	NESHAP for Surface Coating of Automobiles and Light-Duty Trucks	Not applicable to any operations at this facility
Subpart JJJJ	NESHAP for Paper and Other Web Coating	Not applicable to any operations at this facility
Subpart KKKK	NESHAP for Surface Coating of Metal Cans	Not applicable to any operations at this facility
Subpart MMMM	NESHAP for Surface coating of Miscellaneous Metal parts and Products	Not applicable to any operations at this facility
Subpart NNNN	NESHAP for Surface Coating of Large Appliances	Not applicable to any operations at this facility
Subpart OOOO	NESHAP for Printing, Coating, and Dyeing of Fabric and Other Textiles	Not applicable to any operations at this facility
Subpart PPPP	NESHAP for Surface Coating of Plastic Parts and Products	Not applicable to any operations at this facility
Subpart QQQQ	NESHAP for Surface Coating of Wood Building Products	Not applicable to any operations at this facility
Subpart RRRR	NESHAP for Surface Coating of Metal Furniture	Not applicable to any operations at this facility
Subpart SSSS	NESHAP for Surface Coating of Metal Coil	Not applicable to any operations at this facility
Subpart TTTT	NESHAP for Leather Finishing Operations	Not applicable to any operations at this facility
Subpart UUUU	NESHAP for Cellulose Products Manufacturing	Not applicable to any operations at this facility
Subpart VVVV	NESHAP for Boat Manufacturing	Not applicable to any operations at this facility
Subpart WWWW	NESHAP for Reinforced Plastic Composites Production	Not applicable to any operations at this facility
Subpart XXXX	NESHAP for Rubber Tire Manufacturing	Not applicable to any operations at this facility
Subpart YYYY	NESHAP for Stationary Combustion Turbines	Not applicable to any operations at this facility
Subpart ZZZZ	NESHAP for Stationary Reciprocating Internal Combustion Engines	Not applicable because this facility is not a major source of HAP
Subpart AAAAA	NESHAP for Lime Manufacturing Plants	Not applicable to any operations at this facility
Subpart BBBBB	NESHAP for Semiconductor Manufacturing	Not applicable to any operations at this facility
Subpart CCCCC	NESHAP for Coke Ovens: Pushing, Quenching, and Battery Stacks	Not applicable to any operations at this facility
Subpart DDDDD	NESHAP for Industrial and Commercial Boilers and Process Heaters	Not applicable because this facility is not a major source of HAP
Subpart EEEEE	NESHAP for Iron and Steel Foundries	Not applicable to any operations at this facility
Subpart FFFFF	NESHAP for Integrated Iron and Steel Manufacturing Facilities	Not applicable to any operations at this facility
Subpart GGGGG	NESHAP for Site Remediation	Not applicable to any operations at this facility
Subpart HHHHH	NESHAP for Miscellaneous Coating Manufacturing	Not applicable to any operations at this facility
Subpart IIIII	NESHAP for Mercury Emissions from Mercury Cell Chlor-alkali Plants	Not applicable to any operations at this facility
Subpart JJJJJ	NESHAP for Brick and Structural Clay Products Manufacturing	Not applicable to any operations at this facility
Subpart KKKKK	NESHAP for Clay Ceramics Manufacturing	Not applicable to any operations at this facility
Subpart LLLLL	NESHAP for Asphalt Processing and Asphalt Roofing Manufacturing	Not applicable to any operations at this facility
Subpart MMMMM	NESHAP for Flexible Polyurethane Foam Manufacturing	Not applicable to any operations at this facility
Subpart NNNNN	NESHAP for Hydrochloric Acid Production	Not applicable to any operations at this facility
Subpart PPPPP	NESHAP for Engine Test Cell Stands	Not applicable to any operations at this facility
Subpart QQQQQ	NESHAP for Friction Materials Manufacturing Facilities	Not applicable to any operations at this facility
Subpart RRRRR	NESHAP for Taconite Ore Processing	Not applicable to any operations at this facility
Subpart SSSSS	NESHAP for Refractory Products Manufacturing	Not applicable to any operations at this facility
Subpart TTTTT	NESHAP for Primary Magnesium Refining	Not applicable to any operations at this facility
40 CFR 64, Compliance Assurance Monitoring		Not applicable. Only sources using controls are landfills, which are subject to a post-1990 NSPS.
40 CFR 68, Chemical Accident Prevention		**Only the General Duty Clause is applicable. See Table A2b.**
40 CFR 72, 73, 75, 76, 77, Acid Deposition Control	Permits, Allowances, Continuous Emission Monitoring, NOx Emission Reductions, and Excess Emissions for Acid Rain Affected Facilities	Not applicable because this facility is not an acid rain affected facility.
40 CFR 82, Protection of Stratospheric Ozone		
Subpart A	Production and Consumption Controls on Class I and Class II Substances	Not applicable because this facility does not produce or consume Class I or II substances in its manufacturing process.
Subpart B	Servicing of Motor Vehicle Air Conditioners	Not applicable - no servicing of motor vehicle air conditioners on site
Subpart C	Ban on Non-essential Products Containing Class I and Class II Substances	Not applicable
Subpart E	Labeling of Products Using Ozone Depleting Substances	Not applicable because no Class I or II substances are used at this facility.
Subpart F	**Recycling and Emissions Reduction**	**Applicable to recovery of refrigerant from discarded refrigerators and air conditioners. See Table A2b.**

TABLE 8

APPLICABLE REQUIREMENTS - FEDERAL REGULATIONS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	APPLICABLE REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE	COMPLIANCE SCHEDULE
40 CFR 60, New Source Performance Standards						
Subpart A	General Provisions	Applicable - specific requirements included under applicable Subpart.	-	-	-	-
Subpart OOO	NSPS for Non-metallic Mineral Processing					
60.672(b) and (c)	Particulate Matter Standard	Visible emissions standard of 10% for transfer points and 15% for the crusher	Method 9	In compliance	Emissions Test on November 17, 2005	NA
60.676	Reporting	Notification of Date of initial startup per 676(i)	NA	In compliance	Notification sent on September 14, 2005.	NA
Subpart WWW	NSPS for Municipal Solid Waste Landfills	Applicable to all Phases - See details below	-	-	-	-
60.18	General Control Device Requirements	The open flares at the Central Landfill are subject to the velocity and opacity limitations.	Method 22	In compliance	Method 22	NA
60.752(a)	Requirements for landfills below applicable. thresholds	Not applicable	NA	NA	NA	NA
60.752(b)	Requires facilities over applicability threshold to comply with 60.752(b)(2) or to calculate NMOC emission rate to show non-applicability.	Facility must submit Design Capacity Report and Initial NMOC Emission Rate Report.	See 60.754	In compliance - Submitted on December 22, 1999	Facility records	NA
60.752(b)(2)	Facilities over threshold must submit a design plan for a collection and control system within 1 year and must install the system within 18 months within submittal of design plan. The system must conform to specifications in 60.759	Facility must submit collection and control system design.	See 60.754	In compliance - Submitted on December 22, 1999	Facility records	NA
60.753	Operational standards for collection and control systems	Facility must have system that meets standards	See 60.754	In compliance	Facility records	NA
60.754	Test methods and procedures	Specifies test methods and certain calculations required to demonstrate compliance.	2E, 3C, and 25C	In compliance	Facility records	NA
60.755	Compliance provisions	Specifies calculations and type and frequency required tests to determine compliance with certain provisions	See 60.754	In compliance	Facility records	NA
60.756	Monitoring of operations	Requires the installation of monitoring equipment to monitor landfill gas and control device performance, and the performance of regular testing of surface methane.	See 60.754	In compliance	Facility records	NA
60.757	Reporting Requirements	Requires submission of an initial design capacity report and includes other reporting requirements that depend on landfill status.	NA	In compliance	Facility records	NA
60.758	Recordkeeping Requirements	Facility must keep records of waste, results of performance tests, vendor specifications, monitoring results, exceedances, gas flow and other parameters.	NA	In compliance	Facility records	NA
60.759	Specifications for active collection systems	Facility must meet specifications	NA	In compliance	EPA review of plans	NA
40 CFR 63, National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT Standards)						
Subpart A	General Provisions	Certain requirements are applicable as shown in Table 1 of Subpart AAAA. Primary requirement is to develop and implement a Startup, Shutdown and Malfunction Plan.	NA	NA	NA	NA
Subpart AAAA	NESHAPS for Municipal Solid Waste Landfills	Applicable - Facility is required to comply with 40 CFR 60, Subpart WWW; prepare and implement a startup, shutdown and malfunction plan as required under 40 CFR 63.10(d)(5); and decrease the reporting interval from once per year to twice per year. The facility is not a bioreactor and is not subject to the provisions specific to bioreactors.	See Subpart WWW	In compliance	Facility records	NA
40 CFR 68, Chemical Accident Prevention		Only the general duty clause is applicable. Per CAA Q&A Database, March 1999, methane used as fuel at a landfill is not subject to the RMP requirements.	NA	NA	NA	NA

TABLE 8

APPLICABLE REQUIREMENTS - FEDERAL REGULATIONS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	APPLICABLE REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE	COMPLIANCE SCHEDULE
40 CFR 82, Protection of Stratospheric Ozone						
Subpart F	Recycling and Emissions Reduction	Applicable to recovery of refrigerant from discarded refrigerators and air conditioners	NA	In compliance	Facility records	NA
40 CFR 82.154	Prohibitions	Venting of certain refrigerants is prohibited.	NA	In compliance		NA
40 CFR 82.156	Required Practices	Specifies the required practices for opening of appliances for repair, service, maintenance or disposal	NA	In compliance		NA
40 CFR 82.158	Standards for Recycling and Recovery Equipment	Specifies the requirements for equipment used in the recovery of refrigerants.	NA	In compliance		NA
40 CFR 82.161	Technician Certification	Specifies the certification requirements for persons performing maintenance, service, repair, or disposal of appliances containing refrigerants	NA	In compliance	Facility records	NA
40 CFR 82.162	Certification by owners of recovery equipment	Requires that persons maintaining, servicing, repairing or disposing of appliances certify that the proper equipment has been obtained and the requirements of Subpart F are being observed	NA	In compliance	Certification sent to USEPA in March 2000	NA

TABLE 9
APPLICABLE REQUIREMENTS - PERMITS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Approvals 1035, 1037, 1038	Office of Air Resources must be notified of any planned physical or operational changes to flares	Remote Flare 1 and two Perennial Flares	Not applicable	In compliance	Facility records
Approval 1810 Emission Limits	Install landfill gas collection and control system (open flare meeting 40 CFR 60.18, control system meeting 98% destruction, or treatment system)	Phase V	Method 22 Method 25C or Method 18	In compliance	Facility records and quarterly surface scans
	Extract methane at a rate sufficient to prevent methane concentration levels at landfill surface from exceeding 500 ppm above background	Phase V	Method specified in Surface Emission Monitoring Plan	In compliance	Quarterly surface emissions monitoring
Approval 1810 Landfill gas collection system design & construction requirements	Install landfill gas collection system in accordance with the requirements of Section B of Approval 1810	Phase V	Not applicable	In compliance	Facility records and quarterly surface scans
Approval 1810 Gas Collection System Operating Requirements	Operate each wellhead and trench header with a landfill gas temperature of less than 131 F.	Phase V	Not specified	In compliance	Monthly wellhead monitoring
	Nitrogen level in wellheads and trench headers less than 20 percent or oxygen less than 5 percent	Phase V	3A or 3C	In compliance	Monthly wellhead monitoring
	Owner/operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well or trench	Phase V	Not applicable	In compliance	Not applicable
	Prevent excess moisture from entering the waste and trenches/wells	Phase V	Not specified	In compliance	Visual observation
	Vertical wellheads and trench headers operated with negative pressure, except under specified conditions	Phase V	Not specified	In compliance	Monthly wellhead monitoring
	Landfill gas collection equipment must be maintained in accordance with good air pollution control and engineering practices	Phase V	Not applicable	In compliance	Facility records
	Gas extraction blowers and all valves contributing to the venting must be closed within one hour	Phase V	Not applicable	In compliance	System Design
	Landfill gas collection system can be capped or removed under the conditions specified.	Phase V	Methods 2E and 25C	In compliance	Collection system has not been removed
Approval 1810 Wellhead/Trench Monitoring Requirements	Gauge pressure at each well and trench header must be monitored monthly.	Phase V	Not specified	In compliance	Facility records and quarterly surface scans
	Gas temperature, and nitrogen or oxygen concentration must be monitored monthly at each vertical well head and trench header.	Phase V	3A or 3C	In compliance	Facility records and quarterly surface scans
	Corrective action must be taken as specified for exceedance of well head parameters.	Phase V	Not applicable	In compliance	Semi-annual compliance reports
	Visual inspection and flow monitoring of each horizontal gas collection trench must be performed every 9 months.	Phase V	Not specified	In compliance	Facility records
Approval 1810 Surface Emission Monitoring	Surface methane concentration must be monitored quarterly following the required path. Corrective action must be taken as described in the permit.	Phase V	Method 21 as modified by Subpart WWW	In compliance	Quarterly surface scans
Approval 1810 VOC Content of Landfill Gas	VOC content must be tested annually	Phase V	Per approved protocol	In compliance, first test scheduled for 4/19/06	Method 25C
Approval 1810 Landfill Gas Flow Monitoring	Gas flow must be monitored hourly at each control device. Flow from each phase must be monitored separately.	Phase I, II, III, IV, V	Not specified	In compliance	Facility records
	If the data logging device is inoperable, then gas flow must recorded manually twice daily on Monday through Friday and once on Saturday. Flowmeter for manual readings must be calibrated every 13 months and compared against an annuabr for accuracy once per month.	Phase I, II, III, IV, V	Flow meter calibrated in accordance with manufacturer's specifications	In compliance	Facility records
	Monitor and record methane content and oxygen content at each individual control device twice per week.	Phase V	Not specified	In compliance	Facility records
	Monitor total quantity of waste deposited into Phase V	Phase V	Scale calibrated to NIST and Handbook 44	In compliance	Facility Records
	Implement program to monitor for cover integrity	Phase V	Not applicable	In compliance	Facility Records
Approval 1810 Vertical well soundings	Conducted yearly with corrective action taken within 5 days of discovering problem	Phase V	Per Well Sounding, Inspection, and Response Plan	In compliance, no vertical wells in place yet	Facility records

