



City of Richmond

Report to Committee

To: General Purposes Committee

Date: October 19, 2015

From: John Irving, P. Eng., MPA,
Director, Engineering

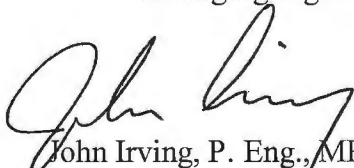
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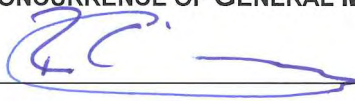


Re: **Odour Management from Organic Waste Management Facilities in Richmond and Surrounding Areas**

Staff Recommendation

That:

1. Staff continue to monitor odour issues and work with Harvest Power and Metro Vancouver to develop durable odour mitigation strategies.
2. A letter be sent to the Metro Vancouver Board expressing the City's concerns regarding current air quality from local organic waste management facilities and requesting that it investigate the feasibility of implementing an organics management odour control regulation for composting facilities regionally.
3. A letter be sent to the Metro Vancouver Board requesting that it consider a requirement that member municipalities be limited to disposing organic waste at facilities with air quality permits or approvals.
4. A letter be sent to the BC Minister of Environment requesting that Operational Certificates regulating air emissions and odours be required for existing and new facilities managing organic waste.


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REPORT CONCURRENCE		
ROUTED TO: Environmental Programs	CONCURRENCE <input checked="" type="checkbox"/>	CONCURRENCE OF GENERAL MANAGER 
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO 

Staff Report

Origin

This report is intended to provide Council background and contextual information regarding the recent increase in odour complaints, especially as they relate to commercial composting activities in the City, and an update on the Air Quality Permitting process for Harvest Power.

This report supports Council's 2014-2018 Term Goal #3 A Well-Planned Community:

Adhere to effective planning and growth management practices to maintain and enhance the livability, sustainability and desirability of our City and its neighbourhoods, and to ensure the results match the intentions of our policies and bylaws.

This report supports Council's 2014-2018 Term Goal #5 Partnerships and Collaboration:

Continue development and utilization of collaborative approaches and partnerships with intergovernmental and other agencies to help meet the needs of the Richmond community.

Background

Regulatory Agency

Metro Vancouver has delegated authority from the Province, under the Environmental Management Act, to provide the service of air pollution control and air quality management by controlling the discharge of air contaminants through bylaws adopted by the Greater Vancouver Regional District Board. Metro Vancouver also regulates the management of organic waste through permits; municipally-operated waste management operations are an exemption and are regulated by the BC Ministry of the Environment. Operational Certificates are tools similar to Permits that are issued by the Province to regulate the operations of prescribed industries, in order to assure responsible management of discharges to the environment, including for air emissions. Major organic waste management facilities in operation in or near Richmond include: Harvest Power (currently operating as Harvest Fraser Richmond Organics, Ltd), the City of Vancouver's Kent transfer station (Vancouver), the Vancouver Landfill (Delta), Enviro-Smart Organics Ltd. (Delta) and Revolution Resource Recovery (Vancouver).

Harvest Power Odour Management

Locally, Harvest Power has been operating a compost, soil recycling, and biofuel energy production facility at 7028 York Road for several years. The operation of the green waste processing facility has held a Composting Facility License since 1997. The operation includes open row composting of mixed organic wastes (soils, lawn waste, and food scraps) and enclosed digestion of high-calorie organic wastes (residential and commercial food scraps) for the production of biogas that is in turn burned to generate electricity (the "Energy Garden"). To meet regional landfill diversion targets, Harvest Power recently started receiving packaged organic materials (e.g. canned goods, packed meats, etc.). Harvest Power has been receiving organic materials collected by the City of Richmond since it started recycling organic waste, initially with yard trimmings then growing to include organics. The City's current agreement

with Harvest Power is valid through to June 30, 2019; the City has options for two additional terms of sixty months each.

