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#48a **EXPERT REPORT OF PROFESSOR GEORGE A. HAY**

NOW PUBLIC

1. My name is George Alan Hay. I reside at 609 Cayuga Heights Road, Ithaca, New York, USA.

A. BACKGROUND AND QUALIFICATIONS

2. I am the Edward Cornell Professor of Law and Professor of Economics at Cornell University in Ithaca, New York, where I hold a tenured joint appointment in the Law School and the Department of Economics. In the Law School, I teach the basic course in Antitrust Law. In the Department of Economics, I teach a variety of courses, including Law and Economics, and the basic undergraduate course in Microeconomics. Prior to joining the Cornell faculty, I was the Director of Economics for the Antitrust Division of the United States Department of Justice.
3. I hold a B.S. degree in Mathematics from Le Moyne College (1963) and an M.A. (1967) and Ph.D. (1969) in Economics from Northwestern University. My field of expertise in economics is the branch of economics known as Industrial Organization, which is relevant to issues of competition law and policy. I have published numerous articles relating to antitrust law, including widely cited articles on market power, oligopoly, predatory pricing and other topics. My full *curriculum vitae* is attached as Annex A to this Report.
4. I have consulted on well over a hundred competition matters and have testified as an expert witness in more than a dozen competition matters in the U.S., Australia, and New Zealand. I have served as a consultant for the United States Department of Justice, the United States Federal Trade Commission, the Australian Competition and Consumer Commission, and the New Zealand Commerce Commission, as well as numerous private firms and organizations.
5. In this matter I have been retained by Stikeman Elliott on behalf of the respondents and asked to provide expert economic testimony on the likely competitive effects of the acquisition of the Ridge landfill ("acquisition") by respondents ("CWS").
6. In preparing this report I have reviewed the Agreed Statement of Facts and assume those facts, as well as other facts asserted in this report, to be accurate. I have also reviewed the parties' pleadings and Statements of Anticipated Evidence, Part VIII of the *Competition Act*, R.S.C. 1985, c. C-34, the Merger Enforcement Guidelines, and the Reasons for Judgment in *Canada (Director of Investigation and Research) v. Hillside Holdings (Canada) Ltd.*, (1992) 41 C.P.R. (3d) 289 (Comp. Trib.), *Canada (Director of Investigation and*

Research) v. Southam Inc., (1997) 71 C.P.R. (3d) 417 (S.C.C.), and *The Commissioner of Competition v. Superior Propane Inc.*, (Reasons for Judgment of the Competition Tribunal released August 30th, 2000). At the time of preparing this report there was no Agreed Statement of Facts relating to Chatham-Kent. As a result I have not addressed any special issues which may apply to Chatham-Kent.

B. OPINIONS

Current Sales and Current Capacities

7. The Commissioner has alleged that if CWS is permitted to retain the Ridge, it will control approximately 36% of the licensed disposal capacity of landfills located in southern Ontario that are capable of receiving waste¹ from the GTA. The Commissioner relies on the following table to support this conclusion.

CWS (Blackwell, LaSalle, Richmond)	802,000
Ridge	680,000
City of Toronto (Keele Valley)	1,625,000
Niagara Waste Systems (Walker)	617,000
EWSWA (Essex-Windsor)	140,000 ³
Green Lane Environmental (Green Lane)	280,000
TOTAL	3,034,000

¹ References to waste in this report mean SNHW which is defined as the type of waste in regard to which the Applicant alleges a likely substantial lessening or prevention of competition and means solid non-hazardous waste comprised of ICI Waste and Residential Waste but does not include Special Waste (as those terms are defined in the Agreed Statement of Facts).

² The figures in this Table appears at paragraph 63 of the Commissioner's Statement of Grounds and Material Facts. It should be noted that the Commissioner did not include the capacity of the disposal facilities in the Regional Municipalities of Halton and Peel which accept waste from their respective parts of the GTA.

³ Essex-Windsor has a total permitted annual fill rate of 320,000, but is only allowed to receive 140,000 tonnes of non-local waste.