TABLE 9
APPLICABLE REQUIREMENTS - PERMITS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Approval 1810 Recordkeeping	Maintain on site for a least 5 years records of current amount of waste in-place, year-by-year waste acceptance rate, and location and date of all collection system exceedances	Phase V	Not applicable	In compliance	Facility Records
	Maintain records of waste acceptance into Phase V	Phase V	Not applicable	In compliance	Facility Records
	Maintain records of average monthly volume of landfill gas collected at each control device	Phase I, II, III, IV, V	Not applicable	Not applicable	Facility Records
	Maintain records of average monthly volume of gas collected from each landfill phase	Phase I, II, III, IV, V	Not applicable	Not applicable	Facility Records
	Maintain records of monthly average methane and oxygen of landfill gas from Phase V	Phase V	Not applicable	Not applicable	Facility Records
	Maintain records of monthly VOC emissions from each phase individually and the total of Phases I, II, II, IV, and V.	Phase V	Not applicable	Not applicable	Facility Records
	Total VOC emissions from all Phases for each twelve month period	Phase I, II, III, IV, V	Not applicable	Not applicable	Facility Records
	Maintain for the life of Phase V a plot map showing the location of each planned well and trench, the installation date and location of all wells and trenches.	Phase V	Not applicable	In compliance	Facility records
	Maintain records of the maximum expected gas flow rate or another approved method, year-by-year waste acceptance, the density of wells and other gas extraction devices as determined according to 40 CFR 60.759(a)(1), and documentation of non-degradable waste excluded from collection.	Phase V	Not applicable	In compliance	Facility records
Approval 1810 Recordkeeping	A quarterly surface monitoring report must be submitted 45 days after the close of each quarter, including a map showing Phase V exceedances, the methane quality at each collection system blower during the surface monitoring, a list of methane exceedances, description of corrective actions taken or planned, a certification that the surface emission monitoring plan was followed (with exceptions noted), and description of any routine minor collection system improvements.	Phase V	Not applicable	In compliance	Facility records
	An annual report must be submitted that includes value and duration of exceedances of wellhead monitoring parameters, description and duration of periods of bypass, description and duration of all periods when a control device was not operating for a period of one hour or more, periods when the collection system was not operating in excess of 5 days, the location of each exceedance of 500 ppm methane at the landfill surface, and the date of installation and location of any collection system expansion.	Phase V	Not applicable	In compliance	Facility records
	A closure report must be submitted within 30 days of cessation of waste acceptance.	Phase V	Not applicable	In compliance	Phase V is still accepting waste
	An equipment removal report must be submitted 30 days prior to removal or cessation of any control device	Phase V	Not applicable	In compliance	Control equipment has not been removed to date
	The Office of Air Resources must be notified prior to beginning construction on any significant additions to the gas collection system beyond those described in the landfill gas management plan for Phase V.	Phase V	Phase V Landfill Operational and Closure/Post Closure Landfill Gas Management Plan	In compliance	Facility records

TABLE 9
APPLICABLE REQUIREMENTS - PERMITS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Approval 1810 Recordkeeping	VOC emissions must be calculated monthly within 10 days after the close of each month and the Office of Air Resources must be notified within 15 days if the VOC emissions from Phases I - V exceed 99.45 tons in any 12-month period.	Phase I-V	Not applicable	In compliance	Facility records
	The Office of Air Resources must be notified of the initial date of placement of waste in the phase V landfill within 15 days	Phase V	Not applicable		Facility records
	The Office of Air Resources must be notified of any anticipated non-compliance with the terms of this permit.	Facility	Not applicable	In compliance	Facility records
	The Office of Air Resources must be notified of any non-compliance with the terms of this permit within 30 calendar days.	Facility	Not applicable	In compliance	Facility records
	The Office of Air Resources must be notified of any planned physical or operational changes to any emission unit that would materially change emissions or applicable requirements, result in a violation of the permit, or qualify as a modification under Regulation 9.	Facility	Not applicable	In compliance	Facility records
Approval 1810 Other Conditions	All records required by Approval 1810 must be kept for at least five years and must be made available to the Office of Air Resources.	Phase V	Not applicable	In compliance	Facility records
	Emission unit must be designed, constructed, and operated in accordance with the permit application	Phase V	Not applicable	In compliance	Facility records
	Facility must be maintained in a manner consistent with good air pollution control practices	Facility	Not applicable	In compliance	Facility records
	Permit applies at all times except during start-up, shutdown, or malfunctions	Facility	Not applicable	In compliance	Facility records
	Landfill gas system collection system can be capped when it meets NMOC emission rate criteria	Phase V	Not applicable	In compliance	Facility records
Approval 1810 Other Conditions	Facility must comply all applicable provisions of 40 CFR 60, Subparts A and WWW and 40 CFR 63, Subparts A and AAAA is required.	Phases I - V	Not applicable	In compliance	Facility records
Approval 1810 Offset Requirements	Facility must provide either purchase discrete emission reduction credits (DERs) or emission reduction credits (ERCs) if VOC emissions from Phases I - V exceed 99.45 tons per year.	Facility	Not applicable	In compliance	Monthly VOC calculation
	VOC emissions must be calculated per the methodology given in permit, including the use of the 2000 Base Case Gas generation model, as updated annually, including emissions during startup, shutdown and malfunction, and using the equations provided in the permit.	Phases I - V	Not applicable	In compliance	Facility records
	Owner/operator must certify within 20 days of the end of each month to Office of Air Resources that no malfunctions, unusual occurrences, or other circumstances would be cause for questioning whether the assumed efficiencies were achieved.	Phases I - V	Not applicable	In compliance	Facility records
	If owner/operator, EPA, or Office of Air Resources determines model requires change, other two parties must be notified within 45 days	Phases I - V	Not applicable	In compliance	Facility records
Approval 1838 - 1841 Emission Limits	NO_X Emission Limit of 7.1 gm/bhp-hr or 12.5 lb/hr	Compost Grinder 1 (E001)	Not specified	In compliance	Vendor Data
	CO emission limit of 1.7 gm/bhp-hr or 3.04 lb/hr		Not specified	In compliance	Vendor Data
	TNMHC emission limit of 0.16 gm/bhp-hr or 0.28 lb/hr		Not specified	In compliance	Vendor Data
	Fuel sulfur limit of 500 ppm by weight on or before May 31, 2010 and 15 ppm by weight on or after June 1, 2010.		Not specified	In compliance	Facility records
	SO_2 emission limit of 0.28 lb/hr on or before May 31, 2010 and 0.008 lb/hr on or after June 1, 2010		Not specified	In compliance	Vendor Data

TABLE 9
APPLICABLE REQUIREMENTS - PERMITS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Approval 1838 - 1841 Emission Limits	Particulate matter emission limit of 0.45 gm/bhp-hr or 0.79 lb/hr	Compost Grinder 1 (E001)	Not specified	In compliance	Vendor Data
	Opacity shall not exceed 10%, except for three minutes in any one hour. The opacity limit does not apply during the first five minutes of engine startup		40 CFR 60, Appendix A, Method 9	In compliance	Vendor Data
	NO_X Emission Limit of 8.8 gm/bhp-hr or 19.5 lb/hr	Compost Grinder 2 (E002)	Not specified	In compliance	Vendor Data
	CO emission limit of 0.8 gm/bhp-hr or 1.7 lb/hr		Not specified	In compliance	Vendor Data
	TNMHC emission limit of 0.05 gm/bhp-hr or 0.10 lb/hr		Not specified	In compliance	Vendor Data
	Fuel sulfur limit of 500 ppm by weight on or before May 31, 2010 and 15 ppm by weight on or after June 1, 2010.		Not specified	In compliance	Facility records
	SO_2 emission limit of 0.36 lb/hr on or before May 31, 2010 and 0.011 lb/hr on or after June 1, 2010		Not specified	In compliance	Facility records
	Particulate matter emission limit of 0.08 gm/bhp-hr or 0.19 lb/hr		Not specified	In compliance	Vendor Data
	Opacity shall not exceed 10%, except for three minutes in any one hour. The opacity limit does not apply during the first five minutes of engine startup		40 CFR 60, Appendix A, Method 9	In compliance	Visual observation
	NO_X Emission Limit of 7.0 gm/bhp-hr or 13.49 lb/hr	RecoverMat 1 Grinder (E003)	Not specified	In compliance	Vendor Data
	CO emission limit of 1.8 gm/bhp-hr or 3.51 lb/hr		Not specified	In compliance	Vendor Data
	TNMHC emission limit of 0.17 gm/bhp-hr or 0.33 lb/hr		Not specified	In compliance	Vendor Data
	Fuel sulfur limit of 500 ppm by weight on or before May 31, 2010 and 15 ppm by weight on or after June 1, 2010.		Not specified	In compliance	Facility records
	SO_2 emission limit of 0.31 lb/hr on or before May 31, 2010 and 0.009 lb/hr on or after June 1, 2010		Not specified	In compliance	Facility records
	Particulate matter emission limit of 0.49 gm/bhp-hr or 0.95 lb/hr		Not specified	In compliance	Vendor Data
Approval 1838 - 1841 Emission Limits	Opacity shall not exceed 10%, except for three minutes in any one hour. The opacity limit does not apply during the first five minutes of engine startup	RecoverMat 1 Grinder (E003)	40 CFR 60, Appendix A, Method 9	In compliance	Visual observation
	NO_X Emission Limit of 10.7 gm/bhp-hr or 3.3 lb/hr	Trommel Screener (E004)	Not specified	In compliance	Vendor Data
	CO emission limit of 2.08 gm/bhp-hr or 0.62 lb/hr		Not specified	In compliance	Vendor Data
	TNMHC emission limit of 0.5 gm/bhp-hr or 0.15 lb/hr		Not specified	In compliance	Vendor Data
	Fuel sulfur limit of 500 ppm by weight on or before May 31, 2010 and 15 ppm by weight on or after June 1, 2010.		Not specified	In compliance	Facility records
	SO_2 emission limit of 0.05 lb/hr on or before May 31, 2010 and 0.002 lb/hr on or after June 1, 2010		Not specified	In compliance	Facility records
	Particulate matter emission limit of 1.1 gm/bhp-hr or 0.33 lb/hr		Not specified	In compliance	Vendor Data
	Opacity shall not exceed 10%, except for three minutes in any one hour. The opacity limit does not apply during the first five minutes of engine startup		40 CFR 60, Appendix A, Method 9	In compliance	Visual observation
Approval 1838 - 1841 Operating Requirements	12-month fuel usage limited to 15,000 gallons combined for Compost Grinders and Trommel Screener	E001, E002, E004	Not applicable	In compliance	Facility records
	12-month fuel usage limited to 10,000 gallons for RecoverMat 1	E003	Not applicable	In compliance	Facility records
Approval 1838 - 1841 Continuous Monitoring	Each engine must be equipped with non-resettable elapsed time meter	E001 - E004	Not applicable	In compliance	Facility records
Approval 1838 - 1841 Fuel Oil Testing	Fuel oil used in the engines must be tested for sulfur and certified by the supplier or tested by RIRRC	E001 - E004	Not specified	In compliance	Facility records
Approval 1838 - 1841 Recordkeeping and Reporting	Monthly fuel use and operating hours for each engine must be recorded within 10 days after the first of each month.	E001 - E004	Not applicable	In compliance	Facility records

TABLE 9
APPLICABLE REQUIREMENTS - PERMITS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Approval 1838 - 1841 Recordkeeping and Reporting	12-month total fuel use by the compost grinders and trommel screener must be determined within ten days after the first of each month. OAR must be notified in writing whenever the 12-month the total exceeds 15,000 gallons.	E001, E002, E004	Not applicable	In compliance	Facility records
	12-month total fuel use by RecoverMat 1 must be determined within ten days after the first of each month. OAR must be notified in writing whenever the 12-month the total exceeds 10,000 gallons.	E003	Not applicable	In compliance	Facility records
	OAR must be notified of the actual startup date of each engine	E001, E002, E004	Not applicable		Facility Records
	OAR must be notified of any anticipated non-compliance with the permit or other applicable air pollution control requirements.	E001 - E004	Not applicable	In compliance	Facility Records
	Copies of all fuel oil certifications or analyses must be kept and made available to OAR and EPA. The records shall include a certification that the records represent all of the fuel combusted at the facility.	E001 - E004	Not applicable	In compliance	Facility Records
	OAR must be notified of any planned physical or operational changes	E001 - E004	Not applicable	In compliance	Facility Records
	OAR must be notified of any non-compliance with the terms of the permit in writing within 5 business days.	E001 - E004	Not applicable	In compliance	Facility Records
	All records required by the permit must be made available to OAR upon request.	E001 - E004	Not applicable	In compliance	Facility Records
Approval 1838 - 1841 Fugitive Dust	No visible emissions from the grinders, trommel screener, associated sources, or service roads may leave the property.	E001 - E004	40 CFR 60, Appendix A, Method 22	In compliance	Visual observation

