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1 D-15085
 2 STATE OF ILLINOIS)
) SS:
 3 COUNTY OF KENDALL)
 4 BEFORE THE PUBLIC HEARING OFFICER
 5 In The Matter Of:
 6 APPLICATION FOR LOCAL SITING APPROVAL
 PROPOSED WILLOW RUN RECYCLING AND DISPOSAL FACILITY
 7 KENDALL LAND AND CATTLE, L.L.C.
 WASTE MANAGEMENT OF ILLINOIS, INC.
 8 KENDALL COUNTY, ILLINOIS
 9
 10
 11 REPORT OF PROCEEDINGS had and
 12 testimony taken at the hearing of the above-entitled
 13 matter before PATRICK M. KINNALLY, Hearing Officer,
 14 taken by Shannon M. Frey, CSR 084-2277, and Amy K.
 15 Bateman, CSR No. 084-003803, on Thursday,
 16 September 11, 2008, at 6:00 p.m., at 6617 Chicago
 17 Road, Plattville, Illinois.
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 24 ROUGH DRAFT TRANSCRIPT

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1 PRESENT:
 2 MR. PATRICK M. KINNALLY, Hearing Officer;
 3 PEDERSON & HOUP, by
 MR. DONALD J. MORAN
 4 161 North Clark Street, Suite 3100
 Chicago, Illinois 60601-3242
 5 Appeared on behalf of Waste Management of
 Illinois, Inc.
 6
 7 JEEP & BLAZER, LLC by
 8 MR. MICHAEL S. BLAZER, and
 MR. DEREK B. RIEBMAN
 9 24 North Hillside Avenue, Suite A
 10 Hillside, Illinois 60162
 11
 12 KENDALL COUNTY STATE'S ATTORNEY, by
 13 MR. ERIC C. WEIS, and
 MR. BRIAN LA BARDI
 14 807 West John Street
 Yorkville, Illinois 60560
 15 Appeared on behalf of the County of Kendall;
 16 HINSHAW & CULBERTSON, LLP, by
 MR. CHARLES F. HELSTEN
 17 100 Park Avenue, P.O. Box 1389
 Rockford, Illinois 61105
 18 Appeared on behalf of the County of Grundy;
 19 SCOTT M. BELT & ASSOCIATES, P.C., by
 MR. SCOTT M. BELT
 20 105 East Main Street, Suite 206
 Morris, Illinois 60450
 21 Appeared on behalf of City of Morris;
 22 MR. DELBERT S. LYLE,
 2100 Manchester Road, Suite 945
 23 Wheaton, Illinois 60187
 Appeared on behalf of Lyle Enterprises,
 LLC;
 24 MUELLER & ANDERSON, P.C., by
 MR. GEORGE MUELLER,
 609 Etna Road
 Ottawa, Illinois 61350
 Appeared on behalf of Kankakee Regional
 Landfill, LLC;
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1 ALSO PRESENT: (Cont'd.)
 2 LAW OFFICES OF DANIEL J. KRAMER, by
 MR. DANIEL J. KRAMER
 3 1107A S. Bridge Street
 Yorkville, Illinois 60560
 4 Appeared on behalf of Village of Minooka;
 5 LAW OFFICES OF DANIEL J. KRAMER, by
 MS. KELLY A. KRAMER,
 6 1107A S. Bridge Street
 Yorkville, Illinois 60560
 7 Appeared on behalf of Old Second National
 Bank of Aurora Trust 8932.
 8
 9 ALSO PRESENT:
 10 MS. RENNETTA MICKELSON, Kendall County Clerk;
 MR. ROBERT E. DAVIDSON, County Board Member;
 MS. JESSIE HAFENRICHTER, County Board Member;
 11 MS. KAY HATCHER, County Board Member;
 MS. NANCY MARTIN, County Board Member;
 12 MS. PAM PARR, County Board Member;
 MR. JOHN P. PURCELL, County Board Member;
 13 MS. ANNE VICKERY, County Board Member;
 MR. JEFF WEHRLI, County Board Member;
 14 MR. BILL WYKES, County Board Member.
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 24 ROUGH DRAFT TRANSCRIPT

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1 I N D E X

2
 3 WITNESS:
 4 ANDY NICKODEM
 5 EXAMINATION BY: DX CX RDX RCX EX
 6
 7 Mr. Moran 75
 8 Mr. Mueller 149
 9
 10 EXHIBITS: ID REC'D
 11
 12 Kendall County Exhibit No. 1 31
 13 Petitioner's Exhibit No. 1 41
 14 Petitioner's Exhibit No. 2 73
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1 HEARING OFFICER KINNALLY: I would like to
2 call the hearing to order, please.
3 My name is Pat Kinnally, and I'm
4 the hearing officer for the Willow Run Recycling and
5 Disposal Facility filed by Waste Management and
6 Kendall Land and Cattle, and this is the start of
7 the public hearing.
8 A couple things that I would just
9 like to -- before we have the introductions of the
10 County Board, we're doing this in real-time
11 transcription, so a premium is going to be placed on
12 people talking into the microphones, because if you
13 don't talk into the microphones, it won't be
14 transcribed in real-time. That's rule number one.
15 So if anyone is going to speak, make sure that you
16 speak into the microphone.
17 Number two, because we're using
18 this real-time methodology, another premium is
19 placed on one person speaking at a time because it
20 just doesn't work otherwise. You just get a bunch
21 of garbly.
22 So if somebody makes an objection,
23 make the objection and I'll rule on it. I'll give
24 everybody a chance to say whatever their position is

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1 on the objection or motion or whatever, but make
2 sure that we only speak one person at a time. That
3 will help us make sure that we have a good record.
4 Could the County Board members
5 please introduce themselves.
6 BOARD MEMBER DAVIDSON: Bob Davidson.
7 BOARD MEMBER VICKERY: Anne Vickery.
8 BOARD MEMBER MARTIN: Nancy Martin.
9 BOARD MEMBER HAFENRICHTER: Jessie
10 Hafenrichter.
11 BOARD MEMBER HATCHER: Kay Hatcher.
12 BOARD MEMBER WYKES: Bill Wykes.
13 BOARD MEMBER PARR: Pam Parr.
14 HEARING OFFICER KINNALLY: We have a quorum,
15 and we also have with us our State's Attorney, Eric
16 Weis, and Renetta Mickelson is the clerk.
17 If you want to file anything, you
18 can file it with her when she's here or you can file
19 it at her office.
20 The Applicant here, again, as I
21 indicated, is Waste Management of Illinois, Inc.,
22 and Kendall Land and Cattle, LLC.
23 They are the Applicant.
24 Mr. Blazer, do you have some information with

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1 respect to the notices and the date of the -- the
2 date of the Application was June 3. I think we all
3 know that.
4 MR. BLAZER: It was, Mr. Kinnally.
5 Just for the record, because it is
6 jurisdictional, according to the citing ordinance,
7 it is the Clerk's responsibility to publish the
8 requisite notices.
9 We've posted that on the website.
10 We actually did a couple of extras. We don't have
11 the certificates of publication for those yet, but
12 they're those were really not required, but I do
13 have here what I will call Kendall County Exhibit 1,
14 and it has seven different tabs. It includes all
15 the requisite notices of the hearing and all the
16 certificates of publication, and I would move its
17 admission into evidence.
18 HEARING OFFICER KINNALLY: Is there any
19 objection?
20 (No response.)
21 HEARING OFFICER KINNALLY: Hearing none, that
22 will be admitted. Thank you, Mr. Blazer.
23 (Kendall County Exhibit No. 1
24 admitted.)

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1 HEARING OFFICER KINNALLY: Also, with respect
2 to the participants who have filed notices of
3 participation, I have a list here which is kept by
4 our clerk, Ms. Mickelson, and it includes, but is
5 not limited to, of course Kendall County as a
6 participant, as is the Applicant, Waste Management,
7 who is represented by Mr. Moran.
8 Kendall County is represented by
9 Mr. Blazer, and Mr. -- is it Riebman or Riebman?
10 MR. RIEBMAN: Riebman, your Honor.
11 HEARING OFFICER KINNALLY: We also have here
12 from Grundy County and State's Attorney Sheldon
13 Sobol, Mr. Helsten.
14 Is Mr. Porter with you tonight?
15 MR. HELSTEN: No.
16 HEARING OFFICER KINNALLY: How about
17 Ms. Varsho. They are three lawyers.
18 Then George Mueller is representing
19 the Kankakee Regional Landfill, LLC.
20 Mr. Lyle is representing Lyle
21 Enterprises, LLC.
22 The Village of Minooka is
23 represented by Dan Kramer and Kelly Kramer.
24 The City of Morris is represented

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1 by Scott Belt.
2 Old Second National Bank of Aurora
3 Trust is represented by Kelly Kramer, as well.
4 And then we have various
5 participants, and if I mispronounce your name, I
6 apologize. I don't know how to pronounce all of
7 them.
8 Bev Anderson is here from Minooka.
9 Kathy Auw, I believe, from Yorkville. Joan
10 Soltwisch for the Aux Sable Creek Watershed is a
11 participant.
12 Kathy Bahr, Jim Birch, Janet
13 Bodine, Jeffrey Brooks, Theresa Brooks, Lyn Cole,
14 Concerned United Taxpayers, Mr. Runyon.
15 Kevin Dombrowski or Dombkowski. We
16 don't have an address for Kevin. If he could
17 provide us with that, it would be helpful.
18 Alice Edmondson, Allan Evans, James
19 Feeley, Mr. Friestad, Scott Friestad, Sharon
20 Friestad, Mary Garbelman, Evelyn Givens, Gary
21 Hanson, Judy Harrison, Katie Jackson. She needs to
22 supply us with an address, too.
23 Herman Johnson, Gary Karafiat, Paul
24 Keller, Elizabeth Magos, Leigh Marcotte, Todd

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1 Milliron, Paul Morris, Paralee Perkins, Kelly
2 Pfarrer, Gloria Rabin, Michael Rabin, Gavin Redmon,
3 Rosisela Rojas, Mary Schneider, Walter Schultz, Dan
4 Shepherd, Burton Siegel, Carol Siegel, Michelle
5 Siegel, Chuck Sutcliff, Chrisi Vineyard, Cheryl
6 Wallin, and Scott Wallin.
7 That's the list I have, and we also
8 have some participants who filed recently, but they
9 didn't tell us what they wanted to do here, whether
10 they're going to present testimony or submit
11 evidence or offer written or oral comment, and those
12 individuals should check with Ms. Mickelson at the
13 break.
14 They are Gavin Redmon, Mary
15 Garbelman, Judy Harrison, Katie Jackson, who I think
16 I already mentioned, Kathy Auw, and Elizabeth Magos,
17 and Rosisela Rojas.
18 So those folks, if they would check
19 with Renetta so we can find out whether they intend
20 to present testimony under oath or submit evidence
21 or just make an oral statement.
22 The reports, exhibits, maps or
23 documents are of record. I have looked through the
24 nine-page -- or nine-volume Application that was

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1 submitted by the Applicant, and I've also seen
2 documents submitted by Mr. Mueller, as well as
3 Mr. Belt. Those are of record. So I think we're
4 ready to go.
5 Is there anyone who has a motion or
6 anything before we get started who would like to
7 present it at this time?
8 MR. MUELLER: (Indicating.)
9 HEARING OFFICER KINNALLY: Mr. Mueller?
10 MR. MUELLER: Thank you, Mr. Kinnally. I
11 have just a brief oral motion.
12 I would move to admit the first
13 siting Application and all of the filings in
14 connection therewith. Those are, pursuant to my
15 most recent checking, still all available on the
16 County's website.
17 So I make that motion only to avoid
18 problems with people not having filed portions of
19 the old Application that they intend to use in their
20 presentations here.
21 HEARING OFFICER KINNALLY: Okay. Anybody
22 want to respond to that?
23 MR. MORAN: Yes, Mr. Hearing Officer.
24 I would object to the admission of

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1 the prior Application, which obviously by virtue of
2 the Application that is pending before us today is
3 the relevant consideration for all of us to
4 consider.
5 There are obviously many documents
6 and reports in that Application that bear no
7 relationship and bear no relationship and bear no
8 relevance to this proceeding. In fact, as we will
9 hear, this is a substantially reduced landfill with
10 an additional site investigation that has been
11 performed and new studies on each of the criteria.
12 So it would seem to me that there
13 is really no probative or relevant basis on which
14 such documents should be admitted or even considered
15 at this point.
16 HEARING OFFICER KINNALLY: Does anybody else
17 want to be heard on this?
18 MR. BLAZER: If I may, Mr. Kinnally, on
19 behalf of the County, I would join in Mr. Moran's
20 objection. I don't see how it could possibly be
21 relevant.
22 I would also point out that no one
23 tendered that Application, other than some portions
24 which were tendered in accordance with the

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1 requirements of the County citing ordinance which
2 would have been required that it be tendered seven
3 days in advance of the start of this hearing. So
4 for that reason, as well, I would object.
5 HEARING OFFICER KINNALLY: Does anybody else
6 want to say anything about this?
7 MR. HELSTEN: Mr. Kinnally?
8 HEARING OFFICER KINNALLY: Yes. Mr. Helsten?
9 MR. HELSTEN: I guess on behalf of Grundy
10 County and the Grundy County State's Attorney, I'm
11 somewhat perplexed that Waste Management and the
12 attorney for County staff would object to a full
13 view of all the information that's available here.
14 Number one, it is, in part, the
15 same site.
16 Number two, Mr. Moran says, well,
17 this is entirely different, I think the implication
18 being entirely better.
19 There's only one way you can
20 determine if something is better. That's to compare
21 it to what was proposed before. Otherwise, you're
22 dealing in a vacuum. Your hands are tied behind
23 you, and you're dealing in a vacuum because there's
24 nothing to compare it -- there's nothing to compare

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1 it to.
2 As far as the filing requirement,
3 as either Mr. Blazer or Mr. Moran, maybe
4 Mr. Mueller, aptly pointed out, the old Application
5 is still on the website.
6 I think that there probably is a
7 logical reason why nobody moved it into evidence.
8 If it's still on the website under this title, I
9 think any reasonable mind would come to the
10 conclusion that it was still included as part of
11 this proceeding and part of the overall record.
12 I think to exclude it really
13 hamstrings any meaningful and full inquiry as to the
14 merits of the present Application, and as Mr. Moran
15 and I know, and the Pollution Control Board has told
16 us time and time again, the siting hearing at this
17 level is the most crucial stage of the process, and
18 that being the case, there should be an
19 opportunity -- a full and fair opportunity to
20 compare the old Application with the present one.
21 HEARING OFFICER KINNALLY: Anybody else want
22 to say something?
23 MR. LYLE: If I may.
24 HEARING OFFICER KINNALLY: Would you state

