

**COMPETITION TRIBUNAL**

**IN THE MATTER OF** the *Competition Act*, R.S.C. 1985, c. C-34, as amended;

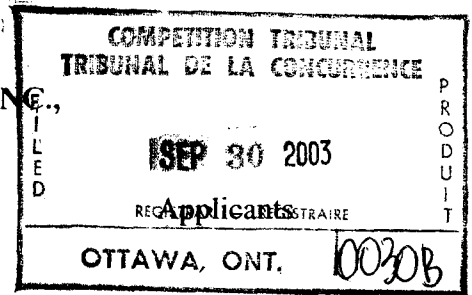
**AND IN THE MATTER OF** an application by Canadian Waste Services Holdings Inc., Canadian Waste Services Inc. and Waste Management Inc. under s. 106 of the *Competition Act*;

**AND IN THE MATTER OF** the acquisition by Canadian Waste Services Inc. of the Ridge Landfill in Blenheim, Ontario from Browning-Ferris Industries Ltd.

**BETWEEN:**

**CANADIAN WASTE SERVICES HOLDINGS INC.,  
CANADIAN WASTE SERVICES INC. and  
WASTE MANAGEMENT INC.**

- and -



**COMMISSIONER OF COMPETITION**

Respondent

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**AFFIDAVIT OF ROGER WARE, PH.D.**  
**(Sworn October 2, 2003)**

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I, **ROGER WARE, Ph.D.**, professor of economics, of the City of Kingston in the Province of Ontario, MAKE OATH AND SAY AS FOLLOWS:

1. I am a Full Professor of Economics at Queen's University in Kingston, Ontario. I have held full-time faculty positions for 23 years at the University of Toronto and Queen's University. I have published many articles in the area of Industrial Organization and Competition Policy, and a recent major textbook on the Economics of Industrial Organization, much of which is devoted to antitrust economics and competition policy. From 1993 to 1994, I held the T.D. MacDonald Chair at the Competition Bureau, and provided advice to the Director of Investigation and Research (now the Commissioner of Competition) and other officers on many cases and issues. I have testified, given evidence, and consulted in several matters

involving competition issues, and have been an invited speaker to the Canadian Bar Association Annual Competition Law Conference on several occasions.


2. A full version of my *curriculum vitae* is attached as Exhibit "A" to this my affidavit.
3. I have been retained by counsel for Canadian Waste Services Inc. ("CWS") to provide an economic analysis and opinion with respect to certain matters regarding the acquisition of the Ridge Landfill by CWS, in light of certain factual developments which have arisen since the Competition Tribunal ordered that the Ridge Landfill be divested.
4. Attached hereto as Exhibit "B" is my Expert Report providing my opinion on the matters set out therein, which opinion I have rendered on the basis of the facts that are also set out therein.

SWORN BEFORE ME at the City of  
~~Kingston~~ <sup>Ottawa</sup> ✓  
in the Province of Ontario on  
October 2, 2003.

  
\_\_\_\_\_  
A Commissioner, etc.

  
\_\_\_\_\_  
ROGER WARE, Ph.D.

This is Exhibit "A" to the  
Affidavit of Roger Ware, Ph.D., sworn before me  
at the City of <sup>Kingston</sup> ~~Kingston~~, in the Province of Ontario,  
*R. Ware* this 2nd day of October, 2003.

  
A Commissioner of Oaths, etc.

## CURRICULUM VITAE

September 2003

**NAME:** Roger Ware

**CURRENT POSITION:** Professor, Queen's University  
Director of LECG since June 1999

**OFFICE ADDRESS:** Department of Economics  
Queen's University  
Kingston, Ontario K7L 3N6

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**HOME ADDRESS:** 241 Alwington Place  
Kingston, Ontario  
K7L 4P9

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**DATE AND PLACE OF BIRTH:** February 23, 1951 - England

**CITIZENSHIP:** Canadian and U.K.

**EDUCATION:**

B.A. Honours (Economics)  
Cambridge University  
Awarded June 1972

M.A. (Cantab) awarded July 31,  
1976

M.A. (Industrial Economics)  
University of Sussex, England  
Awarded December 1973

Ph.D., Queen's University, Kingston,  
Canada, Awarded October 1981

**POSITIONS HELD:**

July 1997 - present	Professor, Queen's University
January 1991 - June 1997	Associate Professor, Queens University
August 1993 - August 1994	Holder of T.D.MacDonald Chair in Industrial Economics, Bureau of Competition Policy, Ottawa
1989 - December 1990	Associate Professor, University of Toronto
1987-88	Visiting Associate Professor, Department of Economics, University of California, Berkeley.
1986-87	Sabbatical Leave. Visiting Research Scholar, Carleton University and National Bureau of Economic Research, Stanford University
July 1986	Promoted to Associate Professor with Tenure, University of Toronto.
1981-86	Assistant Professor (Economics), Erindale College, University of Toronto.
1980-81	Lecturer in Economics, Erindale College, University of Toronto.
1979-80	Instructor, Introductory Economics, Queen's University
1977-79	Various Tutorial and Research Assistantship Positions held, Queen's University.

## POSITIONS HELD (continued)

1975-1977

U.K. Department of Industry,  
Industrial Policy Analysis and Briefing  
Division.

Provided advice on government support for research and development, and special assistance schemes for industry. During this period I completed a cost-benefit study of cost sharing support for industrial development projects.

1973-1975

U.K. Department of Industry.  
Economic Assistant, working on an econometric forecasting model of U.K. trade flows. Promoted to Senior Economic Assistant, October 1974.

**AWARDS:**

Holder of R. Samuel Mclaughlin Scholarships for graduate studies at Queen's University, 1977-78, 1978-79, 1980-81 sessions.

Awarded a Social Sciences and Humanities Research Council Post Doctoral Fellowship for 1983-84, renewed for 1984-85.

**SSHRC Research Grants:**

1983: \$6,760

1989: \$14,250

1992: (3 year grant in the amounts of:) \$19,500, \$4,300, \$2,300.

Awarded an SSHRC Leave Fellowship, 1986-87.

**MAJOR FIELDS OF RESEARCH INTEREST:**

**Industrial Organization:**

Antitrust Economics and Competition  
Policy  
Strategic Behavior  
Research and Development  
Dynamic Modelling  
Trade and Industrial Policy

**Public Economics**

**BOOKS**

*Industrial Organization: a Strategic Approach.* (with Jeffrey Church, University of Calgary) 2000. Boston: Irwin McGraw-Hill.

**JOURNAL PUBLICATIONS**

"Predatory Pricing In Canada, The United States And Europe: Crouching Tiger or Hidden Dragon," with Brian Facey, forthcoming 2003, *World Competition Review*

"Is Competition Law 'Beyond the Ken of Judges'?" 2001. *Canadian Competition Record*. Vol 20, No. 3.

"Efficiencies and the Propane Case" (2000), *International Antitrust Bulletin*.

"A Dynamic Model of Endogenous Trade Policy," (2001) joint with Bev Lapham, *Canadian Journal of Economics*.