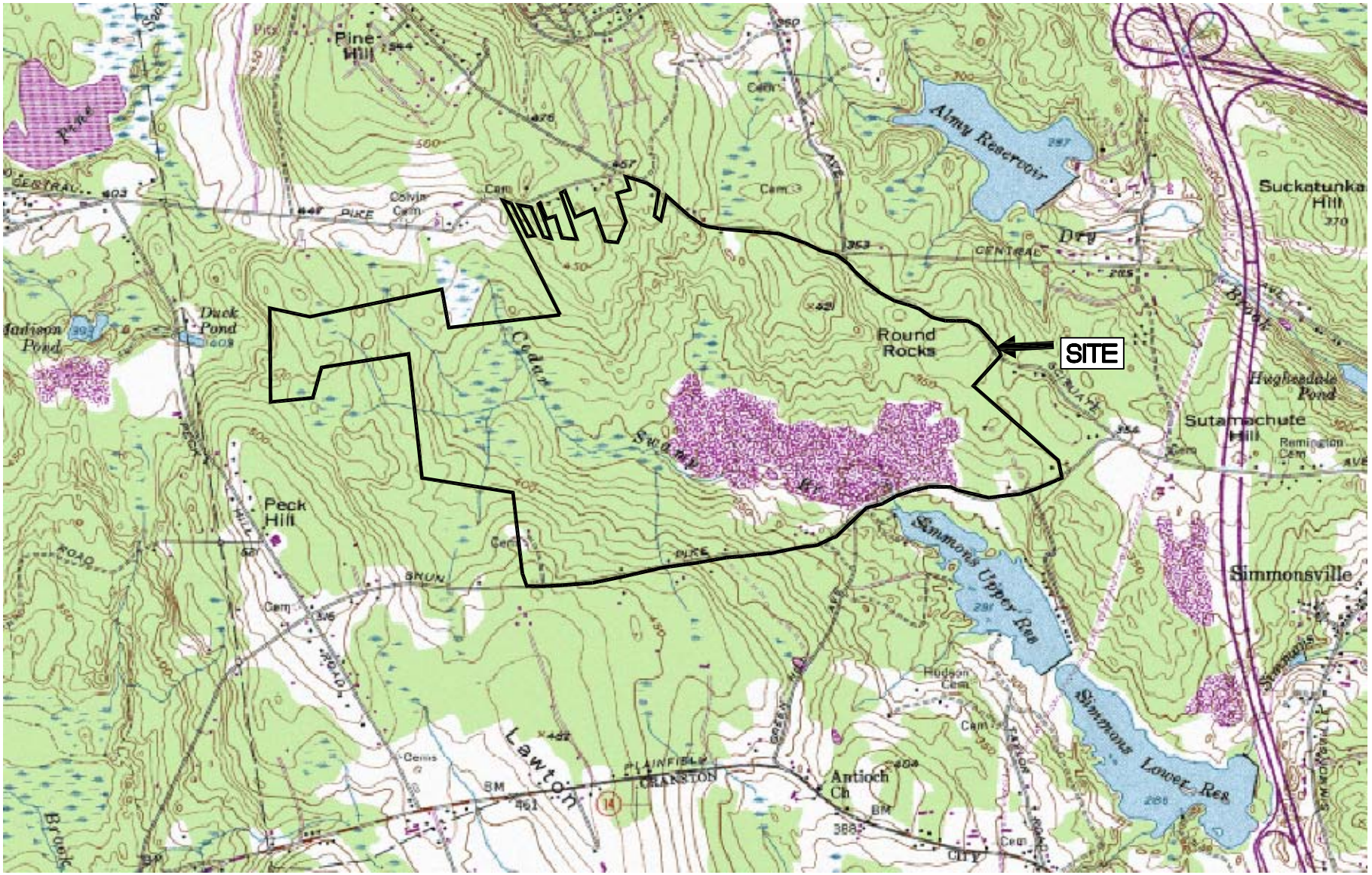
TABLE 10
APPLICABLE REQUIREMENTS - SUPPLEMENTAL ENVIRONMENTAL PROJECTS

Central Landfill
Johnston, Rhode Island

REGULATION OR REQUIREMENT	DESCRIPTION OF REQUIREMENT	UNITS SUBJECT TO REQUIREMENT	REFERENCE TEST METHOD	COMPLIANCE STATUS	METHOD OF DETERMINING COMPLIANCE
Forfeit renewal of solid waste operating licence	RIRRC shall terminate waste acceptance operations in Phase II and III by July 2003	Phase II and III	NA	In compliance	Facility records
Commence capping	No later than June 15, 2003	Phase I, II, and III	NA	In compliance	Facility records
Prioritize capping of the portions of Phase II and III that overlie Phase I	Areas 5 and 6 must be completed before any other areas	Phase I, II, and III	NA	In compliance	Facility records
Complete final capping	Completed by December 31, 2006	Phase I, II, and III	NA	In compliance	Facility records
Install vertical well gas collection system	Placed in conjunction with installation of final cap	Phase I, II, and III	NA	In compliance	Facility records
Complete capping of the western slope of the Central Landfill, Phase II and III	No later than December 31, 2003	Phase II and III	NA	In compliance	Facility records

FIGURE

FILE: P:\JOBS\32251\PHASEVI\CAD\LOCUS.DWG BY: Brian.Cooper DATE: 12 Apr 2007 – 2:58pm



AIR POLLUTION CONTROL PERMIT APPLICATION
CENTRAL LANDFILL

RHODE ISLAND RESOURCE RECOVERY CORPORATION

JOHNSTON, RHODE ISLAND

LOCUS PLAN

PROJECT No.: 32767.02

SHEET No.: 1

DES'D BY	: K.D.B.
CHK'D BY	: K.D.B.
APP'D BY	: M.P.N.
DRAWN BY	: M.A.
SCALE	: 1"=2000'
DATE	: APRIL 2007

GRAPHIC SCALE
2,000' 0' 2,000' 4,000'

GZA GeoEnvironmental, Inc.
Engineers and Scientists
380 HARVEY ROAD
(603) 623-3600 MANCHESTER, NEW HAMPSHIRE 03103

APPENDIX A

APPLICATION FORMS

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

APPLICATION FOR APPROVAL OF PLANS TO
CONSTRUCT, INSTALL, OR MODIFY PROCESS EQUIPMENT

Return to: RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES
235 PROMENADE STREET
PROVIDENCE, RI 02908

Section A

1. FULL BUSINESS NAME R.I. Resource Recovery Corporation PHONE 401-942-1430
2. ADDRESS OF EQUIPMENT LOCATION 65 Shun Pike, Johnston, RI 02919
   SIC CODE 4953 # EMPLOYEES 10+/-
3. LOCATION ON PREMISES (BLDG., DEPT., AREA, ETC.) Landfill Phase VI
4. NATURE OF BUSINESS Solid Waste Mangement

Section B

APPROVAL REQUESTED FOR:
1. CONSTRUCTION ☒ INSTALLATION ☐ MODIFICATION ☐
2. ESTIMATED STARTING DATE June 2009 ESTIMATED COMPLETION DATE 2010

Section C

EQUIPMENT INFORMATION (IF PROCESS IS A SURFACE COATING OPERATION, I.E. SPRAY PAINTING, PRINTING, COATING, ETC., COMPLETE SURFACE COATING SUPPLEMENT IN LIEU OF SECTIONS C AND D).

1. GENERAL DESCRIPTION OF PROCESS OR OPERATION Phase VI expansion of municipal solid waste landfill. Emissions from anaerobic decomposition of waste.
2. TYPE OF EQUIPMENT USED IN PROCESS Hauling and compacting equipment.
3. EXHAUST GAS FLOW RATE: NORMAL See Table 1 ACFM @ _____ °F
   MAXIMUM _____ ACFM @ _____ °F
4. AIR POLLUTION CONTROL EQUIPMENT: YES ☒ NO ☐ IF YES, FILE FORM AP-ICE *
5. OPERATING PROCEDURE: ☒ CONTINUOUS 24 HRS/DAY 7 DAYS/WEEK 52 WEEKS/YEAR
   ☐ BATCH ____ HRS/BATCH ____ BATCHES/WEEK ____ WEEKS/YEAR

Section D

RAW MATERIALS AND FUELS:

1. LIST RAW MATERIALS (STARTING MATERIAL USED IN PROCESS) AND FUELS (TYPE AND AMOUNT):

MATERIAL	BATCH/CONT.	ANN. AMT
Municipal Solid Waste	Batch	1,200,000 tons/yr

END PRODUCTS:

* RIRRC will file additional applications for the gas control system once they are selected. The appropriate AP-ICE Forms will be submitted at that time.

Section E

EMISSIONS INFORMATION:

POLLUTANT	RATE OF EMISSIONS (LB/HR)	METHOD USED TO DETERMINE EMISSIONS
See Tables 3, 4 and 5	See Tables 3, 4 and 5	Gas analysis and
		LFG Model

Section F

STACK INFORMATION:

1. STACK EXIT DIMENSIONS I.D. NA INCHES OR NA INCHES X NA INCHES
2. STACK HEIGHT ABOVE GROUND NA FEET
3. VOLUME OF GAS DISCHARGED INTO OPEN AIR NA ACFM @ NA ^{o}F
4. IS STACK EQUIPPED WITH A RAIN HAT? YES ☐ NO ☐
5. DISTANCE FROM DISCHARGE TO NEAREST PROPERTY LINE NA FEET

ADDITIONAL INFORMATION:

INCLUDE WITH THE SUBMITTAL ANY ADDITIONAL INFORMATION, PLANS, SPECIFICATIONS, EVIDENCE OR DOCUMENTATION TO ASSIST THE REVIEWER IN HIS ASSESSMENT.

This application is submitted in accordance with the provisions of Chapter 23-23 of the General Laws, as amended, Regulation 9, and to the best of my knowledge and belief is true and correct.

_____ _____

Signature Title

_____ _____

Printed Name Date

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES

SUPPLEMENT TO FORM AP-1PE
TO BE FILED FOR SURFACE COATING OPERATIONS

Section C

PROCESS/OPERATION

1. INDICATE TYPE OF PROCESS APPROVAL IS REQUESTED FOR:

PRINTING		SURFACE COATING	
LETTERPRESS	_____	SPRAY PAINTING	_____
LITHOGRAPH	_____	DIRECT ROLL	_____
GRAVURE	_____	REVERSE ROLL	_____
FLEXOGRAPHIC	_____	KNIFE COATING	_____
SCREEN	_____	FLOW COATING	_____
OFFSET	_____	ADHESIVE	_____
OTHER (SPECIFY)	_____	OTHER (SPECIFY)	_____

2. INDICATE MATERIAL BEING COATED _____
3. ARE OVENS USED IN PROCESS? YES ☑ NO ☐

   IF YES, COMPLETE THE FOLLOWING:

   A. DIRECTED FIRED_____ INDIRECT FIRED_____ FUEL TYPE _____
   B. NUMBER OF ZONES _____
   C. TEMPERATURE IN EACH ZONE _____
   D. NUMBER OF PASSES _____
4. EXHAUST GAS FLOW RATE/STACK _____ NORMAL ACFM @ _____^{O}F

   _____ MAXIMUM ACFM @ _____^{O}F
5. AIR POLLUTION CONTROL EQUIPMENT: YES ☐ NO ☐ IF YES, FILE FORM AP-1CE
6. OPERATING PROCEDURE: ☐ CONTINUOUS ____HRS/DAY ____DAYS/WEEK ____WEEKS/YEAR

   ☐ BATCH ____HRS/BATCH ____BATCHES/WEEK ____WEEKS/YEAR

Section D

COATINGS/INKS

1. PROVIDE THE FOLLOWING INFORMATION FOR EACH COATING OR INK USED IN PROCESS:
   A. BRAND NAME OR COMPANY DESIGNATION
   B. GENERIC NAME AND VOLUME % OF SOLVENTS IN COATING OR INK
   C. GENERIC NAME AND VOLUME % OF THINNERS ADDED TO COATING OR INK
   D. VOLUME % OF SOLIDS IN COATING OR INK
   E. APPROXIMATE ANNUAL CONSUMPTION
   F. APPLICATION RATE OF COATING
   G. SUPPLIER'S NAME AND ADDRESS
   H. DRAWINGS AND CALCULATIONS SHOWING COMPLIANCE WITH THE "GUIDELINES FOR DETERMINING CAPTURE EFFICIENCY FOR ADD-ON CONTROL DEVICES FOR WEB COATING OPERATIONS."
2. LIST THE END PRODUCTS

APPENDIX B

SUPPORTING CALCULATIONS

APPENDIX B
SUPPORTING DATA AND CALCULATIONS
VOC BASELINE EMISSIONS CALCULATIONS

Central Landfill
Johnston, Rhode Island

VOC BASELINE EMISSIONS IN TONS

For the purpose of estimating the emissions increase, modeled gas generation rates were used for both the baseline and future potential emissions. Baseline emissions using the model are calculated below. The baseline period is the two year period ending 12/31/2006. Baseline is the average annual emissions for this two-year period. Emissions are annual tons of VOC.

	2005	2006	Average
Phase I	5.1	4.1	4.6
Phase II/III	10.9	9.0	9.9
Phase IV	48.4	55.2	51.8
Phase V	1.0	47.5	24.2
Total for Phases I - V:	65.4	115.7	90.6

NMOC BASELINE EMISSIONS IN TONS

	2005	2006	Average
Phase I	5.1	4.1	4.6
Phase II/III	11.0	9.1	10.0
Phase IV	48.4	55.2	51.8
Phase V	1.0	47.5	24.2
Total for Phases I - V:	65.5	115.8	90.7

H_2S BASELINE EMISSIONS IN TONS

	2005	2006	Average
Phase I	0.35	0.28	0.32
Phase II/III	0.76	0.63	0.69
Phase IV	14.59	16.68	15.63
Phase V	0.64	29.69	15.17
Total for Phases I - V:	16.34	47.28	31.81