8. However, in addition to the landfills located in southern Ontario, the Agreed Statement of Facts identifies a number of landfills in Michigan and New York that have disposed of waste from the GTA and other areas of Ontario. Based upon the information in Table 3 of Paragraph 75 of the Agreed Statement of Facts, the total amount of GTA waste disposed of at Michigan landfills in 1999 was 589,953 tonnes. Another 69,703 tonnes was disposed of at landfills and incinerators in New York. This, of course, represents actual sales, not capacity.
9. Hence, the 36% figure relied on by the Commissioner does not reflect accurately CWS's share of sales (when all actual providers of disposal for GTA waste have been included) nor is it an accurate measure of CWS's share of the overall capacity of those who have actually provided disposal of GTA waste in the recent past. CWS's share in fact of GTA disposal in 1999 (adjusted to include volumes received at the Ridge) was approximately [REDACTED].⁴ While CWS's share of sales may go up somewhat over the next year⁵, its share would remain well short of the level normally required to raise concerns about the possibility of market power. The same would be true if we measured CWS's current capacity as a share of the total capacity of those firms that actually received waste in 1999.

Future Market Conditions

10. The principal concerns expressed in the Notice of Application and Statement of Grounds and Material Facts deal with the market as it is expected to develop over the next several years. Hence, in order to respond to those concerns in preparing this report, I have made certain assumptions about the demand/supply picture and how it will evolve over time. I believe that these assumptions are consistent with the allegations made by the Commissioner. Where appropriate, I discuss some alternative assumptions below, and am prepared to consider other alternative assumptions in the course of giving evidence.
11. In particular, I have made the following assumptions:
 - (a) The total amount of GTA and other Ontario waste that needs to be disposed of will remain roughly constant over the foreseeable future. In particular, I am not assuming that there will be a dramatic increase

⁴ This is based upon the total volume of GTA waste received at CWS/WMI landfills and the Ridge landfill in 1999 as a percentage of the total volume of GTA waste that was disposed of in 1999 as set out in Table III of Confidential Appendix B and paragraph 75 of the Agreed Statement of Facts.

⁵ In March 2000 CWS acquired, with the consent of the Commissioner, collection businesses of BFIL in Toronto which represent an annual collection volume of approximately 200,000 tonnes.

in the degree of diversion of waste. (If, contrary to my assumption, diversion were to increase substantially for reasons unrelated to the acquisition, it would not affect my overall conclusions, but would change some of the numbers used to illustrate and support the conclusions.)

- (b) Keele, Blackwell, and LaSalle will close as forecast in the 2001-3 time period.
- (c) CWS will receive regulatory approval to expand the Warwick and Richmond landfills in the amounts reflected in the Agreed Statement of Facts and these expansions will have been completed in generally the same time frame as the Keele, Blackwell, and LaSalle closures.⁶
- (d) The City of Toronto and the Regional Municipalities of Durham, York and Peel will have entered into a long-term contract ("the GTA contract") with CWS/Rail Cycle North to dispose of their residential waste in the Adams Mine facility starting in 2003. The price and other relevant aspects of the contract will be fixed in the sense that they will be unaffected by anything that CWS might or might not do as a result of the proposed acquisition.⁷ Similarly, the City will have entered into a long-term contract with Republic Waste Services to dispose of its commercial waste in the Carleton Farms facility in southeastern Michigan. This contract will be for a maximum of 500,000 tonnes and a minimum of 100,000 tonnes per year.

Uncommitted Demand and Uncommitted Capacity

12. Based on the above assumptions the "uncommitted demand," i.e., the amount of GTA waste likely to be generated on an annual basis in some future year, e.g., 2003, which has not already been contracted for, is approximately 1.2 million tonnes annually.⁸ (In other words, I am eliminating from the analysis the GTA waste that is covered by the GTA contract since it is now irrelevant to the analysis of the proposed acquisition.)
13. Similarly, it is possible to make a reasonable estimate of the capacity in southern Ontario that will be available to compete to supply the uncommitted

⁶ Both CWS LaSalle and CWS Blackwell will likely be closed by the spring of 2002, resulting in a loss of 675,000 tonnes per year of capacity, which would not likely be replaced by the CWS expansions until the fall of 2002.

⁷ Therefore, whatever else one might conclude about the competitive issues in this case, the CWS involvement in the RCN project is irrelevant to the competitive analysis. So long as the GTA contract has prices which are fixed in the contract or which can vary based only on some broad-based index, whatever CWS might do with respect to prices at the other CWS landfills neither affects nor is affected by the RCN project.