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1 your name, please.
2 MR. LYLE: Mr. Lyle, Delbert Lyle, on behalf
3 of Lyle Enterprises.
4 It seems to me that based on the
5 arguments before the hearing officer, the issue of
6 relevance is really one that would come into play
7 upon the time that there would be a comparison made
8 or attempt to make a comparison during the hearing.
9 Just to flat out take the whole
10 hearing and try to deny it from being part of the
11 admitted evidence in the case or admitted submittal
12 in this case, I think, is not appropriate at this
13 time.
14 HEARING OFFICER KINNALLY: So can you tell
15 me, are you agreeing? Do you want it in or do you
16 want it out?
17 MR. LYLE: I want it in subject only to
18 objection on relevance at the time that there's a
19 comparison made during this hearing.
20 HEARING OFFICER KINNALLY: Okay. Mr. Kramer,
21 did you want to say anything?
22 MR. KRAMER: Excuse me. On behalf of the
23 Village of Minooka, we would likewise join in
24 Mr. Helsten's and Mr. Mueller's arguments. We feel

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1 it goes to weight, credibility. You're an
2 experienced hearing officer. You know what you
3 should consider or not, and they've made reference
4 to the prior Application, selected portions in their
5 summary and in their applications. So I think
6 they've opened the door to that and it goes to
7 weight and credibility and should be admitted.
8 HEARING OFFICER KINNALLY: Anybody else want
9 to be heard?
10 Okay, here is the way I'm going to
11 handle this. I'm going to deny the motion at this
12 point, and if there are certain portions -- I mean,
13 that hearing lasted for over two weeks, and I think
14 everybody knows it's on the website. They can take
15 notice of it.
16 I'm not saying that the motion is
17 out of order, but at the beginning of the case,
18 let's see how it goes. We don't need to put that
19 into this record at this time.
20 The Application, as I understand
21 it, at one point was withdrawn. We all know what it
22 was. If there are portions that you want to use to
23 try to somehow invalidate this Application, you're
24 free to do that, but I don't think we just open the

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1 record and dump the entire proceeding that we had
 2 before in this particular Application. So it's
 3 denied without prejudice at this time.
 4 Anybody else have any motions?
 5 MR. MORAN: Mr. Hearing Officer, we would
 6 move for the admission of the siting Application,
 7 all nine volumes which was filed with the County on
 8 June 3 of 2008.
 9 HEARING OFFICER KINNALLY: Okay.
 10 Is there any objection to that?
 11 MR. HELSTEN: Subject to cross.
 12 HEARING OFFICER KINNALLY: Of course.
 13 Anyone else have any objection?
 14 (No response.)
 15 HEARING OFFICER KINNALLY: Those will be
 16 admitted.
 17 MR. MORAN: Mr. Hearing Officer, do you need
 18 to identify that Application as a Petitioner's
 19 exhibit because we have not done that as yet?
 20 If we could identify it as
 21 Petitioner's Exhibit 1, we could do it. Otherwise,
 22 simply refer to it as the Application.
 23 HEARING OFFICER KINNALLY: That's fine.
 24 Petitioner's Exhibit 1 will be the nine-volume

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1 Application that was filed on June 3, 2008, and a
 2 copy of which is at Ms. Mickelson's office and on
 3 the website.
 4 (Petitioner's Exhibit No. 1.
 5 admitted.)
 6 HEARING OFFICER KINNALLY: Any other motions?
 7 MS. VINEYARD: (Indicating.)
 8 HEARING OFFICER KINNALLY: Okay. Do you want
 9 to come forward and state your name?
 10 MS. VINEYARD: My name is Chris Vineyard.
 11 I'm requesting a motion to remove County Board
 12 Member Anne Vickery from the Kendall Land and Cattle
 13 Waste Management Landfill Hearing on voting on the
 14 landfill due to a conflict of interest.
 15 Ms. Vickery invited the Kendall
 16 Land and Cattle Waste Management Landfill attorney
 17 over to her home for a family dinner this summer
 18 raising doubt as to her ability to give an impartial
 19 opinion or vote.
 20 HEARING OFFICER KINNALLY: Does anybody want
 21 to be heard on that?
 22 MR. MORAN: Certainly.
 23 HEARING OFFICER KINNALLY: Okay.
 24 MR. MORAN: With respect to any

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1 communication, contact or discussion between any
 2 representative or member of the Applicant, any
 3 County Board member, any other person or
 4 participant, those communications are in no way
 5 inappropriate as those communications occur prior to
 6 the filing of any siting Application.
 7 I think the law is pretty clear on
 8 those types of communications and contacts, and it
 9 simply does not form any basis for disqualification
 10 of any County Board member or any other action.
 11 HEARING OFFICER KINNALLY: Does anybody else
 12 want to be heard on that motion by Ms. Vineyard?
 13 MR. BLAZER: If I may, also, Mr. Kinnally?
 14 HEARING OFFICER KINNALLY: Mr. Blazer, go
 15 ahead.
 16 MR. BLAZER: The legal standard, among other
 17 things, is that in order for disqualification -- a
 18 motion to disqualify to have any merit, there must
 19 be a showing of what the allegedly improper
 20 communication was and how it prejudiced the
 21 proceeding.
 22 That hasn't been presented in this
 23 motion. I think the motion is out of order and I
 24 ask that it be denied.

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1 HEARING OFFICER KINNALLY: Does anybody else
 2 want to be heard on that motion?
 3 MR. LYLE: Delbert Lyle on behalf of Delbert
 4 Enterprises, LLC.
 5 I did not hear anything in the
 6 motion that would exclude -- have a basis to exclude
 7 this member of the County Board for hearing this
 8 matter.
 9 HEARING OFFICER KINNALLY: Okay. Does
 10 anybody else have something they want to say?
 11 MR. HELSTEN: I guess for Grundy County, nor
 12 did I. I think we have to be fair about it. Nor
 13 did I. I don't see any reason why Ms. Vickery can't
 14 sit.
 15 HEARING OFFICER KINNALLY: Anybody else?
 16 (No response.)
 17 HEARING OFFICER KINNALLY: Okay. The motion
 18 will be denied. I don't know when these
 19 conversations took place. I don't know what they
 20 were about. I don't know what the alleged prejudice
 21 is, so at this time that motion will be denied.
 22 All right. Any other motions?
 23 (No response.)
 24 HEARING OFFICER KINNALLY: All right. Then

1 according to the ordinance, the Applicant has the
2 burden of proof. They get to go first. As I
3 indicated at the public information meeting, you now
4 can make an opening statement if you so desire.

5 MR. MORAN: Thank you, Mr. Hearing Officer.

6 Good evening members of the County
7 Board, Mr. Kinnally, Mr. Blazer, Counsel, interested
8 citizens and participants.

9 My name is Don Moran. I represent
10 Waste Management of Illinois, and we present our
11 site location Application for the Willow Run
12 Recycling and Disposal Facility.

13 Since we last met, Waste Management
14 has been busy, busy listening, busy hearing, busy
15 learning, and busy understanding, busy considering
16 and reflecting upon the statements and expressions,
17 views during the two prior siting hearings, both by
18 the County Board, by the interested parties, the
19 citizens attending those hearings, spending time
20 locally talking with local residents, listening to
21 those residents and property owners, and discussing
22 with them their concerns regarding this facility,
23 collecting additional site information with the
24 additional site investigation that has been

1 performed in and around this proposed site, and then
2 organizing and assembling those findings in order to
3 respond to those various concerns expressed.

4 The result of this work? This
5 siting Application. Simply put, what is the
6 response to the concerns that were expressed and
7 identified?

8 This landfill will be built and
9 constructed entirely out of the bedrock aquifer. No
10 portion of this facility will be located within any
11 portion of that bedrock aquifer.

12 The landfill footprint has been
13 reduced by over 50 percent, and here we indicate the
14 footprint from the 2007 Application in black, and
15 you'll see outlined in green is the 2008 footprint.
16 That reduction was from 282 acres to 134 acres.

17 The height of this facility has
18 been reduced by over 50 feet, from 235 feet to just
19 over 180 feet.

20 The capacity of this facility has
21 been reduced by almost 60 percent, from a total of
22 35 million tons down to 14-and-a-half million tons,
23 the life of this site similarly reduced by almost 60
24 percent, from 35 years to 14-and-a-half years.

1 No part of this proposed facility
2 located within the Prairie Parkway corridor. The
3 entire facility boundary for Willow Run located
4 north of that corridor.

5 Walley Run, which we see indicated
6 here in blue, will not need to be relocated. It is,
7 in fact, going to be located entirely west of this
8 landfill footprint, and the double composite liner,
9 which has been proposed for this facility, exceeds
10 the federal Subtitle D in the Illinois State
11 requirements for liner systems for municipal solid
12 waste landfills.

13 Now our hydrogeologist Joan
14 Underwood was involved in this project from the
15 beginning. Joan developed and directed the field
16 investigation that was performed for this site. She
17 was on-site both before, during, and after that site
18 investigation program.

19 She consulted with geologic experts
20 from the Illinois State Geological Survey.

21 She analyzed and reviewed the data
22 that was obtained through this site investigation,
23 and she is going to be vouching for the accuracy of
24 that data.

1 Andy Nickodem, our design engineer,
2 was also involved with this project from the very
3 beginning. Andy directed and supervised all of the
4 design activities for this facility.

5 Andy and Joan working together have
6 assembled, have put together, and organized this
7 data and prepared a landfill that will be safe and
8 that will operate as intended.

9 Now, they will present during the
10 course of this hearing evidence to support this
11 design and the protectiveness of this facility, and
12 what you are going to see is that the aquifer and
13 the private water wells in and around the area are
14 not at risk.

15 The engineered systems to contain
16 the waste, remove leachate, and monitor the
17 groundwater will ensure the protection of both the
18 aquifer and the water wells in the area.

19 Willow Run will be constructed and
20 operated to the exacting standards of the industry
21 leader, Waste Management.

22 We are here before you because of
23 our strong belief in the merits of this Application,
24 and because of the experience of Waste Management in

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1 Illinois to perform as an industry leader, and as a
2 leader in each community in which it conducts
3 business.
4 Now, there are those here today who
5 do not share that view, do not share that view of
6 this Application or Waste Management.
7 Nonetheless, we welcome their
8 relevant and pertinent questions relating to this
9 facility, and we're eager to respond and answer
10 those questions, as well as all the questions that
11 you, the County Board, may have with respect to this
12 proposal.
13 Now, many things will be said
14 during the course of these hearings, many things
15 both for and against this proposal, but simply
16 because something is said, does not make the
17 statement true.
18 You've had the experience of being
19 able to sit through two of these siting proceedings
20 and acquire substantial knowledge and expertise
21 regarding the proposal that you're about to hear.
22 Based on that experience and that
23 knowledge that you've acquired, I would ask you to
24 carefully consider the statements offered in this

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1 hearing, and look to separate fact from fiction,
2 separate reality from speculation, and distinguish
3 between that which is offered to clarify and that
4 which is offered to confuse.
5 Consider the statements that are
6 offered, how they were developed, and then ask this;
7 what experience and what credible evidence exists to
8 support those statements?
9 I want to thank you in advance for
10 your commitment and your consideration of this
11 Application, and we look forward to sharing and
12 presenting this Application to you.
13 Thank you.
14 HEARING OFFICER KINNALLY: Mr. Moran, we have
15 an exhibit up there. Can you identify that for the
16 County Board members, where that -- it's up there on
17 the screen, and just so the record is clear, do you
18 know what page that is of your Application?
19 MR. MORAN: Yes. Mr. Hearing Officer, this
20 is an exhibit that's based on a PowerPoint slide
21 that Mr. Nickodem is going to present entitled
22 Willow Run RDF.
23 It has additional information
24 beyond what's on this slide. It has the footprint

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1 from the 2007 facility, the 2008 facility, as well
2 as these other characteristics.
3 I don't believe we have a number
4 identified yet, but we will be presenting the
5 PowerPoint hard copy slide booklet at the
6 appropriate time and we can identify it.
7 HEARING OFFICER KINNALLY: Okay.
8 MR. MORAN: In fact, that exhibit has been
9 filed. We simply haven't marked it, but it would be
10 the first slide in the Nickodem PowerPoint
11 presentation.
12 HEARING OFFICER KINNALLY: Criterion 2?
13 MR. MORAN: That would be correct.
14 HEARING OFFICER KINNALLY: Thank you.
15 Thank you, Mr. Moran.
16 The way I'm going to do this, I'm
17 going to go right down the aisle with Mr. Mueller,
18 and then Mr. Kramer, and then Ms. Kramer, and then
19 we'll go with the people in the back.
20 Mr. Blazer, you can go last, and,
21 participants, if they want to make a statement, as
22 well.
23 Mr. Mueller, would you like to say
24 something?

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1 MR. MUELLER: Mr. Kinnally, do you want me
2 here or over to the podium?
3 HEARING OFFICER KINNALLY: All I want you to
4 do is talk in the mic. Either way, whatever is
5 convenient for you.
6 MR. MUELLER: Good evening, Ladies and
7 Gentlemen. It's deja vu all over again, and I say
8 that in a more serious tone than I hoped I would be
9 able to say it.
10 The first thing that is the same as
11 it has been is that this aquifer, as all of you on
12 the County Board know, is still vulnerable and
13 sensitive. Nothing that Waste Management did in
14 their listening time, to paraphrase Mr. Moran, has
15 changed the nature of that aquifer. It is still
16 highly sensitive. It is still highly vulnerable.
17 It is still pretty much at ground level.
18 It's immediately under the ground
19 surface, and what that means is, you can design, you
20 can redesign, you can reinvestigate, you can
21 reinterpret, but in the end you can't make a silk
22 purse out of a sow's ear, and that means you can't
23 make an appropriate geologic setting and appropriate
24 hydrogeologic setting out of one that doesn't exist.

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1 Now, unfortunately, the vulnerable
2 nature of this aquifer is not the only thing that
3 stayed the same.

4 A great deal of what is in this
5 admittedly newer, bigger, and somewhat different
6 Application is still the same, and some of the
7 things that are the same are the things that were
8 most disturbing to all of us, and, I believe, many
9 of you the first time around; and those are that the
10 same suspect data set developed by CEC, which never
11 had the courage to testify the last time, is still
12 being used, albeit in a supplemented and a
13 reinterpreted form, but we still start with the same
14 basic data set that Joan Underwood couldn't vouch
15 for before, and, yes, it is being reinterpreted but
16 they're still the same soil borings.

17 Secondly, you see the same
18 tendencies still to try to save money and cut
19 corners at the public safety's expense, and I'll
20 give you just one example of many that you're going
21 to hear about during this hearing.

22 In the last set of hearings,
23 Mr. Nickodem was confronted with the fact that they
24 had sized their leachate holding tanks to closed

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1 condition leachate generation. Closed condition is
2 after they're done filling and after the final cover
3 is on.

