

ITEM	7
MANAGER'S REPORT NO.	1
COUNCIL MEETING	93/01/04

TO: CITY MANAGER 1992 DECEMBER 29

FROM: ACTING CHIEF PUBLIC HEALTH INSPECTOR

SUBJECT: TICOR TECHNOLOGY LIMITED, 4623 BYRNE ROAD, BURNABY.

PURPOSE: TO INFORM COUNCIL ON APPLICATION FILED BY TICOR TECHNOLOGY LIMITED TO THE G.V.R.D. FOR AMENDMENT OF THEIR EXISTING (AIR EMISSIONS) PERMIT VA-383.

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RECOMMENDATION:

1. THAT a copy of this report be forwarded to Ms. Lorna Hancock, Executive Director, Health Action Network Society, #202-5262 Rumble Street, Burnaby, B.C., V5J 2B6.

REPORT

1.0 INTRODUCTION:

At the regular Council Meeting on 1992 November 23, a presentation was made by Ms. Lorna Hancock, Executive Director, Health Action Network Society regarding an application filed by Ticor Technology Limited to amend their existing G.V.R.D. (Air Emissions) Permit VA-383. Arising from the delegation's presentation and discussion, Council referred specific questions to staff for inclusion into their report on the subject issue.

The following report provides information on Environmental Health Services involvement as it relates to reviewing of the noted application and includes the G.V.R.D.'s responses to specific questions raised during the 1992 November 23 Council Meeting.

2.0 BACKGROUND:

Ticor Technology Limited, a Division of Philip Environmental Services Inc. (B.C.), is located in an M3 zone and has been in operation since 1988. The nature of business, as stated in their Business License, is Manufacturing General - reclamation and refining of titanium dioxide from waste paint and related material. The operator has appropriate valid Permits from the Ministry of Environment, Lands and Parks, and the G.V.R.D. relating to storage of waste paint or paint related materials, ash, as well as discharges to the atmosphere and sanitary sewer.

In June 1992, an application for amendment to the existing G.V.R.D. (Air Emissions) Permit VA-383 was filed by Ticor Technology Limited. The amendment relates to an operational change from a titanium dioxide reclamation facility to a Special Waste thermal treatment facility for destruction of waste paints, waste ink (printer's ink), resins, oil filter media, fuel filter media, hydrocarbon contaminated soils and various material not regulated under the B.C. Special Waste Regulations.

For Council's information, an application was also filed by Ticor in 1992 February with the Ministry of Environment, Lands and Parks, to reflect additional storage space required and type of waste proposed to be stored at their facility. According to the G.V.R.D. staff, permitted discharge to the sanitary sewer, however, would not be requiring an amendment.

3.0 COMMENTS REGARDING TICOR'S APPLICATION FOR AMENDMENT TO THE G.V.R.D. (AIR EMISSIONS) PERMIT VA-383:

As a part of the application review process, Environmental Health Services staff have met with the regional district officials on two occasions to obtain clarifications regarding the subject application. In addition, staff have also submitted a letter to the G.V.R.D. in response to the noted application. In particular, staff's concerns have echoed and supported those of the regional district officials which require Ticor to:

- undertake an approved atmospheric dispersion study to identify the maximum ground level concentration of emissions from the facility,
- establish an approved ambient air quality, meteorological monitoring and continuous air emissions monitoring programs, and
- demonstrate equipment's capability of thermally treating wastes other than those previously authorized.

Recent discussions with Mr. Don Miller, G.V.R.D., have revealed that the above concerns have now been addressed by Ticor to their satisfaction. In addition, the regional district has forwarded a letter responding to those specific questions raised by Health Action Network Society during their presentation at the regular Council Meeting on 1992 November 23 (see Attachment).

Environmental Health Services staff have been advised by the G.V.R.D. officials that the above application is still under review. In addition, Mr. Harvey Maxwell, B.C. Ministry of Environment, Lands and Parks has also confirmed that application by Ticor requesting amendment to their permitted storage space is also under review. Any changes in the status of these applications will be brought to the attention of Council.

4.0 CONCLUSION:

An application for amendment of their G.V.R.D. (Air Emissions) Permit VA-383 was filed by Ticor Technology Limited with the regional district in June 1992. The intent of the application was to allow for acceptance and treatment of wider range of wastes regulated pursuant to the B.C. Special Waste Regulation in addition to the paint related wastes already authorized.

An application has also been filed by the applicant with the B.C. Ministry of Environment, Lands and Parks, requesting an amendment to their permitted storage space.