"Interac, Essential Facilities and Access to Electronic Funds Networks: a Comment on Mathewson and Quigley," (1998) with Brian Rivard, *Canadian Competition Record*, 18: 12-21.

"Abuse of Dominance under the 1986 Canadian *Competition Act*," with Jeffrey Church, (1998) *Review of Industrial Organization*, 13: 85-129.

"Trade Dress and Pharmaceuticals: Efficiency, Competition and Intellectual Property Rights," 1997 with Jeffrey Church, *Policy Options*, September.

"Delegation, Market Share and the Limit Price in Sequential Entry Models," (1996) with Jeffrey Church, *International Journal of Industrial Organization*, 14: 575-609.

"Public Firms as Regulatory Instruments with Cost Uncertainty," (1996) with Devon Garvie, *Canadian Journal of Economics*, XXIX No. 2: 357-378.

"Raising Rivals' Costs and Alcoa: a Rejoinder" (1994)  
*Canadian Competition Policy Record*, October.

"Understanding Raising Rivals' Costs: a Canadian Perspective," (1994)  
*Canadian Competition Policy Record*, March.

"Markov Puppy Dogs and Related Animals," (1994) with Bev Lapham,  
*International Journal of Industrial Organization*, 12, 569-593.

"A Sequential Entry Model with Strategic Use of Excess Capacity," (1993) with Brad Barham, University of Wisconsin, *Canadian Journal of Economics*, XXVI, No. 2, 286-298.



- "Evolutionary Stability in the Repeated Prisoner's Dilemma," (1989) with Joseph Farrell, *Theoretical Population Biology*, 36, 161-166.
- "Eliminating Price Supports: a Political Economy Perspective," (1989) with Tracy Lewis and Robert Feenstra, *Journal of Public Economics*, 40, 159-185.
- "Forward Markets, Currency Options and the Hedging of Exchange Risk," (1988) with Ralph Winter, *Journal of International Economics*, 25, 291-302.
- Review of *The New Industrial Organization: Market Forces and Strategic Behavior* by Alexis Jacquemin (1988), *Southern Economic Journal*.
- "A Theory of Market Structure with Sequential Entry" (1987), with Curtis Eaton, *Rand Journal of Economics*, Vol. 18, #1, 1-16.
- "A Model of Public Enterprise with Entry" (1986), *Canadian Journal of Economics*, XIX, 642-655.
- "Long Term Bilateral Monopoly: The Case of a Resource" (1986), with Tracy Lewis and Robin Lindsey, *Rand Journal of Economics*, vol. 17, No. 1.
- "Public Pricing Under Imperfect Competition" (1986), with Ralph Winter, *International Journal of Industrial Organization*, 4, 87-97.
- "On the Shapes of Market Lattices in Loschian Spatial Models" (1986), with Mukesh Eswaran, *Journal of Regional Science*. "Inventory Holding as a Strategic Weapon to Deter Entry" (1985) *Economica*, 52, 93-102.
- "Lumpy Investment in a Growing Differentiated Market" (1984), *Economica*, 51, 377-391
- "Sunk Costs and Strategic Commitment: A Proposed Three-Stage Equilibrium" (1984), *Economic Journal*, 94, 370-378.
- "Strategic Timing and Pricing of a Substitute in a Cartelized Resource Market" (1983), with Nancy Gallini and Tracy Lewis, *Canadian Journal of Economics*, XVI, 429-446.
- Three Essays on the Economics of Differentiated Markets* (1981), Ph.D. Thesis, Queen's University,
- "The Relationship Between Efficiency and Technical change" (1977), in *Industrial Efficiency and the Role of Government*, edited by C. Bowe, HMSO, London.

## ARTICLES IN BOOKS

Publication (on CD) of paper "Recent legislative changes: is competition law becoming too industry specific?" contained in proceedings of Canadian Bar Association 2002 Annual Fall Conference on Competition Law

"The Effect of Uncertainty on the Value of Strategic Commitment." 2002. With B.C.Eaton, in volume, *Applied Microeconomic Theory: Selected Essays of B. Curtis Eaton*. Northampton, MA: Edward Elgar.

"Leading Edge Issues in the Economics of Competition Law," in J.B.Musgrove ed., *Competition Law for the 21<sup>st</sup> Century*, (proceedings of the 1998 Canadian Bar Association), Juris Publishing.

"Network Industries, Intellectual Property Rights, and Competition Policy." 1998. in N. Gallini and R. Anderson ed., *Competition Policy, Intellectual Property Rights and International Economic Integration* Industry Canada Research Series, The University of Calgary Press.

"Entry Deterrence" (1991) chapter in *New Developments in Industrial Organization* ed. by Manfredi La Manna and George Norman, Edward Elgar Publishing, London.

Review of Market Structure and Innovation, by M.I.Kamien and N.L.Schwartz (1983), *Canadian Journal of Economics*.

## RECENT PROFESSIONAL ACTIVITIES

Refereeing on a regular basis for *American Economic Review*, *Canadian Journal of Economics*, *The International Journal of Industrial Organization*, *The Journal of Industrial Economics*, and occasionally for *Journal of International Economics*, and *International Economic Review*.

Presentation of a paper "Efficiencies and the Propane Case" at the CBA Competition Law Section Meetings, Ottawa, September 2000.

Organizer, Paper presenter and Chair of two Sessions on *Competition Act* at 1997 Canadian Economics Association Annual Conference, St. John's, Nfld., June 1997.

Organizer and Chair of Panel Session on Canadian Competition Policy at 1992

Canadian Economics Association Annual Conference, Charlottetown, June 1992.

Co-Organizer of UBC Conference on Industrial Organization, July 1993

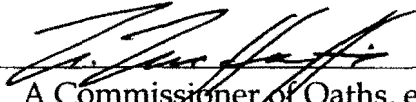
Organizer of a Conference on *Barriers to Entry*, March 1995, at the Bureau of Competition Policy, Ottawa.

Holder of the T.D.McDonald Chair in Industrial Organization at the Competition Bureau, Ottawa, from 1993-94.

**Membership of Professional Societies -**

Member of Canadian Economics Association, American Economics Association.

This is Exhibit "B" to the  
Affidavit of Roger Ware, Ph.D., sworn before me  
at the City of ~~Kingston~~<sup>Oran</sup>, in the Province of Ontario,  
*W.B.* this 2nd day of October, 2003.

  
A Commissioner of Oaths, etc.