⁸ See Agreed Statement of Facts Table 3 at paragraph 75.

demand. Excluding the Adams Mine facility (which will be committed to the GTA contract), and excluding the municipal landfills which have historically been limited to local residential waste, and allowing for the closures and expansions outlined above, we are left with approximately 3,217,000 tonnes of uncommitted capacity in southern Ontario as of 2003 which could accept GTA waste.⁹ This is illustrated in the following Table¹⁰:

CWS Warwick and Richmond	1,500,000
Ridge	680,000
Niagara Waste Systems (Walker)	617,000
EWSWA (Essex-Windsor)	140,000 ¹¹
Green Lane Environmental (Green Lane)	280,000
	3,217,000

14. Based on the above, it is clear that CWS will have a substantial "share" of the available capacity in southern Ontario to service the uncommitted demand. Nevertheless, that high "share" does not establish that CWS has market power. In what follows, I explain the reason for that conclusion.

⁹ This total assumes that all of the Adams Mine capacity will be filled with volumes pursuant to the GTA contract.

¹⁰ There is, of course, demand for disposal capacity for waste generated outside the GTA, and historically, the landfills identified in the table have satisfied at least some of that demand. For instance, in 1999, Walker, Essex-Windsor and Green Lane together had available capacity for 1,037,000 tonnes, but received a total of only [REDACTED] tonnes of GTA waste (see Agreed Statement of Facts- Confidential Appendix B Table III). I assume that at least some of the remaining capacity was used for non-GTA waste, although the Agreed Statement of Facts does not contain the data from which one could calculate the precise amount. For present purposes, it does not matter. The relevance of non-GTA demand to an assessment of the competitive consequences of the acquisition is discussed later.

¹¹ Essex-Windsor has a total permitted annual fill rate of 320,000, but is allowed to receive only 140,000 tonnes of non-local waste.

The Concept of Market Power

15. Market power (for purposes of competition law) is the ability of a firm (or group of firms acting together) **profitably** to maintain prices above the competitive level by a material amount for a sustained period of time.¹² (In the absence of any evidence or claim to the contrary, I am assuming that the pre-acquisition prices represent the benchmark for the competitive level. Hence I am asking whether prices can profitably be increased above historical levels because of the acquisition. Obviously, prices may go up or down for reasons completely unrelated to the acquisition such as general inflation or cost factors specifically related to waste disposal.)
16. Often, market power is inferred from a large share of a relevant market. As a general matter, however, a large market share is a necessary, but not sufficient, condition for a firm to exercise (unilateral) market power.¹³
17. While market definition is necessary in order to measure market shares in the "relevant" market, I will start with a more general observation about market power in order to put the question of market definition in context.
18. Whether a hypothetical price increase will or will not be profitable will in general depend on a variety of factors. But from the perspective of the firm attempting to implement a price increase, there is one overriding issue, viz., how much of its existing volume of business it will lose if it attempts to increase price. *Ceteris paribus*, the greater the volume of business that will be lost, the less profitable the increase. If the amount of business that will be lost is substantial, the proposed price increase will not be profitable at all. In such a situation, the firm does not have market power.¹⁴

¹² Cf. Merger Enforcement Guidelines, 2.1 and 2.4. See also, G. Hay "Market Power in Antitrust", 60 Antitrust Law Journal 1992.

¹³ Cf. Merger Enforcement Guidelines, 4.2. The same general analysis applies to the question of whether a group of firms, acting collectively, can exercise market power. In that case, we examine their combined market share. In what follows, I will avoid repeating the reference to a group of firms acting collectively.

¹⁴ An example may help to illustrate the point. Assume that, at current prices, a firm has 100 units of sales annually at a price of \$20 per unit. Assume further that the firm incurs direct costs of \$10 per unit and hence, at a price of \$20, the firm earns a gross margin of \$10 per unit over direct costs, hence \$1000 in total gross profits. (The \$1000 will not be net profits since the firm will normally have corporate overhead or other fixed costs.) Assume the firm is contemplating a price increase of 5%, i.e., to \$21, resulting in a gross margin of \$11 per unit. If the firm's sales will fall by at least 10% (i.e., to 90 units or less annually), the price increase will not be profitable (i.e., gross profits will be less than the original \$1000). The key point is that, as a general matter, a firm has to lose only a fraction of its current volume to make a price increase unprofitable. This fraction is sometimes referred to as the "critical loss ratio." (As a general matter, the higher the current markup over direct costs, the smaller is the critical loss ratio; i.e., less business needs to be lost to make a price increase unprofitable.)

