

IN THE MATTER OF an application
by the City of London to establish
a sanitary Land-fill site in the
Township of Westminster, Ontario

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1 --- Upon commencing at 9:30 a.m.

2 THE CHAIRMAN: Ladies and gentlemen,
3 can we come to order? It is now 9:30 and we will
4 resume the hearing.

5 I want to make a request. The
6 gentleman who is taking the transcript of what is
7 being said is having a little difficulty to hear.
8 I think perhaps people talk a little fast and it is
9 not too clear away from the microphone. The man
10 who is taking the transcript would appreciate it
11 if you would stick to the mike and if you are a
12 fast talker, slow down, please.

13 Mr. Plaxton?

14 MR. PLAXTON: Mr. Chairman, before
15 we start I wonder if I could ask the audience to
16 gather over on the right-hand side to be a little
17 closer to the witness where these Exhibits are
18 located so that they may follow a little better
19 some of the evidence that is given with reference
20 to the various plans. Otherwise, they may not be
21 able to see what he is really referring to. I
22 suggest that they move over to the right so that
23 they can hear the witness a little better.

24 THE CHAIRMAN: Mr. Plaxton has
25 suggested that you might get a better view of what
26 the witness is saying if you move over to this side.

27 VICTOR MORRIS, recalled:

28 MR. PLAXTON: Mr. Chairman, we were
29 dealing with the evidence of Mr. Morris yesterday
30 and there -- perhaps we could have Mr. Morris just



1 | briefly review yesterday's testimony and bring it
2 | into the context of what he is about to speak to
3 | today.

4 | EXAMINATION BY MR. PLAXTON CONTINUED:

5 | Q. Perhaps you could deal with
6 | the description of the engineering that is going
7 | into this landfill site briefly?

8 | A. Mr. Plaxton suggested this and
9 | I thought it might be easier to do it on the board,
10 | Mr. Chairman, rather than referring to the diagrams
11 | as we did yesterday.

12 | Basically what I said yesterday was
13 | taking a cross section of the site from the access
14 | road, Concession Road 7 and we first provide the
15 | six foot high security fence.

16 | Q. This would be a description of
17 | it: six foot high chain link fence?

18 | A. Chain link. Behind that we
19 | propose to plant a row of trees around the perimeter
20 | of the site, as I said, higher trees when the initial work
21 | takes place and smaller trees when it reaches the
22 | area. Behind that will be the visibility barrier
23 | which we calculate to be 15 feet high. This will
24 | be a grass slope to shield the area from the road.
25 | Behind that is the access road to the site running
26 | parallel to Concession Road 7 and it would also
27 | be paved and that would be extended as each cell
28 | in the site was developed. On that access road would
29 | also be located the weigh scales which would be to
30 | weigh the refuse coming into the site and the trucks



1 going away when they leave the site. Towards the
2 landfill site we would have the storm water drainage
3 ditches which again go around the complete site
4 collecting surface water. All of this occurs in
5 the 300 foot wide buffer strip on the concession
6 road side of the site. The buffer strip is 150 feet
7 wide in the narrow part of the site.

8 The ground would then be excavated
9 to a depth -- the first cell is eight feet, but the
10 average depth is nine feet over the site. This
11 excavation would be shaped in such a way that the
12 base would slope to a drainage sump at the end of
13 the excavation from which any contaminated water
14 would be pumped. Along the excavation there would
15 be areas left to separate the areas of clean excavat-
16 ion from the areas where the landfill operation was
17 taking place, drawing cover material for the sanitary
18 landfill excavation as we excavate the sanitary land-
19 fill operation.

20 Around the perimeter of the site
21 would be installed a leachate drain which would be
22 perforated pipe in granular material.

23 Q. And that granular material,
24 would you describe exactly how it would operate on
25 the right-hand side? The granular material there
26 would be what?

27 A. It would be cut into the clay.
28 If there is clay on this side of the leachate drain
29 and clay down into the excavation, so the granular
30 material would be around the drain to ensure proper



1 filtration -- not filtration, but drainage of the
2 leachate to the drain. As the eight foot high cells
3 are built up, we eventually build up a slope which
4 on the average is a six to one site slope to an
5 average height of 30 to 40 feet, depending on which
6 part of the site we are in. This is gradually built
7 up in layers eight feet high with nine inches of
8 cover material placed over each cell and around
9 each cell.

10 When we reach the final elevation
11 there will be initially 12 inches of compacted clay
12 placed over the site, some loose material for a
13 false ceiling to prevent erosion. The final agri-
14 cultural aspects then will be developed. Professor
15 Webber will elaborate on that but basically it is
16 envisaged that over a period of dry weather the
17 clay will be kept very pliable and placed on the
18 site and then top soil material, sludge and possibly
19 leaves to form compost will be placed on this top
20 layer on the site. This four feet extends down
21 the face of the landfill operation. I have not shown
22 that too well. It goes beyond the leachate drain
23 so we have a seal completely around the site with
24 the leachate drain at this point (indicating).
25 These layers will be nine inches of compacted
26 cover material and will stop short of this four feet
27 of impervious cover and granular material used
28 in the final part so any leachate penetrating the
29 top four feet -- some, of course, will find its
30 way down and we feel this will reduce the amount.



1 This will allow the material to travel along each
2 cell layer to the granular areas, travel down under
3 the four feet of final cover so that we don't create
4 pressure at this point which may cause leachate to
5 escape from the site. This material then travels
6 down to be collected in the leachate drain which
7 has maintenance manholes every 300 feet and collect-
8 ion sump from which the leachate is pumped to the
9 trucks to be taken to the sewage treatment plant.
10 I should mention here a detail of the leachate
11 drain, apart from the sump which will give the city
12 some reserve capacity between trucking times, during
13 the construction it is possible that a very heavy
14 rainfall, say, on the side of it, that this rainfall
15 could get into the leachate system and while that
16 is going on there would be a relief pipe from the
17 leachate system back into the excavation so that it
18 gives a reserve sump for any surcharge on the
19 leachate system.

20 Q. I wonder if we could work our
21 way from the road again in toward the site, only on
22 this occasion just imagine we are not on the road
23 side of the site, but that we are on the internal
24 boundary. There is a great difference that would
25 apply?

26 A. Imagine the other end of the
27 cross section where we have the existing farmland.
28 We would have a four foot farm fence using a chain
29 link -- not a chain link, but a wire mesh type of
30 wire on the fence which will help catch any paper



1 that escapes from the internal system. We would
2 then have a tree system and then another site berm
3 15 feet high. We then have -- there is no access
4 road because the way the site is laid out there is
5 a driveway around the back of the site. We would
6 go into the storm ditch around the perimeter and
7 then we would be into the back end of this excavation,
8 again with the leachate drain in granular material
9 at that point.

10 Q. So the leachate drain surrounds each
11 of the 550 foot squares that you referred to yester-
12 day as being 550 feet wide and the depth of the site?

13 A. Yes. The leachate drains run
14 up between each of those 550 foot-wide cells.

15 Q. Perhaps we could just take a
16 note of that aspect of it. Could you show the way
17 the 550 foot strips are constructed?

18 A. On this we enter the southeast
19 corner of the site with the paved roadway from
20 Concession Road #7 and we have the weigh scale.
21 After being weighed, the vehicles turn into the
22 access road which runs the depth of the site. This
23 is approximately 550 feet within the buffer strip
24 of 150 feet from the site, roughly. As we enter the
25 concession road, we have our daily cells progressing
26 across in the excavation. These are approximately
27 100 feet by 60 feet by 80 feet. The advantage
28 of keeping them under 100 feet is that it keeps the
29 operation compact and efficient. In many cases
30 this stretches to 150 feet, but we feel that keeping



17

1 the daily cells out of the actual face, the area to be
2 created here will be for the trucks or containers
3 and private cars will be directed to unload into
4 these containers and they will be picked up and
5 put into proper landfill areas. This keeps the
6 private cars out of the working phase of the land-
7 fill site. We fill in the nine foot excavations
8 and then come back and start placing the next
9 material back here. We work this progressively so
10 that we finish with a top lift here while we are
11 still on the bottom lift at this end of the cells.
12 From the same access road work will start on cell B
13 on this site and it will be a repetition of what
14 takes place here.

15 Q. The procedure there would be
16 an access road going to the rear of the site every
17 what, 1,100 feet or so?

18 A. Yes. The length of the paved
19 road will be extended to cells C and D and another access
20 road up here between cells C and D will be placed.

21 Q. When you have finished the site,
22 you will have a series of fields running north and
23 south, would that be correct? Approximately 1,000
24 feet wide?

25 A. Yes.

26 Q. Agricultural use?

27 A. The method of dividing up the
28 fields could be any shape you want, but the total
29 depth of the site extending this way in increments
30 of 550 feet.



1 Q. Would they have to be in thousands
2 at that point?

3 A. At this point it will be 1,100
4 feet.

5 Q. I see. The first field would be
6 550 feet?

7 A. Yes.

8 Q. From there on running through
9 the site they would each be about 1,100 feet in
10 width?

11 A. No. This cell B is also 550.

12 Q. Doesn't it immediately connect
13 to another 550 to make up 1,1000feet?

14 A. We work up in 550 foot live cells.

15 Q. How do you slope them as they
16 meet side by side?

17 A. Taking a cross section through
18 here, this cell (indicating) will be excavated like
19 so and completed like so. This access road goes
20 between the two and as cell B is excavated and
21 completed, it is completed up this slope and completed
22 like this and then joined from the back and then this
23 is the access road here.

24 Q. So it becomes one vast field?

25 A. Yes. With the covering material
26 on top. Shall I discuss the progressive development
27 of these?

28 Q. Yes, please.

29 A. This series of four drawings
30 are intended to show progressive development of the site,



1 the point being that I think some people would get the
2 impression when they read we are taking 400 acres
3 that it immediately becomes useless for agriculture,
4 the whole thing is stripped and you have a horrible
5 construction site right there lasting for 20 years.
6 The purpose of developing a site first at this end
7 entails -- sorry -- I will go back. This line here
8 shows the sanitary landfill within the boundaries
9 of the site so that this green area shown here
10 represents a buffer strip (indicating) after one
11 year's operation we would have completed this area
12 of landfill which represents 19 acres. We would
13 have dug or would be digging during the second
14 year the second cell. The reason for the difference
15 in the acreage there, this one is actually 11 acres
16 for the second year, is that the end cell is sloped
17 on a tree site so it will require more plant area
18 for the first year. After one year you have 19
19 acres completed but not finished off. We have
20 another 11 acres in operation and we would have
21 this buffer strip here plus the working area around
22 it. This leaves 345 acres in its present condition.

23 At the end of five years ---

24 Q. Can you indicate what the
25 intention of the city might be with respect to the
26 345 acres? This is as to its remaining in agri-
27 cultural use.

28 A. It would be available to
29 continue on the present system of farming, the
30 way the farmers want to keep it and this arrangement



1 was made with the city. I can't really elaborate
2 on the policy of the city on it, but it is available
3 to remain as is.

4 Q. Are you aware of the policy
5 of the city with respect to whether they would be
6 prepared to let these people continue in the agri-
7 cultural use?

8 A. It is my understanding from
9 discussions that they would be quite prepared to
10 do this.

11 Q. That section of the site that
12 is not in use?

13 A. Yes, on the understanding that
14 progressively we are moving towards them. You will
15 see the rate at which we reduce this area that is
16 left in its present situation. After five years
17 we would be in a situation where we had finished
18 this area of landfill shown in the dark hatching.
19 This would represent an acreage of 50 acres. We would
20 have this area representing the fifth year, part of
21 the fifth year and part of the fourth year of com-
22 pleted landfill. It represents 26 acres and we
23 would be working the sixth year on this cell which
24 in this case represents 13.5 acres. The amount of
25 refuse increases each year so the cells will pro-
26 gressively get a little bigger. In the sixth year
27 this leaves 288 acres untouched by the operations.

28 At the end ---

29 Q. Before you leave that diagram,
30 you said the 50 acre parcel would be completed. To



1 what extent would it be available, for example, for
2 agricultural use?

3 A. Yes, it would be. This could
4 be used for agriculture as well as the hatched area,
5 a total of 338 acres.

6 Q. Out of a total?

7 A. Of 405 acres. At the end of 10
8 years you can see that more of the area is being
9 completed and is available and is ready for agri-
10 cultural use again. This represents 114 acres.
11 This is a previously completed part of the site
12 which is still being prepared for agricultural use
13 and this is the working area here. At this stage
14 in time, 11 years after, there will be 207 acres
15 still in its present condition. There will be 114
16 acres made available for agricultural use again and
17 this area of approximately 13 acres, and this would
18 be sixteen acres where the actual operation is
19 completed. Shown diagrammatically in each of these
20 drawings the size of the daily cell that is being
21 operated at any one time is shown so you can see
22 the relative size of where the actual garbage is
23 being placed each day. It is the dark red square
24 in each diagram.

25 After 15 years, the site will move
26 this way. We would have approximately 180 acres
27 restored for agricultural use. We would be finish-
28 ing off this acreage which is 6 acres and we would
29 have a 90 acre site here which would leave approx-
30 imately 134 acres still in its present situation.



1 Q. The utilization of acreage as
2 you have shown it here over the years, taking into
3 account any improvement in the existing system of
4 the city from a waste disposal standpoint over that
5 period, what difference would this make? Have you
6 assumed ---

7 A. These are based on the most
8 conservative estimates of sanitary landfill re-
9 quirements which is that nothing else will be
10 introduced during that period of time. We are not
11 saying it won't be, but to get a site we have to
12 plan on nothing better coming up in the meantime
13 as this is all based on growth of population,
14 increase in refuse use and therefore setting land
15 requirements on that basis.

16 Q. Does it follow, therefore,
17 that the utilization of the site would be perhaps
18 slowed down in the event that the City of London
19 introduced methods to reduce the volume of refuse?

20 A. Yes, I believe the thing will
21 be slowed down once it gets started. I'm aware
22 that the city has been dealing with one company
23 to take waste paper and arranging pickup of paper
24 separately, but at the present time it is on a trial
25 basis to see if the quality of the material these
26 people are getting is acceptable to them. I expect
27 this type of reclamation will continue and hopefully
28 the amount of garbage produced will be reduced, but
29 we can't base a 20 year life cycle on these supposi-
30 tions. I do believe the general of using the site



1 will decrease.

2 Q. Mr. Morris, I believe it is a
3 known fact that methane gas and other gases of
4 similar types or different types are manufactured
5 in the process of decomposition of garbage. What
6 account have you taken into the design of this
7 manufacture of gas?

8 A. We have discussed this with Pro-
9 fessor Webber because it is a case that methane is
10 produced. Normally in a landfill site if the area
11 was just to be used for recreational purposes or
12 grass, it is protected from buildings by the type
13 of permanent material we have in the ground here
14 which is the pervious clay, then there wouldn't be
15 any need to take particular precautions because of
16 the height of the fill and the material would just be
17 diffused in the growth of grass in the surrounding
18 area. However, because of the intent to use it
19 agriculturally we intend to place granular trenches
20 on the top layer of fill material which will vent
21 the gases from the top to these trenches away from
22 the cover material where methane could permeate
23 to the roots of the crops and so on and affect
24 their growth.

25 Q. Is this not one of the crucial areas
26 from a standpoint of return to an agricultural use?

27 A. Yes.

28 Q. To prevent the flow of gases?

29 A. I think it is understood we will
30 have to experiment as this whole thing is developed



1 and there will be a continuing learning program to find
2 the best solutions to these problems. As far as
3 methane gas is concerned, when we reach the top
4 layers of material, these are the nine inches of
5 backing material (indicating), we intend to make
6 these at the very top 12 inches of material and
7 under this 12 inches, at the junction between the
8 two areas of refuse placing, we would install these
9 granular trenches which are approximately three feet
10 deep for the purpose that it would be under this
11 top 12 inches. Gas generated here (indicating) will
12 travel to these ditches or trenches and then on the
13 next two cells there would be another. These are
14 approximately 200 foot sections. The gas would
15 collect in these trenches and be vented through the
16 seal there at intervals of again about 200 feet.

17 Q. And do you have a device on the
18 top of the vent?

19 A. Yes. There is normally a
20 rotating vent placed on these to make sure there is
21 a positive draw on the gas.

22 This is what is intended for the first
23 part until we find out just what the total effect
24 would be.

25 Q. Thank you. I would like now
26 to direct your thoughts to the questioning yesterday
27 directed to Mr. Dowse connected with the permeability
28 of the clay and the cleansing factor, if any, or
29 action, if any, of clay material. The 16 feet which
30 is the minimum depth as we understand your evidence



1 based on current knowledge, taking that depth, what would
2 be the cleansing effect to leachate which will
3 eventually, we are told, pass through this layer
4 of clay? I understand it will take 150 years for
5 that to happen. What would the nature of the sub-
6 stance coming out of the other end be, how clean or
7 how dirty? What is the answer on that?

8 A. In the use of permeable clay
9 material like this there is a continuing effect as
10 well as an exchange effect as the percolate or
11 leachate passes through this material. The best
12 example that I could find is a paper by Hughes
13 and Cartwright in Illinois where they have done a
14 lot of work on this condition and he gives an
15 example for clay till material and I understand
16 that the Illinois clay is of the same permeability
17 as the material here. As an example he gives
18 chemical oxygen demands of leachate in the order of
19 40,000 parts per million which is much higher than
20 anything we have measured at the present landfill
21 site. Travelling a distance of 2.6 feet in this
22 silty clay till would be reduced to 96 parts per
23 million, a distance of 4.3 feet to 52 parts per
24 million or milligrams per litre and a distance of
25 17 feet would be reduced to seven.

26 Q. Seven parts ---

27 A. Seven milligrams per litre or
28 parts per million. Milligrams per litre or parts
29 per million are basically the same.

30 Q. Assuming initially it had how



1 many parts per million when it started?

2 A. Forty thousand.

3 Q. Reducing it from 40,000 parts per
4 million to seven parts per million?

5 A. That is correct. We have not
6 done these tests on this site to find out if that is
7 the case because we believe, first of all, our estimate
8 of the amount of leachate that will dribble through --
9 Mr. Dowse took a very conservative view -- there is
10 a conservative value and there is a dilution effect
11 of the total aquifer and there is on top of that
12 this continuing effect of the clay material. We
13 believe that that could be proved experimentally, if the
Board required.

14 Q. Thank you, Mr. Morris.

15 Dealing with the southeast site of
16 the city, questions were directed and slides were
17 taken both of that site and the former Westminster
18 Road -- not Westminster -- Commissioner's Road site.
19 Let's deal with Commissioner's Road first. I believe
20 that site was utilized by the city before the south-
21 east site?

22 A. That is correct.

23 Q. Are you aware of any engineer-
24 ing system or drainage system for leachate at the
25 Commissioner's Road site?

26 A. There is none as far as I know.

27 Q. There is no such system?

28 A. No.

29 Q. When was the Commissioner's Road
30 site in fact first introduced into use by the City of



1 London?

2 --- (Laughter)

3 Could I get that from somebody else?

4 More than 10 years?

5 A. It was in operation eight or
6 nine years ago anyway.

7 Q. I will get that from somebody
8 else. In the meantime can you tell me was it
9 sufficiently long ago that engineering techniques
10 which have been currently adopted for landfill were
11 not then currently in practice?

12 A. That is correct.

13 Q. When did landfill in itself,
14 this engineering system that you indicated here,
15 how recently really has this been introduced?

16 A. It was introduced in the -- it
17 has been introduced within the last two or three years.

18 Q. And the landfill system whereby
19 garbage is covered in daily cells, how long has that
20 system been in use?

21 A. Some areas have used it for
22 the last 10 years, but do you mean in the City of
23 London?

24 Q. I'm thinking both of the City
25 of London and in general use.

26 A. I think it is something that
27 sort of has grown from the open dump condition.
28 Gradually the cover has developed, not to the degree
29 of compaction, or proper covering up to the present
30 day, which we are talking about.



1 Q. So how would you characterize
2 landfill in the last two or three years as compared
3 to the landfill prior to that time?

4 A. I believe now it is a properly
5 engineered and designed condition where before it
6 was not.

7 Q. Would you characterize it as
8 a major structural project?

9 A. For a city the size of London
10 it is.

11 Q. Have you the engineering techniques
12 to go with it?

13 A. Yes, subject to approvals and
14 regulations which did not exist before.

15 Q. Dealing with the Commissioner's
16 Road site, would you describe whether it has any of
17 the safeguards you referred to in your evidence,
18 for example, does it have a perimeter drain to
19 take off rain water?

20 A. There is a creek that runs along
21 the side but that was there before the landfill was
22 put in. The soil material in there is quite differ-
23 ent from the clays we are talking about here. It
24 is a granular material on that site.

25 Q. Right. Moving from that site
26 to the south site of the City of London, did the
27 city at this stage introduce engineering in time?

28 A. Yes, it did.

29 Q. What kind of design did they use
30 -- did they have a leachate system of the kind you have



1 described here?

2 A. We were involved in the design
3 of the landfill site. It was a much more difficult
4 site than the one we are looking at today.

5 Q. For what reason?

6 A. Because of high ground water
7 tables. We were entering an old gravel operation,
8 gravel pit, so that we were starting with a hole
9 in the ground with some granular material left in
10 the bottom of the site above an impervious clay
11 bed.

12 Q. What water level did you have?

13 A. The water level was at this
14 point (indicating) drawn down by this excavation
15 from a higher elevation. This elevation, of course,
16 varied with the season of the year and so on. It
17 was necessary to construct clay plots around the
18 site to maintain this ground water condition out-
19 side the site because it was running into several
20 wells.

21 This material, the water, surface
22 water ditches were constructed around the site.
23 As the fill was placed -- before the fill was
24 placed on the clay material, a leachate drain
25 was installed around the perimeter of the fill
26 so that the landfill was built up within that
27 portion of the site. The leachate drains were
28 installed and they are not like this one. At the
29 projected site they are above the excavation whereas
30 there is no excavation of the clay material here.



1 They do not have built in relief measures because
2 you can't let it back up into the site. It just
3 surcharges here and eventually it will permeate the
4 material and get into the ditch. There was again
5 cover material placed and specific granular material
6 placed within that cover material to allow drainage
7 to the leachate drain. It was very difficult be-
8 cause granular material was being used here to
9 prevent the amount of infiltration that would take
10 place and therefore the amount of leachate generated.

11 Q. Is that the same situation at
12 that site as the one we are talking about?

13 A. Yes.

14 Q. Would you explain that?

15 A. The basic difference is this
16 is granular material which is very permeable and
17 allows water to pass through easily and the material
18 here is the impermeable clay which does not allow
19 water to pass through easily.

20 Q. You are referring now to what
21 was used to cover that site?

22 A. This material was originally
23 in here (indicating).

24 Q. And that original material was
25 in the impervious clay area so you are referring
26 now to the nature of the material to cover the
27 garbage so that the rainfall would tend to what --
28 penetrate it?

29 A. Penetrate this material and
30 when it hits the clay to travel back over to the



19

1 leachate drain.

