



**PHASE VI LANDFILL  
SOLID WASTE MANAGEMENT FACILITY  
LICENSE APPLICATION**

**February 2011**

**Response to Comments**

In Re: Proposal to issue a license to Rhode Island Resource Recovery Corporation

**Introduction**

Rhode Island Resource Recovery Corporation (RIRRC) proposes to develop a new landfill as a sixth phase of the Central Landfill to meet future disposal needs of the State of Rhode Island. An application for a license for this expansion was received by the Office of Waste Management in April 2007. Based on extensive rounds of meetings and comments the original application was revised and resubmitted to our Office in April 2010. The submittal was determined to be complete on August 3, 2010. This Response to Comments package will respond to substantial comments made during the public hearing and received during the public comment period.

On August 9, 2010 a Notice of Informational workshop, Public Hearing and Public Comment Period was published in the Providence Journal.

A copy of the proposed Phase VI Landfill Permit and supporting documentation was made available at the Office of Waste Management and Johnston Public Library.

An Informational WorkShop was held on August 24, 2010 at 6:00 PM at the Rhode Island Resource Recovery Headquarter to answer and explain any issues raised by the public. Subsequently, a public hearing was held on October 13, 2010 at the Rhode Island Resource Recovery Corporation Administration Building, 65 Shun Pike, Johnston, RI at 6:00 PM. The written comment period closed at 4:00 PM on November 15, 2010. A transcript of the public hearing was prepared and is presented as APPENDIX C.

## **General Responses**

### **1. Overview of the Department's Role in the Permitting Process**

The Department reviewed the *Application* under the authority of Rhode Island General Laws, Chapters 23-18.9-9, 42-35-14, and the *Regulations* that outline the standards required for this facility to protect public health and the environment. They address specific design and construction aspects of the proposed landfill and operating standards including, but not limited to, provisions for protecting air, ground and surface water, odor, dust, and fire controls, as well as requirements for sampling and testing of air, ground and surface water on-site, at the boundary line and off-site(if required) of the subject property.

In review of this and any other application, the Department is committed to a review process grounded within the scope of its legal authority. To that end, the Department's decisions must be both predictable and enforceable. An applicant for any permit must be able to determine from the outset, what is required under the Regulations. The Department through its *Regulations* and administrative procedures has carefully outlined the basis for approvals, modifications and denials of permit applications. The Department's actions on an application (approval or denial) must have a basis in reasons codified in the Regulations. Otherwise, the decision can be overturned as arbitrary and capricious or on the basis of the Department exceeding its statutory authority.

In short, the Department must determine if the application meets the requirements of the Regulations. The Department has reviewed all of the recent submitted materials, comments and data, and has determined that the current application has satisfactorily addressed these regulatory requirements.

### **2. Adequacy of Public Notice and Public Hearings**

As required by governing statute, the Office of Waste Management advertised the Public Notice in the Providence Journal on August 9, 2010 regarding the informational workshop, public hearing and public comment period for the Solid Waste License Application. A press release was also sent out to media outlets. An informational workshop was held at RIRRC's Headquarters on August 24, 2010 at 6:00 pm. Representatives of the Office of Waste Management and RIRRC were available at that workshop to answer questions. A public hearing was held on October 13, 2010 at 6:00 PM at RIRRC's Headquarters to allow the public an opportunity to express their concerns on the record. In addition, written comments were received for an additional thirty (30) days following the close of the public hearing. RIDEM has responded to all of these substantial comments and may add conditions to the permit to address them.

### **3. Buffer Zone**

Comments were received by the Department regarding the buffer zones between the landfill and the surrounding residential properties.

The Phase VI, as proposed, does have the minimum 600' buffer zone in the north, northeast, northwest, west and east directions as determined by the Department of Administration – Statewide Planning. As a condition of the Phase VI license, an Annual Report is required to be prepared and distributed by the RIRRC that will include a description of efforts to maintain and/or revegetate the buffer zone in accordance with applicable statutes.

The solid waste permit application stated that the proposed Phase VI Landfill meets the buffer zone (1000') between the proposed Phase VI and any residential property.