Harvest Power was given an Air Quality Permit in 2013, pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw No. 1082*, after a lengthy and iterative process which included input from the City and consultation with Metro Vancouver engineers and subject experts. The Permit identifies sources of odour and other air pollutants, identifies standards for various regulated parameters (nitrogen oxides, particulates, volatile organic compounds, etc.) and sets out a monitoring system to assure compliance. The initial permit expired in June 2015, however, a temporary Approval was granted by Metro Vancouver. This effectively extends the conditions of the original permit until December 31, 2015 to provide Harvest Power and Metro Vancouver an opportunity to continue to collect data, revise their Permit and work to address issues that may arise. When permits are issued, stakeholders and the public are invited to provide feedback on proposed conditions of the permit.

Under the conditions of the permit, odours are generally controlled through biofilter technology. These are bodies of organic media supporting microbes that metabolize the odourous compounds of the air passed through them, and reduce odour by an order of magnitude or more. Combined with adequate dispersion, biofilters can manage most odours effectively. Some operations are enclosed; waste feedstock for the Energy Garden biodigesters is managed in an enclosed building where exhaust air passes through scrubbers to reduce or remove odours. During the existing permit period, according to Metro Vancouver it is believed that odour complaints may have been received when the biofilters are degraded, either through overheating or contamination by ammonia, which upsets the organic balance in the filter media.

In the past, odour complaints linked to Harvest Power have increased when broadcast or print media draws attention to the operation. In some cases, a portion of the complaints are not attributed to Harvest operations, but to other sources in the area, such as farming practices or issues related to sewer treatment plants. Previous spikes in complaints have occurred in the early fall, which Metro Vancouver attributes to weather conditions that prevent the dissipation of odours. Fall weather is typically defined by frequent temperature inversions and calm winds; the same conditions that create foggy conditions at ground level. These weather conditions have been persistent in Richmond this year, bringing a peak in odours and complaints.

Odour Complaint Management

As air quality permit issuance is through Metro Vancouver, Metro Vancouver is responsible for receiving and responding to odour complaints. When receiving a complaint, Metro Vancouver staff will forward the anonymized complaint to the most likely source. The City also receives complaints directly through various channels. When arriving at Front of House or the City Switchboard, customers are instructed to direct their complaint to the Metro Vancouver 24-hour Air Quality Complaints phone line and/or the online Air Quality Complaints Form. If customers desire more feedback from the City, they are generally put in contact with Environmental Sustainability staff, who are more able to explain the technicalities of the concern and direct the complaint to be more effective. If multiple complaints are received in a short period of time, City staff contact Metro Vancouver Regulation & Enforcement staff to assure that complaints are being registered and to determine what specific actions are being taken by Metro Vancouver regulatory staff.

Harvest Power tracks complaints that they receive from Metro Vancouver and others sources, and provides a monthly report to Metro Vancouver and the City of Richmond. Harvest Power manages a “Progressive Odour Management Plan” which involves a review of complaints received. Complaints received are characterised as “likely” or “not likely” to be a result of their operations; weather and wind conditions are reviewed during this analysis. As part of this, Harvest undertakes air dispersion modelling to help determine the impact of weather conditions on odour travel and to aid in identifying potential site sources to focus on. The last report received by the City was on August 14, 2015, covering the time up to July 31, 2015.

Analysis

Recent Issues and Short Term Actions at Harvest Power

Harvest Power has occasionally had challenges meeting their odour targets over the years. In particular, this has been an issue when the Energy Garden was introduced as well as when the recent ban on food scraps disposal identified in Metro Vancouver’s Integrated Solid Waste and Resource Recovery Management Plan led to an overall increase in waste being received at the facility. Recently reported anomalous issues or process changes include:

- **Packaged Organic Waste:** Harvest Power reports that they have been accepting some packaged organic material to be processed in the Energy Garden. Initially, packaging was manually depackaged; this slow process has resulted in longer than expected on-site storage. Harvest Power is currently in the process of permitting and commissioning covered automated ‘depacking’ equipment which will decrease storage times. The new system also includes leachate management recovery.
- **Biodigesters:** In January, Harvest Power cleaned their biodigesters as a maintenance procedure, but had difficulties in restoring the system’s biogas scrubbers. Harvest Power reports that the repairs have now been completed and they expect that the system should be fully operational.
- **Biofilter:** Harvest Power reported that they have one underperforming biofilter on site that is scheduled to be replaced in October, 2015. It is Metro Vancouver’s and the City’s experience that complaints decrease after the biofilter media has been changed.