2 Q. Would you compare that with
3 our site and the kind of material used to cover the
4 garbage there?

5 A. We expect in the order of 12
6 cubic feet or 70 gallons a day. In here the city
7 has been removing on the average 16,000 gallons per
8 day from a site. That is six or 700. Sixteen hundred.

9 Q. What is the total acreage of
10 that site?

11 A. I think the approved acreage
12 is in the order of 45 acres.

13 Q. The useable acreage is 45,
14 useable for this purpose?

15 A. Yes. I would like to check
16 that. I think I should mention there was provision
17 in the design report that if we found this infiltrat-
18 ion rate, collection of leachate could not be handled
19 by a trucking system, then a pumping station would
20 be installed with a leachate pump to go into the
21 city sanitary sewers.

22 Q. This formed part of your
23 recommendation, did it?

24 A. Yes. Also on this site there
25 were two operations conducted, one a clean fill
26 site and the other, the refuse site. The so-called
27 clean fill site was trees, stumps, rubble, building
28 materials and so on. I don't know where the photo-
29 graphs were taken, but I think some of them were
30 actually in that area. The site itself was this old



1 quarry and the dumping had been going on at the site
2 before the city was even involved, I guess through
3 a private arrangement between industry and the owner
4 of the quarry so that the site was really shaped
5 something like this with existing fill material in
6 there. In some cases it is not known what is in
7 these existing areas and material like the yellow
8 material demonstrated on one of the slides ---

9 Q. That is the yellow-green
10 material at the side of one of the slopes?

11 A. It was on a slope from here
12 (indicating), where this was actually covered during
13 the construction of the storm ditches and is not
14 part of the city's operation at the landfill site.
15 This is why the perimeter drainage goes around like
16 this (indicating) with the access road in here.

17 Q. I see.

18 A. In fact there is a ditch all
19 the way around the site.

20 Q. Is the city taking steps to
21 try to do something about that yellow material?

22 A. Most of it had been removed
23 during excavation but some of it was left.

24 Q. Can you express your opinion
25 as an engineer as to the suitability of the subject
26 site for the landfill use? Can you categorize the
27 site as to its suitability?

28 A. We believe it is an excellent
29 site for sanitary landfill.

30 Q. And do you feel the design meets



1 the water problem?

2 A. Yes, we believe it does.

3 Q. Or the potential problem? Did
4 you participate with the City Engineers Department
5 in drawing a set of standards of operation for land-
6 fill sites generally in the city?

7 A. Yes. These were included in
8 the brief.

9 Q. And can you refer to the stand-
10 ards themselves? I would like you to touch on one
11 or two. Typically people in the vicinity of landfill
12 sites are concerned about a number of things. Firstly,
13 they are concerned about the way in which a truck
14 arrives at the site. I am wondering, when you
15 referred here to the regulations that will deal
16 with that. In other words, the city has indicated
17 its intention to limit the access to the property
18 to travel along Wellington Road and then onto
19 Concession Road #7 at the southeast corner of this
20 site. Let us assume that a truck laden with refuse
21 came to the site travelling east along Concession
22 Road #7 which is, that is to say, coming from the
23 west to the east, which is a non-designated means
24 of access, not designated by the city. What is in
25 these regulations to prevent that from occurring?
26 I refer you to the top of page 3.

27 --- (Laughter)

28 A. It says: "All municipal refuse
29 vehicles and private haulers shall
30 use the designated routes proceeding



1 to or from the site. Any person
2 or corporation violating this pro-
3 vision shall not be permitted to
4 enter the site for the purpose of
5 delivering refuse."

6 Q. Yes. Let's look at the regulation
7 dealing with the condition of the vehicle arriving
8 there. Assuming he comes with garbage sitting right
9 out in the open?

10 A. There is a provision. The
11 vehicles have to be covered with a proper roof or
12 a tarpaulin.

13 Q. So that appears in these re-
14 gulations. Then you also indicate what measures
15 would be given effect in paragraph I-XII on page I
16 referring to dust, flying paper, nuisance shall
17 be controlled.

18 A. Dust is controlled with water
19 trucks which spray the area on the site and oil can
20 also be spread on the gravel roads to control dust.
21 Water trucks would be used to control dust and oil
22 can also be spread on the roads as it is presently
23 done in the township to control dust. Flying paper---

24 Q. It is the intention as well,
25 is it not, for the city to surface pave the road
26 leading to the site to prevent dust along that strip?

27 A. That is correct, along the main
28 road leading to the site. Flying paper is controlled
29 by methods of dumping, but also by provision of snow
30 fencing which is the present practice in the city. I



1 understand we recommended that they look at using
2 a netting such as is used in the Metropolitan Toronto
3 sites which can be up to 16 or 17 feet high and as
4 long as it is kept clean by the operators, they will
5 act as a barrier, flying paper catcher. As I
6 mentioned ---

7 Q. Can you describe again just
8 how the site operation itself, for the benefit of
9 those who may have come late, how the site operation
10 itself controls the effect of paper blowing away?

11 A. There can be paper blown from
12 the municipal dump in a truck. The paper blows and
13 the paper is blown when it is left uncompacted and
14 uncovered. It is the city's practice to move the
15 cover material over as soon as they can get at it.
16 This is generally a few hours but certainly at the
17 end of each day.

18 Q. How large would any part of
19 the working face which might have exposed garbage
20 be at any one time?

21 A. As I said, the present operation
22 is in the order of 150 feet long and with a three
23 to one slope on the face which is over 24 feet wide.

24 Q. What other steps would be
25 taken into account in controlling debris, paper
26 blowing?

27 A. There are staff on the site
28 whose special duty is to go around picking up paper
29 which does escape from these catchers. The city
30 proposes a pickup truck also be made available three



1 hours a day to monitor the surrounding area to see
2 if there is any problem of blowing paper.

3 Q. These would be along the
4 concession roads adjoining the site?

5 A. That is correct.

6 Q. You have dealt with item 22
7 on page 2 I believe in your description of the
8 surface drainage. Is there anything else you would
9 like to say in relation to the manner in which the
10 surface drainage system that you describe which is
11 internal, leads to the external drainage systems?

12 A. As I mentioned, we have
13 maintained the same drainage areas in shaping the
14 site to conform with the existing swales. It will
15 be discharged to the same points at which they are
16 discharged at the present time. Extra holes are
17 indicated on the model to construct ponds at these
18 outlets as a safety device in case of a bad spill
19 or accident. Basically we intend to maintain the
20 same flow downstream of the site as exists at the
21 present time.

22 Q. Dealing with one item you have
23 not touched on, item 25 on page 2, referring to:

24 "Any ground water intercepted
25 in excavations on the site shall
26 be sealed from the fill and con-
27 ducted to a proper outlet..."

28 Would you describe that design, how you would see
29 that working on the landfill site?

30 A. These are general conditions that



1 apply to any site. As I mentioned on the other site,
2 this involved cutting off the high water table on the bottom
3 of the excavation. On this site here the only problem
4 that could occur is when the excavation has been
5 carried out and sloped to the end of the excavation
6 so that any rainfall falling in the area where they
7 are working will drain to this point and be pumped
8 out. We do intend to shape the bottom of the
9 excavation so that we have clay berms between the
10 area where they are placing the refuse and the area
11 where they are still excavating the cover material
12 so that if the rain falls here (indicating) it will be co-
13 llected in this area and if it is uncontaminated, it
14 will be pumped into the storm drain system. Any
15 water here in this landfill will be automatically
16 taken away as leachate.

17 Q. Without a flood clearly more
18 water would get into the ground?

19 A. The idea is just to reduce the
20 amount, the city would have to care for at the site.

21 Q. Can you describe more particularly
22 the nature of the on-site road design? You said you
23 wanted to discuss that.

24 A. These are the internal ---

25 Q. Number 23 on page 2. Is there
26 anything further you want to say about it?

27 A. I feel it is a standard road de-
28 sign. We have indicated here that it would comprise
29 18 inches of compacted granular B material with six
30 inches of granular A on top. The paved area, of course,



1 would be paved on top of that.

2 Q. Can you describe the points at
3 which water would be sampled from this site from
4 the standpoint of monitoring on-site?

5 A. The proposed monitoring program
6 which, of course, is subject to administrative approval,
7 will be initiated as early as possible so that the
8 background of conditions would be built up before
9 any operations took place at the site. All the
10 major drainage outlets from the site would have
11 samples taken every two weeks to check the condition
12 of the ground water near the site. Also we have three
13 existing sampling points, two of which we are sure,
14 where we can take samples from the deepest aquifer,
15 the PUC well up here (indicating) which can be
16 used for sampling and bore hole 101 in the middle
17 of the site and there are two wells, 17 and 18 on
18 this drawing, which are reported to be deep wells
19 and hopefully one of them is. This will be checked
20 out and used for sampling the deeper aquifer at this
21 part of the site.

22 The shallow wells, we have six around
23 the site, bore hole 103 which was left with pro-
24 vision for sampling water, there are wells here marked
25 .9, 12, 15 and 201. Bore hole 102. In fact we
26 have shallow wells around the site which would be
27 used for sampling purposes every two weeks.

28 Q. Quite apart from that, we will
29 be asking Mr. Rowntree the policy of the city as to
30 further monitoring. I'm wondering if you could describe



1 for us the nature of the odour, if any, to what extent
2 would that be controlled in the operation?

3 A. From previous experience with
4 landfill sites the odour is not anticipated to be a
5 problem. By daily covering and avoidance of any
6 spreading of sludge material for drying which is
7 not completely digested in the first place, there
8 should be no odour problems on the site.

9 Q. And rat control?

10 A. The city has a program of bringing in
11 rodent control people who place traps around the site to
12 catch them and they also look for any evidence of
13 rats and track them down. In a properly designed
14 landfill site rats will not establish themselves
15 and develop, but we recognize the possibility of
16 rats being brought in with the garbage trucks and
17 spilling out and heading out from the site. Talking
18 to operators and Mr. Robertson, the number of sightings
19 of rats were very few.

20 Q. Potential for fire, what do
21 you have to say about that?

22 A. Again, there is control by means
23 of the superintendent or spotter on the site, the
24 materials which could cause fires which do go into
25 the site. If a fire does develop, then the city has
26 firefighting equipment and it can be extinguished by
27 pushing it around with the equipment over the other
28 material.

29 Q. The appearance of the site to
30 a party standing on the street, the effect of this is



1 what?

2 A. Standing on the concession road?

3 Q. Yes.

4 A. As I mentioned yesterday, we
5 show this site blind, someone who is standing on the
6 concession road will be able to see the six foot high
7 chain link fence and a string of trees and then he
8 can see this grass berm. He will not see the land
9 area behind. Where the main entrance is located it
10 is proposed to build an attractive gate and, of
11 course, you can see through the gap in the berm at
12 that point where the trucks go in behind the berm.

13 Q. Surrounding land could be of
14 variable height. You referred to a person standing
15 on the street at the six foot level. Is there a
16 point where he could stand where he would get an
17 over-view of that berm?

18 A. That is correct. That is from
19 a distance.

20 Q. Let's assume that that person
21 lies to the east of that site. After the first two
22 years of operation, I believe, you have indicated
23 that the end of the "L" of the site would be fully
24 cut off. Is that right?

25 A. Yes, this part would be completed
26 to its full height and would form a screen over the
27 rest of the operations here. When the operations
28 are going on here, there would be a 50 foot berm
29 and as the top level is placed it is possible there
30 would be higher ground to the east.



1 Q. So that at the end of two years,
2 where would the end of that "L" be? Where would it
3 be in relation to the existing ground surface?

4 A. I think it is about 30 feet high.

5 Q. Would that effectively block some
6 of the operations?

7 A. The ground is lower there so it
8 would have to be 40 feet high.

9 Q. How would that be in appearance?
10 What would the slopes look like?

11 A. The slopes -- I think the model,
12 although it is very small scale would indicate what
13 would be seen. It would be this slope of six to one
14 which is quite a gradual slope. It can be cut and
15 this grass slope is what we would see.

16 Q. It would be a grass slope.

17 MR. PLAXTON: I have no further
18 questions, Mr. Chairman.

19 THE CHAIRMAN: Do you have some
20 questions, Mr. Wright?

21 MR. WRIGHT: Yes, Mr. Chairman, I do.

22 EXAMINATION BY MR. WRIGHT:

23 THE CHAIRMAN: I wonder if you would
24 speak closer to the microphone?

25 MR. WRIGHT: Mr. Chairman, I was just
26 referring to our chance meeting Mr. Morris and I had
27 on the weekend and commenting that we had both planned
28 this for some time.

29 Q. Mr. Morris, there was yesterday
30 at the outset of your testimony quite a bit of reference



1 to separation and transfer sites. This seemed to me
2 a pretty glowing picture of what could be done in
3 future to separate all these different sorts of
4 waste materials, garbage from each other for re-
5 cycling. Just so there is no misunderstanding,
6 nothing like that is in the works here?

7 A. That is correct. If I gave the
8 impression it is a glowing picture, I didn't intend
9 to. I'm saying it is an optimistic picture.

10 Q. I just wanted it to be clear
11 that we weren't talking about anything of that sort
12 in the present plan.

13 A. No. May I elaborate?

14 Q. Yes.

15 A. I believe the city has taken
16 measures in the right direction to initiate this,
17 but they are on a preliminary small scale start. As
18 the government policy is set, this city does intend
19 to stay with that program, I believe. At the moment
20 there is no complete system in view.

21 Q. You are probably more familiar
22 with what the city may or may not be doing in this
23 connection, but what in fact have they done so far
24 with recycling? What are their present plans?

25 A. They consulted us on this whole
26 problem through the Environment Protective Services
27 Committee on an informal basis and we recommended
28 that because of the City of London's location it is
29 very difficult for them to build a high disposal
30 type system to recycle them. We felt they should press



1 the government to study the overall market position,
2 establish which natural resources should be stressed
3 in recycling, and that programs should be developed
4 on a national and provincial basis first. London's
5 position should be established within this framework
6 and then they can know what they should be doing,
7 what would be the best thing for them to do relative
8 to the overall picture. The chairman of this
9 Environmental Protective Services Committee wrote
10 to the Federal Government, and Premier Davis and
11 visited him to press for this to be done. The City
12 Engineers Department I know co-operated with Pro-
13 fessor Knobbs and Mr. Beatty of the Business
14 Administration School at the University of Western Ontario
15 who through a research grant from Ford Motor Company
16 did a study on the feasibility of recycling materials
17 in the City of London which really concluded that
18 unless they could be assured of all the markets
19 which were located in the Hamilton and Toronto areas,
20 in other words, as long as Hamilton can go ahead and
21 do it, that it was feasible, but very costly for the
22 city to do this. They concluded it was too great a
23 cost for the City of London to pursue this policy.
24 This is the sort of background.

25 Q. Again, you are probably in a
26 better position than I am, perhaps you would advise
27 us as to plans that have been made by the City of
28 London, research that is being done by the City of
29 London or under its aegis with respect to incinerat-
30 ion at this point?



1 A. No detailed plans of which I
2 am aware.

3 Q. Are you familiar with what is
4 called SWARU operations in Hamilton? You visited it?

5 A. Yes. I was to go with the city
6 when they visited it but I haven't seen it because
7 I couldn't go. I read a report from other staff members.

8 Q. I see. At the moment I am looking
9 at an editorial comment from the London Free Press and
10 because of one of the resources of the Committee we have
11 not been in a position to follow this up and to find out
12 more fully the particulars, but this editorial quotes a
13 chap in Hamilton named Gordon Sodden.

14 A. He was the engineer who designed
15 the system.

16 Q. What firm is he with?

17 A. He has his own firm.

18 Q. Any figure for a cost per ton that
19 he gave you or he is quoted as having said would be
20 probably pretty close to accurate?

21 A. Not necessarily. Many of these
22 sites -- this is no reflection on Mr. Sodden, but with
23 all due respect to the press, for failure to include
24 everything he said when the price is quoted, in other
25 words, the Black, Clauson system, for example, was quot-
26 ing figures of \$7 or \$8 a ton for disposable waste. What
27 didn't come through at that time was that that included
28 the value of reclaimed materials deducted from the total
29 operation, so in effect the operation itself was running at
30 14 or \$15 a ton and this lower figure was arrived at through



1 resale of reclaimed material. For someone who just
2 read that figure they would say, "Why don't we get
3 our disposal system working like that?" I don't know
4 which figure you are going to throw at me, but I just
5 want to say I would have to give it some thought. My
6 understanding is that that system is running about
7 the same cost as incineration, not lower. Some are.

8 Q. Just because you are talking
9 about a total figure when you discuss it and I would like
10 to discuss it a little further. Mr. Sodden quotes
11 \$7.50 per ton, \$4 for capital and \$3.50 for operating.
12 This is because it has been broken down in that way,
13 I was led to believe by reading the editorial comment
14 that that is strictly amortized cost over the life
15 of the system and a figure of operating cost per
16 ton going through the plant. Again, as I commented
17 in a preliminary way, we are not in a position to
18 actually support or have an investigation, such as
19 would be necessary for us to adequately prove
20 those figures. I would like your comments on those
21 figures as to why they might be off?

22 A. We are doing a report just now
23 from our Toronto office for the National Capital
24 Commission, the Ottawa-Hull area. It is not com-
25 pleted yet. We are still working at it. This is
26 a report from Waterloo and so on. It gives us a continual
27 type of feel of what is happening in the field, what
28 is with this SWARU system and one answer from them
29 is that it is no cheaper than incineration. The
30 bugs are not all out of it yet and so on. Although



1 it will continue to be watched, it is not the sort
2 of thing we would recommend going ahead with right
3 at the present time where there is a cheaper
4 alternative. My point is that it is a reduction
5 system similar to incineration.

6 Q. Am I correct -- correct me if
7 I misinterpret you but basically it is a question
8 of costs, weighing the costs of landfill against
9 the cost of incineration, leaving aside some of the
10 other things which may or may not be weighed?

11 A. The other thing we would weigh
12 in besides cost is the proven reliability of the
13 system. We would not recommend it to a client, unless
14 he was fully aware of it, that we would recommend
15 something that was innovative and in a year or so
16 there would be better cost figures and better
17 operating data on it.

18 Q. The problem with that is (inaudible).

19 A. That is correct. I am not saying
20 the city can't decide to do it on its own but as a
21 consulting engineer it is my duty to warn them that
22 it is not proven and generally this is done through
23 government assistance. In a case like this where
24 something looks reasonable and somebody is going to
25 go ahead with it, then the senior level of govern-
26 ment will help them do it which I think is paid for
27 by the Province of Ontario. Not for London, but as a general
policy.

28 Q. As a general statement, if
29 London were to get into something like a SWARU --
30 I should say further for those who are not aware of



1 what SWARU stands for, it is solid waste reduction
2 and it is a way of separating and incinerating and re-
3 cycling and so on.

4 A. As I understand the problems there
5 you have to make sure the material is clean. The mag-
6 netic separator, we are doing the design of a transfer
7 station for Metropolitan Toronto Bermondsey Transfer
8 Station, and in talking with Mr. Sexton there has been a
9 more advanced form of magnetic separator tried there be-
10 cause the SWARU has not been getting clean enough metal.

11 Q. These figures of \$7.50 per ton
12 comes after a great recitation of how they have spent
13 about a quarter of a million dollars to iron out the
14 bugs, so if London were to get into it presumably it
15 wouldn't have to spend that quarter of a million
16 dollars because Hamilton has already spent it to find out
17 where the bugs are. I don't really -- obviously neither
18 of us has any firm figures on this so we can't get into
19 a long dissertation, but would you agree with me that
20 \$7.50 per ton which includes operating capital or
21 would this be reasonable?

22 A. No. I would have to say from the
23 information I have got from my own people that in-
24 cineration, we would still be talking about 10 or \$11
25 per ton which includes the haul to the site.

26 Q. I don't like to put you on the
27 spot one way or the other but I think I'm going
28 to have to. Did the Free Press misquote Mr. Sodden
29 or did Mr. Sodden not give accurate figures to the



1 Free Press?

2 A. I don't think that is fair. I
3 think it is a very complex subject. We can establish
4 for the Board and submit it separately. I'm only going on
5 second-hand evidence and you are going by that
6 article. It can be established what a realistic
7 figure is. My information is it is much higher than
8 \$7.50 a ton.

9 Q. There is one other thing that
10 maybe should be said. There are alternatives to
11 landfill, by way of reduction or whatever,
12 incineration, in use now. There is one now in
13 Hamilton being used. We have just been discussing
14 it. My information is that there are other units
15 available in Canada and in the United States which
16 are presently in operation. Are you aware of those?

17 A. SWARU?

18 Q. No, other alternatives.

19 A. Incinerators are a viable
20 alternative.

21 MR. PLAXTON: My friend said "alternative".
22 Is this by way of improvement to a system or a clear
23 alternative? For example, does Hamilton have a
24 landfill system as well?

25 THE WITNESS: I understand they have.

26 MR. PLAXTON: So it is not really all
27 that clear. I just want to make that clear.

28 MR. WRIGHT: It is an alternative
29 insofar as the landfill that comes out of the SWARU
30 operation is clean, odourless, no dust, traffic in



1 a commercial area where traffic would ordinarily be,
2 no leachates. I think that is an alternative.

3 MR. PLAXTON: You still have the
4 landfill. We are talking here about ---

5 MR. WRIGHT: The landfill -- 95% less
6 in volume and it can be used as clean landfill with
7 no smell. We are not talking about acres and acres
8 of good farmland. I think that is an alternative.

9 MR. PLAXTON: To that extent, clearly
10 landfill is required.

11 THE CHAIRMAN: Did you say that re-
12 cycling and incineration reduce it by 95% of the
13 landfill operation?

14 MR. WRIGHT: Yes, sir, the bulk by 95%.

15 THE WITNESS: I do not think that is
16 an accurate figure.

17 MR. WRIGHT: I'm only going by what
18 is said in this article.

19 Q. Your report, it seems to me,
20 you figure 85%?

21 A. For the amount of material going into
22 the incinerator I think it would have to be 85 to
23 90, but that does not take everything. If you read
24 the report, there is 15 or 20% not taken to the
25 incinerator, but taken directly to a landfill site,
26 building rubble, material you wouldn't put through
27 an incinerator or that you would want to put through
28 a SWARU system. The volume of reduction is, say,
29 15 -- reduce it to 70% of what is going through.

30 MR. PLAXTON: My information here -- and



1 we will call another witness on this -- that we are
2 just talking about municipal waste when we speak of
3 the SWARU system in Hamilton. The commercial waste
4 firms who take their waste directly to the landfill
5 site in its existing form. We will have that from
6 another witness.

7 MR. WRIGHT: Do you have any more
8 information about SWARU?

9 MR. PLAXTON: That will come from
10 the other witnesses as they come up.

11 MR. WRIGHT: Q. Is there any other
12 information about SWARU we might expect to hear
13 today or do we have to raise our own questions to
14 get the answers?