Determinants of Market Power and the Application to CWS

19. As a general matter, a firm that attempts to raise price above the competitive level can lose business for several different reasons¹⁵:
- (a) Buyers can substitute other products or services. In the context of the current matter, this means diversion of waste through recycling or other processes. I have assumed that there will be no dramatic change in the degree of diversion over the foreseeable future and, in particular, that there will be no increase in the degree of diversion in response to any attempted price increase by CWS. (Whether buyers can substitute other products or services is the key element in defining the relevant "product" market. Hence my assumption is tantamount to an assumption that waste disposal is a relevant product market and that diversion is not a part of that market.) Obviously, if, contrary to my assumption, the amount of diversion would be responsive to a presumed price increase by CWS, that would increase the amount of business CWS would stand to lose if it attempted to increase price and would lend support to a conclusion that CWS will not achieve market power as a result of the acquisition.
 - (b) Buyers can turn to other local suppliers that have excess capacity or that can expand current capacity or that can reallocate capacity currently being used to serve other customers. For purposes of my analysis, I have assumed that there would be no expansion of overall capacity in response to a possible price increase by CWS. (Any relaxation of this assumption makes it even less plausible that CWS can achieve market power as a result of the acquisition.) However, the use of excess capacity or the reallocation of existing capacity by other local competitors cannot be so easily dismissed. First, depending on the amount of GTA waste that goes to Michigan, there may be substantial excess capacity in southern Ontario, given the overall capacity figures discussed in Paragraph 13 above. Second, even though some portion of the capacity in southern Ontario has historically been used for non-GTA waste, if, post-acquisition, CWS were to attempt to exercise market power and raise prices to GTA customers, it could create an incentive for other Ontario landfills to reallocate existing capacity to the GTA so as to benefit from the higher prices. To the extent this happens, CWS would lose volume. The combined capacity of the non-CWS Ontario landfills is almost enough to satisfy the entire uncommitted demand by the GTA. While it is highly unlikely that the

¹⁵ Cf. Merger Enforcement Guidelines, 3.1.

majority of this capacity would be reallocated to serve the GTA in the event of a price increase¹⁶, as suggested above, CWS need lose only a modest portion of sales to render a proposed price increase unprofitable.

- (c) Buyers can turn to new entrants who create capacity in response to the hypothetical price increase. I have made the conservative assumption that there will be no new Ontario-based entrants (excluding the RCN venture). Clearly any relaxation of this assumption makes it even less plausible that CWS could achieve market power as a result of the acquisition.
- (d) Buyers can turn to suppliers outside of the local area to the extent that those suppliers have the capacity and the cost structure to make it feasible to take business away from the firm seeking to implement the price increase. This is the key element in defining the geographic market. If, in the event of a significant and nontransitory price increase, buyers can turn easily to suppliers outside the local area because those non-local suppliers have the capacity and the cost structure following the price increase to capture a significant portion¹⁷ of the firm's previous business, the relevant geographic market cannot be confined to the local area and must be expanded to include non-local suppliers,¹⁸ even where the customers we are primarily concerned with are those confined to the local area.¹⁹

20. In this matter, I understand the Commissioner's position to be that the relevant market for GTA waste excludes landfills other than those located in southern Ontario. For reasons discussed below, I disagree with that position. As suggested above, the relevant question is whether landfills other than those in southern Ontario have the capacity and the cost structure to compete effectively for GTA waste, in the event that CWS were to attempt to

¹⁶ Whether there is an incentive to reallocate capacity will depend on whether, after the price increase, the price that another Ontario landfill can charge for GTA waste exceeds what it can charge its traditional customers. Customers located very close to those landfills may be paying a substantial premium and, hence, even after a price increase for GTA waste, it would not pay a landfill to abandon those particular customers.

¹⁷ As suggested in the previous footnote, the portion of the dominant firm's business that is at risk does not have to be extremely large to make a proposed price increase unprofitable. Critical loss ratios of 10-20% are not atypical.