**REPORT OF PROFESSOR ROGER WARE,  
QUEEN'S UNIVERSITY**

**prepared on behalf of Canadian Waste Services Inc.**

**DATED: September 26, 2003**

**Professor Roger Ware  
Department of Economics  
Queen's University  
Kingston, ON  
K7L 3N6**

## A. INTRODUCTION

1. Counsel for Canadian Waste Services Inc. (“CWS”) has requested that I provide an economic analysis and opinion concerning:
  - a. the effects of the following facts (the “Changed Facts”):
    - i. the landfill capacity that was predicted by the Competition Tribunal to arise by 2002 or 2003 from the predicted expansions of the Richmond and Warwick landfills is not available presently; and
    - ii. such capacity is not possibly available until 2006 to 2009;  
  
on the Competition Tribunal’s analysis of the competitive effects of the acquisition of the Ridge by CWS, as set out in its decision of March 28, 2001, including:
      - iii. the effects on the calculation of supply and demand for the disposal of Industrial, Commercial and Institutional waste (ICI Waste) from the Greater Toronto Area (GTA); and
      - iv. the effect of such supply and demand on the appropriate delineation of the geographic market for the disposal of ICI Waste from the GTA; and
  - b. whether there is an effective remedy other than the divestiture of the Ridge to address the competitive effects identified by the Tribunal with respect to only the market for the disposal of waste from Chatham-Kent, and, in particular whether the divestiture of the CWS Gore/Blenheim landfill would be an effective remedy.
2. I have prepared this report myself and I am solely responsible for its content.
3. In arriving at my opinion I have assumed a set of facts to be true. These facts are listed as an Appendix to this report (the “Assumed Facts”).

## **B. THE IMPLICATIONS OF THE CHANGED FACTS FOR THE MARKET FOR ICI WASTE FROM THE GTA**

4. An essential element of the Tribunal's decision on the merits was that there would be an excess of capacity in 2003 among Southern Ontario landfills capable of supplying ICI waste disposal to the GTA. In particular the Tribunal included capacity attributable to expanded CWS landfills at Richmond and Warwick. I have been instructed to assume that this capacity is not available and can not be available before 2006 at the earliest. Most of my report considers the implications of these facts. In a separate part of my report I consider some additional facts that reinforce my conclusions.
5. In considering the new equilibrium of supply and demand, I will analyze only the changes in capacity as described in the Assumed Facts. The major fact change is that neither the predicted expansion of the Richmond landfill nor the predicted expansion and re-permitting of the Warwick landfill to receive GTA waste has taken place. On a smaller scale, the Petrolia landfill has been re-permitted so as to become available for GTA waste to a maximum available annual capacity of 300,000 tonnes (365,000 total tonnes). For the most part I will have little to say about changes in demand, other than the fact that I assume (assumption 19 in the Assumed Facts) that demand for ICI waste from the GTA has not decreased since 1999.

## **THE SIGNIFICANCE OF THE CHANGED FACTS FOR MICHIGAN'S PRESENCE IN THE MARKET AND THE ABILITY OF SOUTHERN ONTARIO LANDFILLS TO INCREASE TIPPING FEES**

6. The starting point for my analysis is the Tribunal's finding that "a broader market would be justified when premised on prevailing prices"<sup>1</sup>. In my judgment the present circumstances of supply and demand point to the same conclusion, but stated more strongly. Namely, that with a more serious shortfall of capacity in Southern Ontario resulting from landfill closures that are only partly offset by the expanded annual capacity at Petrolia, a broader geographic market including Michigan landfills is the

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<sup>1</sup> *Commissioner of Competition v. Canadian Waste Services Holdings Inc.*, 2001 Comp. Trib. 3, Reasons and Decision at [191].

only accurate way to describe the current structure of the market for ICI waste from the GTA. In fact Michigan landfills are the marginal suppliers that determine the equilibrium price in conjunction with demand. To put the conclusion another way, without the excess capacity that the Tribunal envisioned, a finding on geographic market definition involving only Southern Ontario is not consistent with either the original analysis of the Tribunal in its merits decision nor with the present fact situation.

7. The economic significance of the new facts is essentially as follows. Referring to the Commissioner's "Reality Check" document the Tribunal cites a total predicted capacity available for GTA waste of 3,444,500 tonnes<sup>2</sup>, a predicted demand on these landfills of 3,051,381 tonnes and a consequent excess capacity of 393,119 tonnes.<sup>3</sup> It is this finding of emerging excess capacity that was the central fact behind the Tribunal's conclusion that the merger would likely create a substantial prevention and lessening of competition, because the Tribunal concluded that such excess capacity would lead to a fall in tipping fees charged by Southern Ontario landfills and the exclusion of Michigan landfills from the market.
8. The arithmetic of the change from a situation of excess capacity to one of excess demand is summarized in the following table, reproduced from the Applicants' Statement of Grounds and Material Facts,

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<sup>2</sup> The Tribunal's 3,444,500 capacity figure includes six landfills which it was predicted would be directly available to take GTA waste (Walker, Ridge, Warwick, Richmond, Essex-Windsor and Greenlane), and one landfill (Petrolia) which could not take GTA waste, but which it was submitted could absorb waste from two landfills that were closing - Lasalle and Blackwell.

<sup>3</sup> *Commissioner of Competition v. Canadian Waste Services Holdings Inc.*, 2001 Comp. Trib. 3, Reasons and Decision at [202, 203].



**TABLE 2 - CHANGED CIRCUMSTANCES RE CAPACITY**

Supply	Tribunal's Prediction for 2003	2003 Actual
Walker Landfill	617,000	617,000
Ridge Landfill	680,000	680,000
Warwick Landfill	750,000	56,000
Richmond Landfill	750,000	125,000
Essex-Windsor Landfill	320,000	320,000
GreenLane Landfill	262,500	262,500
Petrolia Landfill	65,000	365,000
<b>TOTAL SUPPLY</b>	<b>3,444,500</b>	<b>2,425,500</b>
<b>Demand</b>		
<b>TOTAL DEMAND (per Tribunal)</b>	<b>3,051,381</b>	<b>3,051,381</b>
<b>SUPPLY LESS DEMAND = CAPACITY EXCESS (SHORTFALL)</b>	<b>393,119</b>	<b>(625,881)</b>

9. The essence of the new facts is a net shortfall of approximately one million tonnes of capacity relative to the figure used by the Tribunal in their analysis. Thus, the excess capacity envisioned by the Tribunal in their decision has not materialized. Instead, with the closures of Blackwell, Lasalle, Britannia and Keele Valley landfills, only partially offset by higher annual capacity at Petrolia, it is evident that more waste must be shipped to Michigan than was the case in 1999. There is no indication that this will change before a situation of excess capacity is created in Southern Ontario.
10. The figures below illustrate the effect of the change in the facts on the market equilibrium in ICI waste from the GTA. Figure 1 illustrates the market conditions in 1999, the last year for which demand data were available to the Tribunal at its original hearing.

