



RE: 1988 ENVIRONMENTAL ASSESSMENT FOR THE GVRD REFUSE INCINERATOR

The Acting Municipal Manager recommends that Council give consideration to presenting Recommendation 1 through direct audience with the Honorable Minister in recognition of the importance and high priority for action that Council has accorded this particular subject.

Concurrently, staff will present the request to all appropriate ministry staff including, if necessary, the Deputy Minister.

ACTING MUNICIPAL MANAGER'S RECOMMENDATION:

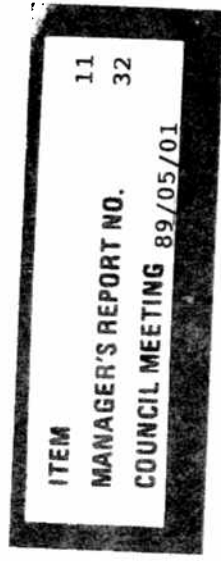
1. THAT the recommendation of the Chief Public Health Inspector be adopted.

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TO: ACTING MUNICIPAL MANAGER 1989 APRIL 26
FROM: CHIEF PUBLIC HEALTH INSPECTOR
SUBJECT: 1988 ENVIRONMENTAL ASSESSMENT FOR THE
G.V.R.D. REFUSE INCINERATOR
PURPOSE: TO REPORT TO COUNCIL ON THE FIRST ANNUAL ASSESSMENT FOR AIR
EMISSIONS FROM THE G.V.R.D. REFUSE INCINERATOR.

RECOMMENDATIONS:

1. THAT the Honourable Bruce Strachan, B.C. Minister responsible for the Environment be requested to:
 - a) Require the Greater Vancouver Regional District to limit the annual tonnage of refuse burned at their refuse incinerator to 210,000 tonnes per annum.
 - b) Set short term (one hour) excursion limits for air pollutants emitted from the G.V.R.D. refuse incinerator.
 - c) Require the Greater Vancouver Regional District to continue annual stack testing of their refuse incinerator for trace metals and organics (dioxins and furans).
 - d) Require the Greater Vancouver Regional District to conduct a complete Environmental Hazard Assessment (including dioxins and furans) for their incinerator's ash residue and that the results of the assessment be forwarded to our Municipality for review and comment prior to development of a long term strategy for ash disposal and utilization.
 - e) Require the Greater Vancouver Regional District to publish yearly information detailing the annual assessment of air emissions and ash characteristics for their refuse incinerator.
2. THAT a copy of this report be forwarded to:
 - a) The Greater Vancouver Regional District, 4330 Kingsway, Burnaby, B.C., V5H 4G8.
 - b) The Ministry of Environment, Lower Mainland Regional Headquarters, 10334 152A Street, Surrey, B.C., V3R 7P8.
 - c) Ms. Dorothy Caddell, 4220 East Georgia Street, Burnaby, B.C., V5C 2T7.



REPORT

The Greater Vancouver Regional District has recently reported on the results of the plant performance and manual stack emission tests that were carried out in 1988 November. The following summarizes the data and provides Council with the Environmental Health Division's concerns regarding the operation of the G.V.R.D. refuse incinerator.

1.0 ENVIRONMENTAL HEALTH DIVISION'S ACTIVITY IN ASSESSING THE
G.V.R.D. INCINERATOR'S AIR EMISSIONS AND ASH CHARACTERISTICS:

For the information of Council, under mandate of the Provincial Health Act, the Environmental Health Division has been actively involved in assessing the environmental and public health concerns regarding emissions from the Greater Vancouver Regional District's refuse incinerator.

Division staff regularly attend the Lower Mainland Environmental Health Committee which reviews with Ministry of Environment and G.V.R.D. staff technical information, complaints and emission levels for the refuse incinerator. The Health Department's Medical Health Officer represents the Metropolitan Board of Health, Administrative Council on the technical review committee. The Environmental Health Division requests and reviews all data concerning community ambient air monitoring and reports on pollutant testing.

Environmental Health Division ensures that all available information for the incinerator is provided, upon request, to interested citizens and community groups.