4 Now, as you all know by now, closed
5 conditions generate a tiny fraction of the volume of
6 leachate that is generated during open conditions;
7 and when Mr. Nickodem was confronted, he correctly
8 told us that the IEPA regs allow sizing based on
9 closed conditions, but it's not the most
10 conservative approach, it's not the best approach,
11 and it's not an approach that allows even the
12 storage of one day's worth of leachate under open
13 conditions.

14 So I asked myself, they've been
15 listening? They listened during the last hearing.
16 Why didn't they just design some bigger leachate
17 holding tanks that will actually hold five days of
18 leachate while that landfill is up and working, and
19 the answer is, because they wanted to cut corners,
20 and because maybe while they were listening, they
21 weren't hearing.

22 Additionally, the same tendency to
23 make nonconservative assumptions is prevalent in
24 this Application. You've all heard the term

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1 conservative assumption. That means some kind of
2 worst-case scenario.

3 The evidence will show in this case
4 many, many examples where worst-case assumptions
5 weren't used, where conservative assumptions weren't
6 used, where, in fact, unrealistic assumptions in the
7 other direction were used in order to paint an
8 unrealistic and a rosy picture.

9 Another thing that hasn't changed
10 is the tendency of this Applicant to ignore entirely
11 or to summarily dismiss data that doesn't fit their
12 preconception of what the site and what the
13 conditions ought to look like and ought to behave
14 like, and we're going to give you a number of
15 examples of that.

16 Lastly, another thing that hasn't
17 changed is that the groundwater impact assessment --
18 and this is, perhaps, the most important of those
19 things that haven't changed.

20 The groundwater impact assessment,
21 when done with reasonable values -- and in this case
22 with values that have been used by Ms. Underwood
23 before repeatedly at other sitings, when using those
24 kinds of values, it fails.

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1 This facility will impact
2 groundwater, and if you find that, I think you're
3 going to need to find that Criterion 2, public
4 health, safety, and welfare, has not been satisfied.

5 So I'm going to suggest to you that
6 this facility and this Applicant are asking Kendall
7 County to be a guinea pig, and what I mean by that
8 is that they're going to tell you about all of these
9 protections, Subtitle D regulations, performance
10 standard, closure requirements, post-closure
11 monitoring, post-closure requirements, and all of
12 that.

13 The truth of the matter is that
14 no -- or that Subtitle D regulations have been in
15 effect for approximately 20 years, that no landfill
16 built under Subtitle D has yet come to final
17 closure, that certainly we're not anywhere near the
18 end of the 30-year post-closure care period with
19 respect to any facility, and all of those things are
20 unknowns, that we need to trust God, faith, or
21 whoever that they will work out.

22 And the reason that becomes
23 relevant is because this landfill now has a unique
24 design. It has a double composite liner with its

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1 constructability issues. It has an outward
2 gradient, even though it sits, for all intents and
3 purposes, on top of the aquifer.
4 You've heard in two previous siting
5 hearings about inward gradients and outward
6 gradients, and Waste Management now says, we have
7 listened and no part of this aquifer -- or no part
8 of this landfill is within that aquifer.
9 The truth of the matter is that
10 sometimes you shouldn't address people's concerns if
11 they're incorrect, and there's been plenty of
12 testimony about outward gradients and inward
13 gradients, and the fact that a facility that is at
14 least below the water table, if it does spring a
15 leak, and they all will eventually, allows water to
16 come in because of that inward gradient rather than
17 to allow leachate to move out.
18 Well, now we've got the groundwater
19 at the surface, but we've designed a facility
20 immediately on top of it so that when that
21 inevitable leak occurs, groundwater moves out -- or
22 leachate moves out. There's no possibility that the
23 inward gradient can work.
24 And Mr. Moran then says -- and so

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1 because of the vulnerable aquifer -- excuse me.
2 Kendall County is being asked to be
3 a guinea pig, to take all of these things that
4 hopefully will work out on faith. That liner is not
5 going to be there hundreds of years from now, but
6 that garbage will be. That waste will be there in
7 perpetuity. Remember that term, in perpetuity, and
8 when you have an aquifer that close to the surface,
9 you have to measure the risk by proximity to the
10 aquifer. It's the only reasonable and prudent way
11 to measure that risk.
12 Mr. Moran says this is a greatly
13 reduced site. The footprint is smaller, the height
14 is lower, the capacity is less, the duration is
15 less, and the implication, of course, is that,
16 therefore, the risk is less.
17 Well, perhaps the risk is
18 marginally reduced, but it's not any less real, and
19 it's the reality of the risk and not the size of the
20 risk in terms of how many thousands of gallons of
21 leachate does it take to poison a well. It's the
22 reality of the risk that ought to guide this
23 decision-making process.
24 Lastly, Mr. Moran asks that you

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1 listen carefully and separate fact from fiction,
2 and, in essence, what he's saying is judge the
3 credibility of the witnesses, judge their experience
4 and ability, and you know something, I concur and
5 agree with him, because, as I understand it, their
6 first witness is going to be Andrew Nickodem.
7 Mr. Nickodem last year told you
8 that the design that he proposed there was as good
9 as it could be, was completely protective, but yet
10 they've changed it.
11 He's previously told you that
12 geology doesn't matter. They don't design for
13 geology. They don't rely on geology for any
14 protection, but he can't explain why geologic
15 conditions impact the state-required groundwater
16 impact assessments.
17 And if geology doesn't matter, if
18 that was credible testimony, then why are they now
19 trying to build another layer between the bottom of
20 their liner and that sensitive, vulnerable aquifer,
21 a layer, I might add, that doesn't offer anywhere
22 near the protection that they're going to suggest
23 that it does.
24 So when you weigh credibility of

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1 the witnesses, remember the pride that Mr. Nickodem
2 took in last year's aborted application and think to
3 yourselves, do we want to believe this gentleman the
4 second time when we didn't believe him the first
5 time?
6 Thank you.
7 HEARING OFFICER KINNALLY: Thank you,
8 Mr. Mueller.
9 Mr. Dan Kramer, do you want to make
10 a statement?
11 MR. KRAMER: Mr. Kinnally, we would waive at
12 this point.
13 HEARING OFFICER KINNALLY: Thank you,
14 Mr. Kramer.
15 Ms. Kelly Kramer, would you like to
16 make a statement?
17 MS. KELLY: No, I would waive it at this
18 time.
19 HEARING OFFICER KINNALLY: Thank you.
20 And, Mr. Charles Helsten for Grundy
21 County, would you like to make a statement?
22 MR. HELSTEN: Just a brief one, Mr. Hearing
23 Officer.
24 HEARING OFFICER KINNALLY: Thank you. Go

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1 ahead.

2 MR. HELSTEN: Good evening, Ladies and

3 Gentlemen, the County Board, Mr. Kinnally, Counsel,

4 and interested members of the public.

5 I think the evidence will show, as

6 Mr. Mueller touched upon briefly, that this is the

7 same site that it was a year and a half ago, that in

8 a year and a half we haven't changed either

9 thousands or millions of years of development of

10 this site.

11 It has the same shortcomings as

12 whether the site is 14 million tons -- or the site

13 is 30-some-million tons. It has the same

14 shortcomings as Mr. Mueller alluded to now that it

15 did then.

16 I think the evidence will also show

17 that this is a fatally flawed site that can't be

18 fixed. This is a site that God didn't mean to have

19 a landfill on.

20 I think the evidence will also show

21 that you can go seven, eight, 10, 15 miles away and

22 find a site that has the geological conditions that

23 are suitable for a landfill.

24 Mr. Mueller touched briefly upon

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1 Mr. Nickodem and Ms. Underwood's discussion of

2 natural in situ layers, layers that help retard or

3 inhibit or confine leachate that may find its way

4 out of a landfill.

5 I think the evidence will show that

6 presently Mr. Nickodem and Ms. Underwood are

7 minimizing the value of those conditions, but in the

8 past at three other landfills, in the general area

9 here, two in Will County and one in Kankakee, they

10 extolled the virtues of having those conditions in

11 place, and how prudent and how essential those

12 conditions were.

13 Also, as Mr. Mueller briefly

14 alluded to, assumptions that were uniformly relied

15 upon by Ms. Underwood and Mr. Nickodem in those

16 other three hearings in which I was involved and in

17 which two witnesses from Patrick Engineering were

18 involved on behalf of Will County and Kankakee

19 County who sat in the same position that Mr. Blazer

20 and his learned friends there did, assumptions that

21 were used there and were extolled had been

22 completely abandoned in assessing this site and in

23 calculating the model -- in running the model here.

24 I think the reason why -- I think

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1 the evidence will show that if Ms. Underwood and

2 Mr. Nickodem adhere to the assumptions that they

3 used in sites -- three sites in the same general

4 region and the same general area at this site, the

5 model will fail -- the model will seriously fail.

6 Ladies and gentlemen, there's -- I

7 think the evidence will show another irony. A

8 friend of mine in EPA that was bureau chief for

9 years used to say, "It's a big wheel that doesn't

10 come around twice," and I think the wheel has come

11 around twice here.

12 I believe the evidence also will

13 show that Waste Management in this Application is

14 engaging in characterization of certain geological

15 conditions under this site characterizing them as

16 confining units, again, units that will inhibit or

17 retard or prevent the migration of leachate that may

18 lead the bottom of the landfill into the aquifer in

19 the same way that they severely, with me, criticized

20 that type of characterization in Kankakee County.

21 Now, I don't think there was

22 anything wrong with severely criticizing what was

23 done by Mr. Mueller's client in Kankakee County. I

24 criticized it. Waste Management criticized it, but

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1 I don't think then you can turn around and

2 conveniently engage in the same practice at another

3 site when you need to in order to pass the model.

4 That I think the evidence will show. I think we

5 will see that ironic twist here.

6 I think the evidence will also show

7 that the double composite liner design that's

8 proposed here is really a design that you use for an

9 entire region that doesn't have the underlying

10 confining layer and in situ clay that you normally

11 want to have when, as Mr. Mueller said, the liner

12 eventually starts to deteriorate.

13 I think that the evidence will show

14 that this design is a design of the last necessity

15 that must be used here. It's because of the poor

16 geological conditions.

17 As Mr. Mueller briefly alluded to,

18 I think the evidence will show it's a risk. It's a

19 risk. I believe the evidence will show that this is

20 a design that is excruciatingly difficult to

21 implement and construct because of the many layers

22 and the exacting specifications, and that at least

23 several state agencies in the Midwest, one being the

24 Wisconsin Department of Natural Resources, and one

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1 being the Illinois Environmental Protection Agency,
2 have said we don't recommend those liner systems
3 because of the problems attendant to implementing
4 designing -- designing and implementing those
5 systems and making sure that they work properly.
6 It's better to go to a -- to rely
7 upon other preventative measures than attempt to
8 overdesign a landfill in a place that wasn't
9 intended for that type of use.
10 I think the evidence will also
11 show, again as Mr. Mueller briefly alluded to, that
12 pulling the liner out of the aquifer does nothing.
13 It serves no benefit here.
14 All it essentially does then is
15 create a giant earthen berm underneath the ground
16 that sits just slightly above the aquifer, so close
17 to the aquifer that it really doesn't make any
18 difference whether it's in it or just several feet
19 above it. The impact, I think the evidence will
20 show, and the potential for problems are exactly the
21 same.
22 Ladies and Gentlemen, again, I
23 welcome Mr. Moran's challenge to focus on the
24 evidence, and that's what -- and when you hear the

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1 evidence, I think you will see that, again, this
2 site isn't the right site for a landfill. There are
3 many others in this area, in this County that are,
4 that this site isn't, and that, in essence, the
5 evidence will show what's happening here is you're
6 trying to put a square peg into a round hole, and
7 there's twisting and contorting that has to be done
8 with all the assumptions that we've talked about so
9 far that just can't be done.
10 Thank you.
11 HEARING OFFICER KINNALLY: Thank you,
12 Mr. Helsten.
13 Mr. Belt, do you want to say
14 anything?
15 MR. BELT: Yes, Mr. Kinnally.
16 On behalf of the City of Morris,
17 Scott Belt. Good evening, Ladies and Gentlemen of
18 the Board.
19 The City of Morris is here for the
20 same reason that it was here a year ago, and that is
21 because we feel, and you will hear testimony, that
22 the proposed landfill poses a significant and
23 unreasonable risk to the pilots and their passengers
24 traveling to and from the Morris Municipal Airport.

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1 Somewhat consistent with the last
2 landfill siting Application that was submitted and
3 that we were here on the Soave matter, this waste
4 landfill siting Application also proposes to locate
5 the landfill footprint directly beneath an
6 instrument approach to the City of Morris Airport.
7 The instrument approach that I am
8 referring to is different in kind from the one that
9 was discussed a year ago, and it's referred to as
10 the VOR-A instrument approach.
11 VOR is an FAA acronym for VHF
12 omni-directional radio range, which the evidence
13 will show is one of the more significant and one of
14 the more relied upon instrument landing systems, not
15 only in this area, but across the United States.
16 You'll hear testimony that
17 approximately 90 percent of the aircraft that are
18 flying out there today have VOR instrument landing
19 equipment in their aircraft to utilize in the event
20 of foul weather or in the event that they have a
21 desire to travel on an instrument -- on an
22 instrument flight plan.
23 In fact, the VOR system is so
24 significant that you're going to hear testimony that

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1 the very VOR system that is relied upon and utilized
2 by the Morris Airport is also relied upon on a daily
3 basis by both Midway Airport and O'Hare Airport for
4 commercial air carriers traveling to and from both
5 of those -- both of those destinations.
6 The VOR instrument approach is a
7 significant part of the Morris Airport. And, again,
8 to have this landfill footprint literally bisect
9 that approach surface is significant and presents a
10 significant risk, presents an unreasonable risk to
11 the flying public, which we would ask that you pay
12 special attention to.
13 The aircraft approaching the Morris
14 Airport on this VOR flight path have clearance to
15 approach as low as 689 feet above ground level.
16 As Mr. Moran pointed out in his
17 opening comments, the proposed final build-out
18 elevation above ground level is approximately 180
19 feet, which reduces that precious space, obviously,
20 by 180 feet in which the pilots have to travel,
21 leaving roughly about a 500-foot elevation for the
22 pilots to travel the balance of the distance to the
23 airport, which you will hear our calculations are
24 going to be different than Waste Management, in that