UNIT  
TRANSPORT  
PLUS  
DISPOSAL  
COSTS

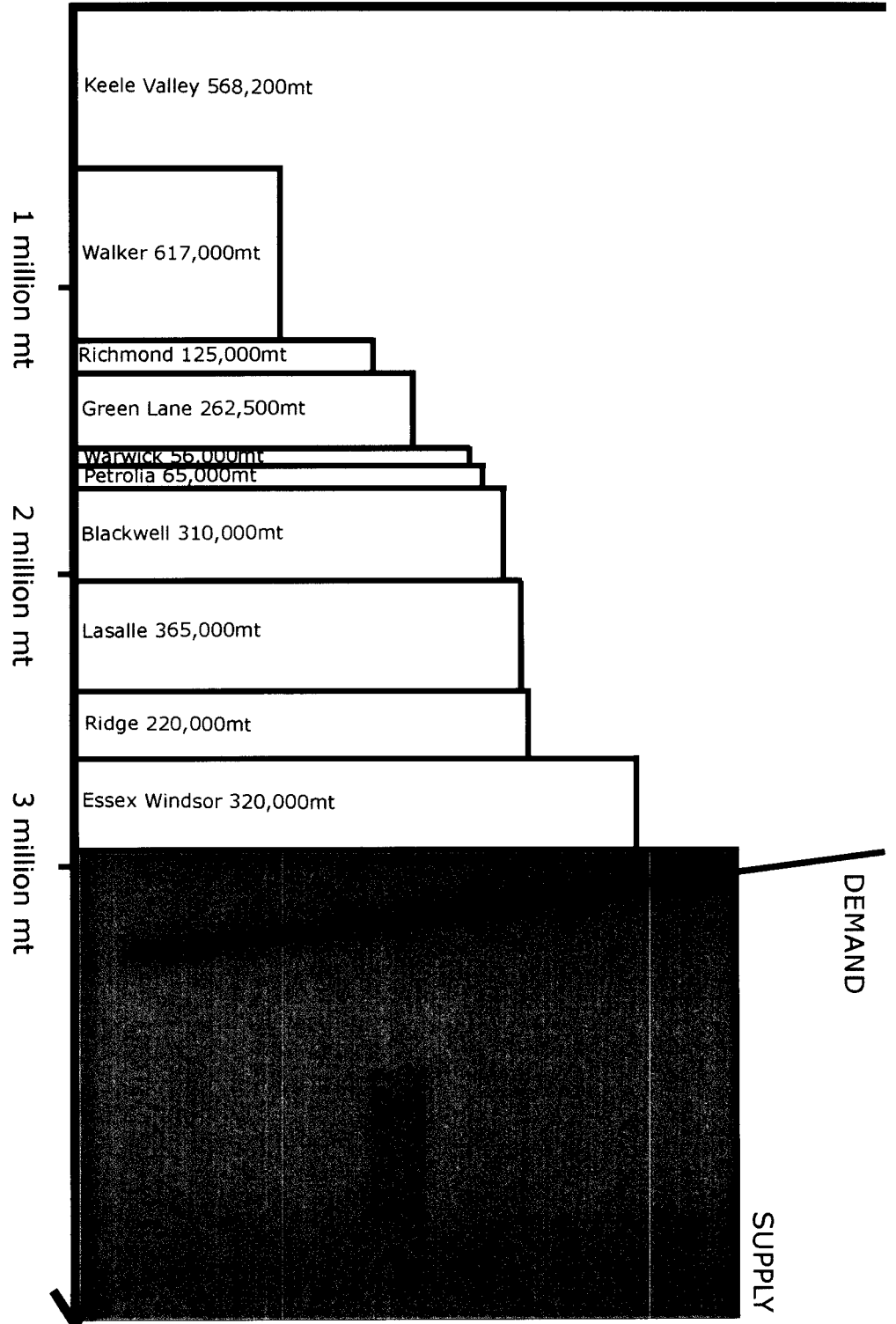


FIGURE 1: SUPPLY-DEMAND CONFIGURATION FOR ICI WASTE DISPOSAL TO THE GTA IN 1999

11. The upward sloping step-function represents in schematic form the supply curve for waste disposal services available to the GTA. The step function shows an estimate of the “total unit costs” for each relevant landfill, that is average disposal costs<sup>4</sup> plus transportation costs from the GTA. The width of each step in the supply curve represents the available capacity at that landfill for accepting ICI waste from the GTA. Although I have made an attempt to accurately depict available capacity on the horizontal axis, and to represent the increasing transportation costs with distance on the vertical axis, the graphs are intended for illustrative purposes, not as a tool for quantitative analysis. In particular I have not assumed any variation in disposal costs between landfills and the origin of the vertical axis in the figures is at the level of average disposal costs. The graph does incorporate the finding by Dr. Baye (accepted by the Tribunal at [99]) that the border crossing to Michigan (and New York) involves additional costs of approximately \$5 per tonne, in addition to transportation costs directly related to distance. The additional border costs incurred in shipping waste to Michigan ensures that the supply curve of Michigan landfills lies everywhere above and to the right of that of landfills in Southern Ontario.
12. I define the *total unit costs* for a particular landfill as the average disposal costs per tonne to the landfill, plus the transportation costs per tonne of transporting the ICI waste from the GTA. Taking into account the distance and the additional border costs, Michigan landfills represent the *marginal suppliers to the GTA market for ICI waste*. The economics of the market equilibrium are not much more complicated than setting demand equal to supply.<sup>5</sup> The market price is determined by the intersection of the supply curve and the demand curve. In the 1999 scenario the important consequence is that the market price will be determined by the total unit costs of the marginal landfill in Michigan. The larger the capacity shortage that emerges in Southern Ontario, the more robust this conclusion will be.

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<sup>4</sup> These are the actual costs facing the landfill per tonne.

<sup>5</sup> Care has to be taken to consider the fact that the economic interdependencies extend beyond GTA waste and beyond Southern Ontario landfills. In particular, the demand for waste disposal from non GTA communities will clearly affect the capacity available for GTA waste, and the ultimate price that is determined in the market.

13. Of course, in reality there is not a single marginal landfill in Michigan. Michigan landfills form a cluster whose transportation costs including border transit from the GTA are higher than those from Southern Ontario landfills. Given the additional costs of crossing the border, Michigan landfills are more similar to each other than they are to Southern Ontario landfills. The central fact about Michigan landfills that distinguishes them from those in Southern Ontario, however, is the enormous capacity available for GTA waste (Assumed Fact 22). This is why I have represented the supply curve for Michigan landfills as very flat in the figures, because small increases in the T&D price would induce very large increases in the supply of capacity to the GTA market.
14. Each landfill that receives GTA waste sets its tipping fee, given transportation costs from the GTA to its landfill location, to the prevailing T&D price for GTA waste. This is consistent with the evidence of Dr. Baye and industry participant witnesses that was presented to and accepted by the Tribunal (at the original section 92 hearing) on tipping fees.<sup>6</sup> It is easy to see why none of the inframarginal landfills have the ability to raise price in these conditions. If they were to raise their tipping fee so that the combined tipping fee + transportation fee exceeded the market determined level, then GTA transfer stations would simply choose instead to ship more waste to Michigan landfills, which have a very large capacity to accept ICI waste from Toronto. It also evident that in these 1999 conditions in which the Tribunal found that the market would be larger than Southern Ontario, a change in ownership of the Ridge landfill would not create any market power, nor would it lead to any change in tipping fees or prevention or lessening of competition. No matter who owns the Ridge, and whether or not the ownership is combined with ownership of other landfills, no better strategy is available to them than to sell up to capacity at the prevailing T&D price.
15. The Commissioner made submissions and Dr. Baye provided evidence that excess capacity in Southern Ontario landfills would prevail in the period from 2002 onwards.