15 A. I think what I've tried to
16 say, what we recommended in that report still stands
17 at the present time, the most economical system for
18 the City of London is a landfill site at this time.
19 The only other alternative we considered in detail was
20 incineration. The SWARU system is a variation of
21 incineration. The same argument would apply to
22 incineration as sanitary landfill. That also goes
23 for hydrogenation and so on. They are all possible
alternatives in the future.

24 Q. In any event, incineration at
25 a cost would do the job?

26 A. With a backup landfill site.
27 As you mentioned, 30% was left of building rubble
28 and residue from the incinerator. I haven't tried
29 to get Ministry approval to get permission for
30 dumping incinerator ash into a landfill site. You



22

1 have to be careful dumping it into a hole in the
2 ground because you still have the metallic ions and
3 so on in there. You throw all of this out, and you
4 would still have to think of looking after the metal-
5 lic ions but not to the same extent.

6 Q. From your last comment am I
7 to understand that there would still be leachate
8 problems from this metallic ash?

9 A. There could be, yes. Again
10 it depends on the distance from the water table,
11 use of the ground water, the type of soil, where
12 you dump the ash and so on.

13 Q. I am confused because it was my
14 understanding that once it was incinerated this ash
15 was devoid of any further -- there was no further
16 ability to decompose.

17 A. That is correct. It is free
18 of organic decomposition, but it is not free of
19 metallic ions and so on. You can increase the ion
20 content of the soil and water.

21 Q. There is not a serious leachate
22 problem relative to what we are discussing here?

23 A. That is correct.

24 Q. And there certainly wouldn't be the
25 kind of noise involved because, as I understand an
26 incineration operation, it is conducted inside a
27 building which building would be in a commercial
28 complex and outside of the usual industrial noises
29 there would be nothing unusual. Is that your
30 understanding?



1 would be concerned the same comment would be made
2 as with paper and as far as the paving would be
3 concerned there would be no running along the
4 gravel roads between the sites, no bulldozers
5 running around. Again it is all inside?

6 A. That is correct. Dust, as we
7 described before, can be controlled.

8 Q. You will forgive me perhaps
9 for being redundant in that but I just wanted to
10 get it on the record. There would be no rodents
11 to be contended with with an incineration operation?
12 Those that may be brought in in the truck would
13 certainly be disposed of when they get into the
14 heat?

15 A. When they get in there, but,
16 of course, in an incinerator operation it is often
17 dumped into a hopper first and sometimes I have
18 seen when the hopper gets filled there is spillage
19 on the floor. I would recommend an effective con-
20 trol program be initiated at an incinerator site
21 as well. It is more confined in area.

22 Q. Would it be safe to say that
23 with respect to the pest control system in an in-
24 cineration operation -- would it be safe to say
25 it wouldn't be as extensive or wouldn't need to be
26 as extensive as required to control rodents and
27 what not in an area of 400 acres?

28 A. Yes.

29 Q. As to methane gases and carbon
30 dioxide and this sort of thing, I understand that while



1 | there is some gas burn-off, it is and can be
2 | appropriately filtered so that there would be no
3 | danger from methane gas and any other gases are
4 | appropriately dealt with?

5 | A. An incinerator can be designed
6 | to prevent the escape of methane.

7 | Q. There is no odour in an in-
8 | cineration operation that you are aware of?

9 | A. If the building is properly
10 | designed and ventilated and exhaust -- it can be
11 | designed to be odour-free.

12 | Q. The other thing I might say
13 | and I guess it is a statement of the obvious --
14 | if you put an incineration plant in a commercial
15 | zone in the City of London you wouldn't be using
16 | our good farm land in the Township of Westminster?

17 | A. If you put it in an industrial
18 | zone, not farmland, you would be using up good
19 | industrial land.

20 | Q. I have some questions about
21 | the report that you brought out to the City of
22 | London which you have beside you. As I understand
23 | the study and procedure, and just repeating what
24 | you already said, you started off with 43 or 46 --
25 | 46 initial sites?

26 | A. We started off with the
27 | City of London, an eight mile radius on all sides
28 | of the city and that would be preliminary to arrive
29 | at these 46 sites.

30 | Q. And then you did a preliminary



1 tour which cut it down to 23 and this was -- the
2 first cut was based on high ground potential for
3 water run-off, insufficient capacity, et cetera?

4 A. Surplus water, ground water
5 pollution potential, lack of capacity because there
6 was no cover material available.

7 Q. Well now, you took that group
8 and you made your objective analysis and you rated
9 it when it came out of the computer and you got
10 number 1 to 23 in order. As I read this chart ---

11 MR. WRIGHT: Mr. Chairman and members
12 of the Board, this is page 7-33 of the large blue
13 book.

14 Q. As I read this, these are the
15 parameters that were used in this objective testing
16 and they have no real consideration of the cost
17 factor?

18 A. Not at this stage of the report.

19 Q. Basically we are talking about
20 all of the things that I was just talking to you
21 about which the incinerator would remove. You are
22 clearly concerned with the possibility of reducing
23 the cost and you are trying to evaluate the
24 23 sites in order that you can have minimum danger
25 of gas, admitting that there is a gas problem,
26 minimum ground water pollution hazard, again
27 admitting there is a problem, and so on. Among
28 those other things which you considered was the
29 isolation of the site and how many people you were
30 going to be interfering with by putting this in.



1 All right. We are down to 23 and we've got them in
2 order. You take the top six and you then go into
3 the matter of cost. One would assume that you would
4 have, for lack of better terminology, your computer
5 environmental study, the best in that category would
6 probably be not the best in terms of cost. They
7 would necessarily be linked. I would presume that
8 when you had your cost analysis done of each of
9 the top six and you have them ranked side by side,
10 you have a logical evaluation done by a computer,
11 then you would have to wipe off cost against cost
12 in ecological values, that while you might
13 have to sacrifice some ecological value, the cost
14 consideration plays quite large a role.

15 MR. PLAXTON: That is your assumption.

16 MR. WRIGHT: Q. Am I wrong?

17 A. No. We were looking for both
18 ecological conditions and costs. I think you may
19 be coming to this, but in this detailed evaluation
20 of the cost, the actual evaluation of the site capacity was
21 also carried out so as you can see on the table
22 some of the sites do not meet the 20 year capacity.

23 This would also be weighed -- I might
24 say just to get the whole picture, when we got
25 down to the sites we felt they were all capable of
26 being acceptable from an ecological point of view
27 and this was achieved by weighing and explaining
28 all the costs.

29 Q. Yes.

30 MR. WRIGHT: Mr. Chairman and members



1 of the Board, I would ask you to turn to page XI-VII.

2 Q. Mr. Morris, do you anticipate
3 what I was leading up to, you have sites W-12 --
4 excuse me -- site SW04 and site SW05 which are
5 ranked by the computer as two and three ahead of
6 site W-12 and on your cost readings those two sites
7 come out respectively five and four, which is
8 substantially against the cost of W-12 which is
9 ranked number eight. You have anticipated the
10 point I was going to make because your answer to
11 my question is going to be, "Ah, they are not
12 20 year sites." My answer to that is, "Ah, but
13 those are the only two sites that were in the City
14 of London."

15 --- (Laughter)

16 MR. PLAXTON: There is a further ---

17 THE WITNESS: If I could -- may I
18 answer that?

19 MR. WRIGHT: Q. Yes.

20 A. I know that wasn't part of the
21 reason. When W-12 -- you hit the reason why we
22 didn't choose them here. There isn't a capacity
23 in the individual sites and ---

24 Q. They weren't side by side?

25 A. They were side by side, but
26 this was not considered by the planner as a feasible
27 thing because of the community aspect of the area
28 where these are which would be ruined if both of
29 these areas or sites were taken out. We agreed
30 in the evaluation one or the other but not both.



1 When we found that W-12 was not acceptable from the
2 ground water aspect, we went over these sites first to
3 have another look at them and we talked to the Ministry
4 of the Environment and the Planning Board and so on and
5 they were very concerned about ground water pollution
6 on these sites.

7 MR. PLAXTON: What sites?

8 THE WITNESS: SW04 and SW05. For that
9 reason we stayed away from them again and went to W-12A.

10 MR. PLAXTON: Would you describe SW04 and
11 5 and why the water pollution problem might have been
12 there?

13 THE WITNESS: These were gravel pit
14 operation. It is a continuing operation and at the
15 moment the SW04, the operator is planning to excavate
16 gravel five or six feet below the ground water table
17 and we would have to build that up with clean material
18 again and completely line the site, not just the bottom,
19 because this aquifer does go through on the basis of
20 geological explorations, through to the Thames River.
21 This hole is about 100 feet deep and to concentrate
22 our garbage in that hole, the site would have to be
23 lined around the site as well as the bottom to pre-
24 vent gas travel or leachate.

25 MR. PLAXTON: In what way would you
26 propose to line it?

27 THE WITNESS: We discussed possible
28 methods but we felt that we couldn't guarantee --
29 we can't guarantee very much, but we felt we couldn't



1 really be sure we would have an effective system
2 because of this difficulty of lining the site
3 either with plastic or with rubber membrane or
4 with clay.

5 MR. PLAXTON: What was the comment
6 on the site proposal from the city?

7 THE WITNESS: We talked to Dr.
8 Patterson and he didn't like the idea at all so
9 we chose another site. I think ---

10 MR. WRIGHT: Q. What were you thinking?

11 A. I was going to say the logical
12 question from your point of view was why the heck
13 did we ever look at them in the first place.

14 Q. I didn't hear the question I
15 was supposed to have asked.

16 A. Why did we consider those as
17 viable sites and we threw them out on the basis of poten-
18 tial for ground water. The criteria was generally
19 accepted criteria that we could get four or five feet
20 of clean material between the bottom the landfill
21 site and the ground water table. It was considered
22 that this was a reasonable basis for the design. We
23 did not consider that as much as type of soil,
24 permeability and the thickness.

25 Q. I trust you did the same kind
26 of re-investigation with the other sites you re-
27 commended? There are two in the Township of
28 London -- three in the Township of London.

29 A. Those sites all went out on the basis
30 of pending regulations by the Ministry of Transport and



1 Communications. They do not want a landfill site
2 within five miles of an airport. This was not
3 known at the time the report was done, but this was
4 quite seriously being considered.

5 Q. Why don't they want a landfill
6 within five miles of the airport?

7 A. Because of the birds that may
8 be attracted to a landfill site. Metropolitan
9 Toronto is going to do a study with the Ministry
10 on the Pickering Airport site to establish how
11 serious a problem that is. They are trying to find
12 out how many birds are involved and so on.

13 Q. You didn't happen to feed
14 W-12A through your computer, did you?

15 A. I considered that, but I felt
16 it would not be a meaningful thing because all the
17 others were done on the basis of the same sort of
18 information being available. We felt W-12A had
19 far superior soil conditions to W-12 or SW04 or
20 SW05 so when we compared the general things that
21 were considered here with W-12, added the cost
22 of the extra bit of hauling; it was still the best
23 site.

24 Q. It is on high ground, isn't it?

25 A. Yes.

26 Q. It is on watershed?

27 A. We consider that an advantage.

28 Q. I don't understand that. Does
29 it create a potential for two water systems instead
30 of only one?



catchment area

1 A. You have less/drainage to the
2 site. In that we can take care of these things, but
3 if you have a large stream flowing under the site,
4 then obviously you have to construct some means of
5 diverting that stream and it increases the leachate
6 problem, if it spills into the site.

7 Q. What is your cost per ton?

8 A. Present day costs?

9 Q. Perhaps the members of the
10 Board would like to have a copy of the report.

11 A. This is just our calculations.
12 We can't get a final cost study until we find out
13 the cost of the land itself. We estimated \$2 a
14 ton for disposal costs on 1973 prices. That was
15 worked out from the prices in 1970. We have a total
16 price here of \$6 a ton which when Mr. Haines
17 finished his calculations he added 25%. It should be
18 \$5.75 a ton. We know we are in that order. Until
19 we get all the basic prices finalized, we can't
20 come up with an accurate figure.

21 Q. I have not seen your figures
22 so I can't quarrel with your figures but I'm just
23 asking if you took some of these things into
24 consideration which I say were not taken into
25 consideration at the time your 1970 report was
26 prepared and brought in. I presume that includes
27 the extra hauling costs?

28 A. Yes. Which are those ---

29 Q. I am sorry. You are not going
30 to compare the cost of W-12 which was set at 5.05 or



1 \$5.02 a ton and the \$6 a ton you are now speaking
2 of in respect to the projected costs per ton at
3 W-12A. I am just trying to figure out whether or
4 not we have got everything calculated into this.
5 Also included in that I presume you have calculated
6 the cost of hauling out the leachate from the leachate
7 ditches?

8 A. Yes.

9 Q. How many gallons per acre per
10 year did you calculate that?

11 A. We based it on the same rates as
12 if we hauled out 16,000 gallons per day and we feel
13 that is way in excess of what we would get.

14 MR. PLAXTON: Is that therefore a
15 source of savings in the total cost?

16 THE WITNESS: Potential source of
17 savings. The low infiltration rate, the total site
18 when completed, if everything is still coming out
19 as leachate and has to be trucked from the site,
20 we would be talking about 18,000 gallons per day,
21 but getting a high figure, we maintain that it
22 would not be that high.

23 MR. WRIGHT: Q. I don't know if you
24 could tell me anything or not about whether the
25 traffic people took into account the extra trucks
26 that would be involved hauling leachate at that
27 rate? There is going to be some pumping into these
28 trucks and taken to the London Sewage Disposal Plant.

29 A. I am sure I did because I
30 counted the same trucks on the road. I think surely



1 we did.

2 Q. Are these being hauled out of the
3 Clarke site dump right now?

4 A. Yes.

5 MR. PLAXTON: But more gallorage
6 than you anticipated?

7 THE WITNESS: We allowed for the
8 same as presently is being hauled from the site.

9 MR. PLAXTON: (inaudible)

10 MR. WRIGHT: With great respect to
11 my friend, Mr. Chairman, I would like to question
12 the witness without interruption. I would ask the
13 Chairman to give you a chance after I have finished
14 to pick up these things. Your witness has been very
15 helpful himself.

16 THE WITNESS: These figures which we
17 calculated were 60 to 70 gallons per acre per day
18 with respect to the new site and 16,000 gallons are
19 being hauled from the present site which is 600
20 gallons per acre per day.

21 MR. WRIGHT: Q. Have you calculated
22 the cost of hauling the polluted ground water? You
23 said there may be some.

24 A. No. You mean something that
25 would get down in the pond?

26 Q. Assuming you get run-off water
27 that becomes polluted, presumably you are not going
28 to let that run off at least not until it is checked
29 every two weeks to find out how it has been for the last
30 two weeks?



1 A. On that point, if leachate
2 does get into a site, a responsible operator would
3 spot it before two weeks is up. To answer your
4 question, we have this cushion in the hauling of
5 the leachate itself to take care of these conditions.

6 Q. Does your cost figure include
7 the cost of refilling the site -- my problem is
8 that your figure of \$6 per ton is only a dollar
9 above a situation you were contemplating when the farm-
10 land was not being used. I thought that was in your
11 report in 1970?

12 A. That is correct. What has
13 happened really, capital costs are greater but the
14 tonnage to be disposed of we thought would be
15 greater. In other words, if we were doing the 1970
16 report now, we would be basing our costs on a
17 smaller acreage and on the scale factor we are
18 doing it on now, we have increased this by approx-
19 imately 50% and the scale factor brings it back.

20 Q. What is your total cost then,
21 your total capital cost now? You say that has gone
22 up. What does it cost the City of London yearly?

23 A. The cost for putting in an
24 estimate for land cost, engineering costs, access
25 road, development costs, finishing costs and
26 operating costs, \$13,900,000. That is for the
27 20 year life of the site. Eight million dollars of
28 this is operating costs.

29 Q. So the figure you gave me was
30 the total cost?



1 A. Oh, yes. Excluding haulage

2 Q. I didn't hear that.

3 A. Excluding haulage.

4 Q. That figure is not included in
5 this?

6 A. No.

7 Q. Does your costing take account
8 of the cost of any of the widenings on Wellington
9 Road and all the things that will be reported on
10 by the traffic control people?

11 A. It includes upgrading of
12 Concession Road 7 but no work on Wellington Road.
13 I don't think that would have a large impact on
14 the total figure.

15 Q. You have these drainage ditches
16 which -- leachate drains at various spots around the
17 site and there are going to be manholes at various
18 points to allow the drawing off of leachate as it
19 has been accumulating from time to time. You tell
20 us that you're going to have one major paved road
21 on the site which will be on the other side of
22 the berm from the 7th Concession. Are the leachate
23 drains all going to be on that paved road, leachate
24 manhole drains?

25 A. The collection manholes will
26 be located on that south side of the site because
27 that is where it naturally slopes into. There is
28 also one here (indicating).

29 Q. How are the trucks going to get
30 to that one in wet weather?



1 A. There will be a road constructed
2 during operation and after completion of the site
3 and so on. It would have to get in off the White
4 Oak Side Road.

5 THE CHAIRMAN: I can't hear you.
6 Would you step up to the microphone?

7 THE WITNESS: I am sorry. During
8 construction of the site when this access road is
9 extended, then you would use that road to get to
10 the manhole, but if the system is still in operation,
11 instead of pumping up the leachate, assuming it has
12 to be still picked up in future, then, rather than
13 taking this road all around the site, we would
14 construct an access road from White Oak .

15 MR. WRIGHT: Q. You would probably
16 use that road substantially?

17 A. That is correct.

18 Q. Have you taken into account
19 the cost of monitoring every two weeks all the
20 wells in the area and testing by four chemical
21 firms?

22 A. The analysis is done -- it
23 is not done four times. There are four people
24 involved in doing the analysis, but the analysis
25 is done just once.

26 Q. Oh. I see.

27 A. Some people do some -- the
28 Medical Officer of Health does the bacteria count.
29 That is his contribution. The Minister of the
30 Environment -- I can't tell you exactly what each one



1 does but it is not all done four times. That is
2 included in the cost of doing the monitoring program.

3 Q. What is the cost of that?

4 A. We have allowed \$78,000 per
5 the
6 year. At the present /cost of doing it is \$2,640
7 and this work here involves an area three times the
8 size of the site.

8 Q. You are going to be checking
9 surface run-off from time to time. Those times
10 to times are going to be roughly when it rains or
11 when it thaws?

12 A. When there is water on the
13 site it will be checked every two weeks or if the
14 operator observes something unusual, then they
15 will take samples for analysis.

16 Q. There is going to be no effort
17 to try to correlate the monitoring to run-off with
18 the times the run-off would likely occur? It just
19 seems to me that if there is a heavy downpour as
20 there is today, today would be the day to go out
21 and do the test, not two weeks from today if yester-
22 day happened to be the anniversary.

23 A. There are two aspects to that.
24 If there is a continuing source of pollution for
25 some reason getting into the water course in a
26 heavy rain, if you go out and take an analysis today,
27 it is so diluted that it would be okay. There are
28 two things. If the downpour caused the upset and
29 created the pollution, certainly this would be the
30 time to do it, but to detect an insidious type of



1 contamination you would be better to do it with
2 just a ground water sample. Then it would be in its
3 most concentrated form.

4 Q. On a day like today it could
5 get outside your system and spread it far and wide,
6 whereas on dry days it may be, albeit more concentrated,
7 but it probably can't get out?

8 A. That is correct.

9 Q. That is the problem I am con-
10 cerned with, spreading far and wide of the surface
11 run-off which may be contaminated.

12 A. We have described what we have
13 done to protect against that.

14 Q. Part of your protection system
15 was the monitoring system to make sure it was
16 working. Perhaps some rethinking should
17 go into that. You don't want to be closing the
18 gate after the horse has gone.

19 A. This would be discussed again
20 with the Ministry to decide what they want as a
21 regulatory authority. This is what has been set
22 up in broad terms. It could be caught at any time.

23 Q. You mentioned several times
24 this great net down in Toronto. Would this be pro-
25 posed to be used here in London? You are just
26 going to use snow fences?

27 A. At the moment London uses
28 snow fences. I don't think they have purchased
29 netting. We propose that they do because we have
30 seen what happened in Metro Toronto.



1 Q. What is the cost of the netting?
2 What would it be here?

3 A. I haven't worked it out. It
4 would be a very small amount. It is just angle iron
5 holding this net or screening system. You can move
6 it around to get the general direction of the wind.
7 It is two or 300 feet long. As they move the site,
8 you just take the poles and move it.

9 Q. That is not being used here
10 around the pickup trucks?

11 A. We rely on the snow fence for
12 the pickup trucks.

13 Q. You mentioned containers at
14 one point for private hauling and I forget what else.
15 There were also containers shown in the movie which
16 was played. That was the first we heard anything
17 about containers. Is it really being planned here?

18 A. Yes. Looking at selfish
19 interests, it will be definitely in the interest of
20 the city's operation from a cost point of view as
21 well as an improved operation of the city to do that.
22 Metro Toronto have a system where they have these
23 containers set aside and private people coming to
24 the site drive to these containers and unload into
25 them. They are picked up and dumped into the live
26 cell once a day when they are full. The big ad-
27 vantage is they don't have these private cars get
28 under the feet of the bulldozers and trucks coming
29 in.

30 Q. What is the cost of this?



1 A. It is just the cost of the
2 containers themselves and putting in sufficient gravel
3 base in that area for the cars, a small area.

4 Q. Has that been included in the
5 cost for these trucks?

6 A. Not specifically. Remember we
7 had these 25¢ per ton cushions taken in as well.

8 Q. Going back for a minute to a
9 study -- the chronological order which we received
10 from Mr. W.S. Roze, Clerk of the Corporation of
11 the City of London, this forms Appendix B to the
12 brief which the appellants put in. This is the
13 smaller tab in the book. I am looking at page 4-8.
14 The reference that I wish to make is to May 13th,
15 1971 and the comment there is the Council, Committee
16 of the whole of Council adopted the report which
17 you prepared and authorized your firm to prepare
18 detailed investigations of W-12, site W-12. On
19 January 2nd, 1973, you presumably reported to the
20 city that W-12 was not suitable. Am I correct in
21 assuming that at least at the time of your report
22 no thought whatever was given to site W-12A?

23 A. Not specifically.

24 MR. PLAXTON: You are referring there
25 to the 1970 report?

26 MR. WRIGHT: Yes.

27 MR. PLAXTON: Not the subsequent
28 report to Council in January of 1973?

29 MR. WRIGHT: I was commenting here
30 on May 13th, 1971.



1 Q. In January of this year in your
2 report the files on W-12 close as a potential landfill
3 site. One month later they decided that W-12A is
4 a better site. Now, it talks about upon receiving
5 a report of the soil investigations that had been
6 done, am I to assume that they threw out those
7 aspects of your report which dealt with the computer
8 studies and the ecological considerations and at
9 this point, that is, February of this year, 1973,
10 their sole concern was ---

11 A. They asked us to find an al-
12 ternative to W-12, so we reviewed again, as I said
13 before, the other sites and discussed them with
14 the Ministry. We looked at some of the sites
15 further down the list and we decided we should
16 proceed with W-12A or recommended we should pro-
17 ceed with W-12A on the basis of our studies.