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1 our calculations depict that it's actually somewhere
2 closer to two-and-a-half miles as opposed to the
3 three-plus miles indicated in the Application.
4 The other thing that you'll hear
5 testimony on which is different and in addition to
6 what was submitted at the last hearing is that in
7 addition to incoming aircraft, you will hear
8 testimony and see exhibits that this landfill is
9 also located directly beneath a VFR, or visual
10 flight role, departure path.
11 We also find that as being
12 significant. You'll hear testimony that that, too,
13 is a detriment to the traveling public to and from
14 the Morris Airport and that that also presents an
15 unreasonable risk.
16 We're going to touch briefly on the
17 history of the airport, and you'll hear how the
18 construction that was discussed at the last hearing
19 to expand the runway from 4,000 feet to 5,000 feet
20 has, in fact, been concluded, how that runway
21 expansion has -- as we had anticipated and as we had
22 projected at the last hearing, has increased the jet
23 traffic to and from the airport.
24 And you will hear, also, that the

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1 next project, the next phase of the development of
2 the airport, which the City is currently engaged in,
3 is to acquire an additional approximately 80 acres
4 on the -- what would be the north end of the
5 airport, which would provide for a northerly
6 extension of the runway, an additional 500 feet, to
7 then put the runway upon completion of that phase of
8 the project at 5,500 feet.
9 There are two other things that the
10 City has initiated on its own and partly at the
11 request of the Illinois Division of Aeronautics, one
12 of which is a study that has been -- an engineering
13 study that has not yet been completed; however, I
14 think in fairness to you, I think it's worth sharing
15 that the study is anticipating and studying the
16 future use of the airport, considering the fact that
17 the Morris Airport has at least preliminarily been
18 discussed as being a collar county reliever airport.
19 So it certainly is going to take on
20 a character far greater than the way I believe it's
21 characterized in the Application as simply being a
22 local, rural, small-town airport.
23 The engineering study that is
24 currently being conducted is being conducted at a

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1 significant expense to the City, and it's
2 anticipated that there will be several options that
3 the City will be considering, one of which is to
4 potentially expand the north-south runway to as much
5 as 7,000 feet, which to put that into perspective is
6 longer than the longest runway at Midway Airport, to
7 potentially expand the length of the east-west
8 runway, and then there are some other considerations
9 that are being given from a design standpoint in
10 which to allow this airport to continue to grow.
11 In addition to the fact that this
12 landfill is being -- is essentially bisecting both
13 an approach surface and a departure surface, you
14 will also be hearing the hazards that we believe
15 accompany any landfill, and more importantly, at low
16 altitudes are the hazards associated with bird
17 strikes.
18 We have exhibits prepared. In
19 fact, we have some video that we think will
20 depict -- it depicts actual bird strikes that we
21 believe will be very telling in terms of what
22 actually happens in a cockpit when an aircraft
23 strikes a bird.
24 The other aspect that you will also

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1 hear testimony regarding, and this is also a
2 self-initiated, proactive effort that the City of
3 Morris has undertaken, is that they have also
4 initiated a wildlife management study, and that is
5 currently in progress, and it is being performed in
6 cooperation with the US Department of Agriculture.
7 One of the items that is being
8 addressed is the bird activity, and there will be
9 recommendations for bird mitigation plans, not only
10 around the runway -- around the airport, excuse me,
11 but also around the surrounding territories.
12 At the conclusion of our testimony
13 and throughout the City's case, I would ask that you
14 pay special attention to the hazards that will be
15 pointed out related to the circumstances that I have
16 described in placing a landfill directly beneath
17 these very sensitive and significant air surfaces,
18 and at the conclusion of this hearing I would ask
19 that you hold the Applicant to their burden of proof
20 on all criterion, however, specifically on Criterion
21 2 related to the health and safety of the public;
22 Criterion 3 as it relates to the incompatibility of
23 the land use with the character of surrounding area;
24 and, also, on Criterion 5 as it relates to potential

<p style="text-align: right;">Page 73</p> <p>1 operational accidents associated with the operation 2 of the landfill. 3 With that, I thank you for your 4 time. 5 HEARING OFFICER KINNALLY: Thank you, 6 Mr. Belt. 7 Mr. Lyle, do you want to say 8 anything? 9 MR. LYLE: I will reserve at this time. 10 HEARING OFFICER KINNALLY: Okay. Does any 11 other participant want to make a statement? 12 (No response.) 13 HEARING OFFICER KINNALLY: Mr. Blazer, do you 14 have anything to say? 15 MR. BLAZER: I just -- I want to commend Dan 16 Kramer and Mr. Lyle for their insightful and 17 compelling opening statement. I wish the rest of 18 the lawyers were that insightful and compelling, and 19 I would only suggest that you listen to the 20 witnesses and the evidence and leave the lawyers to 21 the lawyering. 22 Thank you. 23 HEARING OFFICER KINNALLY: Well, that was a 24 very telling statement, Mr. Blazer. Thank you very</p>	<p style="text-align: right;">Page 75</p> <p>1 (Petitioner's Exhibit No. 2 2 admitted.) 3 HEARING OFFICER KINNALLY: Any other things? 4 Anything else? 5 MR. MORAN: We're prepared to present our 6 first witness. 7 HEARING OFFICER KINNALLY: Let's go. 8 MR. MORAN: And our first witness is Mr. Andy 9 Nickodem. 10 HEARING OFFICER KINNALLY: Do you want to 11 raise your right hand. 12 (Witness sworn.) 13 HEARING OFFICER KINNALLY: Thank you, 14 Mr. Nickodem. 15 Go ahead. 16 MR. MORAN: Mr. Hearing Officer, one other 17 matter that we did not address, that obviously 18 occurs to me now is, we talked previously about 19 obtaining stipulations with respect to the 20 qualifications of the witnesses, on the thought that 21 if we could obtain such stipulations, we could 22 obviously expedite the presentation of this 23 testimony. 24 I have actually not addressed that</p>
<p style="text-align: right;">Page 74</p> <p>1 much. 2 All right. Now we have concluded 3 the opening statements. We appreciate the remarks 4 of the participants and their lawyers, and at this 5 time, Mr. Moran, I believe that you have the 6 laboring oar, so you get to go first. 7 MR. MORAN: Thank you, Mr. Hearing Officer. 8 Before we put on our first witness, 9 though, I would ask that we mark as Petitioner's 10 Exhibit No. 2 the public hearing slides and exhibit 11 document that was filed with the County last 12 Thursday, September 4. It's entitled Waste 13 Management of Illinois, Inc., public hearing, 14 slides, exhibits, bears Petitioner's Exhibit 2. 15 It consists of hard copies of each 16 of the PowerPoint slides that we will use with each 17 of the witnesses that we will be presenting, and I 18 would offer Petitioner's Exhibit 2 into evidence. 19 HEARING OFFICER KINNALLY: Is there any 20 objection? 21 (No response.) 22 HEARING OFFICER KINNALLY: Hearing none, 23 Petitioner's Exhibit 2, which apparently is the 24 public hearing slide, will be admitted.</p>	<p style="text-align: right;">Page 76</p> <p>1 issue with Counsel, but I would ask now if Counsel 2 would agree to a stipulation as to the 3 qualifications of Mr. Nickodem. 4 HEARING OFFICER KINNALLY: Well, I think 5 that's a good idea. I don't know what the lawyers' 6 feeling is on that, but I believe he was stipulated 7 to in the hearing previous, so I don't know if 8 anyone has changed their view on that. 9 Would you stipulate to his 10 credentials? Is there any objection to that? 11 He will testify in which criterion? 12 2? 13 MR. MORAN: Criterion 2, 4, 7, and 9. 14 HEARING OFFICER KINNALLY: Is there any 15 objection to that? 16 (No response.) 17 HEARING OFFICER KINNALLY: Hearing none, the 18 stipulation is that Mr. Nickodem is an expert with 19 respect to those criterion. 20 Go ahead. 21 MR. MORAN: Thank you, Mr. Hearing Officer. 22 ANDY NICKODEM 23 called as a witness herein, having been first duly 24 sworn, was examined and testified as follows:</p>

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1 DIRECT EXAMINATION
2 BY MR. MORAN:
3 Q. Mr. Nickodem, you testified with respect
4 to the design of Willow Run for the 2007 siting
5 Application; is that correct?
6 A. Yes.
7 Q. What were you retained to do for this
8 Application?
9 A. I am the lead designer, principal
10 engineer on this Application.
11 Q. Could you identify for us the
12 differences between that 2007 Application and this
13 Application?
14 A. Yes. If we take a look at this slide,
15 and this is what Mr. Moran had put up in his opening
16 statement, this is the property area of the Willow
17 Run site.
18 This, again, is Walley Run, this
19 blue line.
20 These two dashed lines depict the
21 proposed Prairie Parkway Corridor.
22 In 2007, we had a facility boundary
23 of approximately 669 acres. That's all the landfill
24 footprint and other facilities within that. That

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1 was 669 acres, and as you can see, Walley Run went
2 through that facility boundary, as well.
3 In 2007 the Prairie Parkway
4 Corridor was within the facility area. So if we
5 take a look at the landfill footprint that we had
6 proposed in 2007, which is right here, the limits of
7 waste are 282 acres, the height was 235 feet, and
8 the site life was 35 years.
9 And you can see, as you recall,
10 Walley Run went directly through the landfill. We
11 had proposed to reroute that around the east side of
12 the site, and, as well, a portion of the southern
13 end of the landfill footprint was within the Prairie
14 Parkway -- proposed Prairie Parkway Corridor.
15 Now, if we take a look at what we
16 proposed in this Application, after, you know,
17 listening to concerns, you know, looking at the
18 details of the site, we did change that
19 significantly.
20 So first, let's talk about the
21 facility area which is outlined here and lightly
22 shaded. We've reduced the facility area to
23 approximately 368 acres. The reduction is
24 approximately 45 percent over what it was in 2007.

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1 If we look at the landfill
2 footprint that we propose, which is right here,
3 that's been reduced by more than 50 percent to 134
4 acres, the height is reduced by more than 50 feet to
5 181 feet, and the site life to 14-and-a-half years.
6 Some other significant changes that
7 we took into account was Walley Run. We wanted to
8 maintain Walley Run, not impact that at all. We
9 have, in fact, done that by moving the footprint to
10 the east of Walley Run, as you can see.
11 Prairie Parkway was another
12 consideration. Of course the facility boundary in
13 our new Application for 2008 is not within the
14 Prairie Parkway Corridor and, as well, the footprint
15 of the landfill is north of the Prairie Parkway
16 Corridor.
17 Two other significant things that
18 Mr. Moran had mentioned, none of the 2008 design,
19 none of the bottom of liner is within the bedrock
20 aquifer, where, as you recall, in the 2007 design,
21 about 30 percent of the landfill -- the bottom of
22 the landfill liner was in the bedrock aquifer, and
23 we really, you know, did that in response to
24 concerns brought up in the last hearing about the

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1 liner or the bottom of liner being in that bedrock
2 aquifer. So no part of this design is in the
3 bedrock aquifer.
4 As well, from the bottom of the
5 liner to the top of the bedrock aquifer, there is
6 in situ material, in-place material, that is a
7 minimum of five foot thick, low-permeability soil
8 material in between that bottom of liner and the top
9 of the bedrock aquifer.
10 In many areas it's much thicker
11 than that, but we have a minimum of five feet from
12 the bottom of the liner to the top of the aquifer.
13 Q. Mr. Nickodem, when were you retained to
14 work on this Application?
15 A. In December of 2007.
16 Q. And can you describe for us what work
17 you did in preparing that design?
18 A. Yes. We looked at a variety of things.
19 The first thing we did was we wanted to understand
20 the existing conditions out at the site. I mean,
21 that's very important when we're doing any
22 engineering design. You know, I've worked on
23 landfills across the country, many in Illinois.
24 We always look at the existing

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1 conditions first to really understand what's on the
2 site before we design the site. So that's our first
3 item. We identified all the structures on the
4 sites, all the, obviously, buildings, culverts,
5 utilities, all the farm drain tile on the site.
6 We made sure that we understood
7 where all of that was. We -- obviously Walley Run,
8 we know where that is, but we actually surveyed the
9 location and took cross-sections of Walley Run so we
10 understood how much flow would go through Walley
11 Run.
12 Back to the structures, all of the
13 culverts in the area, we surveyed all of those
14 culverts, both the inlet and outlet of those
15 culverts.
16 We also took and made sure we
17 understood all of the sizes of those culverts, and
18 I'll get into that in the future, some future
19 slides, about how we use that information to assess
20 this stormwater control for the area. So we wanted
21 to understand all these existing structures.
22 The Aux Sable Creek watershed was
23 obviously a very important part of looking at the
24 existing conditions. We wanted to understand that

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1 entire watershed and what part of that watershed
2 actually flowed through the Willow Run property
3 area, and then the water wells around the site, we
4 wanted to understand what public and private water
5 wells were within the site area.
6 Location standards, we looked at a
7 whole list of location standards that are required
8 by the Illinois regulations, and here's just a few
9 of them that are marked. I'll discuss them in more
10 detail later.
11 But archeology, we did a study to
12 evaluate the archeological resources on the site.
13 You know, we identified the
14 wetlands on the site, looked at landmarks, nature
15 preserves, and a whole other list of location
16 standards.
17 One of the key, not changes, but
additions that we've done in this --
(Recess taken.)
HEARING OFFICER KINNALLY: All right. I
think our technical difficulties have been solved,
at least for the time being.
So sorry for the interruption, and
I think Mr. Nickodem was telling us about liners and
18
19
20
21
22
23
24

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1 so forth, so go ahead.
2 BY THE WITNESS:
3 A. (Continuing.) Actually, I have been
4 asked to go back to facility development briefly
5 because that was missed, but as I mentioned, we did
6 a phasing design that details how the landfill will
7 be constructed and operated throughout the life of
8 the site, and that's important in evaluating the
9 design, how the design will develop, and we also
10 wanted to, you know, establish what soils we would
11 need for throughout the design. So that's an
12 important addition that we did in this particular
13 application.
14 As I mentioned, we have a double
15 composite liner, which I'll explain in more detail
16 in subsequent slides. We did some extensive
17 material testing on that liner and analysis, and one
18 of the important things, again, another addition
19 that we've added to this application, is some
20 additional assurance that after the liner is
21 constructed, it will be tested again to ensure that
22 there are no leaks in the liner, and that's the leak
23 detection survey.
24 We, of course, have a leachate

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1 management system which is a very important part of
2 the design. We evaluated, you know, several storm
3 events, developed our sizing for all the structures,
4 storage on-site, as I'll detail, again, in the
5 future slide.
6 If we go to the next slide, final
7 cover, you know, we evaluated, again, that from a
8 geotechnical standpoint.
9 Surface water was one area that we
10 really, really spent a lot of time with in this
11 application, and, really, there were a lot of
12 questions in the last hearing about different storm
13 events and runoff in the area, and as I mentioned
14 previously, we went and we surveyed all of these
15 culverts in the area so that we understood, you
16 know, where they were.
17 We also did some modeling on those
18 culverts, looked at many different storm events to
19 ensure that we understood how much flow goes to
20 those structures currently so that when we design
21 the landfill, we could then see that we didn't want
22 to impact any of the surrounding properties from a
23 flooding standpoint, and we made sure that that did
24 not happen with our design.