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<sup>6</sup> *Commissioner of Competition v. Canadian Waste Services Holdings Inc.*, 2001 Comp. Trib. 3, Reasons and Decision at [77].

The Tribunal accepted that there would be excess capacity in the period following the merger. The equilibrium of supply and demand under the facts that supported the Tribunal's decision is illustrated in Figure 2.

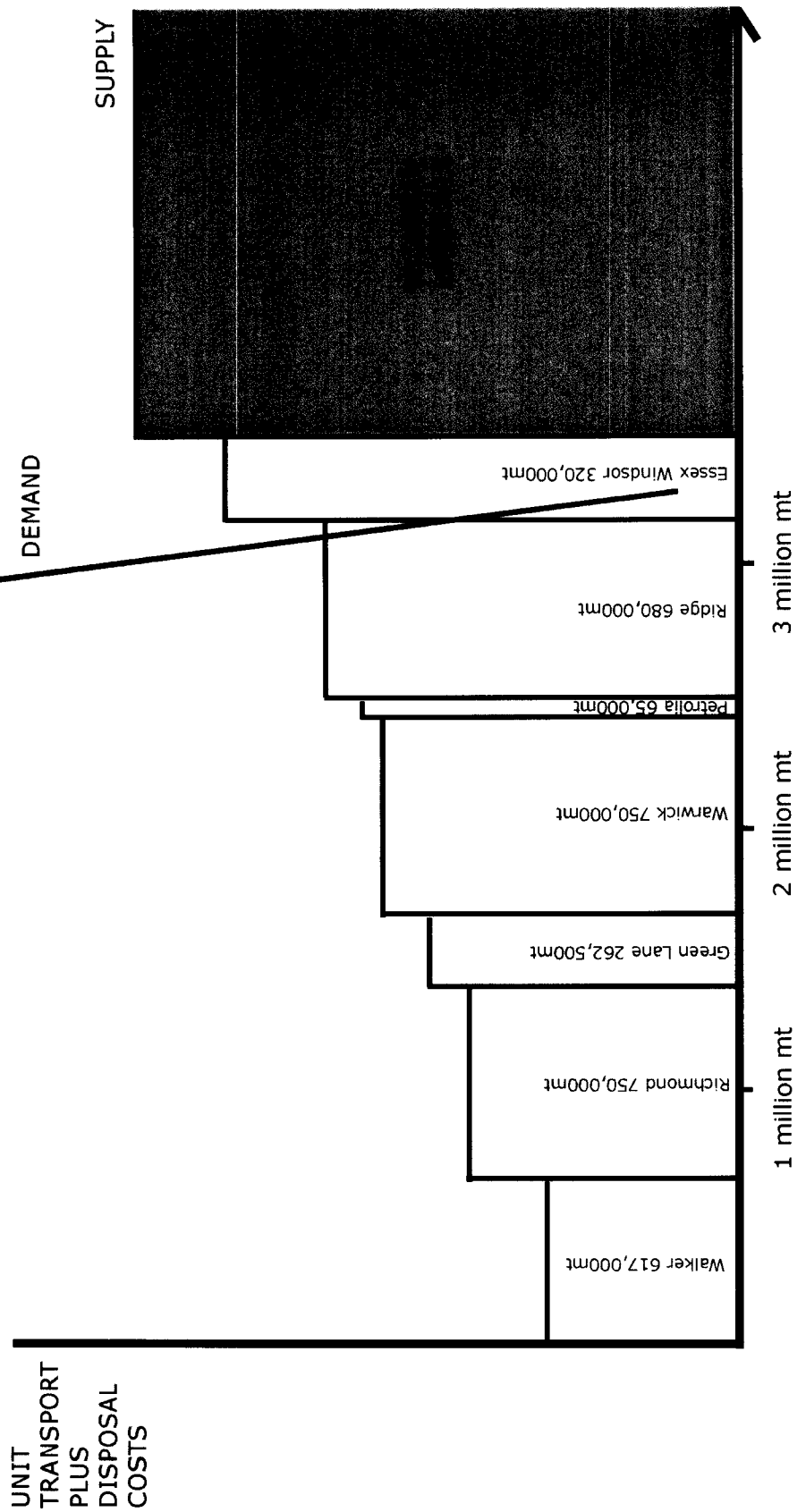


FIGURE 2: SUPPLY-DEMAND CONFIGURATION FOR ICI WASTE DISPOSAL TO THE GTA ENVISIONED BY CT IN 2003

16. As can be seen from Figure 2, demand appears in the same place in the figure, but the supply curve has been adjusted to incorporate the predicted changes in capacity at Southern Ontario landfills. In particular, Keele Valley, Lasalle and Blackwell no longer appear, and the capacity of Richmond, Warwick and Petrolia has been expanded in the figure to incorporate the predicted expansions.
17. In major part due to the forecast expansions at the Richmond and Warwick landfills, the Tribunal predicted that excess capacity would emerge in southern Ontario landfills, defined as an excess of supply of southern Ontario landfill capacity available to the GTA, over demand on those landfills for ICI waste disposal from the GTA and elsewhere. The effect of such excess capacity would have been to shift the marginal landfill to one of the landfills in southern Ontario, with the effect that the T&D price determined by the market would have fallen to the level of unit costs (as per my above definition) of the marginal Southern Ontario landfill.
18. Figure 3 illustrates what has actually happened in the market for ICI waste from the GTA based on the Assumed Facts. Instead of the forecast excess capacity, an increasing capacity shortage has developed. Just as in the case of Figure 1, shipments to Michigan play a significant role in the market equilibrium. However, the significance of Michigan landfills has increased since 1999.<sup>7</sup> Because of the increased importance of Michigan landfills, the Tribunal's conclusion that at prevailing prices a broader market definition is appropriate - is even more robust. The marginal landfills are clearly to be found in Michigan, and the uniform tipping plus disposal fee is being determined by Michigan landfills. Because there is so much capacity available at these Michigan landfills, changes in capacity or price that are initiated by southern Ontario landfills can not influence the market clearing T&D price.

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<sup>7</sup> This flows from the fact that there is much less capacity in Southern Ontario than there was in 1999.