APPENDIX B
SUPPORTING CALCULATIONS
SUMMARY OF GAS COLLECTION AND DESTRUCTION 2005 - 2006

Central Landfill
Johnston, Rhode Island

Month and Year	VOLUME OF GAS IN MMSCF CORRECTED TO 50% METHANE															
	Phase I				Phase II/III				Phase IV				Phase V			
	Collected	Collection Efficiency	Generated	Fugitive	Collected	Collection Efficiency	Generated	Fugitive	Collected	Collection Efficiency	Generated	Fugitive	Collected	Collection Efficiency	Generated	Fugitive
Jan-05	59.52	90%	66.14	6.61	170.49	93%	183.33	12.83	141.62	85%	166.61	24.99	0.00	80%	0.00	0.00
Feb-05	31.77	90%	35.30	3.53	161.21	93%	173.34	12.13	155.08	85%	182.45	27.37	0.00	80%	0.00	0.00
Mar-05	24.91	90%	27.68	2.77	179.12	93%	192.60	13.48	163.91	85%	192.83	28.92	0.00	80%	0.00	0.00
Apr-05	23.36	90%	25.95	2.60	149.94	93%	161.23	11.29	182.09	85%	214.22	32.13	0.00	80%	0.00	0.00
May-05	23.39	90%	25.99	2.60	147.95	93%	159.08	11.14	180.52	85%	212.38	31.86	0.00	80%	0.00	0.00
Jun-05	55.74	90%	61.93	6.19	127.47	93%	137.07	9.59	203.90	85%	239.88	35.98	0.00	80%	0.00	0.00
Jul-05	42.78	90%	47.53	4.75	120.12	93%	129.17	9.04	210.61	85%	247.77	37.17	0.00	80%	0.00	0.00
Aug-05	65.83	90%	73.14	7.31	124.58	93%	133.96	9.38	183.52	85%	215.91	32.39	0.00	80%	0.00	0.00
Sep-05	61.46	90%	68.29	6.83	149.57	93%	160.83	11.26	166.90	85%	196.35	29.45	0.00	80%	0.00	0.00
Oct-05	66.45	90%	73.84	7.38	151.43	93%	162.83	11.40	165.91	85%	195.19	29.28	0.00	80%	0.00	0.00
Nov-05	74.95	90%	83.28	8.33	140.86	93%	151.46	10.60	172.25	85%	202.65	30.40	5.81	80%	7.26	1.45
Dec-05	79.75	90%	88.61	8.86	162.13	93%	174.34	12.20	154.83	85%	182.16	27.32	17.22	80%	21.53	4.31
2005 Total	609.91		677.67	67.77	1784.88		1919.23	134.35	2081.14		2448.40	367.26	23.03		28.78	5.76
Jan-06	69.60	90%	77.33	7.73	185.78	93%	199.76	13.98	166.47	85%	195.85	29.38	32.66	80%	40.83	8.17
Feb-06	50.55	90%	56.16	5.62	149.88	93%	161.16	11.28	158.16	85%	186.07	27.91	70.22	80%	87.77	17.55
Mar-06	61.17	90%	67.97	6.80	136.50	93%	146.77	10.27	220.92	85%	259.90	38.99	76.63	80%	95.78	19.16
Apr-06	50.20	90%	55.78	5.58	137.43	93%	147.77	10.34	216.34	85%	254.51	38.18	66.21	80%	82.76	16.55
May-06	51.87	90%	57.64	5.76	142.47	93%	153.20	10.72	260.38	85%	306.33	45.95	71.81	80%	89.76	17.95
Jun-06	48.10	90%	53.45	5.34	111.86	93%	120.28	8.42	250.25	85%	294.41	44.16	72.03	80%	90.04	18.01
Jul-06	51.62	94%	54.91	3.29	117.99	94%	125.52	7.53	261.32	89%	294.94	33.62	95.54	80%	119.43	23.89
Aug-06	50.90	94%	54.15	3.25	138.55	94%	147.39	8.84	274.16	89%	309.43	35.28	94.45	80%	118.07	23.61
Sep-06	40.99	94%	43.60	2.62	136.73	94%	145.46	8.73	241.47	89%	272.53	31.07	95.86	80%	119.82	23.96
Oct-06	32.54	94%	34.62	2.08	146.81	94%	156.18	9.37	246.71	89%	278.46	31.74	110.38	80%	137.97	27.59
Nov-06	42.00	94%	44.68	2.68	142.34	94%	151.43	9.09	220.21	89%	248.54	28.33	134.43	80%	168.04	33.61
Dec-06	51.61	94%	54.91	3.29	137.64	94%	146.42	8.79	223.95	89%	252.77	28.82	169.02	80%	211.27	42.25
2006 Total	601.15		655.20	54.04	1683.97		1801.34	117.37	2740.32		3153.75	413.42	1089.24		1361.55	272.31

Month and Year	VOLUME OF GAS IN MMSCF CORRECTED TO 50% METHANE										
	Main Flares			Remote Flare 1		Remote Flare 2		Remote Flare 3		ULE Flare	
	Phase I	Phase II/III	Phase IV	Phase IV	Phase V	Phase II/III	Phase IV	Phase II/III	Phase IV	Phase IV	Phase V
Jan-05	3.91	10.53	4.41	4.07	0.00	37.86	50.12	0.00	0.00	25.07	0.00
Feb-05	0.71	2.14	1.58	11.32	0.00	36.29	57.04	21.87	0.00	0.00	0.00
Mar-05	0.00	0.00	0.00	11.39	0.00	32.55	60.18	35.31	0.00	0.00	0.00
Apr-05	0.00	0.00	0.00	11.40	0.00	23.66	64.00	8.10	1.68	16.63	0.00
May-05	0.00	0.00	0.00	15.12	0.00	23.54	54.09	25.16	0.00	22.04	0.00
Jun-05	0.00	0.00	0.00	0.00	0.00	28.26	62.85	1.28	0.00	94.56	0.00
Jul-05	0.00	0.00	0.00	3.68	0.00	25.33	65.67	9.11	0.00	49.91	0.00
Aug-05	0.00	0.00	0.00	1.85	0.00	29.70	38.21	5.41	0.00	0.00	0.00
Sep-05	0.00	0.00	0.00	5.18	0.00	43.18	35.41	17.56	1.66	0.00	0.00
Oct-05	0.00	0.00	0.00	4.10	0.00	36.76	35.04	4.42	0.00	0.00	0.00
Nov-05	0.00	0.00	0.00	1.84	5.81	34.75	31.70	3.15	0.00	8.15	0.00
Dec-05	0.00	0.00	0.00	0.00	0.00	21.88	33.88	0.00	0.00	3.53	0.49
2005 Total	**4.62**	**12.67**	**5.99**	**69.94**	**5.81**	**373.77**	**588.20**	**131.38**	**3.34**	**219.89**	**0.49**
Jan-06	0.00	0.00	0.00	0.00	0.00	42.71	28.70	0.00	0.00	48.83	16.87
Feb-06	0.00	0.00	0.00	0.00	0.00	23.52	31.84	0.00	0.00	51.92	41.08
Mar-06	0.00	0.00	0.00	0.00	0.00	7.03	89.80	0.00	0.00	43.39	35.87
Apr-06	0.00	0.00	0.00	0.00	0.00	0.00	93.06	0.00	0.00	38.34	32.73
May-06	0.00	0.00	0.00	0.65	0.00	0.00	107.61	8.87	0.00	62.46	40.28
Jun-06	0.00	0.00	0.00	0.00	0.00	0.00	92.49	0.00	0.00	75.13	48.26
Jul-06	0.00	0.00	0.00	0.00	3.54	0.00	90.16	7.08	0.00	87.48	69.85
Aug-06	0.00	0.00	0.00	0.00	6.04	0.00	99.61	8.63	0.00	81.85	67.82
Sep-06	0.00	0.00	0.00	1.06	0.00	0.00	94.40	0.00	0.00	72.04	77.42
Oct-06	0.00	0.00	0.00	0.00	0.00	0.00	95.20	0.00	0.00	59.93	67.09
Nov-06	0.00	0.00	0.00	0.00	0.00	0.00	63.16	0.00	0.00	61.73	85.20
Dec-06	0.00	0.00	0.00	0.00	1.84	0.00	70.12	0.00	0.00	58.93	111.64
2006 Total	**0.00**	**0.00**	**0.00**	**1.71**	**11.42**	**73.26**	**956.15**	**24.58**	**0.00**	**742.03**	**694.11**

APPENDIX B
SUPPORTING CALCULATIONS
SUMMARY OF NMOC, VOC, and H2S 2005 - 2006

Central Landfill
Johnston, Rhode Island

Month and Year	NMOC, VOC, AND H2S EMISSIONS (TONS)													
	Phase I				Phase II/III				Phase IV				Phase V	
	NMOC	VOC	H2S		NMOC	VOC	H2S		NMOC	VOC	H2S		NMOC	VOC	H2S
Concentration	668.9 ppmv	663.9 ppmv	116.3 ppmv		668.9 ppmv	663.9 ppmv	116.3 ppmv		1119 ppmv	1119 ppmv	852.3 ppmv		1525 ppmv	1525 ppmv	2412.5 ppmv
Jan-05	0.50	0.50	0.09		0.97	0.97	0.17		3.18	3.18	2.42		0.00	0.00	0.00
Feb-05	0.27	0.27	0.05		0.92	0.91	0.16		3.48	3.48	2.65		0.00	0.00	0.00
Mar-05	0.21	0.21	0.04		1.02	1.02	0.18		3.67	3.67	2.80		0.00	0.00	0.00
Apr-05	0.20	0.20	0.03		0.86	0.85	0.15		4.08	4.08	3.11		0.00	0.00	0.00
May-05	0.20	0.20	0.03		0.85	0.84	0.15		4.05	4.05	3.08		0.00	0.00	0.00
Jun-05	0.47	0.47	0.08		0.73	0.72	0.13		4.57	4.57	3.48		0.00	0.00	0.00
Jul-05	0.36	0.36	0.06		0.69	0.68	0.12		4.72	4.72	3.60		0.00	0.00	0.00
Aug-05	0.56	0.55	0.10		0.71	0.71	0.12		4.11	4.11	3.13		0.00	0.00	0.00
Sep-05	0.52	0.51	0.09		0.85	0.85	0.15		3.74	3.74	2.85		0.00	0.00	0.00
Oct-05	0.56	0.56	0.10		0.87	0.86	0.15		3.72	3.72	2.83		0.00	0.00	0.00
Nov-05	0.63	0.63	0.11		0.81	0.80	0.14		3.86	3.86	2.94		0.25	0.25	0.40
Dec-05	0.67	0.67	0.12		0.93	0.92	0.16		3.47	3.47	2.64		0.75	0.75	1.18
2005 Total	**5.15**	**5.11**	**0.89**		**10.20**	**10.13**	**1.77**		**46.66**	**46.66**	**35.54**		**1.00**	**1.00**	**1.58**
Jan-06	0.59	0.58	0.10		1.06	1.05	0.18		3.73	3.73	2.84		1.41	1.41	2.24
Feb-06	0.43	0.42	0.07		0.86	0.85	0.15		3.55	3.55	2.70		3.04	3.04	4.81
Mar-06	0.52	0.51	0.09		0.78	0.77	0.14		4.95	4.95	3.77		3.32	3.32	5.25
Apr-06	0.42	0.42	0.07		0.79	0.78	0.14		4.85	4.85	3.69		2.87	2.87	4.53
May-06	0.44	0.43	0.08		0.81	0.81	0.14		5.84	5.84	4.45		3.11	3.11	4.92
Jun-06	0.41	0.40	0.07		0.64	0.63	0.11		5.61	5.61	4.27		3.12	3.12	4.93
Jul-06	0.25	0.25	0.04		0.57	0.57	0.10		4.27	4.27	3.25		4.14	4.14	6.54
Aug-06	0.25	0.24	0.04		0.67	0.67	0.12		4.48	4.48	3.41		4.09	4.09	6.47
Sep-06	0.20	0.20	0.03		0.66	0.66	0.12		3.95	3.95	3.01		4.15	4.15	6.56
Oct-06	0.16	0.16	0.03		0.71	0.71	0.12		4.03	4.03	3.07		4.78	4.78	7.56
Nov-06	0.20	0.20	0.04		0.69	0.68	0.12		3.60	3.60	2.74		5.82	5.82	9.21
Dec-06	0.25	0.25	0.04		0.67	0.66	0.12		3.66	3.66	2.79		7.32	7.32	11.57
2006 Total	**4.10**	**4.07**	**0.71**		**8.91**	**8.85**	**1.55**		**52.52**	**52.52**	**40.01**		**47.15**	**47.15**	**74.59**

Month and Year	NMOC EMISSIONS (TONS)										
	Main Flares			Remote Flare 1		Remote Flare 2		Remote Flare 3		ULE Flare	
	Phase I	Phase II/III	Phase IV	Phase IV	Phase V	Phase II/III	Phase IV	Phase II/III	Phase IV	Phase IV	Phase V
Jan-05	0.01	0.02	0.01	0.01	0.00	0.06	0.13	0.00	0.00	0.01	0.00
Feb-05	0.00	0.00	0.00	0.03	0.00	0.06	0.14	0.03	0.00	0.00	0.00
Mar-05	0.00	0.00	0.00	0.03	0.00	0.05	0.15	0.05	0.00	0.00	0.00
Apr-05	0.00	0.00	0.00	0.03	0.00	0.04	0.16	0.01	0.00	0.00	0.00
May-05	0.00	0.00	0.00	0.04	0.00	0.04	0.14	0.04	0.00	0.01	0.00
Jun-05	0.00	0.00	0.00	0.00	0.00	0.04	0.16	0.00	0.00	0.03	0.00
Jul-05	0.00	0.00	0.00	0.01	0.00	0.04	0.17	0.01	0.00	0.01	0.00
Aug-05	0.00	0.00	0.00	0.00	0.00	0.05	0.10	0.01	0.00	0.00	0.00
Sep-05	0.00	0.00	0.00	0.01	0.00	0.07	0.09	0.03	0.00	0.00	0.00
Oct-05	0.00	0.00	0.00	0.01	0.00	0.06	0.09	0.01	0.00	0.00	0.00
Nov-05	0.00	0.00	0.00	0.00	0.02	0.05	0.08	0.00	0.00	0.00	0.00
Dec-05	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.00	0.00	0.00	0.00
2005 Total	**0.01**	**0.02**	**0.02**	**0.18**	**0.02**	**0.57**	**1.49**	**0.20**	**0.01**	**0.06**	**0.00**
Jan-06	0.00	0.00	0.00	0.00	0.00	0.06	0.07	0.00	0.00	0.01	0.01
Feb-06	0.00	0.00	0.00	0.00	0.00	0.04	0.08	0.00	0.00	0.02	0.02
Mar-06	0.00	0.00	0.00	0.00	0.00	0.01	0.23	0.00	0.00	0.01	0.01
Apr-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.01	0.01
May-06	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.01	0.00	0.02	0.02
Jun-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.02	0.02
Jul-06	0.00	0.00	0.00	0.00	0.01	0.00	0.23	0.01	0.00	0.03	0.03
Aug-06	0.00	0.00	0.00	0.00	0.02	0.00	0.25	0.01	0.00	0.02	0.03
Sep-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.02	0.03
Oct-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.02	0.03
Nov-06	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.02	0.03
Dec-06	0.00	0.00	0.00	0.00	0.01	0.00	0.18	0.00	0.00	0.02	0.04
2006 Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.11**	**2.43**	**0.04**	**0.00**	**0.22**	**0.28**