18 Q. How long did all that take?

19 A. Well, in the course of sub-
20 mitting the report in January, prior to that we
21 had been looking at this as part of our work, what
22 was going on, the final alternative, when we saw
23 that W-12 was not sufficient.

24 Q. When was it apparent that W-12
25 was not going to be suitable?

26 MR. PLAXTON: You were referring to the
27 date of the retainer for investigation on W-12?

28 THE WITNESS: That is what I was
29 looking for. It is November, 1972 when we got the
30 report on the W-12 site.



25

1 MR. PLAXTON: The Exhibits already
2 filed indicate the first report done by Mr. Dowse's
3 firm was in September of 1968.

4 MR. WRIGHT: Q. You didn't receive
5 any authorization from the city, the applicant, to
6 do another survey or to update your 1970 report?
7 Your instructions were simply, "Go forth and find
8 a dump"?

9 A. We were asked for a recommend-
10 ation on the basis of the recommendation made in
11 our first report, namely, site W-12 was no longer
12 viable and then what would we recommend that the
13 city do? As I say, we considered and discussed
14 these other sites, looked at the surrounding area
15 with the benefit this time of the detailed studies
16 and geological studies we had done at this stage
17 and also compared the differences between W-12
18 and W-12A to the other sites and we decided the
19 city should go for W-12A.

20 Q. In your opinion, is W-12A
21 pretty open land?

22 A. Yes. Do you mean open
23 physically?

24 Q. I'm talking now of the eye-
25 sore potential. There is more eyesore potential
26 in W-12A than there was with W-12?

27 A. That is ---

28 Q. It is an objective personal
29 opinion which both you and I can make by driving
30 by the sites. One is a gravel pit and one will be



1 an eyesore to the area?

2 A. The W-12 site was 250 acres.

3 The gravel pit is there.

4 Q. It is there.

5 A. There are some offices and
6 things on W-12 which isn't such a feature here in
7 the farmland. There are various aesthetic values
8 involved.

9 Q. But you will agree with me
10 that this is on one of the highest pieces of land
11 in the countryside and it would therefore be most
12 obvious, this site, raising the highest point in
13 the surrounding area by another 30 to 40 feet?

14 A. It's not really the highest
15 point. Wellington Road East is highest. It is a
16 fairly high point.

17 Q. One of the higher points then.
18 If it is the highest level point above sea level,
19 there should be a sign on the hill. It is one of
20 the prominent spots in the surrounding area. And
21 you are going to raise that prominent spot by
22 another 30 or 40 feet, depending upon what the plan
23 is now?

24 A. Yes.

25 Q. Also at this site radio towers --
26 you can see at least two sets of radio towers from
27 the fill site which would be another irritation.
28 That is one of the highest spots in the area.

29 A. This would have no interference
30 with the radio antennae.



1 Q. The reason I referred to them
2 was the radio stations wouldn't put their trans-
3 mitting units in a hole.

4 MR. WRIGHT: Mr. Chairman, is this
5 an appropriate time for a break? I will have another
6 hour or half hour.

7 THE CHAIRMAN: I was just going to
8 ask you how much longer you would be.

9 MR. WRIGHT: I have some considerable
10 time to go yet.

11 THE CHAIRMAN: Might we adjourn and
12 come back at ---

13 We will adjourn until 1:30.

14

15 --- Luncheon adjournment

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1 --- Upon resuming at 1:30 p.m.

2 THE CHAIRMAN: Ladies and gentlemen,
3 may we come to order?

4 Mr. Wright, do you want to proceed
5 with your questions?

6 MR. WRIGHT: I am advised there has
7 been some difficulty in hearing. If there is anybody
8 in the audience who cannot hear me, please let me
9 know.

10 Q. Mr. Morris, before lunch we
11 were talking about some of the costs involved in
12 the site W-12A and I was enquiring into whether
13 certain factors had been calculated in your cost
14 of \$6 per ton. There is one further matter which
15 I would like to ask you about and that is whether
16 or not your cost calculations include a factor for
17 potentially -- not potentially -- for potential of
18 having to haul potable water to the citizens in
19 the area if their wells become contaminated at
20 some point?

21 A. No, it doesn't. We had
22 estimated a cost of putting a water main in on
23 the concession road but it is a separate item from
24 that figure.

25 Q. A separate water main, is
26 that something that is in the works at the moment?

27 A. If for some reason the wells,
28 the water supplies did become contaminated, the
29 city is prepared to extend the water main from the
30 White Oak system, down White Oak and along Concession



1 7 to serve the residents in that area. As I say,
2 we don't expect that to happen. There are cheaper
3 alternatives if it did happen. That is for emergency
4 possibilities.

5 Q. So the cost of a sewer system
6 -- a water system has not been calculated into this?

7 A. No, it is not in here, no.

8 Q. What would be the cost of that?

9 A. Eighty thousand dollars. Might
10 I clarify what I said this morning? I realize I
11 wasn't clear. We gave you this total figure ---

12 Q. Six dollars per ton?

13 A. No, I'm clear on that. The
14 13,900,000 was the figure I quoted as the total
15 disposal cost. I said 8,000,000 of it is operating
16 cost. By implication you could take it that \$6,000,000
17 is available as the direct capital expenditure.

18 Q. You are quite right. That is
19 exactly what I thought.

20 A. That is wrong because what we
21 did was to follow the table which was used in the
22 1970 report so we could identify each of the columns
23 in there for different aspects of the cost so that
24 in the so-called capital cost went things like
25 total development costs, amortized over 20 years.
26 These development costs are things which are going
27 on each year. Is that -- in other words, it is
28 digging the hole ahead and so on. If we had not
29 been following this other format, it could have been
30 under operating costs. We used the same method so we



1 ended up with a figure which could be compared on
2 the same accounting procedures with what was done
3 at the time. Six dollars compared with the \$5 at
4 that time. These are 1973 figures and 1970, and it
5 compares with the relative consideration costs. The
6 actual amount of capital which would have been required
7 to start and initiate the first cell is in the order of
8 \$1,300,000.. That is the sort of capital the city has
9 to put up initially. The rest is the accounting method
10 of distributing costs as it requires it.

11 .Q. Thank you. Now, in your study
12 you took almost a year to find site W-12. Between
13 the time that the city closed the file on W-12 and
14 the time you recommended W-12A, it was about a month.
15 It seems to me that there is a discrepancy --

16 MR. PLAXTON: That is not the evidence.
17 The evidence you heard this morning indicated that
18 there was a bigger lead time than one month. In
19 February of this year (inaudible) the first initial
20 bore hole test results were published in September of
21 1972, so obviously there was more examination and
22 preparation ordered for W-12A prior to the report of
23 September, 1972.

24 MR. WRIGHT: Mr. Chairman, I don't
25 like to try to cross-examine anybody who hasn't made
26 a certificate and I refer to the Roze certificate.
27 I originally asked if someone would be here on behalf
28 of the city in this connection. Apparently I will be
29 able to ask Mr. Plaxton about this, but if this report
30 is inaccurate, the figures in the certificate
show that the file on site W-12 was closed



1 on January 2nd, 1973 and on February 6th, 1973 the
2 city received a report that site W-12A was appro-
3 priate for landfill operation and they authorized
4 James MacLaren to proceed with detailed design for
5 the waste disposal site. It may very well be that
6 that is accurate, but if it is accurate, it is
7 misleading.

8 MR. PLAXTON: You are getting at an
9 assumption (inaudible). The information as given
10 by the Clerk I assume to be very accurate.

11 MR. WRIGHT: I also presume ---

12 MR. PLAXTON: The point is there are
13 more activities than those of Council going on.
14 There is the Board of Control here in the City of
15 London and their activities are not reported in
16 that statement.

17 MR. WRIGHT: We will say no more than
18 that about it except the certificate itself is mis-
19 leading and I wonder what other things are not said
20 that should be said. It may very well be that the
21 Board of Control minutes might shed more light on
22 this whole matter and perhaps they should be
23 here in evidence.

24 Q. In any event, Mr. Morris, I
25 am going to leave that matter.

26 In your studies which came up with
27 site W-12 you did a two week study of the truck
28 weight into one of the sites and I have forgotten
29 which one it was.

30 A. The Commissioner's Road site.



1 Q. And that was done, as I under-
2 stand it, because no one had any clear idea of what
3 kind of weight was being put into the landfill site?

4 A. That is correct.

5 Q. Now, you took that two week
6 study at what time of the year?

7 A. The summer, as I recall. I
8 could look it up.

9 Q. I believe it was summer too.
10 You then proceeded to adjust those figures to take
11 account of seasonal fluctuations. Can you explain
12 to me why or how you were able to adjust these
13 figures to reflect seasonal adjustments when you
14 didn't have any information in the first place?

15 A. Because we didn't have the
16 information peculiar to the City of London, we had
17 to use data which had been derived in Metro Toronto
18 studies and general literature information to in-
19 dicate what was a typical distribution of waste
20 production. That was the graph shown here (indicating).

21 Q. You based your report then on
22 information that was gathered from other municipalities
23 and not from the City of London?

24 A. As far as the seasonal fluctuat-
25 ions were concerned.

27

26 Q. Do you really think a two week
27 study of the weight is adequate for this purpose?

28 A. We would like a full year study.
29 We were faced with a condition of trying to arrive
30 at some degree of accuracy. There was an interim



1 report which allowed for a slightly higher weight on the
2 basis of experience elsewhere and so on, but when we had
3 the two-week study it was calculated, it was a carefully
4 controlled study which we thought would be meaningful
5 so we reached the conclusion London was in fact
6 producing a lower per capita rate of garbage than other
7 communities.

8 Q. Is it fair to comment that you
9 have throughout this whole study very often used --
10 offset very desirable study techniques as against time
11 requirements in making your reports?

12 A. I don't think to the extent you are
13 implying. Admittedly we would like more data, but we
14 believe that we have had enough data to make a realistic
15 report.

16 Q. How much more time would you need
17 to translate what you believe is a completely realistic
18 report into what you feel is a completely satisfactory
19 report?

20 A. We feel it is a completely satisfactory
21 report. Eight weeks of analysis of the weigh scale, this
22 is more meaningful, but we will continue to get this in
23 and tie it up to see if there is any change from any
24 week period.

25 Q. Is it fair to say you are still in
26 the process of developing the figures?

27 A. We have allowed in this design for
28 a conservative high value in waste production. We are
29 convinced of that.

30 Q. Did you not just tell us that you
are still developing figures?

A. We are still checking, yes,



1 developing and checking.

2 Q. Should perhaps this report
3 have been brought out about this time when you had
4 a chance to do the kind of studies that you would
5 have liked to have done?

6 A. Well, if it would have taken
7 the same time to get through policies matters and
8 everything else that it did to reach the stage we
9 did today in 1970, I would say the value of having
10 the report in 1970 far exceeds the inaccuracy in
11 the two week measurement of solid waste.

12 Q. I am just suggesting that
13 perhaps much of the objection to this in this
14 connection would be if the citizens felt this re-
15 port had covered all the ground adequately and,
16 as I suggested to you, a two week study in the
17 summertime doesn't adequately provide the figures
18 and the statistics. On your admission you would
19 be able to produce realistic figures, as you
20 suggested, and you would have liked to have had
21 more figures and in fact you have continued to
22 gather more figures. I am just suggesting to you
23 that perhaps that report was a little premature
24 considering the figures you are developing and
25 still are developing?

26 A. Unfortunately, this is not an
27 unusual circumstance where a municipality gets into
28 a problem and hasn't done all the things that a
29 consultant would like to have when he comes into
30 the study, so you have to introduce assumptions and



1 use the basis of your experience. In addition to
2 that, rather than just go that way, there was this
3 two week check period carried out.

4 Q. Can you tell me from your
5 experience with the city what other things the city
6 has not done which you would have liked to have
7 seen the city do in this report? Your comment just
8 was, "This was a fairly typical situation where a
9 city..."

10 A. I didn't say that. It said
11 it was typical of municipalities. We go into other
12 municipalities. If they have been thinking ahead
13 of time and putting in stuff, it is easy to see
14 in hindsight they should have done this, but it has
15 been the practice not to have weigh scales. It is
16 still not a requirement, specific requirement of
17 the Waste Management Branch. It is a ^{recommended} option. We
18 may be called into a municipality tomorrow to
19 weigh the waste but the evidence is now any
20 municipality of any size should have weigh scales.
21 What I think you are trying to derive from me is
22 do I think the City of London was negligent in this
23 matter.

24 Q. Far be it from me. I'm not
25 suggesting negligence in any manner whatsoever.
26 What I'm trying to elicit from you is from your
27 comment that there were certain things to be de-
28 sired when you came into this situation and also
29 from your comments as you go out of the situation,
30 even at the time you made your report, there were



1 certain things to be desired perhaps and as I under-
2 stand, one of those things was information as to the
3 weight that was going to the site and you are con-
4 tinuing to make those studies. My question to you
5 was: in addition to the realistic but perhaps in-
6 adequate figures about the weight going into the
7 dump, what other matters were left to be desired
8 in regard to the study? Your comment was a general
9 one. Can you think of anything that perhaps the
10 Hearing Board should know about that you did not
11 consider in your report, what should be pursued
12 further in this connection?

13 A. I can't think of anything other
14 than the waste weight which has been desirable.

15 Q. This is what you are basically
16 referring to, the weight scale?

17 A. Yes.

18 Q. How about the four day test
19 of inside volume? Do you think that was adequate?

20 A. Well, it was adequate to demon-
21 strate what could be done with a compaction rate
22 of 1,200 pounds per cubic yard because we used a
23 conservative value and we had a four day test
24 when everything is checked and you tend to ^{get} a better
25 performance than you would under normal operation.

26 Q. And you, as I understand it
27 from reading your report, didn't take into account
28 the different volumes that might be expected during
29 different seasons of the year. Presumably frozen
30 dumps or items for disposal would not compact until



1 bulldozer becomes insignificant on the lower layers
2 because of the weight distribution through the fill.
3 The real peak compaction is on the initial two feet
4 where they ride back and forth on it.

5 Q. Yes, but is the cell immediately
6 below going to give a little as the weight of the
7 tractor goes over it?

8 A. Yes, it will vibrate a little, but
9 it won't compact much more.

10 Q. All the figures which we saw
11 in the movie here showed this tractor going over
12 things -- one looked like a bed spring and there
13 were a number of other things and when it got over,
14 it bounced back up again but it certainly didn't
15 bounce up to the same height. He ran over that
16 quite a number of times before it would lie absolutely
17 flat. There is going to be some give on the cell
18 below.

19 A. You can feel the vibration on
20 the cell, but the material, the tractor can only,
21 because of its weight and its tracks and so on
22 can only compact the material in the cell below it.
23 If you tried to put in the full eight feet and run
24 the equipment over, you would not get the same com-
25 paction you do by doing it in layers. Once you have
26 done that compaction and built it up there is very
27 little further compaction from the normal operation
28 above.

29 Q. In any event, you feel that
30 there is no need to seasonally adjust and there is
no need to take account of anything such as give



1 or any differences in height level in a four day
2 study which should be sufficient to prove what you
3 want to prove?

4 A. I think seasonal adjustment
5 should be made for volume of production and the
6 rest of the factors are not significant in the
7 computation of this.

8 Q. The four day study was adequate
9 in your opinion?

10 A. Yes.

11 Q. I was going to say what about
12 a one day traffic study, but I think the brief that
13 has been put in, which we have been handed, another
14 three days of traffic study -- perhaps your comment
15 on the -- I suppose there will be further expert
16 testimony on this, but let me ask you this about
17 the traffic study: is in your opinion a traffic
18 study based on four days observation on Wednesdays
19 and Thursdays in the summertime, is that adequate
20 in your opinion to be able to adequately reflect
21 traffic to the dumps in this community?

22 A. That is a good question.

23 Q. If you can't answer it ---

24 A. I can't answer it because I'm
25 not a traffic engineer.

26 Q. Are you aware of the objections
27 which the Kettle Creek Conservation Authority has
28 raised with respect to this site?

29 MR. PLAXTON: Mr. Chairman, there has
30 not to my knowledge been an objection. I do not think



1 the witness should answer that question.

2 MR. WRIGHT: Q. Let me put it this way---

3 A. I remember seeing a letter
4 from the Kettle Creek Conservation Authority to
5 Mr. Rowntree.

6 Q. Yes. It is July 20th, some
7 ten days ago.

8 MR. WRIGHT: Are you going to put
9 this in, Mr. Plaxton?

10 MR. PLAXTON: Yes.

11 MR. WRIGHT: Do you have extra copies?

12 MR. PLAXTON: I referred to that
13 earlier.

14 MR. WRIGHT: I wondered if the Board
15 members may at this time wish to see the letter?
16 I will not be referring to it at length but we
17 only have one copy.

18 MR. PLAXTON: I would be delighted
19 to furnish the Board with a photocopy but I do
20 not have them available at the moment.

21 MR. WRIGHT: If I do go into it
22 in any great detail, I shall read the letter out.

23 Q. Mr. Morris, I am just trying
24 to draw to your attention that basically the
25 Kettle Creek Conservation Authority had appealed
26 for information ten days before the hearing before
27 this Board. I can only presume that they were
28 not brought into discussions or consultations in
29 any way. Why were they not brought into it?

30 A. I think it was the fault of



1 the committee system if Mr. Rowntree will forgive
2 me. When we decided that we should approach the
3 Upper Thames -- it was decided by the Co-ordinating
4 Committee of the city that various interested parties
5 should be approached and Kettle Creek was forgotten
6 about in the process. Someone thought someone else
7 had done it and so on. When this letter came in,
8 I contacted the Resources Manager for the Kettle
9 Creek Conservation Authority and asked him to come
10 in and see the drawings to show him what we had
11 done to design against the sort of problems the
12 Authority would be concerned about, so Mr. Weston did
13 come in and he looked over the drawings and the
14 whole system and personally had no adverse comments
15 to make but said he would inform **and** report back
16 to his Authority. That would be on the day after
17 the letter, the 21st of July.

18 Q. If after he reports back to
19 his Authority and the Authority have some object-
20 ions to the proposal, it can be a little late for
21 them to raise these objections before this Hearing
22 Board, can't it?

23 A. Before the Hearing Board, yes.

24 Q. That is where the Certificate
25 of Recommendation is going to be made, isn't it?

26 A. All these approvals are sub-
27 ject to the Board reporting back with their re-
28 commendations. It still has to be approved by the
29 technical people in the Waste Management Branch
30 who I know consult not only the underground water



1 section but also the relevant Conservation Authorities
2 in the area. This approval system built in is just
3 not based on what happens here.

4 Q. Am I to understand from what
5 you say that the plans and specifications for this
6 proposal have not been approved?

7 A. They have been submitted to
8 the Ministry and we are waiting for approval after
9 the Hearing Board is over. The Hearing Board is
10 held before any approval is given to the site.
11 There was a preliminary approval given, but just
12 in concept before development of the detailed plans.

13 Q. Yes, but the Conservation
14 Authority, it is your view they should have no
15 part in the public hearing?

16 A. It was a misunderstanding and
17 that is why they were not informed. I think the
18 evidence will show we approached the Upper Thames
19 Conservation Authority, the PUC, anyone we could
20 think of who was involved unless there was an over-
21 sight.

22 Q. These are the sorts of things
23 the citizens would like to know. If the citizens
24 knew the Conservation Authority at Kettle Creek
25 had reviewed your plans and had given their nod
26 of approval, then I am sure they would be a little
27 less distraught because here is a letter from the
28 Kettle Creek Conservation Authority of July 20th
29 saying, "We understand there is a landfill site
30 going in with / ^{possible run-off} into Kettle Creek."



1 A. I understand that concern, but
2 perhaps the Chairman would like to comment upon it.
3 All these approvals must be given before any final
4 approval is given to the city. Kettle Creek cer-
5 tainly should have been informed prior to this
6 meeting.

7 Q. From a public policy point of
8 view, if all of these various authorities had given
9 their approval before the Hearing Board meeting is
10 called at all, surely the chance of having a hearing
11 board sit for three or four days is going to be sub-
12 stantially reduced because the citizens who would
13 be concerned would have all the relevant information
14 available so they could satisfy themselves. Isn't
15 this what we are here for? We are here for four
16 or five days because the citizens aren't satisfied
17 that all the information has been adequately looked
18 into. If they could call the Department of Health
19 or Kettle Creek Conservation Authority, none of us
20 would have been here.

21 I can't blame you because, as you
22 say, it was something done at City Hall ---

23 A. Apart from this business of
24 Kettle Creek, none of these other authorities can
25 or will give final approval until the meeting of
26 the Hearing Board has been held. It is on a
27 procedural basis.

28 THE CHAIRMAN: We are required to
29 act on behalf of the persons in the municipality
30 to advertise the meeting which was done, notify



1 adjacent property owners which was done. We have
2 not been asked to notify other persons or we would
3 have notified them. In our terms of reference from
4 the legislature ---

5 MR. WRIGHT: I am not an M.P. question-
6 ing the Board on its jurisdiction, Mr. Chairman.

7 THE CHAIRMAN: You raised the point.
8 Should there have been notice given other than the
9 public notice?

10 MR. WRIGHT: Mr. Chairman, my point
11 is should not the public hearing be the last step
12 in line? Shouldn't all of the experts and pro-
13 fessionals bring their opinions to bear so that
14 all the information can be available to public
15 scrutiny and then have the public hearing?

16 THE CHAIRMAN: That is not for us
17 to decide. We were asked to hold a hearing and
18 report back on what was said at the hearing. We
19 make certain recommendations. The technical work is done
20 by the Minister and his staff. We are going to
21 report what happened, what was said at this hearing
22 and then it is up to the Ministry to put that into
23 their machine, if you like, have discussions along
24 with the technical people, and they will comment.
25 We will put in the objections and what are the
26 grounds of the objections and what support there
27 is and what grounds there is for the support. We
28 will report to the Executive Director and then they take
29 it from there.

30 MR. WRIGHT: Thank you, Mr. Chairman.



1 Q. Mr. Morris, the Golder sub-
2 soil tests were done at your request?

3 A. Yes.

4 THE CHAIRMAN: I might say there is
5 no (inaudible)

6 MR. WRIGHT: The only reason I raise
7 this, Mr. Chairman, because maybe it is a question
8 of procedure which I maybe should ask the Board
9 to make this recommendation, that for future re-
10 ference if all of these technical experts had
11 brought their opinion^s to bear prior to the public
12 hearing it is very possible the public would be
13 satisfied with this new landfill site without the
14 cost of this type of hearing and being worried
15 sick because the Kettle Creek people have no idea what is
16 is involved "They are doing this and we are
17 not even being told about it."

18 The Medical Officer of Health of
19 the City of London and the County of Middlesex
20 should be able to categorically reassure any
21 citizens that this is all right and they have
22 checked it out. There are other sources which
23 any concerned citizens should be able to
24 approach to satisfy themselves that everything is
25 in order. That is what is lacking here. That is
26 why I raise this.