¹⁸ This is reflected in the Merger Enforcement Guidelines, which ask what would happen if a hypothetical monopolist with respect to local production were to attempt a significant nontransitory price increase. If the price increase would not be profitable due primarily to increased sales from producers outside the local area, the relevant geographic market must be expanded to incorporate those non-local producers.

¹⁹ Thus, even if for legal or policy reasons, the market (from the demand side) is limited to Canadian customers, a proper analysis still must include non-Canadian firms in measuring sales or capacity where these firms have demonstrated an ability to make sales to Canadian customers.

implement a price increase. If one were to conclude that the other landfills (collectively) have the capacity and the cost structure to compete successfully for a significant amount of additional GTA waste in the event of a price increase by CWS, the conclusion that must follow in this matter is that CWS will not acquire market power as a result of the acquisition.²⁰ Whether that conclusion is expressed as one about geographic market definition (the relevant market must include at least some landfills other than those in southern Ontario) or whether one is content with the observation that CWS will not acquire market power, is purely a matter of stylistic preference.

21. The facilities²¹ outside southern Ontario most likely to respond to a price increase by CWS are those in Michigan (and to a lesser extent in New York). As for the overall capacity of the relevant landfills to absorb additional business, there can be no real question. It is my understanding that the total remaining capacity of just those non-WMI Michigan landfills that have historically received Ontario waste exceeded 209 million bank yards in 1999²² which equates to an effective capacity of 121.3 million tonnes.²³ Adjusting for the capacity to be used between 1999 and 2002, this translates into a remaining capacity of at least 102.2 million tonnes as of 2003.²⁴ With the exception of any limits in host community agreements,²⁵ there are no annual capacity limits on the amount of waste a Michigan landfill may accept.²⁶ Hence, less than 1.5% of the total remaining capacity at these landfills alone could supply the **total** uncommitted demand for disposal of GTA waste in any given year.²⁷
22. The sole remaining question then is whether these US landfills have a cost structure that would permit them to compete effectively for a significant additional amount of GTA waste in the event of a price increase by CWS. In the typical merger or other competition matter, this is often highly

²⁰ The same would be true with respect to collective market power for CWS and the other Ontario landfills acting together.

²¹ This reference to facilities includes both landfills and incinerators.

²² See Appendix A of this report. This total excludes the following: WMI landfills; landfills in Michigan with substantial capacity which are not presently receiving GTA waste, but are located in proximity to Michigan landfills that are presently competing; and landfills and incinerators with substantial capacity in New York which have received GTA waste.

²³ Bank yards are converted at a rate of 1600 lbs. per bank yard, with an additional 20% deducted for cover.

²⁴ An additional 19.1 million tonnes have been deducted to account for volumes likely to be received at these facilities in 1999, 2000, 2001, and 2002, based on 1999 fill rates and a conversion rate of 1.94 gate cubic yards per bank cubic yard.

²⁵ Arbor Hills and WMI Venice Park have limits in their respective Host Community Agreements. The other Michigan landfills do not have annual or daily capacity limits.

²⁶ Paragraph 48 of the Agreed Statement of Facts.

²⁷ Even if the Allied landfills in Michigan were excluded on the basis that it has been alleged that the Allied landfills are restricted from competing for GTA waste until 2005, and even if the Arbor Hills capacity was excluded there were still 146.3 million bank yards of available capacity as of January 1, 1999.

speculative since we are looking at firms that do not currently sell to customers within the local area (the proposed geographic market). We therefore need to speculate about whether this pattern would change in the event of a price increase by the incumbent dominant firm. To this end, we often start by comparing prices within the local area to the prices charged by the non-local firms to customers in their own local areas and then factor in such things as transportation costs and tariff barriers in order to determine whether those non-local suppliers who have not historically captured any local business might be price competitive in the event of a higher price within the local area.²⁸