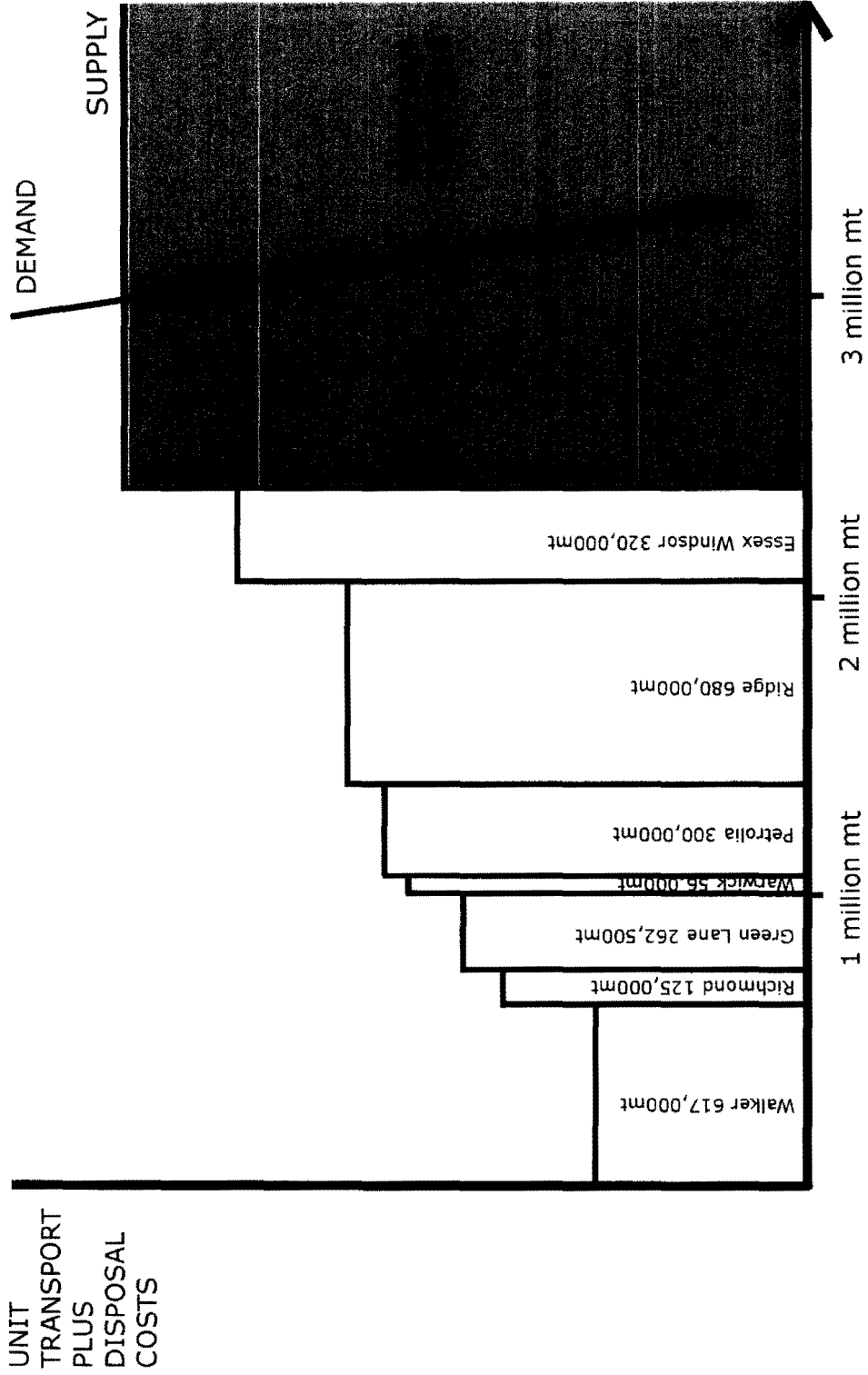


FIGURE 3: SUPPLY-DEMAND CONFIGURATION FOR ICI WASTE DISPOSAL TO THE GTA REALISED IN 2003



19. The abundant capacity for disposal of waste from the GTA means that the supply curve of waste disposal services from Michigan is almost horizontal. This means that a very small increase in the prevailing T&D price, which would translate into a small increase in the tipping fee to a given landfill, would induce a large increase in the volume of waste disposal supplied. This could occur either because landfills in Michigan already supplying the market increased the volumes they were willing to absorb, or because marginal landfills that are not currently supplying find it profitable to enter the market at a slightly higher price. Either way, with so much capacity available from Michigan, any attempt to increase tipping fees will be frustrated by increases in supply from other landfills – the horizontal Michigan supply curve that I have illustrated in the figures.
20. In other words, southern Ontario landfills face a prevailing T&D price. They can do no better than sell their own available capacity at that price, but they do not possess any ability to influence the price.
21. If one were to carry out a hypothetical monopolist test for geographic market definition involving only Southern Ontario landfills and given the current fact situation, a price increase by such a hypothetical monopolist would not be profitable because of an increase in supply from Michigan landfills. In other words buyers in the GTA will respond to any attempt to increase tipping fees by shipping more waste to Michigan at the pre-existing prevailing price. Thus, the correct geographic market would have to include landfills in Michigan (which I would expect to include at least those that are currently receiving waste).
22. It follows also that since none of the Southern Ontario landfills possess the ability to influence price under the new set of facts, then the same conclusion would follow under a change in ownership. Provided that the supply curve at the margin is horizontal, or nearly so, then the inframarginal firms cannot influence the price irrespective of the market structure. No matter who owns the Ridge landfill, for example, there exists no better strategy for them than supplying disposal up to their capacity at the prevailing T&D price (in other words, setting their tipping fee so that

tipping plus transportation equals the prevailing price.) Hence there cannot be any prevention or lessening of competition that requires a remedy. All of this continues to hold as long as excess capacity does not emerge among Southern Ontario suppliers.

**Price discrimination without excess capacity does not indicate a geographic market restricted to Southern Ontario landfills**

23. The Commissioner in his Reply to the Amended Statement of Grounds and Material Facts argues that price discrimination by itself without excess capacity constitutes a reason to identify a smaller geographic market, and cites the Tribunal in support of that position.<sup>8</sup> In fact, the Tribunal's statement at [100] in its merits decision makes it clear that *both* excess capacity and evidence of price discrimination were necessary for it to find for a narrower geographic market involving only Southern Ontario landfills.<sup>9</sup>

24. However, in light of the Commissioner's allegation and since the Tribunal's merits decision contained some discussion of the role of price discrimination in defining a smaller market, it is important for me to consider whether the presence of price discrimination by itself, without excess capacity in Southern Ontario landfills, indicates either that a smaller market is appropriate or that a change in ownership of the Ridge landfill will have any effect on market power in the market for ICI waste from the GTA.

25. As discussed below, in my view the presence of price discrimination without excess capacity neither justifies a smaller geographic market definition, nor does it necessarily have any implications for the presence of market power within the market

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<sup>8</sup> "The Tribunal held that the existence of price discrimination is a basis to delineate narrower geographic markets." *Reply* at [40]. Also, "Consequently, even if one of the circumstances that led the Tribunal to find the relevant geographic market to be southern Ontario had changed (which it has not), the other circumstances that led the Tribunal to this finding have not changed. In particular, landfills still practise price discrimination." *Reply* at [101].