APPENDIX B
SUPPORTING CALCULATIONS
SUMMARY OF NMOC, VOC, and H2S 2005 - 2006

Central Landfill
Johnston, Rhode Island

Month and Year	VOC EMISSIONS (TONS)										
	Main Flares			Remote Flare 1		Remote Flare 2		Remote Flare 3		ULE Flare	
	Phase I	Phase II/III	Phase IV	Phase IV	Phase V	Phase II/III	Phase IV	Phase II/III	Phase IV	Phase IV	Phase V
Jan-05	0.01	0.02	0.01	0.01	0.00	0.06	0.13	0.00	0.00	0.01	0.00
Feb-05	0.00	0.00	0.00	0.03	0.00	0.05	0.14	0.03	0.00	0.00	0.00
Mar-05	0.00	0.00	0.00	0.03	0.00	0.05	0.15	0.05	0.00	0.00	0.00
Apr-05	0.00	0.00	0.00	0.03	0.00	0.04	0.16	0.01	0.00	0.00	0.00
May-05	0.00	0.00	0.00	0.04	0.00	0.04	0.14	0.04	0.00	0.01	0.00
Jun-05	0.00	0.00	0.00	0.00	0.00	0.04	0.16	0.00	0.00	0.03	0.00
Jul-05	0.00	0.00	0.00	0.01	0.00	0.04	0.17	0.01	0.00	0.01	0.00
Aug-05	0.00	0.00	0.00	0.00	0.00	0.04	0.10	0.01	0.00	0.00	0.00
Sep-05	0.00	0.00	0.00	0.01	0.00	0.07	0.09	0.03	0.00	0.00	0.00
Oct-05	0.00	0.00	0.00	0.01	0.00	0.06	0.09	0.01	0.00	0.00	0.00
Nov-05	0.00	0.00	0.00	0.00	0.02	0.05	0.08	0.00	0.00	0.00	0.00
Dec-05	0.00	0.00	0.00	0.00	0.00	0.03	0.09	0.00	0.00	0.00	0.00
2005 Total	**0.01**	**0.02**	**0.02**	**0.18**	**0.02**	**0.56**	**1.49**	**0.20**	**0.01**	**0.06**	**0.00**
Jan-06	0.00	0.00	0.00	0.00	0.00	0.06	0.07	0.00	0.00	0.01	0.01
Feb-06	0.00	0.00	0.00	0.00	0.00	0.04	0.08	0.00	0.00	0.02	0.02
Mar-06	0.00	0.00	0.00	0.00	0.00	0.01	0.23	0.00	0.00	0.01	0.01
Apr-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.01	0.01
May-06	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.01	0.00	0.02	0.02
Jun-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.02	0.02
Jul-06	0.00	0.00	0.00	0.00	0.01	0.00	0.23	0.01	0.00	0.03	0.03
Aug-06	0.00	0.00	0.00	0.00	0.02	0.00	0.25	0.01	0.00	0.02	0.03
Sep-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.02	0.03
Oct-06	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.02	0.03
Nov-06	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.02	0.03
Dec-06	0.00	0.00	0.00	0.00	0.01	0.00	0.18	0.00	0.00	0.02	0.04
2006 Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.11**	**2.43**	**0.04**	**0.00**	**0.22**	**0.28**

Month and Year	H_2S EMISSIONS (TONS)										
	Main Flares			Remote Flare 1		Remote Flare 2		Remote Flare 3		ULE Flare	
	Phase I	Phase II/III	Phase IV	Phase IV	Phase V	Phase II/III	Phase IV	Phase II/III	Phase IV	Phase IV	Phase V
Jan-05	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
Feb-05	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.00
Mar-05	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Apr-05	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.00
May-05	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.00
Jun-05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.00
Jul-05	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Aug-05	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Sep-05	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Oct-05	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
Nov-05	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00
Dec-05	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00
2005 Total	**0.00**	**0.00**	**0.00**	**0.05**	**0.01**	**0.04**	**0.45**	**0.01**	**0.00**	**0.02**	**0.00**
Jan-06	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Feb-06	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01
Mar-06	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.01
Apr-06	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.01
May-06	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.01	0.01
Jun-06	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.01
Jul-06	0.00	0.00	0.00	0.00	0.01	0.00	0.07	0.00	0.00	0.01	0.02
Aug-06	0.00	0.00	0.00	0.00	0.01	0.00	0.08	0.00	0.00	0.01	0.02
Sep-06	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.02
Oct-06	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.02
Nov-06	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.02
Dec-06	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.03
2006 Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.01**	**0.73**	**0.00**	**0.00**	**0.07**	**0.17**

Note: Flare destruction efficiencies are 98% for open flares and 99.977% for ULE flar

APPENDIX C

COMPLIANCE CERTIFICATION

COMPLIANCE CERTIFICATION

Pursuant to the requirements of Rhode Island Air Pollution Control Regulation 9, Subsection 9.4.2(b), I hereby certify that all existing major stationary sources owned or operated by the Rhode Island Resource Recovery Corporation within the State of Rhode Island are in compliance with all applicable State and Federal air pollution rules and regulations under the Clean Air Act and federally enforceable compliance schedules.

Signature	Title
Printed Name	Date

APPENDIX D

INTERIM RHODE ISLAND COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN – LANDFILL SITING

RHODE ISLAND SOLID WASTE MANAGEMENT CORPORATION
West Exchange Center
260 West Exchange Street, Providence, Rhode Island 02903
401/831-4440
FAX 401/861-0830
JERROLD L. LAVINE, Chairman
THOMAS E. WRIGHT, Executive Director

November 25, 1992

Harry Baird, Chairman
The State Planning Council
Department of Administration
One Capitol Hill
Providence, RI 02908-5893

Dear Mr. Chairman:

It gives me great pleasure to hereby submit to the State Planning Council, on behalf of the Rhode Island Solid Waste Management Corporation, the Interim Rhode Island Comprehensive Solid Waste Management Plan -- Landfill Siting, dated November 1992.

We respectfully request that the Council consider this Interim Plan for adoption as Interim Element 171 of the State Guide Plan.

In order to begin the process leading to the development of additional landfill capacity on the Corporation's Johnston property it is essential that the solid waste element of the State Guide Plan be in place and that it establish, according to law, the Need for additional landfill capacity.

We further request that the Council certify the Need for additional landfill capacity so that the Corporation may proceed with facility development to advert a disposal crisis in July 1994.

The process of developing new landfill capacity includes identification a new landfill site by the Corporation; site certification by the State Planning Council; licensure by DEM of the Corporation's landfill design and facility construction. Since the Central Landfill is currently scheduled for closure on July 1, 1994, under the existing Johnston Consent Order, time is of the essence.

Sincerely,

Edward Connelly

Edward Connelly
Acting Deputy
Executive Director

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APPENDICES

SECTION 171-1 INTRODUCTION

1-1 Purpose

This is an Interim Rhode Island Comprehensive Solid Waste Management Plan (Interim Plan) which addresses only the following issues: the use of landfilling as a solid waste management disposal option; landfill capacity and the siting of additional landfills. This Interim Plan consists of an updated and extended version of the landfill-related portions of the Draft Comprehensive Solid Waste Management Plan dated August, 1992.

The purpose of this Interim Plan is to provide guidance, until a full Comprehensive Solid Waste Management Plan can be developed, for the environmentally sound siting, development, construction and operation of additional landfill capacity by the Solid Waste Management Corporation (Corporation) on property owned by the Corporation in Johnston to serve Rhode Island solid waste disposal needs.

An associated purpose of this Interim Plan is to establish the parameters for landfill siting and development in the State Guide Plan to enable the State of Rhode Island to move forward with the orderly development of needed landfill disposal capacity on Corporation-owned property in Johnston prior to the Central Landfill's scheduled closure date of July 1, 1994.

1-2 Objective

The objective of this Interim Plan is to establish the basis for the development of the programs, and facilities which meet identified needs for the management by means of landfilling of solid waste that protect and preserve the environment and public resources and promote the convenience, health, safety and welfare of the people of the State.

1-3 Scope

This Interim Plan is of limited scope and will ultimately be incorporated as a part of the full Rhode Island Comprehensive Solid Waste Management Plan.

1-4 Status

After more than a year of effort, work on the Comprehensive Solid Waste Management Plan, which was designed to serve as the solid waste element of the State Guide Plan, was suspended because of enactment of the solid waste amendments of 1992 and because of the establishment by Executive Order of a Select Commission to Study the Future of Solid Waste Management in Rhode Island. The new law requires

massive revision of the draft Comprehensive Plan because it prohibits the use of trash incinerators and mandates the recycling of 70 percent of the solid waste stream. Nonetheless, the legislation recognizes the continued need for solid waste landfills. The Select Commission has been charged with making a comprehensive report on all aspects of solid waste management. In order to avoid duplication of efforts, inconsistencies and conflicts, work on the Comprehensive Plan was placed in abeyance.

1-5 Necessity For This Interim Plan

In order to develop by July 1, 1994, essential solid waste disposal capacity to serve Rhode Island into the future, a solid waste element of the State Guide Plan must be in place. This Interim Plan will serve as the interim solid waste element of the State Guide Plan for the purpose of enabling the development of additional landfill capacity on the Corporation's Johnston property until a full Comprehensive Solid Waste Management Plan is developed and adopted as the solid waste element of the State Guide Plan.

While a hiatus in major system planning has resulted from the enactment of the new law and the establishment of the Select Commission, the necessity to develop essential new solid waste disposal capacity on the Corporation's Johnston land consistent with all laws and to ensure the public's health, safety and welfare are protected has become increasingly urgent.

In the 19-month period between December 1, 1992 and July 1, 1994, the Corporation must complete the landfill development process which begins with applying for and obtaining a site certificate from the State Planning Council and ends with the commencement of operation of a newly-constructed landfill.

In order to begin the site-certification process, this Interim Plan, with its Scope limited to landfill-related issues, is intended to serve, on an interim basis, as the solid waste element of the State Guide Plan.

SECTION 171-2 GOAL

2-1 Introduction

The purpose of this Section is the establishment, within the strictly limited Scope of this Interim Plan, of a Goal which will provide the basis and guidance for all actions taken pursuant to this Interim Plan.

2-2 Goal For The Development, on an Interim Basis, of Additional Landfill Capacity in Johnston.

Environmentally sound management of solid waste by landfilling that protects and preserves the environment and public resources and promotes the convenience, health, comfort, safety and welfare of the people of the state at reasonable cost including, in order of preference, source reduction, source separation and recycling, waste processing, and disposal.

SECTION 171-3 NEED

3-1 The Schedule

- The closure of Central Landfill as a primary waste disposal facility, as it existed as of June 1989, by July 1, 1994 is currently mandated by a Consent Order of the Superior Court.

- The Corporation has identified candidate sites on its Johnston property for the development of additional landfill capacity utilizing the methodologies and procedures developed in the Landfill Siting Project conducted for the Corporation by the University of Rhode Island.

- The process of conducting the necessary field surveys and environmental assessments to determine the best landfill footprint within these candidate sites is underway.

- Conceptual design of the landfill facility to be built on the identified footprint has begun.

- It is necessary for the Corporation to obtain from the State Planning Council certification of the landfill sites that have been identified according to Section 23-19-10.2 of the Rhode Island General Laws. It is not possible to determine the amount of time required for the site-certification process.

- Upon completion of the State Planning Council certification process, the Corporation must apply for and obtain a license from DEM of the designed facility. It is impossible to determine the length of the permitting process.

- When the permit is issued by DEM, the Corporation must then build the facility. A landfill facility, as planned by the Corporation and in conformance with all existing laws, can be built in seven to eight months, excluding construction during the winter.

- DEM has stated that it will not begin to process an application for landfill licensure unless the State Planning Council site certificate has first been issued.

- The State Planning Council, in order to certify a proposed landfill site, must determine that the site conforms with the State Guide Plan.

- The draft Comprehensive Plan, on which work has been halted as described in Section 1-4 of this Interim Plan, was to have been submitted to the State Planning Council for approval as the solid waste element of the State Guide Plan.

- Therefore, in order to provide a solid waste element of the State Guide Plan so that the process of siting, permitting and constructing additional landfill capacity on Corporation-owned property in Johnston can go forward as expeditiously as possible against the currently mandated closure date of July 1, 1994, this Interim Plan has been developed for approval by the State Planning Council to serve as the solid waste component of the State Guide Plan until the full Comprehensive Solid Waste Management Plan is completed and adopted.

Assuming a landfill can be built in eight months (not including winter) then construction must commence on or about October 1, 1993 in order to be ready by July 1, 1994.

This means the site certification application by the Corporation, the site-certification and Need determination process by the State Planning Council, a hydro-geological study, final landfill design and application for licensure by the Corporation, issuance of a license by DEM and the procurement by the Corporation of construction services by competitive bids must be accomplished in the 10-month period between December 1, 1992 and September 30, 1993.

This will be difficult unless all processes move with maximum dispatch.

3-2 Solid Waste Projections

3-2-1 Introduction

In order to effectively plan for solid waste management in the future, it is necessary to have an understanding of the quantities of waste that are likely to be managed by various means. The first part of gaining this understanding is to establish a reasonably accurate quantification of current waste management. Then the key factors affecting waste generation need to be identified and modeled to project future waste generation. The likely progress of recycling and composting programs also needs to be modeled to try to predict what quantities of waste will be managed by these programs in the future. The waste remaining after projected recycling and composting needs to be disposed in a landfill or managed at a waste processing facility. Projections have been developed which take into account all of these factors.

3-2-2 Methodology

A methodology has been developed to prepare projections of waste generated, recycled, composted and disposed in Rhode Island. These projections have been developed for inclusion in this Interim Plan, and supersede the projections contained in the June 1987 Statewide Resource Recovery System Development Plan. The projections take into account a number of variables which can affect waste quantities in the future, and are designed to determine a reasonable range of waste quantities to utilize for facility and program planning.

3-2-3 Estimate of 1990 Waste Quantities

The first step in developing the projections is to determine the quantities of waste generated, recycled/composted, and disposed in the base year of the projection (1990). The waste quantities disposed in Rhode Island are divided into commercial and municipal categories. Municipal waste represents that waste generated by residents, as well as certain institutional wastes, such as those generated by public schools. Commercial waste is the remainder of the waste stream.