It must be stated that staff have experienced difficulties in obtaining critical data on emissions from the incinerator. The information contained in this report is based upon a summary of emission data provided by the G.V.R.D. and information obtained through our discussions with Ministry of Environment and G.V.R.D. staff. Requests for additional data must be made to the Ministry of Environment. Staff have recently requested the complete report on the performance testing for trace organics and have not received a date from Ministry of Environment staff as to when this will be made available.

2.0 QUANTITIES OF REFUSE BURNED:

The G.V.R.D. have provided the following data for quantities of refuse burned, ash residues produced and steam sold to adjacent Belkin Paperboard Industries,

209,227	tonnes refuse burned March 1 to December 31, 1988
230,260	tonnes refuse burned for all of 1988 (includes commissioning prior to March 1, 1988).
50,700	tonnes bottom ash produced
9,850	tonnes fly ash produced
6,480	tonnes ferrous metal recovered for recycling
275,000	tonnes of steam exported to Paperboard Industries.

The G.V.R.D. have previously committed to Municipal Council that the amount of Municipal refuse burned per year will have a limit of 210,000 tonnes. To date, the Ministry of Environment has not required the G.V.R.D. to limit the quantity of refuse burned to 210,000 tonnes as specified in their Waste Management Plan.

It is recommended that Municipal Council request the Minister of Environment to limit the amount of garbage burned at the G.V.R.D. refuse incinerator to 210,000 tonnes as stated in the Minister's approval document for the G.V.R.D. Waste Management Plan.

3.0 CONTINUOUS MONITORING OF STACK EMISSIONS:

The air contaminants which are continuously monitored at the G.V.R.D. refuse incinerator stack are particulates, hydrogen chloride, oxides of sulphur, total hydrocarbons and carbon monoxide.

A review of the emission data by the Ministry of Environment has shown that the plant air emissions have been within permitted limits with the exception of sulphur dioxide emissions during the beginning of 1988. The G.V.R.D. has isolated the problem to gypsum board and is now taking steps to eliminate this material from the waste stream. All recovered gypsum material is taken to a local recycling plant. As a result of the efforts taken by the G.V.R.D. sulphur dioxide levels are now within required limits.

The Environmental Health Division is concerned that the Ministry of Environment has not set short term (one hour) excursion limits for air emissions from the G.V.R.D. Incinerator. The Ministry of Environment is assessing air emission performance based upon a time averaging. The Federal Government Canadian Council of Resource and Environment Ministers recommends assessing compliance over a 24 hour period for air emissions from municipal waste incinerators. A short term (one hour) excursion limit is necessary to protect community health from high level, short duration emissions of pollutants.

It is recommended to Council that the Minister of Environment be requested to set short term (one hour) excursion limits for air pollutants emitted from the G.V.R.D. incinerator.

4.0 PERFORMANCE TESTING FOR TRACE METAL AND ORGANICS:

Taking into consideration the data provided by the G.V.R.D. and Ministry of Environment to date, the special manual stack emission tests for trace metal and organics such as dioxins and furans have shown that the incinerator's pollution control equipment which treats the gas stream are working efficiently.

The analysis revealed that at the time of sampling, the emissions of dioxins and furans from the incinerator is 1/20th of the proposed Canadian and Swedish Guideline.

The Environmental Health Division is concerned that the report of low emissions for dioxins and furans and the cost of analysis being approximately \$250,000 could result in the Ministry of Environment not requiring regular annual stack testing for trace metals and organic compounds such as dioxins and furans.

The Ministry of Environment approval document states that the need for future dioxins and furans testing will be assessed upon completion of the first performance test. The Environmental Health Division is of the opinion that yearly testing of the incinerator stack emissions for dioxins and furans, the most critical air contaminant from a community health concern, should be continued on a annual basis.

It is recommended to Council that the Minister of Environment be requested to require the Greater Vancouver Regional District to conduct annual stack testing of the refuse incinerator for trace organic compounds including dioxins and furans.

5.0 ASH RESIDUE:

During 1988, an ash sampling and analysis program revealed that with the exception of lead, concentrations of all parameters were below the leachate quality criteria of the B.C. Special Waste Regulations.