<p style="text-align: right;">Page 85</p> <p>1 So we needed to understand what was 2 out there currently, and we looked at many other 3 things in the surface water that, again, I'll 4 discuss in more detail.</p> <p>5 Gas management, we have, obviously, 6 a gas management plan. Landfill gas is, you know, 7 generated as the waste decomposes.</p> <p>8 We did some extensive analysis on 9 how much gas would be generated, and then we sized 10 the system based on that.</p> <p>11 Monitoring systems, of course we 12 have monitoring systems to monitor all the 13 engineering components of the site that we design 14 for it, groundwater monitoring, leachate monitoring, 15 surface, water, air, and gas.</p> <p>16 And then we have a closure and 17 post-closure plan to ensure that the site is closed 18 properly and that it is maintained for a minimum 19 30-year period, and I want to stress minimum 30-year 20 period after the closure of the site.</p> <p>21 Q. Mr. Nickodem, you indicated that you 22 considered existing conditions. What specifically 23 did you consider? 24 A. We considered several different things.</p>	<p style="text-align: right;">Page 87</p> <p>1 site.</p> <p>2 So if we look at a blow-up of that 3 particular study area, that's that same blue shaded 4 area, that's the outline of it. Here you can see 5 some blue flow lines, and these are one -- there's 6 Walley Run, which is right here; but then, two, 7 there is several other tributaries, you know, our 8 farm drainage channels, and, also, road channels 9 that flow to Walley Run and through this study area.</p> <p>10 You can see to the north of the 11 study area, these flow lines show that flow to the 12 north is directed away from this. So there's no -- 13 we determined that no flow outside of this comes 14 through the site.</p> <p>15 So we wanted to assess how much 16 surface water flowed through the site in a 17 predevelopment condition so that when we developed 18 the landfill, we understood how much surface water 19 was going through there, and you can see these black 20 kind of structures here. Those are all the culverts 21 that we surveyed and identified on the roads -- on 22 the road crossings around the entire site, you know, 23 on Whitewillow, Brisbin, Sherrill and Ashley Roads, 24 and Church Road.</p>
<p style="text-align: right;">Page 86</p> <p>1 If we look at the first slide, I want to talk about 2 Aux Sable Creek, and, really, the entire stormwater 3 characterization on the site, and this, again, was a 4 very important piece to this design.</p> <p>5 This represents the entire Aux 6 Sable Creek watershed. Aux Sable Creek is here, 7 flows to the Illinois River. There are several 8 other tributaries to that, including Walley Run, and 9 our limit -- our facility boundary is right here. 10 So we can see Walley Run is a tributary to Aux Sable 11 Creek.</p> <p>12 Now, we wanted to look at how much 13 stormwater within the Aux Sable Creek watershed 14 actually flowed through the property and through the 15 facility so that we understood that.</p> <p>16 So we developed a study area within 17 this watershed, and that's this area you can see 18 here. How we did that was we had a new topographic 19 map developed for this site, aerial flyover, and 20 then we develop a topographic map from that, and 21 based on that map, we determined that just the areas 22 within this blue shaded area flow through the site, 23 and that's what we evaluated. None of these other 24 areas outside of that boundary flow through the</p>	<p style="text-align: right;">Page 88</p> <p>1 And, again, the reason we wanted to 2 do that was we wanted to ensure that we understood 3 those culverts, the flow patterns through those 4 culverts, and that the development of the site did 5 not back up any water behind those culverts and 6 flood out adjacent properties.</p> <p>7 After those were surveyed, you 8 know, I went out to the site, and drove around the 9 site, and looked at each one of these locations, and 10 verified the location, the size, just to know that I 11 understood that each one of those culverts were 12 there and then what happened.</p> <p>13 Then we -- after we identified all 14 the structures, we actually split up this area into 15 several subareas with different designations, and 16 each one of these areas we used a computer model 17 called HydroCAD to assess how much flow went through 18 these individual areas, and these are just split up 19 by topography, and then each one of these areas will 20 then flow to a specific culvert, and then they will 21 obviously add to one another, like Area C, the flow 22 from that will add to Area T. So, you know, we 23 developed those flow patterns. 24 You know, also, I want to say, in</p>

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1 looking at the predevelopment conditions, there are
2 several of these culverts, road culverts, that we
3 determined cannot handle the 100-year, 24-hour storm
4 event which we designed -- typically design the
5 facilities to, and, in fact, have designed
6 Willow Run for.

7 You know, I was out there one time
8 when at, you know, Brisbin and Sherrill Roads, this
9 area was flooded down here because these culverts
10 were flooded out. I think that was in the spring of
11 this year, one of the times when I was out there.

12 So we wanted to understand all that
13 before we went and designed the facility. If we
14 take a look at the next slide, this is, again, some
15 existing conditions that we considered.

16 Obviously we needed to identify all
17 of the utilities. There is a Commonwealth Edison
18 power line here. There are power lines along
19 Whitewillow, along Church, and also some telephone
20 lines along Church and Whitewillow. So we wanted to
21 make sure we understood where all of those were so
22 that the site didn't impact any utilities, and it
23 will not.

24 And then drain tile, and I

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1 mentioned that before, we did two things to identify
2 the drain tile, which is these dashed lines. One,
3 we had a survey conducted of the drain tile which
4 identified the locations, size, and depth of that
5 tile.

6 The second thing that we did was we
7 met with a local tile contractor, a retired tile
8 contractor that had installed a lot of this tile
9 over the years, and he, in fact, had some additional
10 maps of tile that he had installed.

11 In fact, this area here was from
12 one of those maps, and then he also looked at our
13 information and verified that we understood where
14 all of this drain tile was in and around the site,
15 and the reason we wanted to do that is so that we
16 understood that when we developed the facility, that
17 we weren't going to back up any water into farm
18 fields surrounding the facility.

19 Now, we also identified all of the
20 public and private water wells around the site.
21 This, again, is the facility boundary. This is a
22 five-mile radius around the facility boundary.

23 What we did to identify the wells
24 within a five-mile radius, we got information from

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1 the Illinois State Water Survey, Illinois Geologic
2 Survey, Kendall County, Grundy County, well logs
3 from those counties, and we assembled all of that
4 information and we determined that within this
5 five-mile area, there is approximately 1,003 water
6 wells -- public and private water wells within that
7 five-mile boundary.

8 Q. Now, Mr. Nickodem, are there location
9 standards that relate to Willow Run?

10 A. Yes, there are.

11 Q. And you identified those location
12 standards earlier, at least the fact that you had
13 looked at them; correct?

14 A. Yes.

15 Q. What is the source of those standards?

16 A. The Illinois Landfill Regulations,
17 specifically the 811 landfill regulations.

18 Q. So those standards are really properly
19 considered during the permitting process before the
20 Illinois Environmental Protection Agency; is that
21 correct?

22 A. Yes.

23 Q. Although as part of your design work in
24 preparing the design for this facility, you

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1 considered these standards?

2 A. Yes, we did, all of them.

3 Q. What are those standards?

4 A. You can see a list of them here. They
5 are a pretty extensive list of all the different
6 things that we evaluated.

7 Q. Did you make a determination as to
8 whether Willow Run complies with these standards?

9 A. Yes, we did.

10 Q. And what have you determined?

11 A. Well, I'll talk about each one briefly.
12 Wild and scenic rivers, we looked at the presence of
13 any wild and scenic rivers near and around the site.

14 There's only one wild and scenic
15 river designated in Illinois, which is the middle
16 fork of Vermillion River. That's not near the site,
17 so this site does not have any wild and scenic
18 rivers in proximity to it.

19 Historic and archeological sites,
20 as I noted, we had a company come out and do an
21 archeological survey of the facility to identify any
22 potential archeological resources that may be on the
23 site.

24 They determined that there, you

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1 know, were none. That report has actually been
2 submitted to the Illinois Historic Preservation
3 Agency for review, and we fully expect site
4 clearance on that.

5 Endangered species, there are no
6 endangered species on the facility property.

7 There are no natural landmarks or
8 nature preserves near the facility or on the
9 facility.

10 Wetlands, we actually did a wetland
11 delineation, which is basically going out and
12 surveying and looking at the presence of wetlands on
13 the site.

14 We found that there are 2.3 acres
15 of wetlands on the facility property. Those are all
16 associated with the banks of Walley Run. Since the
17 landfill footprint is not encroaching on Walley Run,
18 we're not going to be impacting those wetlands at
19 all.

20 Additionally, we submitted that
21 report to the Army Corps of Engineers for their
22 review on that; and, again, we don't expect any
23 impact to wetlands on the site.

24 Water supply wells, as I mentioned,

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1 all the wells within five miles.

2 One of the other location standards
3 is you need to identify wells that are in close
4 proximity to the landfill footprint. There are six
5 water supply wells that we identified on the
6 facility property. Three of those wells are sealed
7 and three are active wells.

8 As the facility develops, as the
9 site is constructed, we will also seal those other
10 wells so when we develop the site, all of those
11 wells will actually be sealed.

12 Sole source aquifers, there are no
13 sole source aquifers on the facility or even near
14 the facility.

15 We comply with state and area-wide
16 water quality management plans. Those are plans for
17 stormwater that would be reviewed by the IEPA during
18 the permit application stage.

19 We actually verified that with
20 them. We fully expect that our surface water
21 management plan will meet the intent and meet the
22 code of any state and area-wide water quality
23 management plans.

24 There aren't any parks and

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1 recreation areas right around the site.

2 Airports, the criteria for airports
3 for development of a landfill is that the airport be
4 no closer than 10,000 feet to the facility, and the
5 Morris Airport is, in fact, outside of that
6 10,000-foot limit, and we justify that and show that
7 in the Application.

8 There are no fault areas under the
9 site. The site is not in a designated seismic
10 impact zones. Seismic impact zones are designated
11 by the US Geological Survey generally in areas that
12 may have earthquakes or potential for earthquakes.
13 This site is not in that type of area, obviously.

14 Unstable areas would be areas like
15 karst terrains, things like that. There are no
16 unstable areas under or around the site.

17 And buffers and setbacks we
18 considered buffers from, for instance, Whitewillow
19 Road. You know, we have a 200-foot setback, and
20 then we put a screening berm -- an eight-foot-high
21 screening berm along Whitewillow Road.

22 Q. Mr. Nickodem, in the event this
23 Application were to be approved by the County Board
24 and there were a permit application filed to the

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1 agency, these would be standards that would have to
2 be submitted for purposes of review by the IEPA for
3 compliance; would that be correct?

4 A. Yes.

5 Q. And you simply did that here as part of
6 an overall comprehensive design effort for this
7 facility?

8 A. Yes, we did.

9 Q. Now, will Willow Run be constructed in
10 phases?

11 A. Yes, it will.

12 Q. Okay. What does it mean to say that the
13 facility will be constructed in phases?

14 A. Well, the big thing is that, you know,
15 we have 134 acres of landfill footprint. We're not
16 going to construct that all at once. It will
17 actually be constructed in eight phases, as you see
18 here, and I mentioned that a little bit before about
19 we actually construct and operate in discreet
20 smaller areas in a logic progression, so we're not
21 going to construct this whole thing at once.

22 Phase 1 through Phase 8 is how
23 we're going to construct the site.

24 One of the things that you can see

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1 is Phase 1 is much bigger than the other phases.
2 The reason for that, and we can see in the next
3 slide, actually -- go to the next slide -- we need
4 to construct a larger area when we initially start
5 operating a landfill, because we cannot build the
6 waste that high in the first phase because each
7 phase kind of builds on top of one another. Each
8 subsequent waste overlays from each phase, and we'll
9 see that in subsequent slides.

10 But this would be Phase 1 as we
11 develop, and all of these things that I'll describe
12 will be constructed prior to any waste being
13 accepted on the site. We'll construct the entrance
14 area. Here is Whitewillow Road. The entrance area,
15 all the scales, the scale house. This will be a
16 paved road up to this point.

17 We're going to construct a gravel
18 road back to our maintenance area. On the east side
19 of the site we'll have a maintenance building for
20 equipment maintenance.

21 We'll also construct the first line
22 portion, which is Phase 1. Phase 1 is approximately
23 34 acres. Around Phase 1 we'll construct permanent
24 and temporary berms to, you know, contain the waste

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1 and provide for future development. We'll also
2 construct surface water management features all
3 before any waste is being accepted.

4 As we go to Phase 2, this actually
5 shows Phase 1 being filled, and as you can see, we
6 can fill up to this point, but we can't get up very
7 high, and that's why we build a larger phase in
8 Phase 1.

9 Phase 2, we construct this portion
10 of liner and fill in Phase 1.

11 Now, one of the things, I want to
12 kind of introduce a concept, because I'm going to
13 talk about it later, in the phasing I want to
14 introduce it, is the idea of open, intermediate, and
15 closed conditions on a landfill.

16 Those are three general operating
17 conditions throughout the life of the landfill.

18 Open conditions would be where we
19 would have some waste in an area like Phase 2 with
20 daily cover on it. Daily cover is typically six
21 inches of soil or an alternative cover such as a
22 tarp or something like -- something similar to a
23 tarp. That would consist of an open condition.
24 Intermediate conditions would be

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1 represented by these slopes. The reason they're
2 intermediate is because they haven't reached final
3 grade yet. So they're interior to the landfill in
4 an intermediate condition.

5 On intermediate slopes we place one
6 foot of soil cover.

7 Then there are also final
8 conditions. Final conditions are areas that have
9 reached final grade. Now, I'm not going to say
10 during Phase 1 that this will be final cover because
11 the final cover phasing is slightly different than
12 the actual development of the landfill, partly
13 because we want the waste to settle, to allow time
14 to settle before we place final cover on it because
15 we don't want the cover to have any erosion or
16 settlement that would breach that final cover.

17 So, again, open has some waste with
18 six inches of daily cover; intermediate has one foot
19 of intermediate cover; and then final conditions has
20 a final cover over it.

21 So if we look at the subsequent
22 phases, first Phase 3 -- and you can see down here
23 Phase 3 is year three of waste acceptance. You can
24 see how now we're able to build higher on Phase 1.

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1 So that's why I say, each phase kind of overlays
2 over the previous phase.

3 We build Phase 3, we build
4 Phase 4 -- we see where Phase 3 overlays over
5 Phase 1, and then we construct Phase 4.

6 Phase 5, same thing, we build up a
7 little higher as we go. We're able to reach those
8 higher elevations because the extent of the landfill
9 is getting larger and we're able to get up higher at
10 that point.

11 Phase 6 over here, and you can see
12 we're getting up higher.

13 Phase 7, and then Phase 8 is the
14 final constructed phase, and then we would get to
15 the final development where the remainder of the
16 area would be filled, and then eventually we would
17 be to the final cover, which is shown here.