<sup>9</sup> "On the basis of the evidence of price discrimination and on the evidence (discussed below) that excess capacity would likely lead to a decline in Tipping Fees for ICI Waste from the GTA absent the transaction, the Tribunal finds that the relevant geographic market excludes the states of Michigan and New York in regard to the GTA allegation." *The Commissioner of Competition v. Canadian Waste Services Holdings Inc.*, 2001 Comp. Trib. 3, Reasons and Decision at [100].

for GTA waste. Price discrimination describes the practice in which a single seller is able to charge different prices to different buyers. Economists generally view price discrimination as somewhat benign, and its presence can certainly signal an efficiently functioning and competitive market. Nor does its mere presence without other factors automatically identify market power.<sup>10</sup> In the context of the current case, the only price discrimination identified by the Tribunal that meets my definition is the fact that some landfills who accept waste from both the GTA and other communities may charge different tipping fees based on the location of the buyer. While this may indicate that the GTA and the other communities are distinct markets from a demand perspective, it does not indicate that these landfills have market power with respect to the GTA.

26. In this product market, the market for ICI waste from the GTA, the only restriction in the geographic location of buyers that is justified by price discrimination evidence is to distinguish between buyers in the GTA and those in other communities, between whom price discrimination may be practiced by landfills that serve them. This has no relevance for the present case. There is no indication from price discrimination evidence that the boundary of the *geographic location of the suppliers* should be shrunk or reduced – all of the Michigan suppliers at issue both actively and potentially supply the GTA market. It does not follow that the geographic market should be reduced in these circumstances.

#### **THE EFFECT ON MY CONCLUSIONS OF CONSIDERATION OF ADDITIONAL FACTS CONCERNING THE GTA**

27. I have reached my conclusions based on the fact set labeled I. Principal Facts – Greater Toronto Area (in the Assumed Facts). The additional fact set labeled II. Additional Facts – Greater Toronto Area provides additional information describing the increased importance of Michigan landfills in the market for GTA waste. In particular the facts demonstrate a substantial increase in volume of waste shipped to

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<sup>10</sup> For example, the leading authorities on U.S. Antitrust Law, Professors Areeda and Hovenkamp, state in their text, *Antitrust Law* that “price discrimination evidence has very limited utility for proving [market] power.” (pp 127-128). The leading antitrust scholarly publication, the *Antitrust Law Journal* in 2003 published a symposium of papers by leading antitrust scholars entitled “Competitive Price Discrimination”.

Michigan in 2002 and 2003 compared to 1999. While precise data for ICI waste shipments from the GTA to Michigan have not become available, it appears that the volume has increased substantially in that period.

28. These additional facts only serve to strengthen the conclusions that I have discussed in detail in my report in that they confirm empirically the results that I have anticipated theoretically as flowing from a shortage of capacity in Southern Ontario. The reduced capacity available in Southern Ontario landfills relative to the predictions of the Tribunal has led to an increased role for Michigan in the market for ICI waste disposal from the GTA.
29. As the analysis above suggested, with a shortfall of capacity in Southern Ontario I would expect to see shipments to Michigan increase, and in addition I would not expect tipping fees to fall as predicted by the Tribunal. The additional set of facts confirms that this is precisely the result that has occurred.
30. The demonstrated major importance of Michigan in the market increases the robustness of the conclusions set out above. First, the process of geographic market definition for the purpose of assessing the effect of the acquisition of the Ridge landfill on competition must include supply from Michigan landfills. Second, these same landfills are the marginal suppliers to the GTA market and therefore set the market clearing price. Third, changes in the ownership of the Ridge will not involve any lessening of competition because the price is set in Michigan. Any attempt to increase tipping fees by withholding capacity from the market in Southern Ontario would be met with an equal increase in supply from Michigan, because the elasticity of supply from Michigan landfills is extremely high (a great deal of capacity is available without increasing disposal costs).

**Remedies for the Substantial Prevention and Lessening of Competition found by the Tribunal in the Chatham-Kent market.**

31. The Tribunal in its merits decision found that a substantial lessening of competition was likely to occur in the Chatham-Kent area with the acquisition of the Ridge landfill by CWS. Two landfills, Gore Road and the Ridge supply virtually 100% of the waste disposal volume in that area. Prior to CWS acquiring the Ridge, the two landfills competed as independent entities. I have assumed no new facts relating to supply and demand in the Chatham-Kent area, but the question arises as to whether a less intrusive remedy than the divestiture of the Ridge, only 6% of whose capacity is used to service the Chatham-Kent area, might be found. CWS has indicated a willingness to divest the Gore Road landfill, the effect of which would be to restore the market structure to the same configuration as before the acquisition, with CWS operating the Ridge, and an independent operator the Gore Road landfill. Since such a divestiture reproduces the pre-merger market structure, I find it an effective remedy for any substantial lessening of competition that might have arisen in the Chatham-Kent area.
32. There is an additional reason to support such a conclusion. The Gore Road landfill is scheduled to close in a few years. When it does, the market structure in Chatham-Kent will be precisely the same as it would have been had the acquisition by CWS not taken place. Moreover, this conclusion will hold irrespective of the ownership of the Ridge landfill. Thus, to require CWS to divest the Ridge landfill to satisfy small and short lived competition concerns in Chatham-Kent, would be a remedy whose effects reach far beyond the scope of the problem. Divestiture of the Gore Road landfill, however, responds to the lessening of competition with an exactly matching remedy: restore the structure of the market to precisely the pre-merger configuration for as long as the Gore Road continues to operate.

Dated this 26th day of, September 2003

R. Ware

Professor Roger Ware

## ASSUMED FACTS: FACTS ASSUMED IN PREPARING MY REPORT

### I. Principal Facts – Greater Toronto Area

#### A) Acquisition

1. On March 31, 2000, Canadian Waste Services Inc. (“CWS”) acquired the Ridge landfill.

#### B) Southern Ontario Landfills in 1999-2000

2. As at November 1, 2000, CWS owned the following landfills in Ontario that were permitted to take solid non-hazardous waste (“SNHW”) from, among other places, the Greater Toronto Area (“GTA”):

- (a) the Ridge Landfill
- (b) the Richmond Landfill
- (c) the Blackwell Landfill
- (d) the Lasalle Landfill.

3. As at November 1, 2000, CWS also owned the Petrolia Landfill, which was permitted to take SNHW from Lambton County; and the Warwick Landfill, which was permitted to take SNHW from approximately a 50 km radius around its site (also in Lambton County).

4. As at November 1, 2000, the following landfills owned by third parties were located in Ontario and were permitted to take solid non-hazardous waste from the GTA:

- (a) the Walker Brothers Landfill
- (b) the Keele Valley Landfill
- (c) the Essex-Windsor Solid Waste Authority Landfill
- (d) the GreenLane Landfill.

5. As at November 1, 2000, the above noted landfills had the following annual capacity limits:

Ridge	680,000 m.t.
Warwick	56,000 m.t.
Richmond	125,000 m.t.
Blackwell	310,000 m.t.

Lasalle	365,000 m.t.
Walker Brothers	617,000 m.t.
Keele Valley	1,400,000 m.t.
EWSWA	320,000 m.t.
GreenLane	262,500 m.t.
Petrolia	65,000 m.t.