The average concentrations of lead were found to be 15.5 mg/l in the bottom ash extracts and 78.9 mg/l in the fly ash extracts. The specified limit for lead noted in the Special Waste Regulations is 5 mg/l.

The G.V.R.D. is conducting a source control program and has identified automobile batteries and mining industry laboratories as contributing to the high lead levels in the ash. The G.V.R.D. is confident that the source control program will reduce the lead content in the ash to required levels.

The Environmental Health Division is concerned regarding the future utilization of ash that is generated by the G.V.R.D. Incinerator.

For Council's information, the ash generated by the G.V.R.D. incinerator is currently landfilled in Coquitlam, in specially designed cells, under permit and inspection by the Ministry of Environment. The life expectancy of the Coquitlam site for disposal of the incinerator's ash is approximately three years.

Staff are of the opinion that strategies for future utilization of the ash residue cannot be developed until a complete Environmental Hazard Assessment of the ash is conducted. Staff are concerned that the assessment conducted to date by the G.V.R.D. has not included hazardous compounds such as dioxins and furans. With the incinerator pollution control equipment performing effectively to remove dioxins and furans from the gas stream, the result is that these compounds are potentially redirected to the ash residue.

It is recommended to Council that the Minister of Environment be requested to not consider approving a long term strategy for ash disposal or utilization until a complete Environmental Hazard Assessment has been conducted and commented on by our Municipality.

6.0 SOIL AND VEGETATION ASSESSMENT:

The 1988 soil and vegetation assessment conducted by the G.V.R.D. is currently being reviewed by the Ministry of Environment and Environmental Health Division staff. It is important that this document not be used to comment on possible health concerns associated with the consumption of vegetables produced in this Municipality's farm lands. The use of this data for determining effects on vegetation due to emissions from the incinerator is being questioned by municipal staff and identifying trends will take several years of data.

During late 1988, the news media commented on the 1987 Incinerator Soil and Vegetation data and raised questions on possible health concerns associated with consumption of vegetables produced in Lower Mainland agricultural sites that are in proximity to the G.V.R.D. Incinerator. In response to questions raised by the news media, the Ministry of Environment is conducting a vegetation assessment study for the Lower Mainland Region. This study will address the public health issues previously raised in the news media regarding vegetables grown in agriculture sites located in a metropolitan setting. Environmental Health Division staff are being consulted on the study and upon conclusion will present a report to Council.

7.0 PUBLISHING OF DATA DETAILING THE AIR EMISSIONS CHARACTERISTICS OF THE G.V.R.D INCINERATOR:

The G.V.R.D. previously committed to the Municipality of Burnaby that all data associated with the refuse incinerator will be public information, available to the citizens of Burnaby and to all others in the region. To date, the G.V.R.D. has not provided public information summarizing the air emissions characteristics of the refuse incinerator.

It is recommended that Council request the Minister of Environment to require the G.V.R.D. to annually publish information detailing the annual assessment of air emissions and ash characteristics.

8.0 CONCLUSION:

The Burnaby located, G.V.R.D. refuse incinerator commenced commercial operation at the beginning of 1988 March. The assessment of emissions and stack testing for trace organics has shown that the incinerator's pollution abatement equipment is reducing the emission of air contaminants to below set limits. As with all new technology dealing with pollution abatement, emission limits must continuously be reviewed and refined to ensure protection to the environment and community public health. This report recommends that Council request the Minister of Environment to take the following action concerning the G.V.R.D. refuse incinerator.

- a) Require the Greater Vancouver Regional District to limit the annual tonnage of refuse burned at their refuse incinerator to 210,000 tonnes per annum.
- b) Set short term (one hour) excursion limits for air pollutants emitted from the G.V.R.D. refuse incinerator.
- c) Require the Greater Vancouver Regional District to continue annual stack testing of their refuse incinerator for trace metals and organics (dioxins and furans).
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- e) Require the Greater Vancouver Regional District to publish yearly information detailing the annual assessment of air emissions and ash characteristics for their refuse incinerator.

GVH/gt

cc: Medical Health Officer
Director Administrative &
Community Services
Director Engineering

George V. Harvie

G.V. Harvie, C.P.H.I.(C)
CHIEF PUBLIC HEALTH INSPECTOR