On October 6, 1989 the Rhode Island Solid Waste Management Corporation (RISWMC) (now known as RIRRC) expended on the order of \$23,000,000.00 to acquire by eminent domain residentially zoned property located within 2,000 feet of Central Landfill. RIGLs 23-19-34 and 23-19-35 As mandated by 23-19-34, all of the residentially zoned property located within 1000' of the facility, as well as, all residentially zoned property located on Simmons Lake Drive in Johnston, RI were acquired. Additionally, in accordance with RIGL 23-19-35, the RIRRC completed an optional purchase of residentially zoned property, located between 1000' and 2000' of the landfill.

The acquisition of the property by eminent domain, as well as the optional 2000' property was funded, pursuant to RIGL 23-19-36, solely "...from revenues generated by use of the Central Landfill and from other such sources as may be available, including proceeds from the sale of houses, structures and land under Sections 23-19-34.1 and 23-19-35.1.1".

Within the eminent domain property, General Law 23-19-34.1 intends that: 1) at least part of this property be utilized as a buffer zone; 2) that all houses and structures acquired by the RIRRC must be removed from the eminent domain property; and 3) that all undeveloped property not utilized for the buffer zone may be sold, but only for industrial uses. The language of RIGLs 23-19-34 through 23-19-35.1 is strongly suggestive of a legislative intent to eliminate all residential use and residential structures within the eminent domain property. General Law 23-19-35 allows residential property owners within the optional 2000' property the choice of: 1) exercising the option to sell their residential property to RIRRC; 2) electing to remain on their property; or 3) exercising any other option that any other landlord possesses such as selling to a third party.

#### **4. Air Issues**

DEM's Office of Air Resources implements the Clean Air Act's preconstruction permitting programs in the State of Rhode Island through its Air Pollution Control Regulation No. 9.

RIRRC filed an application with the Office of Air Resources that addressed the requirements applicable to a major modification including BACT and LAER (Lowest Achievable Emission Rate). The Office of Air Resources reviewed RIRRC's application and determined that if the facility is constructed and operated in the manner described in the application, it will comply with applicable state and federal air pollution control rules and regulations. The Office of Air Resources prepared a draft Major Source Permit for public review and comment.

On 1 October 2010 a Notice of Public Hearing and Comment Period was published in the Providence Journal announcing a public hearing and the opportunity for public comment on the Office of Air Resources' proposal to issue a Major Source Permit to Rhode Island Resource Recovery Corporation. A copy of the draft Major Source Permit, a document summarizing the findings of the permit review and a Fact Sheet were made available at the Office of Air Resources and on DEM's website. The availability of these materials at these locations was announced in the public notice.

The public hearing that was held on 13 October 2010 at the Rhode Island Resource Recovery Corporation Administration Building was to accept public comment on both the solid waste license application and the major source permit for air pollution emissions.

Therefore, the Department did review the Phase VI expansion for compliance with all applicable state and federal air pollution control rules and regulations and made this information available to the public for comment.

## **5. Odor Issues**

One of the major sources of odors at landfills is the landfill gas that is generated from the decomposing waste. Offsite odors can occur if the landfill gas is not managed effectively. The draft major source permit addresses landfill gas capture/collection and control. The permit requires that gas collection and control take place during active landfilling as opposed to when a landfill is filled to capacity. Active gas collection is necessary to effectively control landfill gas odors. The approach captures landfill gas before it migrates to the surface of the landfill and directs the captured gas to devices such as the flares, engines or turbines to be destroyed. The Department has concluded that this is the most effective means of landfill gas capture. The Department is not aware of any alternative capture system that is more effective, nor is it aware of any gas destruction systems that are more effective.

The draft major source permit also contains surface emission monitoring requirements and well head/trench monitoring requirements. The surface emission monitoring requires RIRRC to periodically monitor the surface concentration of methane over the entire landfill surface. The purpose of this monitoring is to ensure that landfill gas is being captured and not escaping through the surface of the landfill. If methane concentrations are measured above certain specified levels, the permit prescribes corrective actions to be taken and requires re-monitoring to ensure that the exceedance has been eliminated. The draft major source permit also requires that each individual wellhead/trench header be monitored for several parameters to ensure the effectiveness of the landfill gas capture system.