27 MR. PLAXTON: Referring to this,
28 Mr. Wright is submitting that the Kettle Creek
29 Authority was overlooked. That is not in evidence.
30 The fact is that the Conservation Authority has



1 approved this site for use. The Public Utilities
2 Commission of the city has done so as well which
3 will come out in evidence if he gives it a chance
4 to come in.

5 The other point we should make is
6 that the Legislature of the Province of Ontario is
7 so concerned about this matter that it has seen
8 fit to take direct action over waste management
9 out of the hands of local boards. This is why we
10 are here today.

11 THE CHAIRMAN: We have set up 350
12 public hearings under the Water Resources Commission.
13 We have tried to keep these hearings informal so
14 that a person without counsel or represented by
15 counsel will be allowed to comment. Some things
16 come out at these hearings of which the engineers
17 are not even aware. This is what we hope to get
18 out of these hearings. We take any testimony
19 anybody wants to give and we want the opinion of
20 concerned citizens who may also be aware of some-
21 thing in the area and who are not professional
22 engineers.

23 MR. WRIGHT: Thank you, Mr. Chairman.

24 Q. Mr. Morris, the Golder sub-
25 soil survey you or your firm requested that these
26 studies be made. Now, did you not find your re-
27 sults a little unsatisfactory?

28 A. No. I should explain that we have
29 a hydrogeologist on our own staff responsible for
30 going into the details of this with the Golder firm and



1 he gave me the assurance that he was satisfied.

2 Q. Well, the permeability test
3 shows that the permeability in the lower aquifer
4 was less than that which is in the clay which you
5 are saying is virtually impermeable. From an en-
6 gineering point of view those figures should be of some
7 concern to you, even though you have a belief based
8 on past knowledge working in that soil that that
9 might not be true.

10 A. You are saying the lower aquifer
11 had a lower permeability rating than the upper?

12 Q. It is four to one and one to
13 one.

14 MR. PLAXTON: We can prove this
15 with the man who was the expert on the field.
16 Mr. Dowse was the expert involved and these ques-
17 tions were put to him. Mr. Morris who is now on
18 the stand has indicated that he directly was not
19 involved in that aspect of this. I am wondering
20 how valuable it is to pursue questioning of a
21 witness whose evidence is not as expert as a
22 witness we have already heard and had answers on
23 this aspect.

24 MR. WRIGHT: Mr. Chairman, if I
25 could comment, Mr. Morris is a professional en-
26 gineer. He, from what we can gather, oversees
27 this whole operation and oversaw the publication
28 of the reports. He was the one who had this
29 survey taken and I am asking him what his pro-
30 fessional view of the results is. In case my friend



1 has not noticed, I seriously question the permea-
2 bility and I think that is one of the most important
3 things in this whole matter because they are telling
4 us, "Don't worry. That clay just won't let anything
5 through for 150 years," and yet the figures indicate
6 something is very strange. Either the figures are
7 wrong, or the bore hole/^{result}isn't what they expected it
8 to be.

29 9 MR. PLAXTON: My friend had an answer
10 on this yesterday. The answer yesterday was the
11 degree of permeability shown in that deposit is
12 only part of the total picture related to permea-
13 bility. If you take the soil that you find next
14 to that point, to the depth to which you want to
15 look, and you take a look at the soil plus this
16 other test, you arrive at an opinion based on the
17 two. That was the evidence yesterday that came
18 from Mr. Dowse. He exhausted the area, unless
19 he has got another area going.

20 THE CHAIRMAN: Are you questioning
21 what he said?

22 MR. WRIGHT: I don't propose to re-
23 call him. I would just like to know whether or
24 not the person to whom this report was made found
25 those figures to be strange. I am not inclined
26 to pursue it at any great length, certainly not
27 the length with which I pursued the matter with
28 Mr. Dowse, but I would just like to know whether
29 or not Mr. Morris found the chart on the record
30 of bore hole 101 to reveal some very strange results.



1 I would also propose to ask him, if they are strange
2 results, did he think it might be in order that
3 another hole be drilled. Those are the two ques-
4 tions that I really would like you to answer, Mr.
5 Morris. I don't think you can disagree with me
6 that there seem to be quite strange end results
7 of these on-site permeability tests.

8 Q. You understand how these
9 permeabilities read on this? I'm not going to go
10 through that with you, but you will notice right
11 down at the bottom of that chart, down in what
12 is coloured blue at level 163 feet you have a
13 permeability reading in the column lower to the
14 minus fifth and you will notice that the very top
15 permeability reading at a level of about 10 feet
16 is in approximately the area where the excavation
17 will be. It is further to the right and, there-
18 fore, more permeable than is shown in the bore
19 record. Just from reading that chart you must
20 have found that to be a little strange?

21 A. There are traces of clay in
22 the bottom aquifer. I am surprised -- I forget
23 what the discussions were on this, but I admit
24 that on first glance you might wonder why it is
25 the same. The assurance I have is that the upper
26 layers did give more than what was expected for
27 that type of clay. That is not just Golder's
28 evidence but my own hydrogeologists.

29 Q. But you recall Mr. Golder
30 or the Golder firm was asked by you to perform



1 studies to confirm what you believed?

2 A. We know from the other tests
3 that there is clay there. We know once the class-
4 ification results are given on the clay and so on.
5 Without doing the field tests you can determine
6 what the permeability factor is and this was a
7 check on these.

8 Q. Would you agree with me that
9 a further field study of this would be warranted
10 to straighten out what apparently are inconsistent
11 permeability results?

12 A. I would like to check with
13 hydrogeologist on that. If he is satisfied
14 completely that the work done is adequate and he
15 has also submitted to the Ministry of the Environ-
16 ment and Dr. Barenson of that department was
17 satisfied. You have more than my civil engineering
18 experience on this. You have two hydrogeologists who
19 are both satisfied.

20 Q. I think I have gone as far
21 as I want to go. We covered that yesterday at
22 some length. I still think those questions in
23 that connection should be answered and, of course,
24 the citizens didn't have the benefit of all this
25 opinion confirming these things. So far as we
26 are aware, until we see something in writing, we
27 are entirely in the hands of the Executive Director
28 to make sure that that was in fact checked out. I
29 would say that is probably one of the larger
30 concerns of the citizens here, Mr. Chairman.



1 Are you in agreement, Mr. Morris,
2 with Mr. Dowse that this frozen clay can be taken
3 out with a front-end loader in the wintertime? Oh
4 -- a back-hoe?

5 A. I checked. It could be taken
6 out with the equipment we have on the site which
7 is a D-8 which is a ripper and again I will check
8 with Mr. Dowse and Mr. Sexton who is a soils en-
9 gineer. This was all checked honestly a long time
10 ago. It is one of the fundamental things: could
11 we work the site? Clay is ideal from a percolation
12 point of view but could we really run the site and
13 on the basis of this clay site factor in some other
14 places it has an effect on it and I have their
15 opinion that we can work the site.

16 Q. And it won't freeze up in large
17 rocky chunks that you can't do very much with spread-
18 ing it on the cells?

19 A. It would if it was left lying
20 around. What will physically happen is that in
21 the wintertime, remember we are excavating ahead
22 of the landfill operation, so material will have
23 one night's freezing on it. The surface will
24 freeze and the D-8 will come in an hour ahead of
25 the normal operation and rip that area up. He
26 should rip that to the size that can be trans-
27 ported. If he can't, it will be pushed aside and
28 the underlying material will be excavated for the
29 cover material.

30 Q. I understand you are going to be



1 taking an area that is 400 or 500 by eight and
2 that is all going to be lifted up and set around?

3 A. To form berms as well as the
4 top covering.

5 Q. But you are going to be working
6 in units -- correct me if I'm wrong -- you are going
7 to be working, aside from your daily cell units, you
8 are going to be working basically in units that are
9 400 by 500 yards, excavating them, taking the dirt
10 out with a view to using that as cover when the time
11 comes?

12 A. I obviously fouled up my
13 presentation because that is the initial cell that
14 will be done before any landfill is brought to the
15 site, the area 400 by 500 to give the operation
16 room to start and to work. The fill material used
17 will be excavated ahead of that 400 by 500 as re-
18 quired to provide the daily cover so that the face
19 is advanced on an as required basis up this cell.
20 In other words, the 400 by 500 is down here. That
21 is a hole. That material is stockpiled and left.
22 The cover material for the daily cell is brought
23 from the excavation as we progress. It is in place
24 material.

25 Q. In the wintertime we are going
26 to have undisturbed clay at the top of the un-
27 disturbed cell broken up and used for fill?

28 A. Yes.

29 Q. You say that is what can be done?

30 A. Yes.



1 Q. You have no intention of bringing
2 any other kind of substitute fill in in the wintertime?

3 A. We anticipate periodically in wet
4 weather that gravel may have to be brought in to
5 maintain these roads off the gravel road, but not
6 for cover material. We will not use anything but
7 on-site material.

8 Q. The report, I think in that part
9 of it which deals with the use of grinders, talks
10 about severe frost problems. Are we in an area now
11 where there could be severe frost problems as re-
12 ferred to in that report?

13 A. You mean on the excavation?

14 Q. Yes. You acknowledge that the
15 problem exists?

16 A. On the sites on the outskirts
17 where the landfill sites are, they have similar
18 weather conditions to what we have here and that
19 raises a problem.

20 Q. Is that in the same kind of
21 clay?

22 A. It is clay. I don't know
23 whether that is accurate, I don't know whether it
24 is the same grade or not. It is a heavy clay and
25 they are having a bit of trouble. One of the re-
26 ferences was that we would^{not}/be able to handle it.

27 Q. Too bad we didn't have this
28 information because basically you are telling us
29 this is all new and different and then all these
30 other things come up ---



1 A. Sorry. Things like excavating clay
2 are not new. People who have looked at this know
3 the clay and the material, they know the problem
4 of operating bulldozers and rippers. From their
5 opinion, based on experience, we go into this problem.
6 One other source we did discuss was the clay base on
7 the existing site, which was excavated in some areas
8 on the surface. That was done in the wintertime
9 successfully. It is similar.

10 Q. What site is this?

11 A. On the Clarke Road site.

12 Q. Tell me something about your
13 drainage ditches and your leachate ditches. As I
14 understand it, the idea of the excavation is to
15 drain the leachate down into the bottom corner which
16 is basically the corner where you get started. Let's
17 go to the display.

18 You are telling us that you are
19 grading this area in here so that your leachate
20 will collect here?

21 A. During initial construction
22 of that hole.

23 Q. Yes, but it is fair to assume
24 that any leachates in these lists are going to
25 percolate down through?

26 A. Yes.

27 Q. And then it is going to run in
28 this direction down into this hole right here?

29 A. This is to handle the problem
30 at below ground level, scraping the bottom, having a



26

1 sump at the bottom at the end of this hole. The
2 material that comes in here (indicating) will go
3 through landfill and then hit this layer. We think
4 that it will be diverted by that though we left
5 these granular areas for it to get down this way to the
6 leachate drain. The worst possible case the
7 material, assuming it didn't do that, could con-
8 tinue down through here and find its way to the
9 bottom of the excavation. The only way that it can
10 get out of there, once a piece is down, of course,
11 it can't flow but this material travelling from
12 this point here and this material goes here or
13 travels into the sub-surface. This is how we des-
14 cribe the qualities, the landfill travels through
15 this clay which takes so long plus the tendering
16 effect of the clay in purifying the material. So
17 we say there is no problem of water pollution.

18 Q. This leachate drain is going
19 to be eight or nine feet above this level and,
20 therefore, probably in the order of 10 to 12 feet
21 above this level, is that correct?

22 A. That sump is just a small
23 area in the corner. It would probably be only a
24 foot deeper than the general excavation. You are
25 correct in that this would be above the water.

26 Q. If there is any leachate that
27 percolates down through here, you are going to have
28 to build up about eight feet of liquid leachate
29 along here, a nice little underground lake before
30 we can get it into the leachate drain to be pumped



1 off by the trucks for the sanitary sewer water
2 disposal system?

3 A. It will not be a lake. It is
4 a sanitary condition. It is not a pool of leachate.
5 It is landfill impregnated with leachate. To
6 improve it you have to have continuing pressure
7 from above it from water flowing from above down
8 the site. Our main concern is that the material
9 here, it is the material that could come out of the
10 site and get into the storm sewer system.

11 Q. You said earlier that most of
12 the smell that comes from leachate, you are anti-
13 cipating eight feet of saturated garbage, saturated
14 with leachate that you are making no provision
15 whatever to pump out of the landfill?

16 A. That will not cause an odour
17 problem as such. I said leachate open in an open
18 tank smells very bad. This material is at the
19 bottom of a landfill site and will be decomposing,
20 generating gases which will cause another type of
21 smell from the one you get from a stagnant pool of
22 leachate, but the diffusion rate through the site
23 is, we claim, not a producer of odour on the site.

24 Q. Why wouldn't it be better to
25 let the leachate drain right to the bottom of the
26 sump and get all of the leachate out?

27 A. It is very difficult without
28 putting complete under-drainage system in under
29 the whole site to avoid hydrological draining building
30 up away from your leachate drain. The pressure level



1 in it is a bit higher than that of the drain causing
2 it to travel towards the drain.

3 Q. Couldn't you set it up so it
4 could drain toward one corner?

5 A. That is correct.

6 Q. Surely the leachate is going to
7 drain the same way?

8 A. But it doesn't fall as an
9 individual drop of water and travel along. When
10 you get the pump in the ground it has a drawing
11 effect adjacent to the pump which is what would
12 happen with the leachate. The water would travel
13 towards it at a higher elevation which would go
14 up a steep gradient as it approached the point.
15 You still have this build up further back in,
16 unless you put this under drainage system through-
17 out the whole site and we don't think that is
18 necessary or practical.

19 Q. You provide for the drainage of
20 40 feet above ground level and yet you refuse to
21 provide drainage for the bottom eight feet. You
22 are inclined to let that lie there for 150 years
23 until it gets down to that 30 billion gallons of
24 water in that ---

25 A. It starts to decompose the
26 minute it starts going through the layers and it
27 is picking up material and decomposition begins
28 to take place. If it starts coming out of the
29 bottom of the landfill site, then it sets up
30 bacterial action and the bacterial setup collects



1 these pieces and treats this waste as it works its
2 way through the sub-soil. I said if advisable be-
3 cause the latest information I have is that there
4 is work being done in Illinois on soils under these
5 landfill conditions and they suspect that a memory
6 is in fact set up on the surface of the soil in
7 contact with the refuse which even streams out the
8 molecules that pollute, and this is even better
9 protection than the clay on its own. That hasn't
10 been proved. We do have figures showing that there
11 is a treatment process which shows on the soil.

12 Q. With this saturated level of
13 garbage up to the first eight feet any extra lea-
14 chate that drains into that or if there is for some
15 reason a great deal of ground water that gets into
16 it by reason of a heavy rainfall or something your
17 drainage system can't cope with, then you are going
18 to get run-off of that leachate. It is a potential
19 problem?

20 A. It can run down into the with-
21 drawal sumps.

22 Q. Which are at ground level?

23 A. Yes. In the event of a storm
24 which could hit the area which is unprotected by
25 cover, a small area, you could, depending/^{on}the way
26 you are in the lift and so on could get this in-
27 crease in leachate quantity coming in. I mentioned
28 that we intend to leave the backup/^{relief}from the leachate
29 which would discharge the water back into the excavat-
30 ion which is always ahead of the filling operation, so



1 that is the relief structure we have on this site
2 that we didn't have on the southeastern site.

3 Q. I find it most difficult to
4 understand. You have tried to answer my questions
5 I guess and you can't pursue it any further but it
6 just seems to me you are asking for trouble with
7 eight feet of leachate saturated garbage when your
8 pumping system could very easily be set down that
9 extra eight feet to dry it off.

10 A. I wouldn't allow -- I wouldn't
11 move the one down, but if the technical people
12 advising the Board feel your suggestion is valid,
13 then another one could be put down in the bottom,
14 but I feel the main area for potential pollution
15 is at the toe of the slope and that is where we must
16 have the leachate drain. If we need another one
17 and the technical people require that, then the
18 city would have to put one in.

19 Q. All this drainage that you have
20 got, I understand your leachate drain is perforated pipe
21 surrounded by granular material of some sort so
22 the leachate can gather in there. Is not water
23 running off and going down into that same area? You
24 have two travelling liquids?

25 A. That is right. There is the
26 four feet of final cover material over the top of
27 that to prevent the direct inlet of rainfall. Then
28 below this ceiling is the granular material within
29 the system between the manholes and the manholes are
30 covered so nothing falls in there.



1 Q. So you are telling us that no
2 surface ground water is going to get below that
3 four feet into that leachate drain with a potential
4 to overflow that leachate drain?

5 A. Only what would be dribbling
6 in and forming leachate anyway. This is at the
7 rate of 60 or 70 gallons per day. Theoretically
8 this will go through this layer at the same rate as
9 this falling over here (indicating). Your point
10 perhaps if this balance is not maintained and re-
11 stored properly, it could/ allow extra rainfall to
12 come in. But frankly ---

13 Q. If it overflows, you have
14 ground water runoff ---

15 A. No. As I said, you have this
16 thing. We have a hole in the ground at eight or
17 nine feet below the ground. By letting that
18 leachate drain, with the opening into that opening,
19 opening of the pipe into the excavation, any sur-
20 charge on the drain will flow back into the
21 excavation and be held there.

22 Q. You have told us the excavat-
23 ion is going to be leachate saturated and it won't
24 take any more.

25 A. I'm talking about this part
26 (indicating). The drain is over in the site and
27 we will always have this hole in the ground where
28 we are working.

29 Q. All I say is that you can get
30 all the leachate you want at one end and let it build



1 up to an eight foot level before you start taking
2 it off.

3 A. It doesn't all run to one
4 end. This leachate drain is all around the site,
5 so if some leachate is generated here, some of it
6 will flow to the leachate drain here and some will
7 flow to the leachate drain here and some here and
8 some over there will go straight down. The only
9 bit that I am saying is that we grade this so that
10 we don't create pockets on the floor where during
11 the installation and so on we can have problems of
12 forming of leachate. We want to direct it to an area
13 where it can be removed.

14 Q. You are directing it to an
15 area where it can't be ^{removed} until it reaches the
16 eight foot level?

17 A. Yes.

18 Q. That is the point. That eight
19 feet of leachate is going to be a great deal of
20 leachate accumulating before you can touch it with
21 your pumps.

22 A. We wouldn't touch it with our
23 pumps. It is held in the solid waste in this
24 layer. As I say, we don't expect it even to start
25 there but if it does, it can only go at the rate of
26 the permeability of the clay and on its way down
27 over the 150 years it is going to receive treatment.

28 Q. Mr. Dowse told us yesterday
29 that clay of this nature will crack at the first
30 four feet when it is dry. Now we are talking about



1 four feet out in the rain. If you get a lot of
2 rain after a long hot dry spell, we are going to
3 have a lot of ^{ground} water getting directly into an area
4 where you hoped there would be no water at all.

5 A. Correct. I heard Mr. Dowse
6 say that with some surprise yesterday because he
7 was involved in this top four foot layer being put
8 in there. When he said that he was talking about
9 the maximum depth of clay soil and some disturbed
10 condition which could crack. He said that very
11 quickly after it gets wet it swells again and seals
12 up. In talking to Professor Webber, we were talking
13 about putting this 12 inches of seal on the top and
14 then building up on top of that the other two feet
15 of loose material -- not loose, but more pliable once
16 you deposit the seal on the top,
17 and then we would have vegetation on top of that.
18 In the end result over the whole area we have
19 protection against high penetration or four or five
20 feet of cracking. That 12 inches will not crack.
21 If it does, the leachate quantities will be in-
22 creased and the truck will come out to find what
23 is wrong and put more material on the top or keep
24 it moist through this proposal which hasn't come
25 forward yet, but to recirculate the percolate as part
26 of the farming operation on the top, to maintain a moist
27 condition. Q. The percolate contains -- the
28 leachate contains a lot of chemical contaminants.
29 If you are throwing this back on -- drawing off the
30 leachate and throwing it back on the land, surely
that chemical content is going to affect the land.



1 The water may go through and evaporate but the
2 chemical is still going to remain there in the ground.

3 A. This is why I said this is a
4 proposal that will have to be developed. The city
5 is basing this operation on trucking the contaminated
6 leachate away. From studies that have been done on
7 putting garbage, waste from meat packing factories, all
8 of which are prime organics, and recirculated leachate,
9 and so on it is believed that it can be used under
10 these circumstances without contributing to the
11 deterioration of the water which will land on the
12 vegetation or crops and run off into the storm
13 sewers. That is part of the research aspect of the
14 soils and perhaps Professor Webber should speak to
15 this.

15 Q. That proposal has not been
16 studied seriously at this point?

17 A. It is a proposal, something
18 that should be considered.

19 Q. On this farm which you are pro-
20 posing above the landfill site you told us earlier
21 today that in order to take off the gases you would
22 have granular covers, hoping the gas would gravitate
23 toward that granular cover and you would have stove
24 pipes at 200 foot centres to allow the gas to escape.
25 Isn't that going to be a little dicey for a tractor?

26 A. We recognize that problem and
27 it is all part of the experimental nature of the
28 farm. We hope we can increase that spacing. The
29 whole operation has features in it, the slopes, pre-
30 paration of the soil and one of the disadvantages is



1 going to be the stovepipe system sticking out there
2 if we have to have that. This would all be tried
3 out in the initial stages here (indicating). What
4 we are putting forward at the moment is that we
5 don't need those if we turn it all over to grass
6 and use it for hay and cattle, but if we get into
7 crop production on a more advanced scale, then
8 these are the sort of things we foresee should be
9 provided for and should be anticipated.

10 Q. Has any experimentation been
11 done with this type of farm? I seem to recall some-
12 one saying this was a first for Ontario or anywhere
13 else. I wonder if any experiments have been done
14 on a smaller scale to determine whether it would
15 work?

16 A. I have heard of this done with
17 old dumps that have been covered over and event-
18 ually farmed. I have not heard of any quick re-
19 habilitation for this use of the soil. We know if they
20 are normally covered with two feet of material
21 and seeded that grass will grow. What we are
22 looking at is beyond that in obtaining the capa-
23 bility of this soil to produce other crops.

24 Q. I will tell you what the
25 Committee's concern is about this farm. It looks
26 good on paper perhaps, but as a practical matter
27 there is a real concern that this farm will never
28 ever be returned to the same kind of production,
29 agricultural capacity it is presently being
30 operated at and basically what you are proposing is



1 the best of it.

2 A. Okay. My feeling is that we
3 certainly can put this land back into hay production.
4 I am not a farmer, but discussing it and looking at
5 the facts, we can get that much for sure which isn't
6 as good as what is there at the moment. To see be-
7 yond that the opportunity to develop land with
8 sloping contouring which may in fact produce better
9 crops than are there at the moment.