23. However, in the context of the proposed acquisition, such speculation is unnecessary. The Agreed Statement of Facts makes it clear that non-local landfills have been highly successful in competing for GTA waste at **pre-acquisition prices**.²⁹ This is prima facie evidence that such landfills can successfully compete for substantial amounts of additional business in the event that CWS attempts to increase prices above prevailing levels. If unrebutted, this evidence makes clear that, despite its high "share" of Ontario-based capacity, CWS cannot possibly exercise market power. (This would be true whether the issue is individual market power or dominance shared between CWS and its other domestic rivals.) Put differently, the geographic market cannot be limited to Ontario-based landfills.
24. One can reasonably ask how it can be, in the face of higher trucking costs and (arguably) other cost-affecting disadvantages of US landfills, that those landfills have successfully competed for GTA waste at **pre-acquisition prices**. If trucking costs are indeed higher, doesn't it follow that, for GTA customers, disposal at US landfills must **necessarily** be more expensive than disposal locally? Of course, the answer is "no" for the very same reason that clothing made in China or fruit grown in South America can compete effectively in Canada, despite substantially higher transportation costs from China or South America to Canada. If Chinese producers of clothing or South American producers of fruit are willing to set low prices for exported goods, they can be price competitive in Canada despite their distant location, since what is relevant to Canadian buyers is the export price plus the transportation costs (i.e., the delivered price), and how that total compares to the price of the locally made product.

²⁸ Cf. Merger Enforcement Guidelines, 3.3.2.4. The analysis is set out generally in my article, "Geographic Market Definition in an International Context" (with J. Hilke and P. Nelson), 64 Chicago-Kent Law Review 1989.

²⁹ Cf. Confidential Appendix B of the Agreed Statement of Facts.

25. So too, if US landfills with higher transport costs are willing to accept a lower tipping fee from Ontario transfer stations, they can be price competitive vis a' vis local landfills despite higher transport costs, since the relevant cost to Ontario transfer stations or other shippers of GTA waste is the total t&d (transport and disposal) cost. I understand that the tipping fees for some Michigan landfills to shippers of GTA waste are in fact lower than those for Ontario landfills with the result that that the overall t&d costs for disposal at US landfills have compared favourably to the pre-acquisition t&d costs at CWS and other Ontario landfills.³⁰ *A fortiori*, if CWS were to attempt to raise prices significantly above pre-acquisition levels, overall t&d costs from Michigan and New York disposal facilities would be even more attractive on a comparative basis and it would follow that, given the large capacity of those landfills, a substantial portion of CWS's GTA business would be at risk, easily enough to make a proposed price increase unprofitable.
26. Taken together, the fact of excess capacity in nearby US landfills, the pricing data referred to above, and the historical success of those landfills in capturing substantial volumes of GTA waste, make a convincing case that the foreign landfills cannot be excluded from the relevant market and that CWS will not enjoy market power as a result of the proposed acquisition at any time in the foreseeable future.³¹

Special Factors

27. What remains is to consider whether there are any special factors that, when properly considered, imply that US landfills are not a relevant competitive alternative despite the evidence just discussed. In what follows, I consider (and reject) several possible arguments.
28. One argument presented by the Commissioner is that there is a substantial "hassle" factor for trucking companies to cross the border; that it takes more

³⁰ Cf. Table I of Confidential Appendix B of the Agreed Statement of Facts. Confusion over this point may explain some of the anticipated evidence as set out in the witness statements to the effect that, because of the higher transport costs for shipping to the US, the transfer stations would have a preference for the Ridge (or other Ontario landfills). Of course, if tipping fees were the same, any rational buyer would prefer the lower transport costs for shipment within Ontario over the higher transport costs for shipment to the US. But that misses the fundamental point. It is precisely because transport costs put US landfills at a disadvantage that those landfills with additional capacity to sell will reduce tipping fees to negate the transport cost disadvantage.

³¹ Moreover, even if one were to conclude that the amount of business lost to US landfills would not be sufficient in isolation to defeat a hypothetical price increase by CWS, it does not necessarily follow that CWS enjoys market power in the narrower market. The relevant question then becomes whether, considering all possible competitive responses taken together - some loss to US landfills, some added diversion, some reallocation of capacity from other Ontario landfills to GTA waste, and some expansion or new entry, CWS would lose enough business to make a price increase unprofitable.

time, involves special costs, and that only one trip (from the GTA to the landfill) per day is possible, whereas, at least at certain times of the year, trucks can make two deliveries daily to Ontario landfills (or, in the case of the Ridge and Sarnia, perhaps three deliveries every two days). But, for the ultimate customer (e.g., the transfer station or the waste collector), what matters is the final bill for transport and disposal. If that is as low or lower for disposing of waste in US landfills than for disposal in Ontario landfills, why should the customer care what causes the final price to be what it is, or by how much the landfill had to reduce its tipping fee in order to make the overall cost of using a US landfill no greater than the overall cost of using an Ontario landfill? In any event, whatever the hassle factor, it has not prevented US landfills from competing effectively to date. *A fortiori*, it will be even less of an impediment if CWS were to attempt to increase prices.