18 So that's the normal progression of
19 phasing as we've designed it for Willow Run.

20 Q. Mr. Nickodem, has Willow Run been
21 designed to prevent any release of leachate that
22 would contaminate the aquifer?
23 A. Yes, it has.
24 Q. Can you explain that for us, please?

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1 A. Yes. And I just want to briefly explain
2 what leachate is. I know we went through that in
3 the last hearing, but some folks may not have been
4 here.
5 Leachate is a liquid that as
6 stormwater, snow melt, things like that, percolates
7 into the waste or runs through the waste, it picks
8 up constituents of that waste and gets in that
9 liquid, and then it will eventually flow to the
10 bottom of the landfill on top of the liner, and that
11 liquid we need to control because it has
12 constituents of the waste in it.
13 So that's where we've designed
14 these three features to not only contain the
15 leachate, manage the leachate, but also prevent the
16 formation of leachate.
17 So these three are the three
18 components; double composite liner, the leachate
19 management system, and our final cover.
20 Let's look first at the double
21 composite liner system. As I noted before,
22 underneath this liner, the bottom of the liner,
23 which is right here, no part of that, the bottom of
24 the liner, is within the bedrock aquifer, no part at

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1 all.
2 In addition, there is a minimum of
3 five feet of low-permeability in situ soil from the
4 bottom the liner to the top of the bedrock aquifer.
5 In many places it's much greater than that.
6 So a liner system consists of three
7 feet of compacted soil that will be on-site soils
8 that we'll use, that we've tested the soils on-site
9 to ensure that they meet the specifications that
10 we've designed for.
11 Above that soil is a textured
12 60-mil HDPE geomembrane liner. The reason it is
13 textured is to give it more strength to allow it to
14 have more strength and more stability. So we use
15 textured liners.
16 Above the textured lower 60-mil
17 liner we use the reenforced geosynthetic clay liner.
18 That's essentially a bentonite mat,
19 and some of you may be familiar with bentonite from
20 well drillings and things like that. Bentonite can
21 be similar to clay, very low-permeability material,
22 and it's embedded in a textile mat. So we put that
23 over the top of the lower 60-mil textured liner.
24 Above that we place an upper 60-mil textured HDPE

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1 liner.
2 All of these layers are very, very
3 low-permeability layers and work together to provide
4 a very protective system and prevent any leachate
5 from migrating down through. I mean -- and they are
6 tested throughout construction.
7 One of the things I want to talk
8 about is what we did to evaluate the stability of
9 these -- of our double composite liner.
10 I mentioned testing the soils. We
11 tested all the soils here. We also tested the soils
12 underneath the liner, and we did a bearing capacity
13 analysis to ensure that the soils underneath the
14 liner could bear the weight of the liner and any of
15 the waste that was placed above it. So we did that.
16 We also did stability analysis,
17 many different stability runs for excavation, for
18 filling of waste in intermediate conditions, and for
19 the final conditions.
20 To do that, we had to do testing of
21 each of these layers and the interfaces between each
22 of those layers to ensure that the strength between
23 those layers was adequate to provide long-term
24 stability for the site, and above this, of course we

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1 put a geotextile cushion, and that's really to
2 protect the liner when we placed the leachate
3 collection system over the top.
4 So this prevents leachate from --
5 it contains the leachate within the landfill and the
6 waste in the landfill.
7 So we take a look at the next
8 slide. That's actually a photograph of
9 construction. I believe we had this photograph in
10 our -- in the last hearing, but it's a great slide
11 because it kind of shows all stages of landfill
12 construction.
13 This is the top of the three-foot
14 compacted liner or the top of that low-permeability
15 soil liner.
16 Over the top of that they're
17 placing a geomembrane. The geomembrane comes in
18 rolls. It's laid out in panels, and then each one
19 of these panels are seamed together, and there is a
20 third-party construction quality assurance firm that
21 goes out and ensures that all the seams -- all the
22 seams are tested along the entire length, ensures
23 that all of those seams are constructed properly.
24 If there are any deviations from

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1 the specifications, a seam is redone, fixed,
2 patched. That's all done. All of the panels are
3 surveyed to make sure they're to the lines and
4 grades that were laid out in specifications.
5 And the additional thing that I
6 mentioned previously is what we're going to do after
7 the liner is constructed is an electrical detection
8 of the leaks, and how that is done -- because all of
9 this stuff I mentioned from a CQA standpoint so far,
10 that's done during construction.
11 We tested the seams during
12 construction. We make sure the panels are laid out
13 properly during construction, but after it's all
14 done, we're then going to do an additional testing
15 where we go back and actually put electrode -- an
16 electrical electrode under the liner, which would be
17 into this three feet of soil, and then we'll go on
18 top of the liner with -- there's two methods.
19 For the lower 60-mil we'll go on
20 top of the liner with what we'll call a squeegee --
21 it's like a squeegee wand that sweeps over the liner
22 and has electrical connection to it, so that if
23 there is any potential leak, it will connect from
24 that upper surface through the liner to the clay,

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1 and how it can do that is this liner actually acts
2 as an insulator.
3 So you can make an electrical
4 connection if there is any leaks, and then those
5 leaks can, in turn, be fixed after everything is
6 constructed. So it's just another method to check
7 and ensure that there are no leaks after
8 construction.
9 For the upper 60-mil textured
10 liner, we test it after we placed this entire
11 leachate drainage layer that I'll talk about. So
12 over here they place a leachate drainage layer.
13 Again, we'll go back and put an
14 electrode in the GCL. We'll go back and wet this
15 leachate drainage layer, be able to get an
16 electrical connection between the two, and check for
17 any leaks, and, again, if there is any leaks,
18 they'll be fixed, repaired, and we'll check it
19 again.
20 So there's two ways to check the
21 liner during construction, and that's what we're
22 going to do.
23 So if we take a look now at the
24 next system, that's the liner. That's the

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1 containment system for the leachate.
2 Now we're going to look at how we
3 collect that leachate and manage it. We do that
4 through the leachate collection system; and as you
5 can see here, this is a detail of that.
6 Our same liner right here. Over
7 the top of that liner we place a one foot of
8 granular drainage layer. That's that same layer you
9 saw in that construction photograph being placed.
10 That's a highly permeable layer to allow leachate to
11 flow through it. The leachate will then flow to an
12 eight-inch perforated pipe.
13 In the 2007 application, we
14 actually had a six-inch pipe. We decided to upsize
15 it to provide a little more flow capability in this
16 particular design.
17 Over the top of the entire granular
18 drainage layer we placed a geotextile filter because
19 right above this is where we're going to place all
20 of our waste.
21 So we want to make sure that that
22 waste doesn't clog this system and we want to make
23 sure that leachate continues to drain. So that's
24 why we put that filter on it there.

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1 Now, we've done a lot of evaluation
2 of how much leachate would be generated. We
3 looked -- and that's why I wanted to introduce that
4 open, intermediate, and closed conditions before,
5 because those are the three conditions that we
6 evaluated and that are typical to evaluate in a
7 landfill design for leachate generation.
8 So we evaluated how much leachate
9 would be present in the open condition, how much
10 leachate would be present in the intermediate
11 condition, and the final conditions.
12 From that, we took those numbers
13 and then we designed our system, and here is the
14 actual system as it is designed. There are leachate
15 collection pipes. Those are those eight-inch
16 leachate collection pipes that we designed.
17 You can see these arrows toward
18 these pipes. That is the way that leachate will
19 flow to each one of these pipes. You can see these
20 grades. This is actually showing the top of liner
21 grades, kind of in a herringbone pattern.
22 We design it that way so that
23 leachate will flow to these lines. So leachate
24 flows to these lines and then it flows from west to

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1 east, down to one of four leachate collection sumps
2 that we've designed for this site.
3 And those sumps are a little bit
4 lower in the liner area than the rest of this
5 herringbone pattern liner so that we can collect the
6 leachate and pump it out.
7 From those sumps leachate can be
8 pumped out then for treatment, and that's the whole
9 purpose of the leachate collection system, is we
10 don't want any accumulation of leachate on the
11 liner. By our design -- if you can stay back at
12 that other slide.
13 By our design, there won't be any
14 accumulation of leachate on the liner. We're not
15 proposing to store any leachate on the liner.
16 The purpose of this system is to
17 get the leachate off the liner because that's --
18 that leachate is really what has the constituents or
19 potentially any contaminants that if it got out into
20 the environment, that is what could potentially
21 contaminate groundwater. So we want to control
22 that, and we do it through this system.
23 HEARING OFFICER KINNALLY: Is that a picture
24 of closed conditions right there?

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1 THE WITNESS: No.
2 HEARING OFFICER KINNALLY: I mean, you've got
3 those arrows there. Is that the way the arrows will
4 be when the thing is closed or is this intermediate
5 or what is this?
6 THE WITNESS: This actually is showing the
7 liner. This is not the final cover.
8 HEARING OFFICER KINNALLY: No, I understand
9 that, but the way the arrows are going is where the
10 leachate is going to go into those pipes; right?
11 THE WITNESS: Yes.
12 HEARING OFFICER KINNALLY: So is this the way
13 it's going to be at the end or at the beginning or
14 when?
15 THE WITNESS: All of them. It will flow this
16 way during open, intermediate, and closed
17 conditions.
18 HEARING OFFICER KINNALLY: Okay. Sorry to
19 interrupt you.
20 THE WITNESS: That's okay.
21 BY THE WITNESS:
22 A. (Continuing.) Yeah. This is designed
23 to function throughout the life of the facility and
24 through post-closure period just like this. So

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1 there's not going to be any change in operation.
2 The only reason that we evaluate
3 open, intermediate, and closed conditions is to look
4 at the quantity of leachate that's going to be
5 produced. You know, the design functions the same
6 during all of those conditions.
7 So as I was noting, the leachate
8 sumps, that is where leachate is collected and
9 pumped out, and it can be pumped out either into a
10 tanker truck and taken directly off-site to a
11 treatment plant or it can be pumped temporarily into
12 a leachate forcemain, into the leachate tank area,
13 and then we would pump it out of the leachate tanks
14 into a tank truck and take it off-site.
15 You know, the purpose of the
16 leachate tanks is not to store leachate on the site.
17 It's really just temporary storage, if necessary, so
18 that we can store it temporarily before we put it in
19 the tank trucks and take it off-site for treatment.
20 One of the things to note about the
21 leachate tanks, in the last application, I believe
22 we had one 20,000-gallon tank or maybe one
23 25,000-gallon tank, something like that.
24 In this design we have four

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1 20,000-gallon leachate tanks. So we've actually
2 upsized that to 80,000 gallons of storage, and those
3 calculations and how we came up with that storage
4 amount is in the application. That is five days of
5 leachate storage on the site.
6 BY MR. MORAN:
7 Q. Mr. Nickodem, you just pointed out that
8 with the way this system is intended to function,
9 there will be no accumulation of leachate over this
10 liner; is that correct?
11 A. That's correct.
12 Q. And your point, I believe, was that
13 without any accumulation of leachate in the liner,
14 there won't be any material there, any leachate
15 there that could possibly leak out in the event
16 there was a breach in the liner; is that correct?
17 A. Yes.
18 Q. Please proceed.
19 A. If we take a look at a detail of how
20 this is pumped out of the landfill itself -- and
21 this really shows how we come to know accumulation
22 of leachate or know storage of leachate on the
23 liner, because that's really the goal of the system
24 and how we have it designed for Willow Run.

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1 This brown area would be our liner.
 2 This right here would be one of those eight-inch
 3 leachate collection pipes, and this is a sump, and
 4 you can see from the top of the liner over here, the
 5 sump is a depressed area, a little bit lower area.
 6 The reason we do that is because we
 7 want to place a leachate pump in that area, and then
 8 waste is filled above that.
 9 So how this works is leachate flows
 10 from that pipe into the sump and fills that sump up,
 11 and then there is these pumps -- each sump -- each
 12 of those four sumps has a pump. They have automatic
 13 level controls that when the leachate gets up above
 14 the pump level, it will turn on and pump that
 15 leachate down, and we can pump it, I was mentioning,
 16 either directly into a tank truck or into a leachate
 17 forcemain and then to leachate tanks.
 18 So this pump and the controls on
 19 that pump will continuously maintain a pumping
 20 condition where the leachate will be pumped
 21 continuously out of the landfill cells in each one
 22 of those four sumps so that we don't have any
 23 leachate accumulation over this liner.
 24 Q. Mr. Nickodem, could you show us again

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1 where those sumps are?
 2 A. Sure. Four sumps right here. They are
 3 on the east side of the landfill, and that's
 4 important. That is one of the things that we took
 5 into consideration in designing this -- this
 6 leachate collection system and the way that the
 7 leachate flowed in the site.
 8 If you can see over here, on the
 9 west side of the landfill is Walley Run. We
 10 designed the leachate system specifically to flow
 11 away from Walley Run, so it flows from west to east
 12 to the four sumps over here which are on the east
 13 side of the site away from Walley Run. So that's
 14 how the leachate will be pumped out.
 15 Then if we take a look at that same
 16 construction photograph, we can see some of the
 17 features of the leachate system, again, the granular
 18 drainage layer over on the left side of this slide.
 19 In this area you can see kind of a
 20 lower depressed area. That's where the leachate
 21 collection pipe would go, where that eight-inch pipe
 22 would go.
 23 So leachate flows to that pipe,
 24 then that pipe flows down this area, which is the

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1 lower area of the site where there would be a sump
 2 and a pump to then pump that leachate out of the
 3 site and ensure that we do not accumulate any
 4 leachate on top of that liner.
 5 So the next component in leachate
 6 management is final cover. So I'll kind of
 7 summarize. You know, the liner was meant to contain
 8 the leachate and the waste that's placed in the
 9 site. The leachate collection system collects and
 10 extracts the leachate.
 11 What the final cover does -- and,
 12 actually, all the cover, but specifically the final
 13 cover, is minimizes the amount of leachate that will
 14 be formed during the operations and closure of this
 15 site.
 16 We place the cover over it really
 17 to direct stormwater away from the waste so that it
 18 doesn't form leachate, and I just want to say, just
 19 to make it clear, that any stormwater that contacts
 20 the waste will be treated as leachate at Willow Run,
 21 but we try to direct as much stormwater away from
 22 the waste and keep it as clean runoff and not
 23 contact waste and not create leachate.
 24 So if we look at a detail of the

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1 final cover that we're proposing, we have a one foot
 2 of soil grading layer.
 3 Above that we've got, again, a
 4 geosynthetic layer, which is a 40-mil textured LLDPE
 5 geomembrane. That's a very low-permeability
 6 geomembrane, really to prevent any stormwater from
 7 getting through the final cover, getting into the
 8 waste and creating leachate.
 9 You can notice LLDPE versus we had
 10 in our liner HDPE. HDPE in the liner is
 11 high-density polyethylene. LLDPE is linear
 12 low-density polyeth -- polyethylene. It's hard to
 13 say.
 14 The reason we use LLDPE in the
 15 final cover is because the final surface of the
 16 landfill has a tendency to settle as waste
 17 decomposes, and the LLDPE is a little more flexible
 18 and allows -- and is able to take that settlement a
 19 little better.
 20 Above that level we've -- above
 21 that LLDPE we place a geocomposite drainage level.
 22 That's a highly permeable layer, that if any liquid
 23 percolates through these top layers, the three-foot
 24 soil layers, it will hit that layer and be taken off

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1 from the surface of the LLDPE geomembrane, and,
2 actually, it's outletted at our drainage berms,
3 which I'll talk about later.
4 But in that way, we don't have any
5 accumulation of water over the top of this LLDPE
6 geomembrane. So, again, it minimizes the potential
7 for any water getting into the waste through that
8 cover.
9 Above all of these layers we have
10 three feet of soil cover with the top six inches
11 being vegetative cover, and then that will actually
12 be vegetated with some natural vegetation.
13 Here is a photograph of final cover
14 construction. This would be after that geocomposite
15 drainage layer was placed, and then above that we're
16 placing soil cover over the top of that.
17 Q. Mr. Nickodem, has Willow Run been
18 designed to manage surface water?
19 A. Yes, it has.
20 Q. Could you explain that design and that
21 system for us, please?
22 A. Yes. We take a look at our -- this is
23 the landfill, Willow Run Landfill, and the entire
24 surface water management system for Willow Run.