In 1990, 421,613 tons of municipal waste were disposed in the Central Landfill. In addition, 48,603 tons were recycled at the Materials Recycling Facility. When waste disposed is added to waste recycled the resulting quantity is an estimate of waste generated. However, the 470,216 tons resulting from adding these two quantities does not represent statewide municipal waste generation, since not all municipal waste was disposed at the Central Landfill. Therefore, in order to calculate a statewide municipal waste generation, a per-capita waste generation rate is calculated for those towns that utilized the Central Landfill for a full year in 1990. This rate of 0.55 tons per person per year is consistent with that over the last few years, which indicates that it is not an anomaly. This rate is then applied to the population that did not utilize Central Landfill for a full year in 1990 to determine total statewide municipal waste generation, which is estimated to be 550,701 tons.

For commercial waste, the waste quantities in 1990 are extraordinarily low in comparison with other years due to migration of commercial waste to disposal facilities outside of the state. Therefore, the 1990 data could not be utilized to estimate commercial waste generation. A review of the historic quantities of commercial waste disposed at the Central Landfill indicates that the period of 1987 to 1988 is the most recent period in which the quantities of waste disposed at Central Landfill are likely to be representative of statewide waste generation. Therefore, the quantities of commercial waste disposed at the Central Landfill in 1987 and 1988 were divided by the number of employees in the state for

those two years, respectively, to calculate per-employee disposal rates. The average rate for the two years was applied to the 1990 employment estimate to estimate 1990 commercial waste disposal. This resulted in an estimate of 584,115 tons disposed in 1990.

The estimate of disposal of commercial waste in 1990 does not represent total waste generation, since some commercial waste was recycled. Based on anecdotal data reported by businesses to the Department of Environmental Management, and on commercial recycling rates experienced elsewhere, it was estimated that 15 percent of the commercial waste stream was recycled in 1990. Utilizing the waste disposal estimate and the recycling rate assumption, it is estimated that 687,194 tons of commercial waste were generated in 1990, of which 103,079 tons were recycled.

These estimates of waste quantities are shown in Table 1.

3-2-4 Waste Generation Projections

The 1990 estimates of 550,701 tons of municipal waste generated and 687,194 tons of commercial waste generated form the starting point of the projections. As population and employment increase, the municipal and commercial waste streams, respectively, are expected to grow. In other words, commercial waste is projected based on employment growth and municipal waste is projected based on population growth.

The projections of population and employment that are utilized in the projections are those developed by the state's Division of Planning. Another key variable in projecting waste quantities is the waste generation rate. In this methodology, the waste generation rate declines slightly over time, taking into consideration source reduction.

The waste projections are shown in Table 1.

3-2-5 Recycling/Composting Projections

Once waste generation is projected, the quantity of waste that is recycled or composted can be projected.

For the purposes of this Interim Plan only, it is assumed that 70 percent of the total waste stream will be recycled beginning in 1993. This assumption is based upon the statute which was enacted in 1992 mandating that 70 percent of the waste stream be recycled. This was done in this way because the statute does not specify when 70 percent recycling should be effectuated. Moreover, showing 70 percent recycling beginning in 1993 establishes the most conservative, minimum Need for disposal capacity.

The effect of 70 percent recycling is shown in Table 1.

WASTE PROJECTIONS --- 70 PERCENT RECYCLING

TABLE 1

	SUMMARY OF RESULTS: 70 PERCENT RECYCLING			MUNICIPAL WASTE			
	DOP STATEWIDE POPULATION	PROJECTED POPULATION	SDP CASE 3 PROJECTION	WASTE GENERATION	QUANTITY RECYCLED	DISPOSED	MUNICIPAL RECYCLING RATE
1985	967,910		451,329				
1986	975,021		457,756				
1987	982,132		464,275				
1988	989,242		470,887				
1989	996,353		477,593	554,170			
1990	1,003,464	1,003,464	484,395	550,701	38,347	512,354	7.0%
1991	1,007,268	1,007,268	490,837	556,392	49,588	506,805	8.9%
1992	1,011,072	1,011,072	497,364	562,159	60,828	501,331	10.8%
1993	1,014,876	1,014,876	503,978	568,000	397,600	170,400	70.0%
1994	1,018,680	1,018,680	510,681	573,919	401,743	172,176	70.0%
1995	1,022,484	1,022,484	517,472	579,915	405,941	173,975	70.0%
1996	1,025,467	1,025,467	523,647	584,637	409,246	175,391	70.0%
1997	1,028,450	1,028,450	529,897	589,414	412,589	176,824	70.0%
1998	1,031,433	1,031,433	536,220	594,245	415,972	178,274	70.0%
1999	1,034,416	1,034,416	542,620	599,133	419,393	179,740	70.0%
2000	1,037,399	1,037,399	549,095	604,077	422,854	181,223	70.0%
2001	1,039,683	1,039,683	556,096	607,456	425,219	182,237	70.0%
2002	1,041,967	1,041,967	563,187	610,872	427,611	183,262	70.0%
2003	1,044,251	1,044,251	570,368	614,327	430,029	184,298	70.0%
2004	1,046,535	1,046,535	577,640	617,820	432,474	185,346	70.0%
2005	1,048,819	1,048,819	585,005	621,353	434,947	186,406	70.0%
2006	1,050,996	1,050,996		623,612	436,529	187,084	70.0%
2007	1,053,173	1,053,173		625,900	438,130	187,770	70.0%
2008	1,055,350	1,055,350		628,215	439,751	188,465	70.0%
2009	1,057,527	1,057,527		630,559	441,391	189,168	70.0%
2010	1,059,704	1,059,704		632,931	443,052	189,879	70.0%

NOTE: This 70 percent recycling for waste projections has been developed because of the 1992 solid waste amendments.

WASTE PROJECTIONS --- 70 PERCENT RECYCLING

	SUMMARY OF RESULTS: 70 PERCENT RECYCLING			COMMERCIAL WASTE			
	DOP STATEWIDE EMPLOYMENT	PROJECTED EMPLOYMENT	SDP CASE 3 PROJECTION	WASTE GENERATION	QUANTITY RECYCLED	DISPOSED	COMMERCIAL RECYCLING RATE
1985	442,914		413,064				
1986	451,737		418,874				
1987	460,561		424,766				
1988	469,384		430,740				
1989	470,355		436,799				
1990	471,325	471,325	442,942	687,194	103,079	584,115	15.0%
1991	475,018	475,018	449,203	697,358	115,040	582,317	16.5%
1992	478,711	478,711	455,553	707,521	127,258	580,263	18.0%
1993	482,403	482,403	461,992	717,684	502,379	215,305	70.0%
1994	486,096	486,096	468,522	727,847	509,493	218,354	70.0%
1995	489,789	489,789	475,144	738,010	516,607	221,403	70.0%
1996	493,365	493,365	481,894	745,427	521,799	223,628	70.0%
1997	496,941	496,941	488,739	752,844	526,991	225,853	70.0%
1998	500,517	500,517	495,682	760,260	532,182	228,078	70.0%
1999	504,093	504,093	502,723	767,677	537,374	230,303	70.0%
2000	507,669	507,669	509,864	775,094	542,566	232,528	70.0%
2001	509,298	509,298	517,144	778,132	544,692	233,439	70.0%
2002	510,927	510,927	524,527	781,169	546,819	234,351	70.0%
2003	512,555	512,555	532,016	784,207	548,945	235,262	70.0%
2004	514,184	514,184	539,611	787,245	551,072	236,174	70.0%
2005	515,813	515,813	547,315	790,283	553,198	237,085	70.0%
2006	516,250	516,250		789,971	552,980	236,991	70.0%
2007	516,688	516,688		789,659	552,762	236,898	70.0%
2008	517,125	517,125		789,348	552,543	236,804	70.0%
2009	517,563	517,563		789,036	552,325	236,711	70.0%
2010	518,000	518,000		788,724	552,107	236,617	70.0%

TABLE 1, continued

NOTE: This 70 percent recycling case for waste projections has been developed because of the 1992 solid waste amendments

WASTE PROJECTIONS --- 70 PERCENT RECYCLING

TABLE 1, continued

	COMBINED WASTE			
	WASTE GENERATION	QUANTITY RECYCLED	DISPOSED (POST-RECYCLING)	RECYCLING RATE
1985				
1986				
1987				
1988				
1989				
1990	1,237,895	141,426	1,096,469	11.4%
1991	1,253,750	164,628	1,089,122	13.1%
1992	1,269,679	188,086	1,081,593	14.8%
1993	1,285,684	899,979	385,705	70.0%
1994	1,301,766	911,236	390,530	70.0%
1995	1,317,925	922,548	395,378	70.0%
1996	1,330,064	931,045	399,019	70.0%
1997	1,342,257	939,580	402,677	70.0%
1998	1,354,506	948,154	406,352	70.0%
1999	1,366,810	956,767	410,043	70.0%
2000	1,379,171	965,420	413,751	70.0%
2001	1,385,588	969,911	415,676	70.0%
2002	1,392,042	974,429	417,613	70.0%
2003	1,398,534	978,974	419,560	70.0%
2004	1,405,066	983,546	421,520	70.0%
2005	1,411,636	988,145	423,491	70.0%
2006	1,413,584	989,508	424,075	70.0%
2007	1,415,559	990,891	424,668	70.0%
2008	1,417,563	992,294	425,269	70.0%
2009	1,419,595	993,716	425,878	70.0%
2010	1,421,655	995,159	426,497	70.0%

NOTE: This 70 percent recycling case for waste projections has been developed because of the 1992 solid waste amendments.

3-2-6 Waste Disposal Projections

The quantity of waste requiring disposal is calculated by subtracting quantities recycled/composted from quantities generated. This represents the quantity of waste projected to require disposal at Central Landfill, and is shown in the "Disposed" column in Table 1.

3-3 Findings

- As a result of the scheduled closure of Central Landfill, as it existed as of June 1989, on July 1, 1994, in the existing Consent Order, additional solid waste disposal capacity must be developed and operational by that date to protect the environment and the public health, welfare and safety.

- The process of site certification, licensure and construction must begin immediately or time will run out on the process and municipalities will find themselves with no disposal capacity available within the state.

- The law prohibits the Corporation from utilizing existing landfills in the State for solid waste disposal without the consent of the landfill owner.

- There are no other alternative disposal methods that can be available to the Corporation within a 19-month time frame that can manage up to 3,000 tons/day or 700,000 to 800,000 tons/year of solid waste.

- It can be seen that even with maximum diversion of solid waste from the Central Landfill -- with 70 percent of the total waste stream mandated to be recycled by the new law, there would still remain nearly 400,000 tons of solid waste to be disposed of in 1993. Under the same extreme assumptions, the amount of solid waste requiring landfill disposal increases slightly in each succeeding year.

- In the event that the combined municipal/commercial solid waste recycling rate is closer to 20 percent than to 70 percent in 1993, the quantity of waste needing disposal would more than double.

3-4 Conclusion

- Based upon the findings above, there is established a manifest need to develop additional landfill capacity for the disposal of a minimum of 400,000 tons/year -- and more likely 700,000 tons/year of solid waste -- within the next 19 months.

SECTION 171-4 BACKGROUND

4-1 Recent History of Solid Waste Management in Rhode Island

Since the last state Solid Waste Management Plan was prepared in 1981, there have been major changes in the State's approach to solid waste management. These include major programs for source reduction and recycling, and an intensified effort to develop waste-to-energy facilities and reduce reliance on land disposal. The Corporation's 15-year effort to develop waste-to-energy facilities was terminated in 1992 with the enactment of legislation prohibiting the utilization of incineration.

The Draft Comprehensive Plan, this Interim Plan and the Corporation's 1987 Statewide Resource Recovery System Development Plan (SDP) and state legislation established priorities for planning which place source reduction and recycling as the preferred options. A municipal recycling program was initiated in the Fall of 1987 in two communities: West Warwick and East Greenwich. Over 70 percent of Rhode Island's households, located in over twenty communities, participate in the state's recycling program. In addition to the mandatory programs, 12 communities have started voluntary drop-off programs. By August 1992, the Corporation completed a major retrofit at the Johnston MRF, thereby providing additional recycling processing capacity so that the remainder of the state's households will have recycling programs. In addition, the Corporation has completed a waste composition analysis that provides valuable data for the development and implementation of waste reduction and recycling programs.

Solid waste disposal in Rhode Island is now largely a function of state government:

- Approximately 95 percent of Rhode Island's municipal solid waste and 40 percent of the commercial solid waste streams were disposed at one facility in 1991, the Corporation's Central Landfill in Johnston. In 1991, the other 60 percent of the commercial waste was being disposed of at out-of-state facilities in Maine, Massachusetts and New Hampshire, and it is estimated that approximately this percentage of the commercial waste stream continues to be disposed of out-of-state.

- Corporation subsidies are provided for recycling and disposal of municipal solid waste at state facilities.

- State legislation which, beginning in 1986, had mandated the construction of a system of three waste-to-energy facilities, was repealed in the 1992 session of the General Assembly.

- The Corporation is developing an integrated system of solid waste management facilities and programs based on the priorities of source reduction, source separation and recycling, waste processing and land disposal within the requirements of the legislation, DEM regulation, the courts, and economic conditions which includes: the Corporation and DEM Source Reduction Programs; the Statewide Municipal, Commercial and State Agency Recycling Programs, and the Materials Recovery Facility at the Central Landfill; the Corporation's existing Central Landfill; and the three landfills required by the Superior Court Consent Agreement.

4-2 The Draft Comprehensive Solid Waste Management Plan, Development and Abeyance

Work on the Comprehensive Plan began in July, 1991 with Corporation staff cooperating closely with staff from the Department of Environmental Management (DEM) to develop a framework for the Comprehensive Plan and to scope out its contents. The Comprehensive Plan was designed to be, and will be when all final approvals are complete, the guiding policy and program document of the Corporation and DEM.