10 Q. You are going to have a farm
11 that is going to have a 300 foot limit all the
12 way around it before you even start getting into
13 the slope. Then you are going to have at least 200
14 and probably 300 feet up the slope until you get to
15 the plateau. Is that on the track now?

16 A. The 300 foot is only on two
17 sides and 150 on the other. There is no reason
18 that couldn't be farmed.

19 Q. Except as I read Dr. Webber's
20 report that has to be maintained as grass to
21 facilitate faster runoff and also to keep the
22 soil in place on the slopes.

23 A. Certainly you couldn't farm
24 the slopes. You could on the bottom part. This is the
25 main erosion problem is on the slopes.

26 Q. But you are also going to have
27 to get trucks to those manholes. Right?

28 A. Yes.

29 Q. Presumably you are not going
30 to build some kind of roadway along the slope, so



1 the truck access to those manholes is going to have
2 to be along the 300 feet below where the slope starts?

3 A. Either that or the manholes
4 could be pumped out to the truck without bringing
5 the truck right into that point.

6 Q. In any event, you are going to
7 have a difficult time farming the 350 feet all
8 around and that is probably lost for farming for-
9 ever except if you want to graze something on it.
10 When I talk about farming, I mean what it is pre-
11 sently being used for which is for the most part
12 grain production of some sort.

13 Once you get up on this plateau,
14 we have stovepipes at 200 foot centres which are
15 going to create some small problems?

16 A. These won't be there forever.
17 The gas -- the land will eventually stabilize and
18 the gas production would drop off. These will
19 certainly be here for ---

20 Q. This whole thing has been set
21 up so that it will be drained off very quickly so
22 that none of the water will go through?

23 A. It has been set up so that it
24 will drain without serious flooding.

25 Q. But you want to get the water
26 off that plateau as quickly as possible so it won't
27 run down through?

28 A. It is not like the swales on
29 the existing farms. The runoff will be much less
30 until you hit the eastern bank and that is confined



1 to the river. The overall drainage across the site
2 will be on the average better than is there at the
3 present time.

4 Q. This is what I'm concerned
5 about. As I understand it, the idea is to get the
6 rain water off that plateau as quickly as possible
7 so that you will have less risk of getting the
8 water percolated down into what is the garbage and
9 creating further leachate problems.

10 A. It will start moving off and
11 it moves off under the funnel system evenly and
12 regularly. It doesn't matter whether it travels
13 six feet per second or one foot per second. It is
14 better if it travels one foot per second/ ^{to avoid erosion.} The main
15 point is it must travel off the site. We don't
16 want large quantities -- this is the irregularities
17 in the contour which will leave valleys of water
18 standing, deep valleys of water standing over on
19 top of it.

20 Q. Even if you are fortunate
21 enough to get all of the gases to go to your
22 collection centres so that they can be drained off,
23 there is going to be a certain amount of chemical
24 content brought up through this soil as a result
25 of this gas seepage, is there not?

26 A. I suppose that some of the
27 gases -- do you mean convert into the condition of
28 the soil as they come up through?

29 Q. I would suspect there would
30 be some kind of unnatural chemical content in the



1 soil as a result of gas seeping through the system?

2 A. My understanding is the main
3 problem is the methane generation clogging the
4 root system and cutting off an oxygen supply to
5 the plants.

6 Q. Isn't one of the problems
7 carbon dioxide?

8 A. That would have the same
9 affect as the methane.

10 Q. Which is probably more soluble
11 in water and forms an acid?

12 A. Yes. It would be going in
13 there where the leachate comes in rather than
14 staying in the root system. We are hoping it
15 won't suffocate the root system. This is a
16 thoroughly evaluated attempt to avoid it.

17 Q. Is there any system that is
18 being proposed to monitor the chemical content
19 in the top soil on that plateau to determine what
20 its content is and whether or not it is going to
21 affect the produce later on?

22 A. Well, the proposal at this
23 stage is that as we develop the first part of the
24 site that the city engage someone like Dr. Webber
25 to run a program on the whole thing in conjunction
26 with the local agricultural representative to find
27 out measures, what kinds of fertilizer should
28 be put into the ground and so on.

31

29 MR. PLAXTON: May I propose a break,
30 Mr. Chairman? The witness has been on quite a while



1 and I wonder if we could give him a rest?

2 THE CHAIRMAN: Are you nearly finished?

3 MR. WRIGHT: I am just about finished.

4 To be very honest, I could use a small break to make
5 sure I can cover all the ground I want to within a
6 short time.

7 THE CHAIRMAN: I promised the re-
8 porter we would break at a quarter after three.
9 Is it all right to break now?

10 THE REPORTER: Certainly, sir.

11 THE CHAIRMAN: We will take ten minutes.

12

13 --- Recess

14

15 --- Upon resuming

16 THE CHAIRMAN: Ladies and gentlemen,
17 may we come to order?

18 MR. WRIGHT: Q. Mr. Morris, I just
19 have a few more questions I would like to have you
20 answer for me. In the film that we saw I believe
21 there was a comment to the effect that there was
22 no sludge put into that sanitary landfill site.
23 There is going to be provision for sludge going
24 into this particular site?

25 A. Yes.

26 Q. There are certain conditions
27 about that sludge, the non-toxicity of it, the
28 volume of material in it and as I recall from the
29 operations or the maintenance provisions that have
30 been set down by the city, express approval is



1 required for each load to be dumped into the site.

2 Is that presently being done to your knowledge and,

3 if so, how many approvals are given per week?

4 A. To my knowledge the sludge that
5 is coming in is sewage sludge from the city's plant
6 which would be from the vacuum filters, 80% moisture
7 content and I assume that these would go in in the city
8 trucks from that location. I haven't ticked off
9 each one approved, so frankly I don't know.

10 Q. You wouldn't want to hazard
11 a guess as to how much sludge goes in there? The
12 only reason I'm asking you that question is because
13 I understand you are also sort of related to the
14 sewage disposal in the City of London as well.

15 A. Our firm would be involved in
16 one of the plants but not the ones generating
17 sewage disposal.

18 Q. Perhaps I should ask one of
19 the other witnesses.

20 A. I could take a guess but I
21 would rather not.

22 Q. It has been said **that** there
23 will be no toxic material put into this landfill
24 site. Is that correct?

25 A. That is correct.

26 Q. By "toxic" we are talking about
27 something that would be poisonous in nature? I gather
28 that is what that means which encompasses quite a lot
29 of things?

30 A. Yes.



1 Q. I suppose that would cover
2 such things as Varsol and cleaning fluids and that
3 sort of thing?

4 A. Yes.

5 Q. What sort of things would be
6 considered to be toxic in effect?

7 A. The main reason for that
8 prevention is to avoid receiving toxic waste in
9 significant volumes and "significant" depends upon
10 the category you are talking about but an industry
11 trying to get rid of waste like an enamel paint
12 company and these are shipped to the city for treat-
13 ment. This sort of waste would not be allowed in
14 the landfill site.

15 Q. Quite. You wouldn't prevent
16 or try to screen out those toxic materials which
17 would ordinarily be found in household garbage?

18 A. That is correct.

19 Q. So the absolute statement
20 that no toxic material will be allowed in must be
21 qualified to the extent that there will be toxic
22 elements to the extent that there are toxic ele-
23 ments in any commercial/^{or}household waste? There
24 must be some commercial waste that would be toxic
25 in nature, for instance Varsol and cleaning fluid?

26 A. Yes. I think the thing that
27 is meant here is in any significant volume.

28 Q. The only thing ---

29 A. There is no way of screening
30 it out of the garbage.



1 Q. I didn't think there was, but
2 it was in the nature of an absolute statement here
3 that nothing toxic would be allowed to go in and I
4 just wanted to clarify that you are talking about
5 nothing significantly toxic or no significant volume
6 of toxicity?

7 A. Yes.

8 Q. In the film also there were
9 pictures of trucks coming into that site full of
10 trees and things which were clearly open. That
11 practice is not going to be followed in London as
12 I understand it?

13 A. I understand these trucks will
14 have to have netting or some covering over them.

15 Q. And if a truck arrives, having
16 travelled from the City of London with an open load,
17 from city hall
18 having travelled the nine miles/leaving a trail of
19 paper and debris behind it all the way to the garbage
20 dump, are you then going to turn it back and have it
21 travel all the way back leaving another trail?

21 --- (Laughter)

22 It is just that the city has said,
23 "We are not going to accept it." Has there been any
24 apparent consideration given to what he is going to
25 do now that he has got it there? How long is it
26 going to take for the operators to realize that
27 discretion being the better part of valour they must
28 let him in there anyway because they don't want
29 this trail going all the way back to the City of
30 London or somewhere else?



1 A. I think the main source of that
2 sort of thing is the small jobbing truck. If he
3 does not comply with the standards, then the city
4 will have some pressure to put on him. Sooner or
5 later he knows he is going to go out of business
6 if he can't get rid of the debris. One household
7 may make a run on his own under certain circumstances
8 and I think probably the best thing we can do is to
9 accept it and warn him not to do it again.

10 Q. Perhaps fine him if you have
11 to warn him more than once.

12 Dealing now with this odour that you
13 don't find offensive, can you tell us about what
14 causes odours? Is it in the nature of small
15 particles which get into the air which may be as
16 small as molecular size particles?

17 A. That is correct, and gases
18 that are generated from the material. It is not
19 necessarily particles. It could be gases and it
20 could also be caused by particles in the air.

21 Q. But you are planning to deal
22 with most of the gases. I suppose the hydrogen
23 sulphide and other sulphide gases would be burned
24 off, do you think? I'm really talking about a
25 particular odour that is liable to be blown by the
26 wind.

27 A. Around the site?

28 Q. Yes.

29 A. They are not burned. The material
30 is covered up and the discharge of the gases is so small



1 in relation to the area of the landfill site that
2 you just don't smell them. You don't smell them
3 once it is covered up.

4 Q. Would there be any pathogenic
5 materials created in the same way? Again, would
6 those odours be expected from the site?

7 A. I know that pathogenic organ-
8 isms go downward and are apparently quickly killed
9 off with the decomposition process going on. I
10 really don't know if pathogenic organisms will be
11 of any problem there. It has never really been
12 identified as an area of concern.

13 Q. To your knowledge has it been
14 determined whether or not there is any potential
15 disease which could be transmitted from this site
16 by reason of what is being thrown into the air?

17 A. In all the literature from
18 people in this business and so on this has never
19 been raised as a problem.

20 MR. WRIGHT: Mr. Chairman, those are
21 all the questions I have. Thank you very much.

22 THE CHAIRMAN: Thank you.

23 These hearings are more or less in-
24 formal so if any individual may have some questions
25 that he would like to ask that have not already
26 been asked or if you have some comments you would
27 like to make that you would like to refer to this
28 witness, please come forward.

29 MR. RAYMOND DIPPLE: I have some
30 questions.



1 Mr. Raymond Dipple.

2 Yesterday Mr. Morris made reference
3 to several swales in this area. Now, Dipple has
4 been in most of this area and I wonder what the
5 definition of a swale is.

6 THE WITNESS: I meant the depressed
7 drainage areas through this area. In other words,
8 these areas which are lower where the material
9 collects and runs off.

10 MR. DIPPLE: Thank you.

11 The next question is the emphasis
12 that has been made by Mr. Morris in turning this
13 site back into agricultural uses. I am wondering
14 what type of agricultural use he is referring to.

15 THE WITNESS: Initially there will
16 be a sort of seeding to prevent erosion while the
17 soil renewal process is going on in the first area.
18 The first crop would be, as I understand it, a hay
19 operation and then we would start getting into corn
20 or other crops but frankly Dr. Webber would be far
21 better able to answer the question.

22 MR. DIPPLE: Mr. Morris, what rate
23 would the settlement take place, the settlement of
24 the top layer of earth?

25 THE WITNESS: It depends. There is
26 no specific data that you can state for a landfill
27 site that such and such a height is going to have
28 such and such a settlement over a period of such
29 and such a time. Generally the worst settlement
30 which may be up to 5% of the total height. In our



1 case we might be talking a foot and a half of settle-
2 ment in places would take place over the first two
3 or three years. After that any settlement would
4 be of a minor nature but other references indicate
5 it can go on periodically for some time. This is
6 part of the maintenance project laid down by the
7 city that it would be responsible for correcting
8 these settles.

9 MR. DIPPLE: In your opinion during
10 the settlement period would there be periods when
11 the top surface of the soil would not carry general
12 farm equipment like tractors and combines?

13 THE WITNESS: I don't think there
14 would be any trouble moving farm equipment over the
15 site. It is not going to settle as a hole or gap
16 under the top layers. It is just further compress-
17 ion of the decomposed material over the years after
18 the thing has been placed and compacted, it is de-
19 composing and then you can get a further compression.
20 There would be no danger to farm equipment.

21 MR. DIPPLE: My last question, Mr.
22 Chairman: being as this site will be returned to
23 agriculture, what research did you use or what re-
24 port in designing this to be returned to agriculture?
25 Referring to the agricultural connection in the
26 question I just asked?

27 THE WITNESS: As far as the possibility
28 of agriculture is concerned, I am just giving my
29 opinion based on what I have seen travelling over
30 other former landfill sites. Trucks and so on go over



1 without getting into any trouble and that is fine.

2 MR. DIPPLE: Thank you.

3 THE CHAIRMAN: Thank you.

4 There is another gentleman.

5 MR. JOHN VAN DIEPEN: I live next to
6 the dump. I am from Dutch descent.

7 Sir, my farm is over here (indicating).
8 You see it is right next to the dump. This morning
9 you were talking about your going in with a pickup
10 truck to pick up the blowing papers of the 7th
11 Concession Road. What about the ones that are going
12 on my farm?

13 THE WITNESS: Well, there are two
14 labourers delegated to pick up paper around the
15 site of the present landfill and they would be
16 here at the same time. I am sure the city would
17 be quite willing to get them to stop along the
18 fences and so on around your property to pick up
19 the papers off the farm.

20 MR. VAN DIEPEN: I would like to know
21 how they are going to do that when there is a crop
22 of hay that is about ready to cut. I don't like
23 people to go in there when the core is eight feet high.

24 THE WITNESS: I thought you were
25 concerned about the buildings and so on.

26 MR. VAN DIEPEN: I was
27 the crop. I own a hundred head of cattle.

28 THE CHAIRMAN: Use the microphone.

29 MR. VAN DIEPEN: I have to learn yet.

30 I asked the vet what would happen if there was papers



1 that flies into my stock. That side there is where
2 I keep my cattle at. If everything splashes in
3 there and goes in there too, the vet told me that
4 the cows will eat it.

5 THE WITNESS: We discussed this once
6 before , the possibility. I understand cattle will
7 eat almost anything. So if they see a piece of
8 paper or plastic they will eat it. I can see here
9 they are more liable to eat it and the problem is
10 even worse.

11 MR. VAN DIEPEN: That is right.

12 THE WITNESS: Every effort will be
13 made to stop that happening and if it did happen,
14 then you would have to be compensated ---

15 MR. VAN DIEPEN: For dead cattle?
16 If all my cattle are dead ---

17 THE WITNESS: I think that is ---

18 MR. VAN DIEPEN: I guess I will have
19 to find that out on my own.

20 THE WITNESS: I don't think you should.
21 I think really, Mr. Plaxton, that Mr. Rowntree or
22 someone else should answer this because I am talking
23 second-hand for the city and I think they could talk
24 first-hand. What the city's attitude would be --
25 it is obvious that if the paper is blowing over
26 onto your farm, that would be an easy case for
27 someone to identify the problem and have it stopped.
28 If a piece of plastic comes over and a cow gets
29 sick from eating it, then really there would be
30 an investigation and so on which I think the city



1 should pay for to find out.

2 MR. VAN DIEPEN: It is pretty hard
3 for a little fellow to fight City Hall.

4 THE WITNESS: It isn't a fighting
5 situation, I hope.

6 MR. VAN DIEPEN: We are fighting now!
7 --- (Applause)

8 THE WITNESS: I agree.

9 MR. VAN DIEPEN: About these fences,
10 is it eight feet high?

11 THE WITNESS: Fifteen feet high until
12 the end is finished.

13 MR. VAN DIEPEN: These slopes around
14 -- it is not going straight up? Behind that is a
15 four foot fence coming up?

16 THE WITNESS: The fence is by your
17 property and within that is the tree line and the
18 berm. The berm is a grass covered mound of earth.

19 MR. VAN DIEPEN: That is an eight
20 foot -- four foot fence? That is not going to stop
21 paper flying out. You might as well have no fence
22 at all.

23 THE WITNESS: That is not for that.
24 Instead of putting the normal wire on the fence,
25 that is not the point of protection against paper.
26 It would be if something got there, obviously it
27 is better to have this type of fence -- we are
28 recommending and I think the city will do it, that
29 instead of the present system they will use the
30 netting higher up to catch more paper before it can



1 blow away.

2 MR. VAN DIEPEN: Catch some of it
3 but not all. This morning you were talking about
4 you couldn't put it on the ^{of the city} north side because of the
5 airport and the birds. I will have to feed the
6 birds too.

7 THE WITNESS: They come to the
8 landfill site, the seagulls.

9 MR. VAN DIEPEN: They are not
10 supposed to be able to see through to the landfill
11 site because it is covered up.

12 THE WITNESS: You know how they
13 follow a tractor.

14 MR. VAN DIEPEN: Yesterday afternoon
15 they were talking about the cost of an incinerator
16 and they said they didn't want to build this in-
17 cinerator. I wonder, I don't pay taxes for
18 the city alone but I think it would cost me more
19 than the ratepayers in the city alone for the
20 garbage men to come down to this township.

21 THE WITNESS: I think the Chairman
22 might comment on the fact, the decision as to
23 compensation that should be paid and so on accord-
24 ing to the Municipal Board Hearing. Am I correct
25 on this?

26 THE CHAIRMAN: I think the point
27 you made will be considered by the Ministry of
28 the Environment before approval is given for this.
29 Any damages -- I am not a lawyer and I don't want
30 to give legal advice. I think the city would have



1 to assume responsibility for the damage.

2 MR. PLAXTON: There is no doubt that
3 (inaudible). There is no question.

4 MR. WRIGHT: I would certainly agree
5 if you could go to the trouble of proving it and
6 if you could wait to get to the court procedures.

7 MR. VAN DIEPEN: How much can that
8 cost me to prove it?

9 MR. WRIGHT: How much would a cow
10 cost?

11 MR. VAN DIEPEN: I guess today about
12 five or \$600.

13 MR. WRIGHT: It wouldn't be worth
14 trying to take it to court.

15 MR. VAN DIEPEN: If I had ten or
16 15 at a time there would be a possibility I would
17 get out of it.

18 --- (Applause and laughter)

19 We are talking about the cost of
20 this incinerator and there was a report, I under-
21 stand, from 1970. In the meantime didn't they
22 improve anything from the previous time?

23 THE WITNESS: You mean the cost of an
24 incinerator?

25 MR. VAN DIEPEN: Lower cost or higher
26 cost?

27 THE WITNESS: Costs are always going
28 up.

29 MR. VAN DIEPEN: For me too. Is it
30 not being bettered?



1 THE WITNESS: It is being bettered.

2 The old one was a lot cheaper but caused a lot of
3 pollution. There are very extensive pollution
4 control devices which are changing all the time and
5 this contributes to the cost of the incinerator.
6 The design of the incinerator itself is improving
7 to become more efficient, but it is not compensating
8 for the increased costs of materials and labour and
9 so on.

10 MR. VAN DIEPEN: It is increased
11 cost for the city and not for me.

12 THE WITNESS: Whoever builds the
13 incinerator, yes.

14 MR. WRIGHT: Those increased costs
15 you are referring to, saying they have gone up,
16 am I not correct assuming those were costs in your
17 report that assumed those air pollution requirements?

18 THE WITNESS: Yes, but they were done
19 in 1970 and the increase in materials and labour
20 since this has increased these costs too.

21 MR. WRIGHT: The same requirements
22 are there? It isn't as if there were further and
23 more stringent requirements?

24 THE WITNESS: Not since that time,
25 no. I was explaining to Mr. Van Diepen. It is
26 strictly the labour and material.

27 MR. VAN DIEPEN: About this decision --
28 you can see as I understand there is about 700 acres,
29 trucks go a little over one^a minute and if I go across
30 the road and stick up my hands the trucks might stop



1 but it also might not.

2 THE CHAIRMAN: I think your last
3 question was how you are going to get across the
4 road with all the trucks coming along.

5 MR. VAN DIEPEN: I have to get off
6 the laneway once in a while. If it is open from
7 7:00 until 6:00 at night, I won't try to get out
8 in the daytime. My wife don't let me out at night.
9 --- (Laughter)

10 THE WITNESS: Seven hundred and
11 forty vehicles per day?

12 A SPECTATOR: I believe it is 1,140.

13 THE WITNESS: Eleven hundred and
14 forty each way, so there would be a vehicle
15 front of the laneway -- a vehicle crossing in front
16 of the laneway ---

17 MR. VAN DIEPEN: Every 20 seconds.

18 THE WITNESS: We are talking about
19 seven hours -- 10 hours, 60 minutes in the hour --
20 that is ---

21 THE CHAIRMAN: I think we should ask
22 for a comment from Mr. Aubrey Moodie who spent many
23 years in the municipal (inaudible) 3,000 and
24 60,000 and perhaps a traffic engineer will have
25 to make a decision as to how to give this gentleman
26 access to the road.

27 Do you want to make a comment?

28 MR. MOODIE: I think, Mr. Chairman,
29 the comment I made was that we should ask the
30 traffic engineer when he comes as a later witness.



1 THE CHAIRMAN: Will he be called as
2 a witness?

3 MR. PLAXTON: The next witness will
4 be the traffic engineer.

5 THE CHAIRMAN: There will be another
6 witness you can direct that question to.

7 MR. VAN DIEPEN: I have another
8 question about this water pollution. The city is
9 short of water. We assumed there is no water
10 pollution but now we assume there is water pollution.
11 It rains like heck, you know.

12 THE WITNESS: Well, as I mentioned
13 before, the city would extend the water main. This
14 is one alternative. Other wells could be drilled
15 and pollution could be stopped. If there is a
16 temporary upset, the city would truck in water.
17 If there was some impairment of the water supply,
18 they would be extending a potable water supply
19 using a City of London water truck. They would
20 truck it in.

21 MR. VAN DIEPEN: What are they
22 going to put the water in there? Are they
23 going to empty the truck?

33

24 THE WITNESS: I would leave a con-
25 tainer there where you can put the water in. What
26 do you do at home?

27 MR. VAN DIEPEN: We have no problem.
28 You just take it out of the well. It goes through
29 a pipe.

30 THE WITNESS: There is no storage tank?



1 MR. VAN DIEPEN: No.

2 THE WITNESS: Obviously there would
3 be no point in bringing you the water unless they
4 gave you something to put it in. It can be put
5 in an insulated tank.

6 MR. VAN DIEPEN: I am at a loss. It
7 is not that I don't like city water but I like my
8 own water a lot better. I don't know why -- I
9 came to this country about 23 years ago and at that
10 time I was told it was a democracy
-- apparently I have been misinformed.