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1 And as I noted previously, we
2 looked extensively at the predevelopment flow
3 conditions around the site and we really used that
4 to look at what we needed to engineer structure-wise
5 for the post-development conditions for the site.
6 For instance, one important thing
7 to note, here is Whitewillow Road. There are some
8 culverts that come across Whitewillow Road toward
9 the facility.
10 We wanted to make sure that we did
11 not back up or flood any properties to the north of
12 the site, so we created, you know, run-on channels
13 that directed that flow both to Walley Run and to
14 our sedimentation basin to the east. So that is
15 offsite flow that we've directed around the site.
16 We developed a surface water
17 management system for the entrance area, as you can
18 see here.
19 That surface water management
20 system will collect any surface water flows from
21 this paved area. Actually, we're going to have a
22 paved road and then we're going to have curbing on
23 the sides to collect any surface water along here.
24 That surface water will be directed into this west

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1 sedimentation basin near the entrance facilities.
2 And the reason we did that was in
3 the event -- and we wanted to capture and manage the
4 surface water, obviously; but the other reason was,
5 in the event that any trucks come in hauling waste
6 and they have -- you know, are dripping -- that was
7 one of the concerns brought up in the previous
8 hearing -- or there are some potential leaks from
9 those trucks, we'll be able to catch this with the
10 paved area, the curbed area, and it will flow into
11 this pond, and then we can close that pond off.
12 We actually designed some valves or
13 sluice gates and outlets to each one of our three
14 ponds so that they can be closed off, and that if
15 there are any spills -- we don't expect any, but if
16 there are any spills, we could remediate those by
17 containing them in these ponds.
18 For the landfill itself, we have a
19 fairly extensive surface water management system
20 consisting of diversion berms, which are these are
21 that divert water away from flowing straight down
22 the slope.
23 If it flowed straight down the
24 slope, it would create erosion. We don't want to do

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1 that obviously, so we created diversion berms which
2 direct the flow then to a series of four downslope
3 channels -- actually, I think five. There is a
4 small one over here -- five downslope channels
5 around the site. The surface water then, in turn,
6 gets directed around a perimeter channel to our east
7 sedimentation basin. All of the runoff from the
8 landfill will go through this east sedimentation
9 basin.
10 We also developed a surface water
11 management system for the maintenance area that
12 collects flow from this area, directs it through
13 this basin. Again, each one of these three basins
14 have a valve or sluice gate that we can close if
15 there is any problem.
16 Now, in terms -- the other thing
17 that I should mention here is some other features
18 that we've designed for the site, and, really, in
19 response to becoming a more sustainable design, we
20 looked at several different features, and I'll talk
21 first about rain gardens.
22 Rain gardens are depressional areas
23 that we created at each outlet where stormwater
24 would outlet the facility either into Walley Run or

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1 outlet the facility property itself down here.
2 We've actually got a rain garden
3 here, rain garden here, here, and then one down here
4 that takes the outflow to these ponds.
5 What rain gardens do is, again,
6 they are a depressed area. Rather than having a
7 channel flow directly into Walley Run, we spread
8 that out into this depressed area.
9 There is wetland vegetation that
10 will establish in that rain garden to provide
11 additional filtering, and, also, somewhat reduce the
12 flow into Walley Run. So it actually provides
13 cleaner outflow into not only Walley Run, but the
14 other surrounding water courses around the site.
15 So we've done that to provide more
16 of a sustainable design, and, actually, Conservation
17 Design Forum is going to be talking in one of the
18 future -- as one of the future witnesses. Actually,
19 we have two witnesses from Conservation Design
20 Forum, and they will talk in more detail about the
21 sustainable features that have been designed for the
22 site, and we worked in conjunction with Conservation
23 Design Forum in coming up with some of these
24 strategies for the site.

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1 If we take a look at the next
2 slide, that actually kind of talks a little bit more
3 about some of these sustainable strategies.
4 This actually is right out of the
5 Conservation Design Forum report. It's that east
6 sedimentation basin with several features that we
7 worked on to provide a more cleaner discharge from
8 the pond.
9 So how this works is runoff comes
10 from the landfill. It goes first into this sediment
11 forebay, and the reason we did that was to slow down
12 the flow so it changes the direction of the flow.
13 Rather than flowing directly into the basin, it
14 changes the direction and kind of snakes around to
15 the north, and that's allowing time for sediment to
16 drop out of that -- of that runoff.
17 We also have an access road, and
18 the reason we have that in here is so that we can
19 clean out this sediment forebay, clean out any
20 sediment, keep it flowing properly throughout the
21 life of the site.
22 Then the water flows to the back,
23 to the east side, of the sedimentation basin, and we
24 have a gravel berm where water will disburse through

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1 that berm. We'll have wetlands vegetation around
2 the -- in that berm and around the basin to provide
3 additional filtering.
4 The surface water will then flow to
5 the east through another filter berm where it's
6 further clarified, further filtered, and eventually
7 it will flow down to the south end of the basin
8 where it will then outlet, and, again, it will
9 outlet into the rain gardens.
10 So these sustainable features will
11 be discussed in much more detail by Conservation
12 Design Forum, you know, but it provides a little
13 more control and filtering of the stormwater than
14 just the normal sedimentation basin.
15 Now, if we go back to the
16 evaluation of stormwater, really the volume of
17 stormwater -- and we looked at this before. Our
18 study area within Aux Sable Creek, if we look at the
19 blow-up of that, again, what we did was we used the
20 computer model to determine how much flow was in
21 each of these areas.
22 What's significant is we took that
23 predevelopment flow and compared it to the
24 post-development flow or the flow -- stormwater flow

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1 after the landfill was developed. The stormwater
2 flow rates after the landfill developed is actually
3 less than what the current flow is out there.
4 So by developing our stormwater
5 management system on the site, by developing the
6 sedimentation basins which hold and can detain some
7 of the water on the site, we've actually provided
8 some flood storage for some of the areas to the
9 north that flow to this site.
10 Another significant feature is that
11 there will be no flooding either upstream or
12 downstream because of the development of this
13 facility; and that's why we did this analysis, to
14 ensure that we understood how much flow is currently
15 going through these areas, and we reduced the flow
16 after we developed the landfill.
17 And, actually, one of the
18 significant areas, I mentioned, you know, I was out
19 there in spring and I know this has happened at
20 other times, that there was some flooding at Brisbin
21 and Sherrill Roads. The flow from the landfill --
22 part of the flow will come out through this area and
23 flow down to Brisbin and Sherrill Road.
24 There are numbers that you can see

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1 in the Application where we've reduced those -- that
2 outflow to that intersection and hopefully that
3 provides some, you know, relief from those flooding
4 conditions.
5 The drain tile, that's another part
6 of not necessarily surface water, but it can be
7 surface water.
8 If farm fields back up, you know,
9 you can have ponding, flooding, and that's why we
10 put -- you know, that's why drain tile is put in the
11 farm fields so that they can drain, because the
12 soils in this area are low-permeability soils. They
13 don't drain well. They tend to pond, so we need
14 to -- you know, there needs to be drain tile in
15 there.
16 So, again, I mentioned that we
17 located all of this tile; and one of the reasons we
18 did that is we wanted to make sure that we didn't
19 back up any water into surrounding fields after we
20 developed the landfill.
21 Here is the footprint of the
22 landfill again. There are two drain tiles that we
23 identified that come from fields north of
24 Whitewillow Road and flow -- currently flow through

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1 the property, through the Willow Run facility.
2 As part of facility development,
3 we're going to be removing, you know, these drain
4 tiles when we're developing the liner and all of the
5 other features of the site. So we wanted to make
6 sure we didn't back up anything into these fields.
7 So what we're going to do is
8 reroute this drain tile, you know, when the site is
9 developed. We'll reroute this drain tile around the
10 site, and then it will actually outlet at the same
11 location that the existing drain tiles currently
12 outlet, down on the southeast corner of the
13 landfill.
14 So, again, we'll do that just in
15 response to not wanting to back up any stormwater,
16 any water from taking the drain tiles out.
17 Q. Now, Mr. Nickodem, will this design
18 prevent any flooding of upstream or downstream
19 properties?
20 A. Yes, it will.
21 Q. And for property owners to the north, is
22 there any risk of flooding as a result of the
23 construction or operation of Willow Run?
24 A. No.

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1 Q. Could you explain that again for us,
2 please?
3 A. Sure. Again, we designed several
4 features -- and you're asking about upstream
5 properties?
6 Q. Yes.
7 A. Actually, if we go back to the overall
8 surface water management plan, back two slides --
9 one more -- in terms of the upstream properties,
10 again, that was all part of that study area where we
11 evaluated how much flow was coming from the upstream
12 properties.
13 You know, we evaluated any culverts
14 crossing Whitewillow Road, and we designed this
15 run-on channel north of the proposed landfill to
16 take that runoff from those culverts coming across
17 Whitewillow Road and directed it part to Walley Run
18 and part to the east to our sediment -- east
19 sedimentation basin to ensure that we didn't affect
20 or flood any properties to the north of the
21 facility.
22 Q. Mr. Nickodem, now I want to turn to the
23 gas management system.
24 Has Willow Run been designed to

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1 manage gas and control odor?
2 A. Yes, it has.
3 Q. Could you explain that system for us,
4 please?
5 A. Yes. The landfill gas -- just briefly,
6 landfill gas is formed as waste decomposes over
7 time.
8 You know, one of the components of
9 landfill gas is methane, which is an explosive gas.
10 So we want to make sure that we collect and control
11 the landfill gas that is generated on the site.
12 To do that, the first thing we did
13 was we evaluated how much gas would actually be
14 generated from Willow Run.
15 We have a computer model that takes
16 several inputs, the type of waste, the moisture
17 content of the waste, the volume of waste.
18 From that, we determined how much
19 gas would be generated during each operating year of
20 the landfill and, also, during the 30 years of
21 post-closure after the site is closed.
22 We took the maximum amount of gas
23 that will be generated and we designed our system
24 based on that maximum amount of gas that will be

<p style="text-align: right;">Page 129</p> <p>1 generated during the life of the site and the 2 post-closure period of the site. So after we had 3 the amount of gas, then we started designing the 4 system. 5 To do that, there were several 6 components. We have, first, vertical extraction 7 wells. There are 100 wells which are represented by 8 these dots on the slide. 9 We designed 100 wells, and 10 basically what they are is wells that are drilled 11 through the waste. They have perforated pipes in 12 them so that the -- when we put a vacuum on those 13 wells and then draw the gas out of the landfill so 14 that we can collect and control it, each one of 15 those wells has been designed for a specific depth 16 and, also, a specific radius of influence. 17 And what that is, radius of 18 influence, it's a modeled area where the landfill 19 can draw gas from; and we want to do that so that we 20 have adequate coverage of wells across that site. 21 And all of these calculations are in the 22 Application. 23 We also sized all the pipes 24 connecting those wells, all of these lateral pipes.</p>	<p style="text-align: right;">Page 131</p> <p>1 say, a manufacturing plant or, you know, an asphalt 2 plant, if there was one, or something nearby that 3 they could reuse that gas in their manufacturing 4 facility or they could reuse it in a boiler or 5 something in their process, if there is something 6 nearby. 7 You can also make, you know, fuel 8 from -- to fuel vehicles from landfill gas, and 9 that's been done in several facilities across the 10 country. 11 So when there is sufficient 12 quantities of gas to allow the gas recovery facility 13 to be developed and sited and operated, then we'll 14 decide, you know, what type of facility it will be. 15 HEARING OFFICER KINNALLY: When is that? 16 THE WITNESS: It will be several years. It 17 could be in the Phase 4 or 5. Probably Phase 5 of 18 the facility is what we're currently determining. 19 You want to have a sufficient 20 quantity of gas to be able to drive engines or a 21 sufficient quantity to be able to, you know, build a 22 pipeline to another facility so they can use it in 23 their -- in their application. 24 You know, typically we try -- I</p>
<p style="text-align: right;">Page 130</p> <p>1 We sized all the header around the 2 site so the gas flows from those wells to the 3 perimeter and then to a header, which is -- then 4 flows to a blower and enclosed flare. 5 What the blower does, the blower is 6 a motor. That provides a vacuum on the whole system 7 to draw the gas out from the wells into the flare, 8 and the flare actually combusts the gas. 9 And that's what we want to do, is 10 combust the gas to ensure that none of that gas 11 migrates off-site. 12 You can also see here a gas 13 recovery facility designated. A gas recovery 14 facility is a beneficial reuse of landfill gas, and 15 we're proposing that for Willow Run. 16 Now, that can come in many forms. 17 We haven't decided yet what type of gas recovery 18 facility there will be yet, but a few of the forms 19 that it could come into is a gas to energy plant. 20 That type of recovery facility 21 would take the gas, use it to drive engines, and 22 then electricity would be produced from that. 23 You can also have direct use of the 24 gas. What that is, is we would pipe the gas to,</p>	<p style="text-align: right;">Page 132</p> <p>1 think we'll probably get to around 800 to 1,000 CFM 2 of gas, you know, before a gas recovery facility is 3 developed. 4 BY THE WITNESS: 5 A. (Continuing.) So those are the 6 components of the gas management system. 7 If we take a look at some 8 construction photographs of the system, this is an 9 extraction well. This would be the pipe that's 10 drilled into the waste. Perforated pipe is 11 connected to a header in a lateral system where gas 12 is then drawn out of that, and we have a valve so 13 that we can adjust the vacuum on each well. 14 We can also test each one of these 15 wells; and, in fact, we do on a regular basis to 16 ensure they're functioning properly. 17 Next we take a look at some wells 18 in vaults. These are the same wellheads, same 19 wells. It's just we're putting them underground, 20 and it's really for aesthetics. 21 Depending on the end use of the 22 facility, we can put some or all of the wells 23 underground. 24 In these vaults -- you can see here</p>