Development of the draft Comprehensive Plan continued, with a Working Group providing detailed guidance and review on all aspects of the work, from August, 1991 until May, 1992. The Working Group included representatives from the Statewide Planning Program, the Governor's Office, the environmental community, the League of Cities and Towns, RIPEC, the Industry and DEM. The Working Group provided consensus approval of the draft Comprehensive Plan. The Corporation and DEM worked out agreements on final details. The draft Comprehensive Plan had been presented to the Technical Committee of the State Planning Council in a number of briefing sessions and agency approval clearing the draft Comprehensive Plan for public hearing had been provided by both the Corporation and DEM when the solid waste amendments were enacted.

4-3 The Solid Waste Amendments of 1992

The solid waste amendments of 1992 prohibit the use of incineration by the Corporation in its Comprehensive Plan and also cancels the system of three waste-to-energy facilities that had been in various stages of development: Construction and Service contracts had been obtained for the Quonset Point facility which was in the final stages of permitting; contracts had been put in place for the Johnston facility for which two years worth of permitting had been completed; contracts had been negotiated but not executed for the Central Falls Project. The amendment also mandates that the Corporation develop a system that "shall consist of at least two (2) waste processing facilities which may be privately owned each with a nameplate capacity not-to-exceed one

thousand (1,000) tons per day." This system shall include "a series of waste processing facilities designed to process a minimum of seventy percent (70%) of the municipal and commercial solid waste streams by employing an on site waste separation technology for the purpose of recycling and/or reusing a minimum of seventy percent (70%) of the solid waste stream . . . . " The new solid waste amendments are included here as Appendix A.

Because waste-to-energy facilities are included in textual discussions and analyses of management technologies, options and system configurations located throughout the draft Plan, and because tonnage projections of disposal requirements are based upon recycling levels calculated in the draft Plan, the new statute would appear to require very extensive modification of the draft Comprehensive Plan. Work on the draft Comprehensive Plan was suspended to assess the law's impact and to determine how to amend it to make it consistent with the new law.

4-4 The Select Commission to Study the Future of Solid Waste Management in Rhode Island

Furthermore, on September 30, 1992, Governor Sundlun issued Executive Order No. 92-22(A), establishing the "Select Commission to Study the Future of Solid Waste Management in Rhode Island." The Select Commission has been charged with studying all aspects of the solid waste problem with a view toward making comprehensive recommendations concerning the system, its structure and its financing by December 31, 1992. As a result, work on the draft Comprehensive Plan has been stayed pending the outcome of the Select Commission's work so as to avoid conflict and assure consistency. A copy of the Executive Order is incorporated as Appendix B.

4-5 The Johnston Consent Order

A significant legal matter that affects the Corporation is the Consent Order signed by the town of Johnston, the Corporation, and DEM. The Consent Order was signed in June 1989 to resolve the Town's 1988 Superior Court appeal of DEM's issuance of a solid waste disposal license to operate the Central Landfill. Among the provisions of the Consent Order is the establishment of the July 1, 1994 closure date for disposal of "primary wastes" (wastes that will not be incinerated, recycled or bypassed by another facility) at the Central Landfill, as it existed as of June 1989. The Consent Order allows the Central Landfill to continue to receive and dispose of "secondary wastes" (resource recovery facility ash-residue from recycling facilities and bypass waste) until 2009. The Consent Order is attached hereto as Appendix C.

As indicated in Section 6, the Corporation is considering alternative sites for a new landfill within its property

around the Central Landfill. After a statewide search (see Section 5-2) the top four candidate landfill sites identified are in Johnston with three of the sites situated partially on the Corporation's property. They are adjacent to the existing Central Landfill where they can provide sites for new landfill capacity.

The Town of Johnston, in a suit filed in 1991, asked the Superior Court to enjoin development of any new and expanded landfills in Johnston, claiming that such expansion and new landfills would violate the Consent Order. The position of the Corporation is that nothing in the Consent Order prohibits construction of new landfills in Johnston or expansion of existing landfill areas. A decision was rendered in March 1992, with a finding by the Superior Court that, ". . . neither the Consent Order, nor the two statutes relied upon by the Town, precludes the siting of additional or expanded landfills within the borders of the Town . ." The Town appealed the March 1992 decision to the Rhode Island Supreme Court.

The Supreme Court, in a recent decision, upheld the lower court in its finding that additional landfill capacity can be developed on the Corporation's Johnston property.

The Consent Order requires the Corporation to site two new sanitary landfills by 1994 and 1996. Given the extreme difficulties that have been encountered in the siting of controversial facilities in Rhode Island, there is no practical likelihood that a major inter-local sanitary landfill can be sited and licensed in Rhode Island in less than 10 years, if at all. NIMBY (Not in My Backyard) is only part of the siting problem in Rhode Island; there now is NIMNBY (Not in My Neighbor's Backyard) where municipalities adjoining potential host communities join or lead the opposition to the proposed facility.

The Central Landfill, as it existed as of June 1989, must be closed to primary waste by July 1, 1994, but there is no practical reality that additional landfill capacity can be sited elsewhere in the State and licensed in the foreseeable future.

SECTION 171-5 SITING NEW LANDFILLS

5-1 Introduction

The Corporation, under the Consent Order, was mandated to identify two additional sanitary landfill sites.

5-2 The URI Siting Project

In 1989, the Corporation commissioned the University of Rhode Island to undertake research studies concerning landfill siting. Scientists and researchers in the Departments of Resource Economics, Geology and Natural Resources Science carried out this research effort.

The process identified sites, compared locational/geological factors, and graded and numerically ranked sites using a computer model developed by the Department of Natural Resources Science. The final site comparison used ranks and scores from a model developed by the Department of Resource Economics and the Environmental Data Study performed by the Environmental Data Center (EDC) in the Department of Natural Resources Science to identify the areas in the state where landfill siting is legally permissible, and most acceptable from an environmental standpoint.

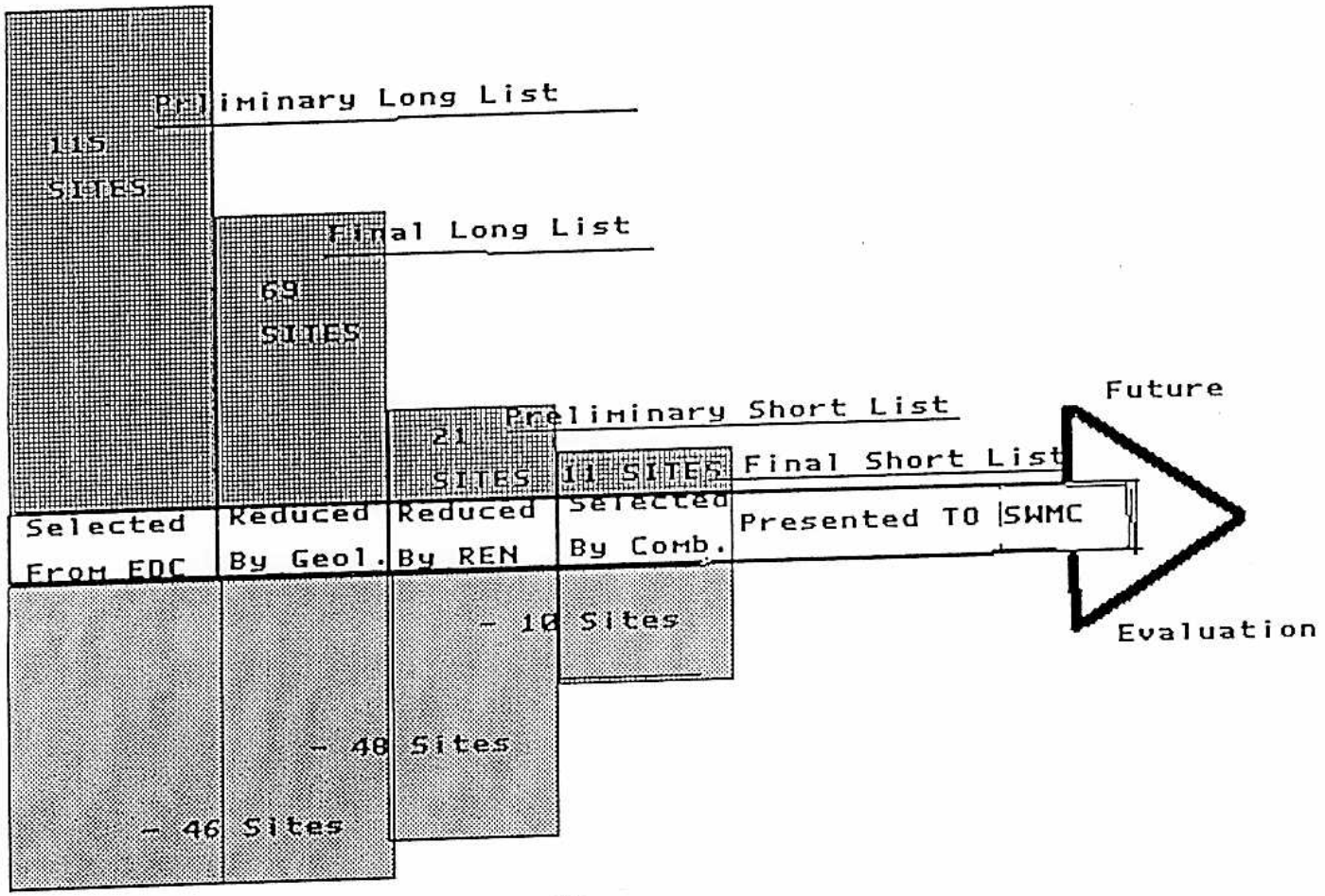
The site identification process used the EDC environmental preference study to yield a preliminary list of 115 sites. A general locational/geological analysis for least desirable effects reduced the list to a final long list of 69 potential sites. The Department of Resource Economics model determined numerical scores and a ranked list for those 69 sites. Selection of a group of highest preference resulted in a preliminary short list of 21 candidate sites. These sites were then compared with a long list rank ordered as scored by the EDC study. Sites in the preliminary short list which were ranked most favorably for environmental acceptability were retained to yield a final short list of 11 sites.

Figure 1 shows the progressive reduction of sites through the screening process and Figure 2 shows the approximate location of the final short list of 11 sites.

Under the terms of the Consent Order, the potential landfill sites which the Corporation must identify are shown in Figure 3. These four sites have been selected by the Corporation on the basis of integrating the final environmental factor ranking of each site with each site's final resource economic ranking. According to the mathematical integration of these environmental factors and resource economics rankings developed in the Landfill Siting

FIGURE 1

PROGRESSIVE REDUCTION OF SITES: THE OVERALL ALTERNATIVE SITE SCREENING PROCESS



Project, these sites are the highest ranking four candidate landfill sites in the State of Rhode Island.

An additional major criterion for the selection of these four sites is the consideration that the Corporation already owns portions of each of the four sites and major portions of two sites. Therefore, potential hardships to families who would be dislocated by the taking of land will be eliminated or reduced. Moreover, the economic burden of the Corporation acquiring additional land would also be eliminated or minimized.

Each of the sites shown on Figure 3 is 400 acres in size which is a nominal size chosen for the purposes of standardization and uniformity when performing the statewide site screening in the Landfill Siting Project and to assure adequate operational and buffer areas. The Landfill Siting Project assumed that the candidate landfill sites would be free-standing with a licensed landfill area of 75 to 100 acres surrounded by sufficient additional area to provide an adequate buffer around the licensed area.

The individual landfill capacity scenarios examined in Section 6 evaluate the footprints of prospective new landfills all of which fall within the boundaries of one or more of the top-ranked candidate landfill sites referenced above which have been identified by the URI Landfill Siting Project.

The Landfill Siting Project Final Report, including Volume I, "The Integration, The Alternative Site Screening Process"; Volume II, "The Integration, The Alternative Site Screening Process", Technical Appendices; Volume III, "The Resource Economics Study, a Landfill Site Evaluation Model that Addresses Public Preferences Regarding Impacts on Natural Resources and Local Communities"; Volume IV, "The Environmental Data Center Study, Facility Siting in Rhode Island", developed and written by URI, is hereby incorporated by reference.

SECTION 171-6 CENTRAL LANDFILL

6-1 Introduction

While landfilling is the lowest priority for solid waste management, it presently handles a significant amount of the solid waste available for disposal in Rhode Island. In 1991, over 95 percent of the municipal and 40 percent of the commercial waste streams are disposed at one landfill - the Central Landfill in Johnston. The other 60 percent of the commercial waste was and continues to be disposed of at out-of-state facilities in Maine, Massachusetts and New Hampshire.

As recently as 1970, there were 44 land disposal sites in Rhode Island, most of which were open burning dumps. With the advent of public concern over air pollution and passage of the Clean Air Act, open burning was banned, and communities turned to sanitary landfills to bury increasing quantities of waste. As these small local landfills gradually closed, cities and towns began to look outside their borders for disposal options. Consequently, by the late 1970's, 19 of Rhode Island's 39 communities were transporting their refuse to one facility - the Central Landfill in Johnston. In December 1980, the Corporation purchased the Central Landfill to serve Rhode Island's disposal needs until a system of solid waste management programs and facilities could be established.

6-2 Municipal Landfills

There were six municipal landfills in the State in 1991. These landfills served the towns of Bristol, Burrillville, Charlestown, North Providence, Tiverton and Westerly. In May 1991, Burrillville closed its landfill and is now using the Central Landfill. Westerly has closed its landfill and is now utilizing Central Landfill. The estimated lifespans of the remaining four landfills varies between 1 and 15 years with North Providence's landfill, according to town officials, having an estimated lifespan of less than one year. It should be noted, however, that these estimates are very rough. Upon closure of the landfills, the municipalities will enter into the Corporation's system.

6-3 Privately Owned Landfills

There are no operating or proposed private landfills in Rhode Island for mixed refuse and none are planned. There are, however, two other facilities that accept construction and demolition debris and recycled materials. The construction and demolition facility is located in North

Kingstown and is operating under a Court Order. The facility that accepts materials for recycling as well as construction and demolition debris is located in Johnston in close proximity to the Central Landfill and is operating under a Consent Agreement with DEM. In 1986, a third facility was proposed in Richmond for construction and demolition debris. This landfill has not yet been developed.