Hydrogen sulfide is a common compound in landfill gas that can contribute to offsite odors. Construction and demolition waste (C&D) and C&D screenings (ground C&D waste from recycling operations), contain gypsum (from wallboard), are the major contributors to the formation of hydrogen sulfide in landfill gas. When gypsum decomposes in a landfill it forms hydrogen sulfide. Hydrogen sulfide emissions can be reduced by decreasing the amount of gypsum (sulfate) containing wastes entering the landfill. The following work practice standards,

required in the draft major source permit, will be implemented at the Central Landfill to minimize hydrogen sulfide emissions:

- Active gas collection to provide the greatest degree of landfill gas collection and therefore minimize fugitive landfill gas emissions.
- RIRRC will not accept any pre-processed C&D waste, residuals from the C&D recycling process or any ground waste whose gypsum content cannot be readily ascertained from visual observation unless this material is analyzed for sulfate content.
- RIRRC will institute waste acceptance policies for the Recovermat process as necessary to maintain the sulfate content of the product to below 1% by weight (dry basis).

The draft permit contains several measures/requirements to prevent and control odors. These are odor management practices that have historically proven to be successful at other landfills. Based on the comments received on the proposal to issue a Major Source Permit to Rhode Island Resource Recovery Corporation, it is the decision of the Office of Air Resources to issue the Major Source Permit, as revised.

### **Comments from the Transcript of the Public Hearing**

**1. Mr. DiSanto:**

Which direction is the Phase VI expansion (approximately 103 acres) taking place?

- The Phase VI expansion is to the east of the existing landfill (towards the I-295 highway).

**2. Mr. Forsberg:**

Department's printed public notices in the Providence Journal are inadequate advertisement.

- See General Response - Adequacy of Public Notice and Public Hearings.

**3. Representative Ucci:**

A) Odor control systems and odor complaint process

- The major source of odor is the landfill gas that will be generated due to an anaerobic decomposition of the landfilled organic waste. As outlined in Section 5 and Appendix M of the Solid Waste Permit Application as well as the major source air permit application, the Phase VI landfill will employ a state of the art gas collection system to control landfill gas generated at the facility.  
In addition, under Rhode Island Department of Environmental Management Solid Waste Regulation No. 1, section 1.4.03(c), a solid waste management facility "shall not emit or cause to be emitted any air contaminant or combination of air contaminants which creates an objectionable odor beyond the property line of said facility." Other minor odor sources will be due to lack of adequate daily/intermediate cover and/or the compost facility deficient management.

The Department staff inspects the facility routinely to ensure compliance with the requirements of solid waste regulations. Also, the Department staff has and will continue to respond to public complaints regarding odor potentially emanated from the landfill, and use the enforcement authorities available to it to compel RIRRC to correct any deficiencies associated with said odor.

Also, please see General Response - Odor Issues.

B) Buffer zone and setbacks from residential areas to the northeast

- See General Response – Buffer Zone.

C) Encroachment / buffer North of Scituate Avenue detrimental to residents

- The permit application asserted that the proposed Phase VI expansion meets all the setbacks and buffer zone requirements of the RIDEM regulations. These are designed so that any solid waste management facility does not have a detrimental effect upon neighboring properties.

Also, see General Response – Buffer Zone.

**4. Ms. Costello:**

Leonora Costello provided the following comment(s) at the 13 October 2010 public hearing.

*Ms. Costello's comments were generally about the odors and noxious fume particularly at night from the landfill. She is opposed to the landfill expansion.*

- See General Response – Odor Issues.

**5. Mr. Bertrand:**

A) A waste to energy plant is better disposal option.

- The Department does not have the authority to specify the type of Disposal Solid Waste Management Facility to be selected by the applicant. Also, RIGL 23-19-3 restricts the use of incinerators by RIRRC because of the perceived health hazard and elevated cost associated with the incineration of solid waste. The Department has no authority to change the law, which requires the approval of the Legislature.

B) Leachate generated by the landfill shall pollute the groundwater which flows into Scituate Reservoir that supplies 65% of the State drinking water.