11 THE WITNESS: This is a meeting here
12 today and you are able to stand up and say what you
13 think.

14 MR. VAN DIEPEN: I don't think it is fair --
15 I told my veterinarian and he said, "You are going
16 to lose your cows. I don't know how you are going
17 to prevent it, if they start eating cardboard."

18 THE WITNESS: Well, there is nothing
19 in the literature or the knowledge of other sites
20 where there has been a massive killing of farm
21 animals or upset of farm crops. That is why I
22 can't say honestly it couldn't happen. I can't
23 reassure you obviously.

24 MR. VAN DIEPEN: Can't you give me
25 an idea?

26 THE WITNESS: A truck could be driving
27 along there and carrying Township of Westminster
28 garbage and it could have an accident and the
29 garbage could fall out of the truck and your cows
30 could eat it and die. That is not an act of God. I



1 admit here the likelihood is greater. I am saying
2 that with the control features it shouldn't happen,
3 but I can't guarantee it wouldn't happen. If it
4 does happen, you have recourse for compensation.

5 MR. VAN DIEPEN: We have heard that.
6 Fifteen cows die at one time or otherwise I might
7 as well forget it. How many times have you been
8 to the site? You get an awful blow out there,
9 sir. There is no way you are going to stop pieces
10 of paper from blowing around, no way.

11 THE WITNESS: We think we can control
12 it.

13 MR. VAN DIEPEN: It is all right
14 if you wait for another 10 or 15 years for the trees
15 to grow, but, otherwise, no way.

16 THE WITNESS: You understand these
17 trees around the first part would be 10 to 15 feet
18 high?

19 MR. VAN DIEPEN: That is the first
20 part. How long will it take those trees to grow?

21 THE WITNESS: They will go in
22 planted at that height. They will go around the
23 first side.

24 MR. VAN DIEPEN: It is around the
25 other side the paper will be blowing around, not
26 this side. They should be on the other side.

27 THE WITNESS: To keep the wind from
28 blowing here (indicating)?

29 MR. PLAXTON: He is suggesting a
30 wind-break.



1 MR. VAN DIEPEN: You can't say that
2 would stop the paper from going through?

3 THE WITNESS: You suggested if there
4 was a row of trees it might help. It would help
5 no doubt. Remember we will have ^a temporary berm
6 on
7 there while the excavation is going/on that site,
8 but these wind-breaks are not designed to stop
9 air current

10 MR. VAN DIEPEN: Thank you.

11 THE CHAIRMAN: Thank you. Does
12 anyone else have any questions?

13 Are there any further questions?

14 MRS. NANCY McDOUGALL: I would like
15 to know exactly where an access road would be put
16 onto the White Oak Side Road to get down to the
17 collection drains if necessary.

18 THE WITNESS: For 20 years -- it
19 would be 20 years before there is an emptying
20 point at that site. We will be starting at this
21 end, but with this internal road extended around
22 in the 20th year we would be using that. The
23 question that came up was whether it was valid
24 to maintain that road so that it could be used
25 for grazing or something. Frankly, I just said
26 we would bring it in from here. I haven't chosen
27 the particular site.

28 MRS. McDOUGALL: You haven't?

29 THE WITNESS: Was there a particular
30 concern there?

MRS. McDOUGALL: We live on that road.



1 THE WITNESS: There would be a truck
2 coming in once a day and if the city did purchase
3 all the property as is proposed, I presume they
4 could pick it up at any point that is convenient.

5 MRS. McDOUGALL: You can't tell me
6 how far down from the proposed site it would be,
7 how many feet south of Concession 6?

8 THE WITNESS: This distance here is
9 1,000 feet and the low point is 1,400 feet from
10 Concession 6. They would bring it in at the closest
11 point.

12 MRS. McDOUGALL: There is one branch
13 of the watershed on the site that empties to the
14 north rather than to the south.

15 THE WITNESS: That is this piece here
16 (indicating).

17 MRS. McDOUGALL: It branches off on
18 our place and goes in two different directions, one
19 behind our house and one in the front. They have
20 got a 30 foot drop from the east side of the White
21 Oak Road through our side and we can swim in the
22 spring in that water that runs across there. Are
23 you proposing to take off this drainage altogether
24 that is coming across that road now?

25 THE WITNESS: No. We are proposing
26 not to interfere with the amount of water that pre-
27 sently discharges from any part of the site to any
28 one of these swales or creeks. The reason for that
29 is we don't want to be accused of interfering with
30 downstream riparian rights. Everyone usually fights



1 to retain the drainage they have in the water system.

2 MRS. McDOUGALL: Would the site
3 be maintained? It is very badly eroded now and
4 every year it eats away a little bit more.

5 THE WITNESS: Yes, it would be
6 maintained across the site. What happens on the
7 other side of the roadway would not be the city's
8 responsibility.

9 MRS. McDOUGALL: What I'm getting
10 at is, for instance, I have all these extra trucks
11 and traffic and we get a lovely dip in the road
12 in the spring and they have to come and fix it up
13 a little bit and if the city is going to maintain
14 one side, is someone going to maintain our side?
15 We have heard nothing about that being maintained.

16 MR. PLAXTON: Mr. Chairman, I wonder
17 if we could determine here where Mrs. McDougall
18 lives?

19 MRS. McDOUGALL: I live on the 6th
20 Concession, on the southwest corner. That is at
21 the White Oak Road.

22 THE CHAIRMAN: Could you go to the map
23 and point that out?

24 MRS. McDOUGALL: Here is the watershed on
25 top here and it branches off here (indicating).

26 THE WITNESS: We are concerned
27 with this area contiguous to your property. There
28 is an interesting point that someone else brought
29 up. Perhaps you would like the amount of stuff
30 washing off to be controlled and I did mention
that we thought it was a good idea to put some ponds



1 in there to catch the leachate and give us -- catch
2 the rain water in the case of an emergency, but
3 normally these would be left open to provide the
4 same flow-through in the stream. If it was okay
5 with the Conservation Authority and the people here
6 preferred it, you might want to take some of that
7 off.

8 MRS. McDOUGALL: It is just that
9 across the way there all I have is this water that
10 is running downhill and trying to get -- I mean,
11 I ---

12 THE WITNESS: There might be some
13 sediment picked up.

14 MRS. McDOUGALL: I have another
15 question.

16 In the brief -- I don't know whether
17 it should be directed to you or not, but in the
18 brief there was -- one of the items said that the
19 trucks coming in here must use the designated route.
20 Does that apply to the City of London trucks or does
21 that apply to anyone who wishes to use the site?

22 THE WITNESS: I think it is a policy
23 matter that they should all use the designated route.
24 If someone living -- it is still the policy -- as
25 I understand it, the city are quite willing to
26 allow township residents to bring their waste into
27 the site obviously, but if someone living up in
28 the City of London at the White Oak Side Road
29 takes a short-cut down the White Oak Side Road,
30 it is going to be difficult to police.



1 MRS. McDOUGALL: I was thinking of
2 the City of London garbage trucks coming from London.

3 THE WITNESS: They have to go along
4 135 to Wellington and along Wellington. Otherwise
5 we would be faced with paving White Oak Side Road.

6 MRS. McDOUGALL: I read it said all
7 trucks and I wondered how you were going to have it
8 policed and how you know people are going to abide
9 by it. If you find the traffic is too bad in the
10 city, they could come out there.

11 THE WITNESS: Again I think you'll
12 have to have recourse through the regulatory
13 authorities who will approve this site subject to
14 all the things they claim they are going to do.
15 That is the protection as I see it, apart from
16 trusting in the honesty of the city itself. Like
17 a piece of paper, it is going to be hard to stop.

18 MRS. McDOUGALL: I'm not worried
19 about the paper. It was the watershed mostly I
20 was concerned about. The rain just pours it across.

21 THE WITNESS: I think that is all
22 we can look at.

23 MRS. McDOUGALL: Thank you.

24 MR. BILL FETTER: You said the birds
25 will be attracted to the dump area? Is this true?

26 THE WITNESS: I said the birds do
27 come to sanitary landfill sites.

28 MR. FETTER: Would rodents also come?

29 THE WITNESS: Just possibly some in
30 the garbage trucks themselves, but they don't come



1 in and live on the landfill site. The problem with
2 rats are rats are brought in ---

3 MR. FETTER: Skunks also. I will
4 tell you why ---

5 THE WITNESS: I don't know about
6 skunks.

7 MR. FETTER: Last year in the fall
8 they printed in the Free Press that Westminster
9 Township had had the highest rabies count in this
10 area. I have three children under five and I am
11 concerned about it. If you make a breeding ground
12 for skunks and rats, if it is a dirty area, which
13 it is not supposed to be, if birds are attracted,
14 surely rodents would be attracted too?

15 THE WITNESS: Not necessarily. The
16 birds are after odd bits of garbage or maybe it
17 is actually ^{the} earth-moving equipment that is turning
18 up feed for them that brings them in.

19 MR. FETTER: You don't think the
20 rodents would want the same feed?

21 THE WITNESS: No. I think Mr.
22 Robertson will be testifying as to what his people
23 have seen on this site as far as rats and it is
24 not recognized. I talked to fellows who are there
25 all day and they have talked of seeing one rat
26 every two to three days.

27 MR. FETTER: Do you know if you see
28 one there are usually a thousand?

29 THE WITNESS: Not in this case.

30 MR. FETTER: Do they use pellets at all?



1 THE WITNESS: Something like a popsicle
2 stick with Warfin.

3 MR. FETTER: I fought a battle with
4 rats in my own place when I bought it and I went
5 through eight pounds of rat poison the first year.
6 Rats like to eat the food in their hand. Mice
7 will carry it and store it and actually carry it
8 around, so I can't use pellets because my children
9 might get it. There is a chemical called
10 which will only kill rats and it won't kill dogs
11 or other things and I used this, but I also ran
12 across a rat who could outsmart me. I used flour
13 and cement in a mixture to catch them so that the
14 cement -- when they drink water the cement would
15 harden in their stomachs and there was still the
16 odd rat I couldn't catch. I even used a lightbulb
17 broken and pushed down the hole so the rat would
18 get cut and then the other rats would kill it and
19 still there is the odd rat. Why, in our area when
20 the farmers harvest their crops they pretty well
21 pound them down the same day so there is not much
22 food around. I have cleaned up my property a lot
23 and now I don't have that big a problem, but if
24 there is a dump fill area brought in -- I am mostly
25 worried about rabies because how does a three year
26 old or two year old child protect himself? I can
27 protect myself, but if you corner a rat in a corner,
28 a child, a rat will attack. My property is completely
29 fenced and I have a lot of pets and I give them all
30 their shots. The county give us three places to get



1 our rabies shots free last year which was very nice
2 and helped out quite a bit but I'm worried about the
3 rabies. If the Free Press is right, the highest
4 count is in that area and why put a landfill site
5 in an area where the rabies are that high? Shouldn't
6 somebody clean up this rabies problem?

7 THE WITNESS: I certainly don't know
8 how to answer that because I don't ---

9 MR. FETTER: I'm not afraid for
10 myself. I'm afraid for my children.

11 THE WITNESS: Surely the Medical
12 Officer of Health is -- as an area designated
13 potentially high for rabies they would know what
14 to do.

15 MR. FETTER: I had been under the
16 understanding that -- I haven't been to the landfill
17 site. Your film showed an American film. There
18 couldn't be too many good landfill sites in Canada
19 or we would have had a picture of a Canadian land-
20 fill site.

21 THE WITNESS: The Canadians can't
22 afford to make the films.

23 SOME SPECTATORS: Boo, boo, boo!

24 MR. FETTER: The City of London is
25 larger than the township here and I think they've got
26 more money than we have.

27 THE WITNESS: That is a pretty
28 expensive film. It was one available that happened
29 to be made in the States and we felt it was rele-
30 vant to the problem.



1 MR. FETTER: I wasn't impressed by
2 that American film at all. I'm a Canadian. Why
3 don't we put Canadian literature out? I don't want
4 to be living in the United States. I'm a Canadian
5 and I'm proud of it and I've always been proud of
6 it. I lived in the City of London six years and
7 it's a clean city and I want to see the area stay
8 clean. The Mayor said in the paper this morning
9 she would like to compromise probably. I think she
10 is thinking more of recycling and I think this is a
11 solution.

12 THE WITNESS: I think that the Mayor
13 has always been interested in recycling, even as far as
14 promoting it, but I think if you read what she
15 said, she is not saying it is a substitute immediately
16 for what is required. We should keep looking at
17 ways for recycling.

18 MR. FETTER: Do you know the landfill
19 at Commissioner's Road is not completely full? The
20 residents there got up in a battle about -- I don't
21 know exactly when -- but the residents there built
22 a new area. The old residents around the dump were
23 not concerned because the dump had always been there
24 for a long time but the new residents, they built
25 these highrise apartments closer and closer and
26 Glencairn got closer and closer and all these
27 new people are the ones that complained but they
28 are the ones who built beside the dump. We are
29 already here. We're not building beside the dump
30 or the landfill site.



1 The other question is how long --
2 the landfill site, how long have you knowⁿ this has
3 been a good idea with the clay? Is this a new
4 feeling, is this a new thing in 1973 or has this
5 been a known fact in Canada for 10 years or five
6 years?

7 THE WITNESS: I think it has been
8 known since landfill sites were developed. We were
9 acquainted with the chemical layer that was good.
10 It might have not been so important before. It is
11 recognized now that -- I think I mentioned before ---

12 MR. FETTER: Is it important be-
13 cause we are pushing the issue?

14 THE WITNESS: No.

15 MR. FETTER: The man yesterday said
16 that a silt soil is not a good place to put a dump.
17 Is this true?

18 In the River Road dump the word
19 "River" means that most of the land -- they said
20 there was some clay there -- I tend to believe
21 there is more muck than silt where the River Road
22 dump is. The way the ice slid, it slid toward the
23 Thames River and the River Road must be beside the
24 Thames River because it is called the River Road.
25 This must be a muck soil and most of the greenhouses
26 and vegetable growing area in that area is to the
27 east around the River Road area. This is muck soil.

28 THE WITNESS: I have walked in the
29 muck that is in the bottom of that river and it is
30 a hard impervious clay.



1 MR. FETTER: Why -- I can't think of
2 the word I want -- the way the ice caused it to go,
3 how come this is backwards? How did the clay get
4 there if usually the silt soil goes to the river?
5 How did the clay get there? Is this a freak?

6 THE WITNESS: Not particularly. There
7 are clay areas all along.

8 MR. FETTER: Mostly along the river?

9 MR. PLAXTON: Perhaps this question
10 could be answered by the witness whose evidence
11 relates to this specific question of geological
12 conditions in the area and we could have Mr. Dowse
13 take the microphone and perhaps formulate a reply
14 to the question.

15 THE CHAIRMAN: I think that would
16 be helpful. I think we are talking about a different
17 site than the one under discussion.

18 Mr. Dowse, perhaps you could give us
19 an explanation?

20 MR. DOWSE: At the River Road site
21 which our company was also involved in the area
22 is overlain with a granular material which was used
23 for gravel and sand in the past but underlying this
24 at the base of the gravel pit this is basically why
25 they stopped extracting material, that high water
26 table. There is this clay till which Mr. Morris
27 talked about and the site is underlain by hard clay.
28 The soil around it Mr. Morris also referred to this
29 morning is a granular material and this necessitated
30 construction of clay partments to hold the clay from



1 the site within the clay. Does that answer your
2 question?

3 MR. FETTER: Yes. There is one other
4 thing. I'm worried about this leachate still. The
5 Free Press printed this morning that after 150
6 years most of the pollution -- I don't like that
7 word "most" -- I would like "none" -- after 150
8 years most -- that is a long time. That is also
9 in the report here. This may be just the Free Press
10 report. I would like to hear "none".

11 THE WITNESS: I believe there will
12 be none. I quoted some figures here which showed
13 a reduction in one measurable value, chemical oxygen.
14 This reduced over 17 feet of travel in similar clay
15 from 40,000 parts per million to seven.

16 MR. FETTER: As long as you say "none"
17 I like that. After 150 years "most" didn't go down
18 too well with me.

19 THE WITNESS: Well I think ---

20 MR. FETTER: I did like the fact you
21 said you would put a tile below when our lawyer
22 was questioning you about the other elevation.

23 The other thing with this diagram
24 here that you drew, the tile is at the bottom and
25 you said he mentioned you are going to keep it going
26 up so that the water would keep draining down to the
27 bottom, is that true?

28 THE WITNESS: No. We have it at the
29 ground level.

30 MR. FETTER: This diagram you drew



1 earlier today, you put a tile at the bottom. You
2 put the tile here and you said you are going to
3 keep this area (indicating) higher.

4 THE WITNESS: Sloped through here.

5 MR. FETTER: Will that elevation
6 not climb eventually and become higher than the
7 other end?

8 THE WITNESS: The natural weight of
9 the soil will prevent that. I didn't say we were
10 going to do it higher. I don't think I did. I said
11 from that point it would be put in here to catch
12 the materials coming out at ground level. Mr.
13 Wright asked the question if I was going to put it
14 down there and that is something that we will
15 probably think^{of} in the final consideration.

16 MR. FETTER: Thank you.

17 THE CHAIRMAN: Anyone have any other
18 questions they wish to raise?

19 MR. GIRLING: My name is Bill Girling
20 R.R. #7, London.

21 I understand that there were bacterio-
22 logical studies and these studies should be concerned
23 with the out (inaudible) plant in unity as they now
24 exist all such surveys conducted in this area, not
25 just the landfill area but the whole ---

26 THE WITNESS: We have a biologist
27 on our staff who was consulted with about the
28 business of choosing sites and in particular when
29 we for engineering reasons were looking hard at
30 this site we talked to him about what we would be



1 | doing with the general ecology and so on in the
2 | area. There was relatively very little difference
3 | between the areas in the shelter and natural habitats
4 | and so on. He thought the main wildlife to be
5 | concerned with would be very small forms like mice
6 | and owls and rabbits and things like this. We
7 | certainly with these activities will drive these
8 | out of the active area, but by restoring the area
9 | as closely as we can to its original conditions, you
10 | can see on the models, it will be an attempt to
11 | grow crops that would eventually restore similar
12 | natural habitats to the area. There will be an
13 | upset while it is going on to very limited numbers.
14 | This can also affect the surrounding area to some
15 | extent, but in his opinion in this area he didn't
16 | believe there would be harming natural communities
17 | you would get in a different type of area.

18 | MR. GIRLING: There was no report
19 | published on this with information on what has been
20 | obtained in the area. I can give you information
21 | on the area. I was wondering to what extent the
22 | builders were getting information?

23 | THE WITNESS: Frankly, this is a
24 | farmed area. He was going by experience. There was
25 | no extensive count done on the small animal population.

26 | MR. GIRLING: I know the area very
27 | well for many years and I know I have been in the
28 | conservation movement in this area all my life and
29 | that is why I'm concerned about this and I wondered
30 | if a biological report could be done? Do you think



1 it is necessary?

2 THE WITNESS: Talk to the biologist.

3 MR. GIRLING: You don't think so
4 yourself?

5 THE WITNESS: We were involved in
6 the site where there is a lot of tree cover and a
7 lot of -- certainly in these conditions we have to
8 get into that detail, but here we felt that this
9 is already underway with the farming application.

10 MR. GIRLING: (Inaudible)

11 THE WITNESS: Yes.

12 MR. GIRLING: Thank you very much.

13 MR. DOBBS: My name is Fred Dobbs and
14 I will be living close to this dump.

15 The other day I was digging down
16 eight feet and eight feet will still be below the
17 drainage that goes across my place. There are
18 almost three drains right now but if there is a
19 piece of rainfall about an inch and a half or two
20 inches, we still have four feet of water about
21 12 feet wide. Is the city going to take care of
22 all this water that falls in the dump or is it
23 going to go across the drains?

24 THE WITNESS: Mr. Dobbs, the water
25 that falls within the site at the moment you mean?
26 This is your area down here? Your farm?

27 MR. DOBBS: On the south side right
28 on White Oak .

29 THE WITNESS: The water running from
30 the north side of Concession 7 across the roadway,



1 does the ponding occur at the place where it crosses
2 the culvert?

3 MR. DOBBS: Yes. You said they
4 were going to take all the water out ---

5 THE WITNESS: What I said was we
6 were not going to change the amount of water which
7 comes out at this point at the present time compared
8 to what would come out in the future.

9 MR. DOBBS: You don't even have the
10 water. How are you going to take care of things
11 in the dump? You won't have enough stuff to take
12 care of the water.

13 THE WITNESS: You know how we develop
14 the site? Most of the site is covered up. It has
15 been dug up and landfill placed and the thing has
16 been resealed and covered. We are working in a
17 relatively small area of the site which is excavated,
18 probably 400 feet by 500 feet.

19 MR. DOBBS: Yes.

20 THE WITNESS: The area is undisturbed
21 and covered and the water will continue to run off
22 without penetrating. If it should be uncontaminated
23 running through the ditches and down through the
24 (inaudible). The material that falls directly into
25 the excavation where we are working will be in a
26 small area where it will be held until it has been
27 trucked away or left in the garbage.

28 MR. DOBBS: You don't think you
29 will be able to hold the water -- it is not only
30 the drains in there that are three feet deep and 12



1 feet wide after a rain. If I go out after a rain
2 and in my driveway you have got trucks from London
3 to carry that water for over half the day, that
4 is pretty good.

5 MR. PLAXTON: Are you planning to
6 truck away rain water, perhaps you should clarify
7 that?

8 MISS McDOUGALL: My name is Becky
9 McDougall and I have a question. I would like to
10 know when the biologist was out to the site or was
11 he only out once?

12 THE CHAIRMAN: I wonder if you would
13 come up to the microphone up here so the reporter ---

14 MR. PLAXTON: I don't think Mr. Morris
15 had finished his answer to the last question. I
16 think the last question dealt with ---

17 THE CHAIRMAN: I wonder if you could
18 answer the last question?

19 THE WITNESS: Answer this question?

20 MR. PLAXTON: The one before. Whatever
21 you can do with the water.

22 THE WITNESS: The rain water which
23 is discharged south of the concession road falls
24 on the top of the cover material into the drainage
25 ditches and leaves the site without coming into
26 contact with the landfill. These ditches discharge
27 to the same point that the existing ditches dis-
28 charge. We do not collect that and truck it away
29 unless in some manner it was contaminated and
30 caught in the ponds at the bottom of the site, but



1 normal rainfall entering the site will generally
2 just proceed off the site in the same manner it
3 does at the moment. In a depressed area which the
4 gentleman I think was talking about, that is con-
5 tained in that clay material and you don't have to
6 truck it away if it is badly contaminated at the
7 same rate the rainfall is falling. The site operat-
8 ion just moves further along the excavation until
9 the trucks can come in and take it away. It is not
10 the runoff from several acres. It is confined to
11 this excavated area.