Environmental Health Services staff have formally responded to the (air emissions) application and the concerns raised by staff and the G.V.R.D. have been met by Ticor. In addition, the G.V.R.D. have addressed the questions raised by Health Action Network Society.

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The applications filed by Ticor to the G.V.R.D. and Ministry of Environment, Lands and Parks requesting amendment to their previous air emissions and waste storage permits respectively are still under review and any changes in their status will be brought to the attention of Council.



K.C. Johnston, C.P.H.I.(C)
ACTING CHIEF PUBLIC HEALTH INSPECTOR

DD/KCJ:ge

Attachment

cc: Medical Health Officer
Director Administrative &
Community Services



Greater Vancouver Regional District
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

General
Telephone (604) 432-6200
Fax (604) 432-6251

Air Quality and Source Control Department - Tel (604) 436-6700 Fax (604) 436-6707

December 14, 1992

File No: 632.2.383

City of Burnaby,
6161 Deer Lake Avenue,
Burnaby, B.C.
V5G 4A3

DD K 92.12.18

Attention: Mr. K.C. Johnston, Acting Chief Public Health Inspector

Dear Mr. Johnston:

Thank you for your letter dated December 2, 1992 regarding the Health Action Network's concerns about Tigor Technology Limited. In response to the specific issues raised the following information is provided:

1. *Do we know what will be burned in the incinerator?*

Only those materials which have been subject to a thorough trial burn and concurrent stack emission testing to demonstrate compliance will be authorized on an ongoing basis. Presently, only waste paint and paint related materials are authorized. The company has applied for approval to process waste inks, paint manufacturing resins, oil filter media, fuel filter media, and hydrocarbon contaminated soils.

2. *Where do the products come from?*

Feed materials originate from a variety of industries such as paint manufacturers, automobile body shops, shipyards, railyards, metal finishers, and aircraft manufacturers. Contaminated soils would be from various sites in B.C.

3. *What is the chemical composition of the products?*

The majority of the wastes are paint related and so contain varying amounts of paint pigments and common paint solvents such as toluene, xylene, and methyl ethyl ketone. The filter media will be made up of paper, cardboard, diatomaceous earth, and kaolin clay combined with varying amounts of motor oils and fuels. Only soils contaminated with hydrocarbons (fuel spills and the like) are being proposed for treatment.

4. *What will be the operating temperature of the incinerator?*

Typical operating temperature of the incinerator is 950-1050° C. The minimum operating temperature specified in the current Permit is 870° C.



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5. *How long will the gases be exposed to the flame for?*

Residence time for the incinerator has been calculated to be in the range of 2.5 to 3.2 seconds.

6. *Detailed information should be provided on the type of scrubbers used.*

A technical information sheet for the scrubber is attached.

7. *Are particulates going to be filtered out? If so, what type of filters will be used? Will the filters be cleaned regularly? How will the filtered material be handled?*

Particulate matter is presently removed with cyclones and a wet scrubber. The company has tentative plans to install a baghouse filtration system in addition to the scrubber to ensure compliance with the more restrictive particulate limit specified in the recently amended Special Waste Regulation.

8. *Where is the flyash going to go to?*

Flyash and any other solid residues captured by the pollution control works are appropriately packaged and shipped to a secure landfill in Idaho.

9. *Will wet scrubbers be used? If so, how will the waste water be disposed of?*

A wet scrubber is currently in use. Depleted scrubbing liquid is treated and discharged to the sanitary sewer system under Permit from the Greater Vancouver Sewerage and Drainage District.

10. *Will waste be treated before it is sent away? Will it be monitored?*

This question is unclear. All waste material that arrives at the site is treated and all discharge streams (solid, liquid, gaseous) are extensively monitored.

11. *How hot will the gases be before they enter the scrubber?*

The temperature of the gases is approximately 400° C. at the entrance to the scrubber.

12. *What volume of material will be burned in the incinerator?*

Feed rate to the incinerator is approximately one barrel (200 kg) per hour. Contaminated soil would likely be fed at a faster rate, probably around one tonne per hour.

13. *Will waste be segregated by the type of waste it is?*

Yes. This is a requirement of the company's Special Waste Storage Permit, which is administered by the Surrey Regional Office of the provincial Waste Management Branch.

14. *Will adequate records be kept?*

Yes. This is a requirement of the company's storage and emissions Permits.

15. *What is the speed of the gas leaving the stack?*

Approximately 6 to 8 meters per second.

16. *Who will monitor the facility and inspect it?*

Representatives of the Greater Vancouver Regional District, the provincial Waste Management Branch, and the City of Burnaby, among others, will be carrying out inspections and monitoring discharges as required.