- Phase VI has a baseliner that is constructed in such a manner in order to contain the leachate and prohibit it from leaching into the ground.
- The other comment was related to the potential of the proposed expansion to affect the water quality of Scituate Reservoir. Based upon a number of Geological studies performed to date, the area around Central Landfill is generally made up of a layer of glacial till covering granitic bedrock. The bedrock dominates the



topography, causing hills and valleys in the landscape. When combined with the relatively wet climate in New England, this results in a relatively shallow groundwater table and causes groundwater divides to generally follow surface divides. 98% of the current landfill lies in the Upper Simmons Reservoir and the remaining 2% lies in the Almy Reservoir Watershed. The divide that separates the groundwater flow is at the northeast corner of the existing landfill. Flows south and west feed the Upper Simmons Reservoir directly, or flow into streams, which then feed the Upper Simmons Reservoir. Flows north and east of the divide feed the Almy Reservoir. The Groundwater on-site flows radial toward the landfill, away from Scituate Reservoir watershed and into Upper Simmons and Almy Reservoirs. The groundwater flow beneath the proposed expansion is predominately towards the Upper Simmons Reservoir, with a small portion of proposed Phase VI footprint within the Almy Reservoir Watershed as are the existing landfill facilities. Both Reservoirs drain to the Pocasset River to the Pawtuxet River before discharging to Narragansett Bay. Environmental monitoring of groundwater and surface water conditions between the landfill and the reservoir is conducted on a regular basis to provide an early warning of unforeseen problems. This monitoring has not provided any evidence of contaminant migration into the Scituate Reservoir watershed.

**6. Mr. O'Connor:**

- A) Regarding permit condition number 1 for the Phase V landfill and leachate discharge issues with the City of Cranston relating to high nitrogen levels.
- The Rhode Island Resource Recovery Corporation (RIRRC) maintains an Industrial User Discharge Permit (IUDP) with the City of Cranston (City). The IUDP does not contain any discharge limitation for nitrogen as described by the commenter. It is the Department's understanding that RIRRC and the City have been in communication regarding updates to the IUDP to reflect newer standards being developed by the City as part of their Local Limits Study, currently under review by RIDEM. Because RIRRC has an IUD Permit with the City of Cranston and maintains an agreement with the City; RIRRC facility has continued to discharge its leachate into Cranston sewer system. In summary, RIRRC is ultimately responsible to dispose of its leachate into a sewer system providing that it shall meet all applicable requirements of the subject sewer authority. The Department will place a condition on the permit to address this issue.
- B) Is the closure account fully funded and solvent?
- In accordance with RIRRC financial submittals to the Department, RIRRC has shown that it maintains a trust fund for the closure and post closure of the entire permitted landfill facility, including Phases II, III, IV & V at Rockland Trust. The Phase I and Superfund trust funds are held in Washington Trust. As of June 30, 2010, the combined total of all trust funds was \$82.3 million. In accordance with the audited updated closure/post closure calculations dated 6/30/10, the trust funds are underfunded by \$6.5 million. However, these funds are currently reflected as designated in the Corporation's audited financial statements, dated 6/30/10.

On 24 March 1998 the previous RIRRC administration entered a Trust Agreement with Van Liew Trust Company (Trustee) to provide assurance that funds will be available when needed for closure/post closure care. The Department was excluded from that Agreement. Currently, Trust Agreement between RIRRC and a Trustee (Rockland Trust) is being developed so as to stipulate the terms of adequately allocating sufficient funding for the cost of closure/post closure care. Any prospective withdrawing from said funding should be subject to RIDEM approval. The Department will place a condition on the license regarding this concern.

- C) Groundwater sampling program and testing of neighborhood wells (at the faucet).
- Under the existing solid waste facility license, RIRRC maintains an Environmental Monitoring Program (EMP) for all environmental media, including groundwater. This program is designed to detect releases from the facility prior to impacting any off site receptors. This program was designed based on extensive studies of the site geology and hydrogeology to determine the optimal locations for sampling/monitoring wells. The EMP program has been in place since the permitting of the Phase II and III landfill cells with analytical database going back to 1988. Between 1995 and the early 2000s GZA following guidance developed by EPA has performed a study to evaluate potential impacts to off-site residents via groundwater use and on-site and off-site impacts to ecological receptors. The study concluded that existing and foreseeable future conditions pose no unacceptable risks to human health or the environment. The study however, has indicated that the zone of groundwater use limitations off-site to be the shores of the upper Simmons reservoir and the area between landfill and the Almy reservoir. RIRRC shall continue to monitor the groundwater via its groundwater well network. The Department staff has and will continue to review the quarterly environmental reports related to air, groundwater and surface-water.