12 THE CHAIRMAN: Where is the young
13 lady?

14 MISS McDOUGALL: I was wondering about
15 when the biologist came to the site and if he only
16 came once.

17 THE WITNESS: Actually I was out with
18 Dr. Bland, the biologist one time/

19 MISS McDOUGALL: When would that be?

20 THE WITNESS: October of last year.

21 MISS McDOUGALL: Were you aware that
22 the 6th Concession between the Wellington and the
23 White Oak Road the land was surveyed by the Lands
24 and Forests to encourage wild animals to return this
25 year? On the North Pond there is a pair of blue hens
26 that come in to do their nesting. I don't know if it
27 is important to you or not but even after 20 years
28 if you destroy that nest, they won't come back.

29 THE WITNESS: Is this in the area here
30 (indicating)? This is the 6th Concession.



1 MISS McDOUGALL: Yes, this is it right
2 here. Even for one year if you start that dump they
3 won't come back and you have lost something that is
4 important.

5 THE WITNESS: They obviously didn't
6 know that was the case.

7 MR. PLAXTON: Is that pond within
8 the same watershed as this landfill site?

9 THE WITNESS: Here is the watershed
10 lying here and these are the ponds up here. They
11 are between the 6th and 7th Concessions where we are.
12 The water is at the east end of the site.

13 MISS McDOUGALL: I'm not concerned
14 about the watershed too much but it is just that
15 you are just destroying something that won't happen
16 again.

17 THE WITNESS: Well, we don't think
18 we are destroying anything. If they don't land
19 there, they will land somewhere else and there is
20 no saying they won't land there just because we
21 are working here. As I explained, this is only
22 working a limited part of the site. You are talking
23 about agricultural activity going on all around.
24 Wellington Road is a heavily travelled thorough-
25 fare. There are trucks coming along the 6th
26 Concession and also down here. To what extent
27 that will affect them I don't know, but I doubt
28 if there will be much change in the existing situat-
29 ion in the area.

30 MISS McDOUGALL: Okay.

*Ponds
between
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1 THE CHAIRMAN: What was your name?

2 I didn't catch it.

3 MISS McDOUGALL: Becky McDougall.

4 THE CHAIRMAN: Anybody else have any
5 questions?

6 MR. VANNESTE: I am President of the
7 Middlesex Federation of Agriculture. I have a quest-
8 ion on something and I would like to have this a
9 matter of record.

10 Do the proposed site around the
11 boundaries have a new fence put up or are you going
12 to go with the present fences and be responsible
13 for one half of the fence to keep it up, upkeep and
14 maintain it for the time you own the property? That
15 ain't behind the buffer zone.

16 THE WITNESS: As an engineering
17 decision, there would be a completely new fence
18 around the site that has been accepted by the city.
19 If we put it on the line, in the future someone is
20 going to be responsible to maintain it, within six inches
21 of the property line.

22 MR. VANNESTE: Just inches within it.
23 Completely fenced in and maintained by the city?

24 THE WITNESS: Yes.

25 MR. VANNESTE: I would like to have
26 this a matter of record.

27 MR. WRIGHT: May I be permitted the
28 indulgence of one further question?

29 THE CHAIRMAN: Yes.

30 MR. WRIGHT: Q. Mr. Morris, this
question concerns the biological or BOD count, oxygen



1 demand count in this region that goes down through
2 this clay. You have quoted us a study which in-
3 dicates that it goes from 40 parts down to seven
4 parts.

5 A. Sorry. I quoted figures on
6 chemical oxygen. They also measure the biochemical
7 oxygen demand. They also measure oxygen demanding
8 constituents which don't decompose biologically so
9 it is a higher value generally than biological
10 oxygen demand. The figure I used is 40,000 parts
11 per million reduced to seven parts per million and
12 I think I gave the reference.

13 Q. Let's not bother going to great
14 lengths about this. All I wanted to do is ask you
15 if those figures have been verified for this soil?

16 A. For this site, no. They were
17 derived from soil similar to this in the State of
18 Illinois.

19 Q. So it is based on literature
20 you found and not based on any studies you have done?

21 A. No.

22 Q. Nothing that was done in connect-
23 ion with this site?

24 A. No.

25 MR. WRIGHT: Thank you.

26 MR. PLAXTON: In relation to the
27 character of the soil, do you know if it is the same
28 here?

29 THE WITNESS: It has a considerable
30 capacity, yes.



1 THE CHAIRMAN: I believe Mr. Moodie
2 wanted to ask a question.

3 MR. MOODIE: Just for clarification of
4 the question asked by the Federation of Agriculture,
5 you stated the fence would be completely fenced in
6 by the City of London within six inches of the line,
7 property line. In my opinion or to put it in a
8 formal question would this eliminate the need for
9 farmers on the other side of that fence -- is this
10 a firm commitment by the City of London?

11 THE WITNESS: The reason I hesitate
12 is I assumed they would put it up on the line but
13 the point that was raised was would that change
14 the responsibility? It is a commitment by the city
15 that they will completely fence the site at their
16 expense with new fencing.

17 MR. MOODIE: And maintain it?

18 THE WITNESS: And maintain it.

19 THE CHAIRMAN: Are there any other
20 points anyone else wants to raise that haven't
21 already been raised?

22 MR. PLAXTON: I have a few questions
23 arising out of my friend's examination.

24 THE CHAIRMAN: I have a few myself.

25 On your policy statement under
26 "General" on page 3, number 3: "The city shall take
27 whatever steps are necessary to control
28 any abnormal escape of gases and odours
29 from the site and to abate any nuisance
30 during the operations and thereafter



1 during the two years maintenance."

2 We are talking about abnormal escape
3 of gases and odours. How do you define something
4 that is "abnormal" or what does that mean exactly?
5 Just for a two year period after the commencement
6 of operations ?

7 MR. PLAXTON: Mr. Chairman, I think
8 this is subject to whatever the Ministry of the
9 Environment requires the city to do. This could
10 be prolonged for a longer period of time. There
11 was one question I was going to ask this witness
12 and that is:

13 FURTHER EXAMINATION BY MR. PLAXTON:

14 Q. How long in a normal sanitary
15 landfill does it take for gas, 90% of the gas to
16 escape from the site? Can you give an answer to
17 that? And then we can come to the other one.

18 A. I can't answer that specifically.
19 The information is being collected in numerous sites
20 and the information is coming in more and more. In
21 some sites which are quite new they have stopped
22 registering gas and others have had it for a long
23 time. These are old dumps that are still generating
24 gas. A lot depends on the condition of the ground
25 water and the moisture in the garbage because this
26 speeds up the decomposing process and drives out
27 the gas faster. Then they would tend to stop
28 generating gas earlier. There are no figures to
29 indicate when you could expect the gas emissions
30 to stop.



1 Q. I understood there was a range.
2 Perhaps I could get that from another witness, de-
3 pending, as this witness has indicated, upon the
4 degree to which the garbage layers are subjected
5 to moisture. As I understand it, ^{if} there is a great
6 deal of moisture ^{then} a greater amount of gas is
7 taken in various stages. Perhaps you arrive at
8 that 90% level sooner as it is drawn, is that
9 correct?

10 A. That is correct.

11 Q. And you are seeking to have a
12 fairly good seal at the top of this landfill site
13 with the result that -- the result you anticipate,
14 would it be dry or a non-dry situation here in your
15 opinion from the standpoint of gas generation?

16 A. We have a relatively dry
17 situation, especially initially. As was pointed out
18 on the site over the long term it will be -- it is
19 still relatively dry compared to the sites constructed
20 -- that is sort of a fast acting ---

21 THE CHAIRMAN: I think you have to
22 apply the requirements of the Ministry of the
23 Environment with relation to gases affecting the
24 environment after the two year period.

25 MR. PLAXTON: This would also apply
26 to the water within the immediate vicinity. This
27 would continue for so long as it was required.

28 THE CHAIRMAN: That answers the next
29 question I had about number 4:

30 "During the lifetime of the landfill



1 operations, the city guarantees an
2 adequate supply of potable water to homes
3 presently having wells adjacent to the
4 site, provided the well water becomes
5 contaminated due to the operation and
6 is declared contaminated and unfit for
7 normal use by the Health Authorities."

8 Now, I take it this is the same
9 principle that applies, that after the landfill
10 site, if some wells are contaminated, you will still
11 provide water?

12 MR. PLAXTON: Yes, sir, there is no
13 question about that. This is a restatement basically
14 of the understanding we had earlier. (Inaudible)
15 For example, we have had gasoline station tank
16 eruptions which will result in gas flowing through
17 the water system -- the water table. Clearly there
18 the gas station company is liable to the owner for
19 the loss of water. I think the same principles of
20 law apply in the municipalities adjoining the land-
21 fill site.

22 THE CHAIRMAN: Thank you.
23 (inaudible) I had many negotiations in my early
24 days on the Ontario Water Resources Commission.

25 If there are no further questions
26 of this witness ---

27 MR. PLAXTON: I have one or two very
28 minor questions, Mr. Chairman, just to clarify where
29 we stand.

30 Q. You referred in your evidence

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1 MISS McDOUGALL: Yes, this is it right
2 here. Even for one year if you start that dump they
3 won't come back and you have lost something that is
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14 would it be dry or a non-dry situation here in your
15 opinion from the standpoint of gas generation?

16 A. We have a relatively dry
17 situation, especially initially. As was pointed out
18 on the site over the long ~~term~~ it will be -- it is
19 still relatively dry compared to the sites constructed
20 -- that is sort of a fast acting ---

21 THE CHAIRMAN: I think you have to
22 apply the requirements of the Ministry of the
23 Environment with relation to gases affecting the
24 environment after the two year period.

25 MR. PLAXTON: This would also apply
26 to the water within the immediate vicinity. This
27 would continue for so long as it was required.

28 THE CHAIRMAN: That answers the next
29 question I had about number 4:

30 "During the lifetime of the landfill



1 operations, the city guarantees an
2 adequate supply of potable water to homes
3 presently having wells adjacent to the
4 site, provided the well water becomes
5 contaminated due to the operation and
6 is declared contaminated and unfit for
7 normal use by the Health Authorities."

8 Now, I take it this is the same
9 principle that applies, that after the landfill
10 site, if some wells are contaminated, you will still
11 provide water?

12 MR. PLAXTON: Yes, sir, there is no
13 question about that. This is a restatement basically
14 of the understanding we had earlier. (Inaudible)
15 For example, we have had gasoline station tank
16 eruptions which will result in gas flowing through
17 the water system -- the water table. Clearly there
18 the gas station company is liable to the owner for
19 the loss of water. I think the same principles of
20 law apply in the municipalities adjoining the land-
21 fill site.

22 THE CHAIRMAN: Thank you.
23 (inaudible) I had many negotiations in my early
24 days on the Ontario Water Resources Commission.

25 If there are no further questions
26 of this witness ---

27 MR. PLAXTON: I have one or two very
28 minor questions, Mr. Chairman, just to clarify where
29 we stand.

30 Q. You referred in your evidence

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1 to a cost of \$5.75 and then later on to a cost per
2 ton of \$6. Could you clarify that, please?

3 A. What I said was that our
4 calculated costs based on the items which we had
5 identified came to \$5.75 a ton. We rounded that
6 off to \$6 in the event, the contingency that we had
7 not covered everything. Things like road widening
8 of Wellington Road and things like that.

9 Q. Have you made a calculation
10 and can you indicate based on 4,000 gallon capacity
11 per tank vehicle of the city which I understand is
12 the capacity, how many loads per day would you have
13 of leachate brought from the site commencing at a
14 point when the site is 25 acres in size and it is
15 completed, that is, the 25 acres and running through
16 to the completion of this site to the full 310
17 acres of usable area?

18 A. We have estimated we would
19 have half a truckload, 1,300 gallons in the first
20 25 acres. In the final complete site and if
21 leachate is still occurring at this rate, we would
22 produce about 18,000 or five truckloads. As I
23 say, for 16,000 or four truckloads from the initial
24 start, until we get a measure of the gallonage.

25 MR. WRIGHT: Could I ask the witness
26 if those figures are based on Dr. Webber's calculat-
27 ions?

28 THE WITNESS: It is based on 60
29 gallons -- 11 inches of rain penetrating the ---

30 MR. WRIGHT: As I read Dr. Webber's



1 report he is estimating for his purposes there would
2 be 11 inches of water per acre generated?

3 THE WITNESS: There would be 11 inches
4 on the ground. Is this the difference between the
5 rainfall and evaporation or transpiration?

6 MR. WRIGHT: I will have to find the
7 reference again.

8 THE WITNESS: On page 7 it says
9 that the southeast London site was estimated at
10 approximately 11.8 inches per year. That is at
11 the existing site.

12 MR. WRIGHT: Yes. The site we are
13 talking about was estimated to be approximately
14 11.8 inches per year. How do you refer to that?

15 THE WITNESS: That is what gives
16 us 16,000 gallons per day. We base it on what has
17 actually been trucked out.

18 MR. PLAXTON: This is based on what
19 was actually being trucked out of these systems?

20 THE WITNESS: Yes. Our estimate
21 of what it would be here is based on one inch of
22 rainfall penetrating into the garbage.

23 MR. WRIGHT: We will pursue this
24 with Dr. Webber then.

25 MR. PLAXTON: You have left, I think,
26 an impression that the size of the site -- I think
27 you found the quantities were greater than you
28 anticipated. You indicated that perhaps that "L"
29 portion of the site was designed for serving the
30 purposes of the Township of Westminster. What if



1 the Township of Westminster elected to come into
2 this site which it might well do if it was approved,
3 what relationship -- a percentage -- what percentage
4 would you say would derive from the township as such?
5 I just got the figure here of 6,700 people said to
6 be in the township area. We have a population in
7 the City of London of 220,000 people. If we say
8 7,000 in the township and 221,000 in the city, it
9 kind of works out to I think about an even number.
10 Perhaps you could make that calculation?

11 THE WITNESS: Three per cent.

12 MR. PLAXTON: Then to what extent
13 would your estimate as to the life of this site
14 be affected by a decision of the Township of
15 Westminster, should they decide to do so, to
16 elect to use this site as a regional site for both
17 the city and the township?

18 THE WITNESS: Considering we have
19 not studied the generation of waste in the township,
20 but presumably it would be less than the figure we
21 are now using for the City of London because of
22 the industrial expansion. But assuming it was the
23 same, taking 3% of the 20 year capacity which would
24 be .6 of a year?

25 THE CHAIRMAN: If there are no more ---

26 MR. PLAXTON: I have some more
27 questions.

28 FURTHER EXAMINATION BY MR. PLAXTON:

29 Q. There is some question about
30 an attempt by my friend to cast some doubt about the



1 validity of your report on the grounds that the
2 quantities are an issue or quantities might be an
3 issue. Is it not customary and indeed the practice
4 when operating one of these sites to weigh in and
5 in fact keep probably daily and monthly tabulations
6 on the total quantities going in? This is a matter
7 for constant review, in other words?

8 A. Oh, yes. Yes.

9 Q. The plans are made as you
10 develop the site and you see the rate of utilization
11 of the site. Is that right?

12 A. It is also ---

13 Q. It is part of your recommendations
14 that this record of utilization of the site be
15 maintained by the City of London?

16 A. That is right. I didn't make
17 it clear that the amount the landfill site is used,
18 the check is obtained on the efficiency of the
19 operation. That is one of the main reasons for it.

20 Q. Are you aware of the intention
21 to use straw in the wintertime?

22 A. No.

23 Q. There was a question related
24 to frost penetration, the freezing of the materials.
25 Are you aware of that intention?

26 A. Yes, we have discussed that.

27 Q. Is that the kind of operation
28 or practice ---

29 A. That is an operating technique
30 to keep the frost penetration down.



37

1 Q. The question also was raised
2 as to whether or not the impervious clay material
3 layer on top of the site would crack two to four
4 feet, and in fact in that way allow rain water to
5 extend into the garbage storage area. My question
6 of you is: the makeup of that four feet, that,
7 I gather is a seal of clay, heavily compacted, is
8 that correct?

9 A. That is correct.

10 Q. And going beyond that do you
11 find the soil having an ever decreasing degree of
12 capacity rising to the surface?

13 A. Yes.

14 Q. Therefore, if you had rainfall
15 on the first three feet, there would be a tendency,
16 I take it -- I ask this as a question -- for moisture
17 to be retained on the upper level of that one foot of
18 the impervious clay which is at the base of the
19 four feet of earth and, therefore, less of a tendency
20 for the clay within the one foot to crack?

21 A. That is correct.

22 Q. So if you maintain moisture
23 on the clay in that way, would you expect or anti-
24 cipate cracking of this kind as a major problem?

25 A. No.

26 Q. There was some reference in
27 your evidence to -- I don't think you used this
28 word -- "slaughterhouse" -- I think you used the word
29 "abattoir", and you said the figures in your
30 report -- can you tell me whether the practice of



1 the city is to permit refuse from an abattoir or a
2 slaughterhouse or a packing house of the kind to be
3 used in this type of a site?

4 A. It is my understanding none
5 of that sort of material is allowed.

6 Q. Is there any regulation about
7 that?

8 A. The regulation is that anything
9 bigger than a dog is not allowed at the site.

10 Q. And this is dealt with under
11 the regulations of the Act in fact? I wanted to
12 make sure there wasn't any indication that you
13 might have used their figures. For particular
14 scientific purposes, we are not intending to have
15 that kind of refuse brought on this land.

16 A. Frankly I can't remember
17 where I used that, but if I did, it was not intended.

18 Q. That was back somewhere in
19 your evidence and you were referring to it to some
20 degree. Frankly, I have forgotten how. I just wanted
21 to make that clear. That is the intention of the
22 city and in fact the intention of the Act, is it not?

23 A. That is correct.

24 Q. My friend during the course of
25 his questioning of you referred to the fact that
26 as you get out of the situation -- in other words,
27 I think he said when you make your report that is
28 the last you as a firm have to do with the job. I
29 would like you to indicate the extent to which you
30 are involved in this job from here on in as a firm



1 and then the extent to which the City of London
2 has decided on policy to review the waste manage-
3 ment procedures of the city from a consulting point
4 of view?

5 A. Our firm has been retained to
6 design the sanitary landfill site and assist in any
7 associated obtaining of approvals. When the report
8 was submitted, we recommended a review every five
9 years and I understand that it is the city engineer's
10 policy that this be done, to review the quantities
11 of waste generated, the significant types of waste
12 and anything else associated with the disposal of
13 soft waste. Presumably, they would retain a con-
14 sulting engineering firm to do that.

15 Q. And one other very small point
16 as to this question of how snow fencing versus
17 some other method would be used, as related to
18 the animals eating debris, plastic, paper and so
19 on. Would you now give the opinions that your
20 earlier recommendation concerning snow fencing
21 should be changed to refer to the 16 to 17 foot
22 high type of netting which is stretched around the
23 work site at the Metropolitan Toronto landfill where
24 you have seen it?

25 A. Yes. We have already concluded
26 that we should make this change and this gentleman
27 just confirmed this, that it is important.

28 Q. And when you also made your
29 recommendation, to clarify the record because it
30 is not clear, the fence on the internal boundary will



1 be within six feet -- six inches of the lot line, to
2 the extent you can find one in this area, it would
3 be inside the city boundary and would be wholly put
4 in at the expense of the city and would not be the
5 normal farm fence, but, rather, with the smaller
6 openings in the wire than the rather larger openings
7 of about a foot by five inches that is typical in
8 farm fencing that I have seen?

9 A. I would make that recommendation.

10 MR. PLAXTON: And, Mr. Chairman, I
11 would like to say on behalf of the city I think that
12 Council would also subscribe to the undertaking
13 involved for the city in that regard, should you
14 see fit to grant the certificate. These conditions
15 would be acceptable to the city along those lines.

16 That is all I have of this witness,
17 Mr. Chairman.

18 MR. FETTER: Can I ask one quick
19 question about water?

20 THE CHAIRMAN: All right.

21 MR. FETTER: You said you would give
22 us water if the water is polluted. Is this true?

23 MR. PLAXTON: Yes.

24 MR. FETTER: What if the United
25 States pollutes your water source, where would you
26 get your water.

27 MR. PLAXTON: I will not answer that
28 question. I'm sorry.

29 MR. FETTER: We can't control the
30 United States in our water source so the next closest



1 one would be the Hudson Bay and that would be
2 pretty expensive. London used to be proud of their
3 springs and I have never heard a Londoner say they
4 are proud of the Lake Huron water.

5 THE CHAIRMAN: I don't think that
6 is a proper question. The City of London will have
7 to have potable water for the city and I think the
8 agreement is that they will supply potable water
9 to land adjacent to this site if the water becomes
10 contaminated, whether it comes from Lake Huron or
11 where it is coming from now, wells, or further
12 north.

13 MR. FETTER: I'm just worried about
14 water. I think eventually water is going to be a
15 very expensive thing to buy if we don't save it
16 and I wouldn't like to see London or us or anybody
17 out of water. I believe there are countries where
18 the water is a very poor source and I hope that
19 Canada can keep a good source of water.

20 MR. PLAXTON: May I say this on
21 behalf of the City of London? I think we are
22 here as people just like yourself. We are not
23 here to be a prolific organization trying to
24 destroy something. We have a problem that we all
25 know exists and we are here to find the best
26 possible way we can handle it.

27 Mr. Chairman, we are trying to do
28 it with the engineering advice the best way we know
29 how. If there is a problem that exists here,
30 would like to be told about it. If there is a problem



1 with the neighbours, we will try to answer those
2 problems. We are here for that purpose. I think
3 this is a very worthwhile type of hearing to have
4 and I would hope that the questioning from here on
5 in would be as instructive as it has been in the
6 past.

7 MR. FETTER: Thank you.

8 THE CHAIRMAN: I might say I've been
9 on the Ontario Water Resources Commission since
10 1961. I have helped many municipalities get good
11 supplies of potable water. We have actually done
12 surveys about getting it from Hudson or James Bay.
13 The Ministry of the Environment is trying to assure
14 that everybody has the best possible water. I am
15 a water fan myself.

16 Are there any further questions?

17 MR. WRIGHT: I would like to have
18 Mr. Plaxton undertake on behalf of the city to
19 guarantee that supply of water, whether it be
20 necessary to truck it or be necessary to install
21 water supply lines out into these areas, should it
22 become apparent ---

23 MR. PLAXTON: Mr. Chairman, it is
24 not necessary for me to do this because it is going
25 to be done by Mr. Rowntree on behalf of the city.
26 He is ^{the} representative of the city who will deal
27 with this. I can assure you that it is his in-
28 tention to inform you of this. He will carry it
29 by hand-truck for an accidental situation or, if
30 there is a problem that cannot be relieved any other



1 way, they will extend the water lines.

2 MR. WRIGHT: I will wait for Mr.

3 Rowntree.

4 THE CHAIRMAN: Thank you very much.

5 The hour is -- oh, if there are no
6 further questions, this has been quite a day. I
7 hope you have a nice drink of cold water and a nice
8 bath.

9 We will adjourn until 9:30 tomorrow
10 morning.

11 --- Adjournment

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