Staff most recently met with Harvest Power on October 8th to discuss concerns and solutions. As a short term response, Harvest Power agreed to add more wood chips to the compost piles, reduce pile height, and increase the turnaround time for scheduled windrow biofilters. These measures, in addition to the resolved issues listed above, should lead to reduced odour complaints. Longer term, the City will have opportunities to comment through the permit renewal process, described below. Long term, covering options of the operations or limiting the amount of waste handled on the site may be required.

Regulation of Other Regional Composting Facilities

Other facilities may be causing detectable odour issues in Richmond. Of all the facilities listed in this report (Harvest Power, Vancouver Kent Transfer Station, Vancouver Landfill, Enviro-Smart and Revolution), only Harvest Power operates under a Metro Vancouver air quality permit. The City of Vancouver facilities are exempt from Metro Vancouver air permitting, but are regulated by the provincial Ministry of the Environment. The Vancouver Landfill operates

under an Operational Certificate but the conditions do not address air quality or odour management. Vancouver's Kent Yard site does not have an operational certificate that regulates odours as well. It is our understanding that Enviro-Smart currently does not have an air quality permit. Metro Vancouver has been pursuing this matter with the operator. Some regional municipalities currently haul organic waste to private sector facilities that do not have air quality permits.

Metro Vancouver advises that while it is still possible that odours from these facilities are detected in Richmond, the majority of "compost" odour complaints in Richmond that are investigated by Metro Vancouver are suspected to trace back to Harvest Power. Despite this fact, there is a disparity regionally in how these facilities are regulated for air quality and until such time that all facilities are operating under the same odour management requirements, it will be difficult to ascertain odour sources and implement appropriate corrective measures. For this reason, a recommendation is included in this report for Council to request that the Metro Vancouver Board consider a requirement that member municipalities be limited to hauling or managing organic waste at facilities with air quality permits or Approvals pursuant to the *Greater Vancouver Regional District Air Quality Management Bylaw*, or operating under an Operational Certificate from the BC Ministry of Environment that regulates air emissions and odours for municipal facilities.

Metro Vancouver Permitting Process and Harvest Power Permit Review

Harvest Power is currently operating under an Approval from Metro Vancouver. The short term Approval provides Harvest Power and Metro Vancouver with the necessary time to develop a new Air Quality Permit. Technical details of the new permit application are currently being reviewed by Metro Vancouver. Although the current Approval expires on December 31, 2015, an extension may be granted if the permitting process cannot be completed by that date. The number of complaints is an important input into the permitting process, allowing Metro Vancouver to negotiate more stringent odour management measures.

Permit applications of this type are subject to the provincial *Public Notification Regulation*. The details of the public consultation in regards to the new Permit have not yet been determined, however Metro Vancouver have indicated that local newspaper notices and direct engagement of stakeholders (including the City of Richmond and people who have registered complaints through the Metro Vancouver complaints system) will be included in the review. A public meeting, intended to give the proponent an opportunity to explain their compliance plan to the public, is possible but has not been confirmed at this time. Staff are prepared to engage in this process and will bring a report forward summarizing key concerns and priorities for the City.

Financial Impact

None.

Conclusion

An increase of odour complaints has been noted by the City and Metro Vancouver. Staff met with both Harvest Power and Metro Vancouver staff to better understand current issues and to identify solutions. Harvest Power has committed to some immediate and on-going changes in

their operations to address the City's concerns. Metro Vancouver is currently reviewing a draft air quality permit recently submitted by Harvest Power. The City and members of the public will have an opportunity to provide input on the permit in late 2015 or early 2016. Staff analysis also revealed that similar organic waste management facilities in the region do not have air quality permits or operational certificates, in the case of municipal facilities, that regulate air quality and odours. Staff recommend that letters be sent to both Metro Vancouver and the BC Ministry of Environment requesting that these facilities be regulated for air quality. City staff will continue to monitor odour complaints and work closely with Harvest Power, Metro Vancouver and the province to address and mitigate odour concerns. Staff will also continue to direct public complaints to Metro Vancouver since complaint frequency is a factor considered at the time of air quality permit review.



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