D) Is there a closure date?

The Phase VI is permitted for 26.2 million cubic yards (approximately 14.2 million tons) of solid waste disposal. Based on current waste acceptance rates (approximately 750,000 ton/yr) and current operational practices at the facility, Phase VI is expected to last approximately 17.5 years. This estimate is subject to change based on the actual waste acceptance rates in the future.

#### **Comments Received by Mail or E-mail**

**1. J. Richard Ratcliffe, Esq.:**

*Pursuant to the Clean Air Act's Prevention of Significant Deterioration program, no major air pollutant emitting facility may be constructed unless the facility is equipped with the "best available control technology" (BACT) United States Clean Air Act, 42 U.S.C. §7475(a)(4). Because Phase VI constitutes a significant expansion of the Central Landfill, BACT requirements are applicable. Id at §7411(a)(4). BACT, as defined in the Clean Air Act, requires the maximum degree of reduction" in the discharge of air*



*pollutants achievable through the currently available methods systems and techniques while taking economic, energy, environmental and other costs into consideration. Id at §7479(3). Major sources of emissions, such as the Central Landfill, are required to use BACT. In light of the foregoing, before approving the Phase VI expansion, the Office of Waste Management must ensure that Rhode Island Resource Recovery will employ the best available control technology in all of its systems to minimize the air pollution generated from the Central Landfill. To date, we have seen no information suggesting that the Office of Waste Management has adequately considered this requirement with respect to the facility as a whole. Therefore we oppose the Phase VI expansion.*

- See General Response – Air Quality Issues.

**2. Mr. Weedon's:**

A) During the public hearing, only questions and comments were permitted by RIDEM.

- RIDEM only received comments during the public hearing. These comments were recorded in a transcript. RIDEM continued to receive written comments for an additional (30) days after the public hearing. RIDEM has 90 days from the close of the public comment period to responds to all comments received.

An informational workshop was held for the public on August 24, 2010 to answer any questions the public may have so that it would give them an opportunity to formulate comments and present those comments at the public hearing.

B) Circulation of the responses to the public and/or owners of the properties which abut RIRRC property.

- RIDEM will respond in writing to all substantial comments and post a summary of the comments and their answers on the DEM web site.

C) Location of the proposed expansion (103 acres) and any warehouses, buildings and/or any structure located within said expansion.

- The proposed expansion is located to the east of the existing landfill. Currently, this area is occupied by vacant land, the Tip Facility, a portion of the Compost Facility, the C&DD Processing Facility, the original methane gas to power plant, the Eco-Depot building, small vehicle area, and main building that includes a maintenance garage. The area of expansion is depicted on the drawings associated with the permit application.

D) Use of the (103 acres) proposed expansion area and how it was determined?

- The (103) acre base-area (foot-print) will be used for solid waste disposal.
- The locations for all Phases of the landfill require review and approval by the State Planning Council. That approval must comply with all statutorily mandated public hearing requirements. The siting approval by the Statewide Planning Program is required prior to submission of the licensing application to DEM. The Rhode Island Comprehensive Solid Waste Management Plan, State Guide Plan Element 171 (April 2007) states that the Phase VI landfill is located largely within generic landfill sites, which have been certified by the State Planning Council.

- E) Real acreage of the foot-print area, whether 103 or 145?
- The overall footprint area of Phase VI landfill will be (153) acres, of which 103 acres is the new base-area and the remaining (50) acres shall overlap the existing Phase I.
- F) Location of proposed two warehouse buildings located close to Central Ave.
- The proposed warehouse buildings stated by the commenter is really only one potential building. This building is proposed to be a maintenance garage as depicted on drawing C-3.1 of the permit application. This building is located out of the (600) foot buffer zone.