6. The Keele Valley landfill closed at the end of 2002.
7. The CWS Blackwell landfill closed in early 2001.
8. The CWS LaSalle landfill closed in the fall of 2002.

**C) CWS Landfill Expansion Applications**

9. CWS has applied to the Ontario Ministry of the Environment to expand the total permitted capacity of the Richmond landfill, and to increase its annual capacity limit to 750,000 m.t.
10. The Richmond expansion application has not been granted.
11. The earliest that an expansion of the Richmond landfill, if ultimately approved, could be operational is some time between 2006 and 2009.
12. CWS has applied to the Ontario Ministry of the Environment to expand the total permitted capacity of the Warwick landfill, to increase its annual capacity limit to 750,000 m.t., and to permit it to take waste from, among other places, the GTA.
13. The Warwick expansion application has not been granted.
14. The earliest that an expansion of the Warwick landfill, if ultimately approved, could be operational is some time between 2006 and 2009.

**D) Southern Ontario Landfills Currently**

15. The CWS Petrolia landfill has been re-permitted such that it may now receive 300,000 m.t. of waste per year from anywhere in Ontario (including the GTA), in addition to the 65,000 m.t. it may take from Lambton County (*i.e.*, 365,000 m.t. total).
16. The total permitted capacity of the CWS Petrolia landfill has not been increased or expanded. Consequently, if it receives 365,000 m.t. of waste per year, it will have depleted its total permitted capacity in approximately 8 to 9 years.
17. Currently, the following landfills may take the following amounts of SNHW from the GTA:

Ridge	680,000 m.t.
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Richmond	125,000 m.t.
Walker Brothers	617,000 m.t.
EWSWA	320,000 m.t.
GreenLane	262,500 m.t.
Petrolia	300,000 m.t. (plus 65,000 m.t. - Lambton County)

18. The foregoing landfills may also take waste from parts of Ontario outside the GTA.

**E) Demand**

19. Currently, the total demand for disposal at these landfills and at the Warwick landfill is at least 3,051,381 m.t. (the amount of demand found by the Tribunal at the hearing of the original application), some of which waste is generated in the GTA, and some of which is generated outside the GTA.

**F) Michigan Landfills**

20. There are a number of landfills in Michigan which may take and have taken waste from the GTA, some of which are owned by Waste Management Inc., a related company to CWS, and some of which are owned by third parties.
21. Unlike Ontario landfills, most of these Michigan landfills have no regulated annual capacity limit.
22. Operationally, these landfills in Michigan could easily absorb more than the totally amount of SNHW generated annually by the GTA.
23. The time and cost associated with the regulatory approval process and the capital costs and time to develop new capacity represent significant barriers to the establishment of a new landfill or the expansion of an existing landfill.
24. Landfills in Southern Ontario may charge different tipping fees to customers outside the GTA than they charge to customers within the GTA.
25. The disposal facilities in Ontario and Michigan that have taken waste from the GTA are approximately the following distances from the GTA:

**Ontario:**

Keele Valley	0 km (in GTA)
Britannia Road	0 km (in GTA)
Walker Brothers	138 km
Richmond	220 km
Greenlane	227 km
Warwick	262 km
Petrolia	278 km
Blackwell	290 km
LaSalle	300 km

Ridge	306 km
EWSWA	378 km

Michigan:

Pinetree	327 km
Tri-City	349 km
Oakland Heights	382 km
Pontiac	382 km
Allen Park	385 km
Riverview	389 km
Woodland Meadows	398 km
Citizens Disposal	402 km
Sauk Trails Hills	408 km
Carleton Farms	412 km
Arbor Hills	416 km
Rockwood Disposal	417 km
Venice Park	419 km
Brent Run	432 km
Vienna Junction	453 km
Midland	499 km

**II. Additional Facts – Greater Toronto Area**

26. Since its acquisition by CWS, the Ridge has been held separate from the other assets of CWS, and is presently managed by an independent manager.
27. Subsequent to 1999, the Tribunal's predicted reductions in shipments of ICI waste from the GTA to Michigan have not occurred.
28. In 2002, total shipments of SNHW from the GTA to Michigan were greater than those in 1999.
29. In 2002, shipments to Michigan of ICI waste from private transfer stations in the GTA continue at levels that are as high, or higher, than the levels in 1999.
30. A report issued by the Michigan Department of Environmental Quality indicates that a total of 6,607,856 cubic yards of waste from Canada was disposed of in Michigan in the period from October 1, 2001 to September 30, 2002, compared to a total of 2,342,791 cubic yards in the period from October 1, 1998 to September 30, 1999.

31. In 2003, year-to-date shipments of SNHW from the GTA to Michigan indicate that total shipments for the year will be greater than those in 2002.
32. In 2003, year-to-date shipments to Michigan of ICI waste from private transfer stations in the GTA indicate that total such shipments for the year will exceed those in 2002.
33. Subsequent to 1999, the Tribunal's predicted tipping fee reductions have not occurred.
34. There has been no reduction in the price of tipping fees at landfills in Southern Ontario for waste from the GTA between 1999 and 2003.

### III Chatham-Kent

35. As at November, 2000, there were two landfills that took waste from the municipality of Chatham-Kent area – the Gore Road Landfill and the Ridge Landfill. This remains the situation currently.
36. The Gore Landfill is owned by CWS, and has an annual permitted capacity of 40,000 m.t. The Gore Landfill is permitted to take waste from a service area 115 km around the site.
37. In 1999, the total volume of waste from the Chatham-Kent area that was disposed of at the Gore Landfill was [REDACTED] m.t., and at the Ridge Landfill was [REDACTED] m.t., for a total of 64,263 m.t. These volumes were broken down as follows:

Chatham-Kent Volumes - Gore Road Landfill (1999)		
Residential Waste	[REDACTED]	[REDACTED]
ICI Waste collected by CWS	[REDACTED]	[REDACTED]
ICI Waste not collected by CWS	[REDACTED]	[REDACTED]
Total ICI Waste	[REDACTED]	[REDACTED]
Total SNHW	[REDACTED]	[REDACTED]

Chatham-Kent Volumes - Ridge Landfill (1999)		
Residential Waste	[REDACTED]	[REDACTED]
ICI Waste collected by BFI	[REDACTED]	[REDACTED]
ICI Waste not collected by BFI	[REDACTED]	[REDACTED]
Total ICI Waste	[REDACTED]	[REDACTED]
Total SNHW	[REDACTED]	[REDACTED]

38. Pursuant to a Host Community Agreement, the Municipality of Chatham-Kent is permitted to dispose of up to 35,000 m.t. of waste at the Ridge Landfill at a preferred tipping fee rate. The [REDACTED] m.t. of residential waste from Chatham-Kent disposed of at the Ridge Landfill as set out above was disposed of pursuant to this Host Community Agreement.

39. In 1999, the total volume of ICI Waste from Chatham-Kent not collected by CWS was [REDACTED] m.t.
40. The demand for waste disposal from Chatham-Kent is the same presently as in 1999. Waste volumes formerly collected by BFI are now collected by BFI Canada.