29. Another argument implied if not asserted directly in the material provided by the Commissioner is that the historical flow of GTA waste finding its way to US landfills is not indicative of the fact that US landfills are competitive with GTA landfills because much of that waste was "directed" by Canadian collectors or transfer stations to landfills sites in the US owned by them or by their corporate parent. While the Commissioner's definition of what constitutes "direction" and the precise amount of direction that the Commissioner believes has occurred in the past remains somewhat unclear to me, I do not think it matters to my ultimate conclusions.
30. First, under any reasonable definition of "direction," it seems clear that there are significant volumes of GTA waste going to US landfills that cannot be explained as the result of direction, suggesting that US landfills are in fact competitive with Ontario landfills (and, *a fortiori*, would be at higher prices). Based upon Tables II and III of Confidential Appendix B and paragraph 75 of the Agreed Statement of Facts, only approximately [REDACTED] of the total amount of waste disposed of in the US was "directed" by CWS or BFIL.³²
31. Second, the observation that some waste was directed is fully consistent with my hypothesis of why US landfills are a relevant competitive alternative for GTA waste. Other things equal, a vertically integrated firm which wishes to compete successfully in its own market (e.g., the collection market) has an incentive to keep its costs as low as possible. For such a firm (assuming it has excess capacity), the relevant comparison is between the direct costs of its own landfill (excluding overhead and profit since overhead and profit represent a payment to itself) and the market price of an independent landfill. When a vertically integrated firm "directs" waste to its own landfill, the most

³² Based upon [REDACTED] "directed" tonnes of a total of [REDACTED] tonnes.

plausible explanation is that the direct costs of using a wholly owned landfill, including transportation costs, are less than the market price of the independent landfill, including transportation costs. But that same phenomenon - the gap between normal market prices (e.g., to US customers) and direct costs - is precisely the reason that a US landfill with excess capacity will be motivated to reduce its tipping fee to attract GTA waste.

32. Another factor suggested in the material supplied by the Commissioner is the possibility that, at some future point, the US border will close to GTA and other Canadian waste. As an economist, I have no special expertise in assessing the likelihood of such a phenomenon, which, if it occurs, will be driven more by politics than by economics. It is likely that a closing of the border will, at least in the short run, cause a substantial increase in the price for disposing of GTA waste (except for customers with fixed-term contracts) since there may not be enough Ontario capacity to absorb the entire domestic volume. And it would follow that the higher prices would result in substantial profits for those companies that are fortunate enough to own domestic landfills (including CWS). But this has nothing to do with market power.
33. In its Application, the Commissioner has made reference to a possible anticompetitive effect of the acquisition in waste collection markets based on the theory that, as a vertically integrated firm, CSW can squeeze non-integrated collection firms. However, if CWS does not achieve market power in disposal as a result of the acquisition, there can be no adverse impact on competition in collection markets. I have already concluded that CWS will not achieve market power in disposal as a result of the acquisition. If the Tribunal agrees with that conclusion, the discussion of collection markets is entirely irrelevant.

C. CONCLUSION

34. Based in large measure on the ability of certain US landfills to compete effectively for substantial volumes of GTA waste in the event CWS were to attempt to increase prices, it is my opinion that CWS will not achieve market power with respect to GTA waste as a result of the proposed acquisition.

APPENDIX A

REPUBLIC CARLETON FARMS AND BRENT RUN LANDFILLS IN 1999	
Republic Carleton Farms	90.648
Republic Brent Run	41.239
Onyx Arbor Hills	26.576
City of Riverview Riverview Land Preserve	14.363
	172.826
Allied Citizens	13.682
Allied Sauk Trails	17.628
Allied Oakland Heights	5.771
Allied Vienna Junction	Unknown
Total Allied	209.907
TOTALS	209.907

³³ Source: Oakland County Michigan Demonstration of Available Disposal Capacity Spring 1999 (Amending 1990 Solid Waste Management Plan Update). This reflects total remaining capacity as of January 1, 1999.

³⁴ Does not include Vienna Junction.

³⁵ Does not include Vienna Junction.