17. *Are emissions going to be monitored constantly?*

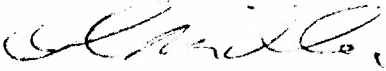
Yes. Several emission parameters are continuously monitored and recorded.

18. *Will monitoring be made public?*

Yes. All emission monitoring results submitted to the Greater Vancouver Regional District are available to the public.

If you have any further questions or comments regarding this issue, please call me at 436-6890.

Yours truly,



D.C. Miller,
Officer,
Air Quality and Source Control

Attachment

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Technical Data Scrubber

Make: PROCEED AIR INDUSTRIES
Montreal/Quebec

MODEL: F118-2502

1) QUENCH TOWER

3' DIA X 12' high MS. Construction
QUENCH PIPE 10 GA. 316 SS, 15" D X 7' long
90 GAL/Min. recirculated Water

2) Venturi

316 SS Construction 12" X 18" c/w damper, pressure drop 30" W.C.:
inlet and outlet transition p.c.s.
45 GAL/Min. recirc. Water

3) Demisting Tower

316 SS Construction, 3' DIA X 12' High
4' cone bottom
18" TRI PACK TOWER PACKING, POLYPROPELYNE
2 GAL/Min. water spray onto packing recirculated water

4) Prime Air Mover (2)

Fabricator: General Equipment
fan material stainless steel (316)
duty 4000 CFM @ 36" SP 0.060 cu/ft density (200°F)
RPM 3600 BHP 29.1 @ 0.60 cu/ft. density

BHP 41.5 @ 0.75 cu/ft. density

50 HP MOTOR,

Drive ratio: 1.1
Drive Sheaves Browning 4 @ 3V6.5
V-Velts 4 - 3V800

5) Chevron blade scrubber, polishing & demisting

Make = Prolite CT/120 ELIMINATOR
SS 316. 51" overall length. 29"wide X 10"deep.

Velocity Range 2 - 8 m/s
Optimum V.R. 3 - 6 m/s
Pressure Drop 0.1 - 0.4 inches
Max liquid loading 0.4 gpm.
PROPLET DIA. 16 microns 99.9% efficiency

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Afterburner - Residence Time Calculation

1) Volume of the afterburner

V_1 (rectangular)	= 0.62 x 0.62 x 3.65	$V_1 = 1.40 \text{ m}^3$
V_2 (rectangular)	= 0.65 x 0.8 x 0.68	$V_2 = 0.35 \text{ m}^3$
V_3 (cylinder)	= $\pi \times 0.75^2 \times 2.15$	$V_3 = 3.80 \text{ m}^3$
V_4 (cylinder)	= $\pi \times 0.53^2 \times 5.3$	$V_4 = 4.68 \text{ m}^3$

Total volume $V_1 - V_4 = 10.23 \text{ m}^3$

2) Flow rate 40 dscm/min (20 °C)

3) Temperatures

V_1, V_2, V_3	-	880 °C	(1 x 0.75 mil. BTU burner)
V_4	-	980 °C	(2 x 0.75 mil. BTU burner)

4) Flow rate at elevated temperature

$\frac{P_0 \times F_0}{T_0}$	=	$\frac{P \times F}{T}$	P - pressure (constant)
			F - flow rate ($\text{m}^3/\text{min.}$)
			T - temperature ($^{\circ}\text{K}$)

880 °C

980 °C

$$F_1 = \frac{1153.15}{293.15} \times 40$$

$$F_2 = \frac{1253.15}{293.15} \times 40$$

$$F_1 = 157.35 \text{ m}^3/\text{min.}$$

$$F_2 = 170.99 \text{ m}^3/\text{min.}$$

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5) Residence Time

Afterburner Section 1 (V₁+V₂+V₃) 880°C

$$T_{R1} = \frac{V_1 + V_2 + V_3}{F_1}$$

$$T_{R1} = \frac{5.55}{157.35}$$

$$T_{R1} = 0.035 \text{ min. or } 2.1 \text{ sec.}$$

Afterburner Section 2 (V₄) 980°C

$$T_{R2} = \frac{V_4}{F_2}$$

$$T_{R2} = \frac{4.68}{170.99}$$

$$T_{R2} = 0.027 \text{ min. or } 1.6 \text{ sec.}$$

Total residence time T_{R1} + T_{R2} = 3.7 sec.

Residence time at max. permitted flow rate (60 dscm/min.)

$$T_{R1} = 1.4 \text{ sec.}$$

$$T_{R2} = 1.1 \text{ sec.}$$

$$\text{Total} = 2.5 \text{ sec.}$$

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Flowsheet
Ticor Thermal Treatment Plan