6-4 Ban of Eminent Domain to Acquire Existing Landfills

The 1992 solid waste amendments prohibit the Corporation from utilizing its power of eminent domain to obtain additional landfill capacity by condemning existing landfills, whether publicly or privately owned. This statute also prohibits the Corporation from ordering "a municipality which owns a sanitary landfill to accept solid waste from any other person or municipality ... "

6-5 Out-of-State Facilities

Portsmouth and Middletown dispose of their solid waste through a contract with the BFI landfill in Fall River, Massachusetts. It is a 10 year contract that expires in 1994. Upon expiration of the contract, these two municipalities must enter into the Corporation's system.

6-6 Brief Description of Central Landfill

The Central Landfill is located on a parcel of approximately 1,000 acres located in the Town of Johnston. It was purchased by the Corporation in December 1980 to serve the immediate needs of the people of Rhode Island until a system of solid waste management programs and resource recovery facilities could be developed and implemented. Presently, 154 acres are licensed for the disposal of solid waste, with approximately 121 acres being utilized. In 1990, the Central Landfill disposed of approximately 700,000 tons of waste including municipal and commercial wastes, demolition debris, municipal and commercial sludge and industrial non-hazardous liquids.

6-7 Evaluation of the Corporation's Johnston Property for Additional Landfill Capacity

The Corporation and its landfill consulting engineer, the Maguire Group Inc., have developed a Comprehensive Land Use Plan for the Central Landfill Site (the Land Use Plan). The term 'Landfill Site' in the title refers to the original 610 acre land holdings of the Corporation in Johnston. The purpose of the Land Use Plan is to: evaluate the characteristics of the Corporation's real estate; provide guidance in planning and budgeting for the design and

development of the utilization of the Corporation's property for the development of additional landfill capacity within legal, environmental, regulatory and economic constraints; and develop and evaluate options for locating required landfill facilities on the property. The Land Use Plan analyzes the development of the property currently underway, suggests modifications where necessary, and presents options to allow development of new landfill capacity on the Corporation's property in Johnston.

The Land Use Plan is dated March 2, 1992, with two addenda entitled "Landfill Capacity Alternatives Analysis (Northeast)", dated June, 1992; and "Landfill Capacity Alternatives Analysis (Southwest)", dated July 2, 1992. The Land Use Plan as modified in June and July 1992 is hereby incorporated by reference.

6-8 Existing Licensed Landfill Capacity

A phased development of the licensed area is underway to allow filling over the Phase I limits of waste placement and to allow expansion of the landfill into the Phase II and III areas. The term, 'Phase I' refers to the 121-acre portion of the Central Landfill which has been utilized to date for the disposal of solid waste. The terms, 'Phase II and III' refer to the licensed landfill expansion areas into which the Corporation plans to move landfilling operations in early 1993. When the Consent Order was issued, Phases II and III were not licensed; Phase I was the licensed Central Landfill at that time. However, the Town of Johnston may oppose the Corporation's plan to use Phases II and III beyond July 1, 1994, and the dispute is likely to end up in litigation, which may prevent the use of Phases II and III for months and possibly years. Therefore, the Corporation needs to have available alternative landfill disposal capacity as of July 1, 1994. The locations of Phases I, II and III are shown in Figure 2-1, Existing Site Layout, of the Land Use Plan, dated March 2, 1992.

According to the Land Use Plan, the approximate total disposal volume and tonnage capacity available for the Phases II and III expansion areas is as follows:

Phase	Available Disposal Volume in cubic yards	Solid Waste (tons)
II	4,758,475	2,617,161
III	2,299,429	1,264,686

Total tonnage capacity available from Phases II and III amounts to 3,881,847. Under the following assumptions, this amount of landfill capacity equates to the following landfill life expectancy (assuming no resource recovery facilities are in operation).

Tons per year	Years of Service
700,000	5.5
800,000	4.9
900,000	4.3
1,000,000	3.9
1,100,000	3.5

Therefore, if Phases II and III do not have to be closed on July 1, 1994, there would be approximately 5.5 years of additional landfill capacity available with a flow of 700,000 tons per year to Central Landfill. However, the Corporation must develop additional landfill capacity because the Central Landfill, as it existed as of June 1989, is currently scheduled to close on July 1, 1994, under the existing Consent Order and, not withstanding recent litigation the Town of Johnston may contend that Phases II and III should be deemed part of the Central Landfill for the purposes of interpreting the scope of the Consent Order. In any event, the Corporation still needs to site and construct additional landfill capacity.

The minimum flow rate projected in this Interim Plan is 700,000 tons of solid waste, all categories, per year. This estimate is based upon the solid waste volumes disposed at Central Landfill over the past three years: In 1989 about 817,000 tons of solid waste were disposed; 1990, nearly 700,000 tons; 1991, more than 600,000 tons and in 1992 approximately 700,000 tons are expected to be disposed. Based upon this disposal performance, the Corporation expects approximately 700,000 tons of solid waste to be disposed of in 1993 at Central Landfill.

All projected landfill disposal tonnages and therefore landfill life projections in this Interim Plan assume no waste-to-energy facilities are on-line, as stipulated by the 1992 solid waste amendments.

It is important to note that the 700,000 tons of minimum estimated annual flow of solid waste into the Phase II - III expansion areas is nearly twice the annual loading of solid waste at Central Landfill posited in Table 1 under a 70 percent recycling scenario. The 70 percent recycling scenario is included in this Interim Plan because of the 1992 solid

waste amendments mandating this level of recycling. However, there is no realistic expectation that 70 percent recycling -- with a full 70 percent diversion from landfilling -- can be achieved in the short term.

Therefore the Corporation must, in order to ensure that adequate disposal capacity is available to the State, plan conservatively for what is likely to occur and what is likely to occur is a minimum flow of approximately 700,000 tons per year or more to Central Landfill for the foreseeable future.

The 70 percent recycling scenario shown in Table 1 is useful because it establishes the minimum Need for additional landfill capacity in the event that 70 percent recycling is, in fact, achieved. Table 1 shows that even with 70 percent recycling, the Corporation has a Need to develop additional capacity sufficient to dispose of about 400,000 tons per year beginning in 1994.

6-9 Potential Future Landfill Capacity on Corporation Property

During the past year, the Corporation, assisted by its landfill consultant, has evaluated its Johnston land holdings to determine the limits of additional landfill capacity that can be installed thereon. These evaluations have included considerations of legal constraints, permit limits, the Johnston Consent Order, a Consent Agreement with DEM, Superfund constraints, environmental constraints, bedrock elevations, overburden soils, wetlands, drainage constraints, surface water and groundwater.

Thirteen different landfill capacity development scenarios have been given consideration. Each scenario was evaluated for the following factors: space availability; buffer area requirements; geotechnical and hydrologic characteristics; environmentally sensitive factors (ground water and wetlands); prevailing adjoining land uses; and proximity of the site to sensitive receptors for air, odor and noise.

All of these capacity development scenarios would result in landfill facilities that would be lined with a double composite liner system, a primary leachate collection system, a secondary leachate collection system, and a sand drainage layer. Any leachate generated and collected by the leachate collection systems will be pretreated in a special facility on site and then discharged into the Cranston wastewater treatment system. In other words, all additional landfill disposal cells that were considered for development would qualify under new federal and state landfill regulations.

The Land Use Plan contains consideration of potential new landfills termed "expansion landfills" and

others termed as "free-standing landfills." "Expansion" facilities are those which would share a perimeter with the existing licensed landfill and which would utilize the slopes of the existing licensed facility. They would be contiguous to the existing licensed area and its capacity would overlap the existing licensed facility. "Free-standing" facilities would not run into or be contiguous with the existing licensed facility in any way. The two different concepts are illustrated in Figure 4-1 of the Land Use Plan, dated March 2, 1992.

A number of the scenarios evaluated were based upon different real estate parcel acquisition assumptions for the purpose of testing various methods of deriving maximum landfill capacity development scenarios.

It can be seen from Table 2 that the scenarios which yield the maximum amount of additional landfill capacity are Scenarios 1 and 3. The landfill scenarios evaluated would yield new landfill life -- at a fill rate of 700,000 tons per year of solid waste -- ranging from a low of less than one year of additional capacity in Scenario 7 to a maximum of about 14 years of additional life in Scenario 3. Table 2 sets forth for each landfill scenario total acreage, total volume, disposal volume, solid waste tonnage capacity, and life expectancy at fill rates ranging from 700,000 tons/year to 1,000,000 tons/year.

Complete details concerning each landfill capacity scenario, including descriptions and the assumptions upon which each was based are included in the Land Use Plan. The Land Use Plan considers, in its calculation of solid waste fill rates, the utilization of waste-to-energy; it was completed prior to the passage of the 1992 solid waste amendments prohibiting the use of incineration.

TABLE 2 - LANDFILL CAPACITY ESTIMATES

	Landfill Scenario	Total Area acres	Total Landfill Volume (Cub Yds)	Available Disposal Volume (Cub Yds)	Solid Waste Tonnage Capacity (Tons)	At 700,000 Tons/yr in yrs	At 800,000 Tons/yr in yrs	At 900,000 Tons/yr in yrs	At 1,000,000 Tons/yr in yrs
A	Free-Standing	29.3	2,400,000	1,920,000	1,056,000	1.51	1.32	1.17	1.06
A	Expansion	60.6	10,950,000	8,760,000	4,818,000	6.9	6.02	5.35	4.82
B	Free-Standing	40.7	4,250,000	3,400,000	1,870,000	2.67	2.34	2.08	1.87
B	Expansion	35.0	8,450,000	6,760,000	3,718,000	5.31	4.65	4.13	3.72
1	Free-Standing w/Lot 112	110.7	19,028,000	15,222,400	8,372,000	11.96	10.47	9.30	8.37
2	Free-Standing w/o Lot 112	39.1	3,761,000	3,008,800	1,654,840	2.36	2.07	1.84	1.65
3	Expansion w/Lot 112	137.2	22,186,000	17,748,800	9,761,840	13.95	12.20	10.85	9.76
4	Expansion w/o Lot 112	65.6	8,200,000	6,560,000	3,608,000	5.15	4.51	4.01	3.61
5	Free-Standing w/Lot 112 Outside Almy Watershed	35.7	3,331,000	2,664,800	1,465,640	2.09	1.83	1.63	1.47
6	Free-Standing w/Lots 61/66/165	47.0	4,151,000	3,320,800	1,826,440	2.61	2.28	2.03	1.83
7	Free-Standing w/o Lots 61/66/165	19.1	1,039,000	831,200	457,160	.65	.57	.51	.46
8	Expansion w/Lots 61/66/165	57.8	7,224,000	5,799,200	3,178,560	4.54	3.98	3.53	3.18
9	Expansion w/o Lots 61/66/165	54.1	5,903,000	4,722,400	2,597,320	3.71	3.25	2.89	2.60

SECTION 171-7 FINDINGS AND RECOMMENDATIONS

7-1 Findings

- Total tonnage capacity available from Phases II and III within the currently licensed area of 154 acres total 3,881,847, which translates into an additional 5.5 years of service at a fill rate of 700,000 tons per year (the current annual loading at Central Landfill) if closure of these areas is not mandated by the existing Consent Order. Remaining landfill life under other solid waste fill rates is shown above in Section 6.

- Because of the currently scheduled closure date of July 1, 1994 in the Consent Order, additional landfill capacity will have to be certified by the State Planning Council, licensed by DEM, and developed by the Corporation within the next 19 months in order to avert a crisis.

- There is no alternative form of disposal that can be brought on-line in 19 months to manage up to 700,000 tons of solid waste per year.

- According to the Land Use Plan, there are a number of areas on the Corporation's property in Johnston that can potentially be utilized for the installation of additional landfill capacity, consistent with all appropriate laws and regulations.

- The Land Use Plan examines and evaluates 13 different scenarios of adding landfill capacity increments consistent with the results of the URI Landfill Siting Project.

- Total additional tonnages and landfill life available from each of the 13 landfill scenarios are shown in Table 2.

7-2 Recommendations

The Corporation should proceed as expeditiously as possible to develop the maximum amount of additional landfill capacity on its property in Johnston consistent with the results of the URI Landfill Siting Project and the scoping and guidance provided by the Land Use Plan.

APPENDIX E

OFFSETS / EMISSION REDUCION CREDITS APPROVAL DOCUMENTATION

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January 7, 2002

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VIA FACSIMILE & REGULAR MAIL

Douglas McVay
R.I. Department of Environmental Management
Office of Air Resources
235 Promenade Street
Providence, RI 02908

Re: Request for Approval and Notification of Transfer of Emission Reduction Credits

Dear Mr. McVay:

By letter dated November 8, 2001, the Rhode Island Department of Environmental Management, Office of Air Resources, pursuant to the provisions of Regulation No. 9 of the Rhode Island Air Pollution Control Regulations, approved the creation and banking of 708.5 tons of VOCs for the benefit of Quebecor Printing Providence Inc. ("Quebecor"). By this letter Quebecor, pursuant to Regulation No. 9.11.5, hereby requests approval, and gives notification, of the transfer of 700 tons of VOCs to the Rhode Island Resource Recovery Corporation, 65 Shun Pike, Johnston, Rhode Island.

If you need any further information in connection with this transfer, do not hesitate to give me a call. We are anxious to complete this transaction. Accordingly, I would appreciate your written authorization at your earliest convenience.

Kind regards.

Very truly yours,

HOLLAND & KNIGHT LLP

Gregory L. Benik, Esq.

GLB: mc

Cc: Sherry Giarrusso-Mulhearn (via facsimile & regular mail)
Claude Cote, RIRRC (via facsimile & regular mail)

PRV1 #76470 v1

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767 TDD 401-831-5508

24 January 2002

Mr. Gregory L. Benik, Esq.
Holland & Knight, LLP
Suite 1800, One Financial Plaza
Providence, RI 02903

Dear Mr. Benik:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your request to transfer 700 tons of VOC emission reductions from Quebecor Printing Providence Inc. to the Rhode Island Resource Recovery Corporation.

This transfer leaves Quebecor Printing Providence Inc. with a balance of 8.5 tons of VOC emissions reductions.

This transfer is effective as of this day, 24 January 2002.

If you have any questions, I can be reached at 222-2808, x-7011.

Sincerely,

Douglas L. McVay
Associate Supervising Engineer
Office of Air Resources