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1 on this particular landfill there is a golf course,
2 and of course they don't want the wellheads
3 aboveground, so they put in a vault. It functions
4 the same way. It's just underground.
5 This is a photo of an enclosed
6 flare in a blower system. Now, the reason it is
7 called an enclosed flare is because the flame is
8 inside. It's enclosed. It's actually down here.
9 You know, some of you may have seen
10 other landfills where they have a flare that has a
11 big flame out the top. That's called a utility
12 flare. We're not going to have that at Willow Run.
13 We're going to have an enclosed flare so that you
14 will not see the flame. It will be inside --
15 inside.
16 The other thing about an enclosed
17 flare is that they're more efficient. They're more
18 efficient at combusting the gas, and there are fewer
19 emissions, air emissions, from an enclosed flare
20 than an open flare, so it's better for the
21 environment.
22 We also show a photo of a gas
23 recovery facility. This happens to be the gas to
24 energy facility at Settler's Hill Landfill, a Waste

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1 Management facility. This facility actually
2 generates electricity. The gas drive the engines
3 and generates electricity.
4 So this is just one example of how
5 a gas recovery facility might look at Willow Run.
6 BY MR. MORAN:
7 Q. Now, Mr. Nickodem, will Willow Run be
8 monitored to evaluate the performance of this
9 design?
10 A. Yes, it will.
11 Q. Could you describe that system for us,
12 please?
13 A. Yes. The monitoring of the site is very
14 important, a very important part. You know, I've
15 talked about all of these different engineered
16 systems, the liner, the leachate collection system,
17 the gas systems, the surface water system.
18 What the monitoring system does is
19 it monitors all of those engineered systems to
20 ensure that they're functioning properly, to ensure
21 that there are no leaks, that the gas system is
22 functioning properly, that all of these systems are
23 functioning properly.
24 So there are several types of

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1 monitoring that we do around the site. The first
2 one is groundwater monitoring. There are 33
3 groundwater monitoring wells located around the
4 site. You can see the locations here.
5 Now, you're not going to see 33
6 dots on this slide, and the reason for that is some
7 of these locations have multiple wells. Some of
8 them are shallow, some of them are deep.
9 So they have multiple well
10 locations so we don't see 33 dots, but there's
11 actually 33 wells on the site monitoring, you know,
12 different levels in the geology.
13 You also notice that there are more
14 wells on this side of the site than over here. The
15 reason for that is the groundwater flow is generally
16 in this direction, so --
17 Q. Mr. Nickodem, I have to interrupt you.
18 When you say this direction, you're
19 pointing from the upper left-hand portion of this
20 exhibit to the lower right-hand portion, which would
21 be in a southeasterly direction?
22 A. Yes. Yes. From the northwest portion
23 of the site to the southeast portion of the site is
24 the direction of groundwater flow.

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1 So the upgradient wells, we don't
2 have as many upgradient because the groundwater does
3 not flow that way.
4 So in the event that there were a
5 leak in the site, you know, it wouldn't flow to the
6 north. It would flow to the south.
7 So we have fewer upgradient wells
8 and more downgradient wells. That's the reason for
9 that.
10 We also have surface water
11 monitoring points. We've got three surface water
12 monitoring points, one at each one of the outlets of
13 the three sedimentation basins so that we can
14 monitor and check the surface water at those
15 discharge points.
16 We also monitor leachate. At each
17 one of the four leachate sump areas, we can collect
18 samples -- we will collect samples, and monitor the
19 leachate for several constituents.
20 We also monitor the landfill gas.
21 There are 25 landfill gas probes or landfill gas
22 monitoring wells outside the limits of waste around
23 the site to monitor the presence of gas to check to
24 make sure that there is no migration of landfill gas

<p style="text-align: right;">Page 137</p> <p>1 off of the site.</p> <p>2 We also monitor all of those</p> <p>3 interior wells. Those 100 wells that we designed in</p> <p>4 the site, we monitor those for methane content,</p> <p>5 oxygen content, temperature, pressure, carbon</p> <p>6 dioxide; and the reason we do that is to evaluate</p> <p>7 the functioning of the system.</p> <p>8 If, for instance, we get a</p> <p>9 particular well, say, that has a high oxygen</p> <p>10 content, that may mean that maybe one of the pipes</p> <p>11 in the system is broken and oxygen is coming in.</p> <p>12 Maybe the landfill cover is -- has some erosion or</p> <p>13 has a break in it and we need to fix that, so then</p> <p>14 we can address that by looking at that.</p> <p>15 If we get, say, a high methane</p> <p>16 content, that may indicate that we need to install</p> <p>17 some additional gas management in that particular</p> <p>18 area.</p> <p>19 So we monitor that to see that the</p> <p>20 operation of the management system -- the gas</p> <p>21 management system, is working properly.</p> <p>22 We also monitor ambient air around</p> <p>23 the site. We have four ambient air monitoring</p> <p>24 locations around the perimeter of the site that</p>	<p style="text-align: right;">Page 139</p> <p>1 this side of the road. That channel will actually</p> <p>2 collect surface water that will come from the</p> <p>3 northwest. It will not take any surface water from</p> <p>4 this entrance area, because you see that area is</p> <p>5 outletted over here without going through a pond,</p> <p>6 but that doesn't actually take any flow from the</p> <p>7 entrance road.</p> <p>8 So all of this has been developed</p> <p>9 to provide stormwater control. You can see the</p> <p>10 different features of our entrance area. You know,</p> <p>11 you can see the sustainable features, these rain</p> <p>12 gardens that we've developed.</p> <p>13 Also, in this area some native</p> <p>14 vegetation and a prairie will be established in that</p> <p>15 area, again, to provide better aesthetics, as well</p> <p>16 as to provide additional filtering capabilities for</p> <p>17 many of the runoff from that area; and, actually,</p> <p>18 that's another feature that Conservation Design</p> <p>19 Forum will discuss in more detail.</p> <p>20 If we now go to the east side, we</p> <p>21 take a look at the Phase 1 features, and this is</p> <p>22 similar to what we looked at before in the phasing,</p> <p>23 but now we're including all the leachate, gas, and</p> <p>24 surface water controls.</p>
<p style="text-align: right;">Page 138</p> <p>1 monitor for the presence of methane.</p> <p>2 Q. Now, Mr. Nickodem, each of these</p> <p>3 different design elements that you have talked to us</p> <p>4 about, explained to us, are they necessary for the</p> <p>5 effective functioning of this facility?</p> <p>6 A. Yes, they are.</p> <p>7 Q. Could you explain to us how these</p> <p>8 various design components can work together in</p> <p>9 accomplishing the goal of an effectively and safely</p> <p>10 functioning landfill?</p> <p>11 A. Yes. That's really the concept of</p> <p>12 integrated development, that all of these systems</p> <p>13 that I've just described are integrated to work</p> <p>14 together, you know, to contain and control the</p> <p>15 waste, contain and control the leachate, the gas,</p> <p>16 manage the surface water, and monitor the entire</p> <p>17 site.</p> <p>18 If we look at the first slide, this</p> <p>19 is the entrance facility. I'm going to talk about</p> <p>20 this first. I talked about it a little bit in the</p> <p>21 past about surface water control. But, again, all</p> <p>22 of this area will be paved, curb and gutter. We'll</p> <p>23 collect all of the surface water into this pond.</p> <p>24 Actually, you see a channel over on</p>	<p style="text-align: right;">Page 140</p> <p>1 And, again, I want to stress, all</p> <p>2 of these items in Phase 1 will all be constructed</p> <p>3 prior to the first load of waste being brought into</p> <p>4 Willow Run.</p> <p>5 So you can see here the 34-acre</p> <p>6 lined area. We've got three leachate collection</p> <p>7 sumps that have been constructed and three leachate</p> <p>8 lines.</p> <p>9 We also construct landfill gas</p> <p>10 collection lines on the high point of the liner</p> <p>11 system kind of right above the liner. The reason we</p> <p>12 do that is so that we can collect gas early on,</p> <p>13 pretty much right away after waste is being</p> <p>14 deposited in the site.</p> <p>15 We don't have to wait until we put</p> <p>16 in these vertical wells. You know, we can collect</p> <p>17 it very early on or, really, when waste is initially</p> <p>18 deposited in the site, if it's -- if it's generating</p> <p>19 gas.</p> <p>20 And how we do that, how we</p> <p>21 determine that is we can monitor these pipes to see</p> <p>22 that -- to check for the presence of gas; and</p> <p>23 whenever gas is being generated through</p> <p>24 decomposition, we can then begin collecting and</p>

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1 combusting it.

2 We've also developed, obviously,

3 the Phase 1. We have all our permanent surface

4 water, our pond. We've got the maintenance area

5 surface water, but we've also developed temporary

6 surface water controls, temporary pond, temporary

7 run-on and runoff channels around there. All of

8 this has been sized. All of this is in the

9 Application, the sizing of all of these temporary

10 features.

11 We also designed a run-on channel,

12 as I mentioned before, to prevent flooding from

13 properties to the north.

14 We have the screening berm which

15 will be constructed as part of Phase 1, and to the

16 north of that we construct this run-on channel.

17 So if we look at Phase 2, we see

18 how these systems start to build off of one another,

19 and they're all integrated together to work

20 together.

21 One of the other things I should

22 note is the monitoring. All the monitoring will

23 also be phased in; so we have constructed the

24 groundwater monitoring, the gas monitoring points.

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1 You know, those points will be

2 extended as the filling progresses around the site,

3 but you can see in Phase 1 we've got some areas up

4 to final grade with some surface water control.

5 We've got some temporary slopes

6 that we have some temporary surface water berms to

7 prevent erosion.

8 We then place our leachate lines in

9 Phase 2. This is the last leachate sump of those

10 four sumps that will be constructed.

11 We also have gas control, including

12 that gas pipe that is on the base of the landfill.

13 You can see we put an enclosed

14 flare in because we now have waste in the facility

15 and gas will be generated. So we'll place an

16 enclosed flare in there to allow the gas to be

17 combusted.

18 We have some permanent gas wells.

19 We also have interim horizontal collectors. This

20 is -- there's three features to our gas collection

21 system. This pipe on the base of the landfill which

22 can collect gas, really, immediately when waste is

23 deposited, as long as gas is being generated, we

24 have these interim horizontal collectors which could

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1 be constructed in areas that maybe aren't amenable

2 to constructing vertical wells. And the reason it

3 wouldn't be amenable is because more waste is going

4 to be placed in this area and those wells would be

5 damaged.

6 So what we do is we place

7 perforated pipes in trenches for these interim

8 horizontal collectors that can then collect gas at

9 different levels of the landfill prior to us putting

10 permanent wells in.

11 If we go to Phase 3, you can see it

12 just starts to build. The waste filling gets

13 higher. We put more surface water controls in.

14 Leachate lines are extended in Phase 3 and connect

15 to the existing leachate lines.

16 In Phase 1, gas lines, same thing,

17 it's connected to the existing gas line in Phase 1.

18 We've got temporary surface water

19 controls, additional gas management has been

20 developed in this area.

21 Phase 4, very similar thing. More

22 controls, leachate line extended, more gas

23 management, more interim horizontal collectors in

24 this area.

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1 One of the other things I should

2 note, as the site develops, more and more of the

3 surface water will be directed to the permanent

4 sedimentation basin versus this temporary basin.

5 They're not designed any differently. They're both

6 designed the same. They're both designed to handle

7 the flows that are expected. It is just as we

8 develop the site, more and more of it is developed

9 to the east basin versus this basin here.

10 Phase 5, very similar thing. We

11 fill higher up. We're building on the other phases.

12 We have more gas control, more leachate, more

13 monitoring is extended around the site, groundwater,

14 gas monitoring.

15 You can also see in Phase 5 that

16 we're proposing in this phase that we believe the

17 gas recovery facility will be constructed at this

18 time around year seven of waste acceptance. We

19 believe that at that point we'll have sufficient gas

20 to construct that facility.

21 Prior to that, all the gas will be

22 flared.

23 So we really have two methods of

24 control once we get the gas recovery facility in

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1 place. It can either be direct to that facility and
2 reused, or it can go to the flare and be flared.
3 Phase 6, the phases then move to
4 the west, a similar thing.
5 Phase 7, if we move on, you can see
6 now in Phase 7 actually this temporary pond has been
7 reduced in size. One, that's because we're going to
8 be constructing in this area and we need to reduce
9 the size; but, also, we just don't need that large
10 of a pond at that point because most of the surface
11 water is being directed to the east pond at this
12 point.
13 Phase 8 is the last constructed
14 area. You can see the last leachate line has been
15 extended. We've got more interim surface water
16 control.
17 At this point, all of the
18 groundwater and gas monitoring and all of the
19 leachate monitoring, surface water monitoring will
20 all be in place around the site.
21 It will be the last cell; and then
22 as we fill that last cell, we get up to the final
23 development, which is shown here. We then put our
24 final gas system, final surface water management

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1 features on the site, and then we get up to the
2 final development, which is the final grade, the
3 closure plan of the site with all these features
4 working together.
5 So you can see in looking at this
6 how the site is constructed, operated, how all of
7 these systems, leachate, gas, surface water, the
8 liner, all work together during the operations of
9 the site to control leachate, gas, surface water,
10 and to monitor all of those constituents.
11 Q. Now, Mr. Nickodem, based on your
12 experience, training, and the work that you
13 performed in putting this design together, do you
14 have an opinion as to whether Willow Run has been
15 designed so as to protect the public health, safety,
16 and welfare?
17 A. Yes, it has been designed to protect the
18 public health, safety, and welfare.
19 Q. And what are the reasons or bases for
20 that opinion?
21 A. Well, it's really everything I've
22 discussed. You know, one, we provide a liner for
23 waste containment. That's the first thing. To
24 contain the leachate and the waste that's placed on

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1 the site, we have our double composite liner we've
2 designed.
3 We've provided leachate removal
4 through our leachate collection system so that
5 leachate doesn't accumulate on top of the liner,
6 that we remove that leachate and treat it as quickly
7 as possible.
8 We provided surface water
9 management systems so that we control the surface
10 water in and around the facility to prevent any
11 flooding either upstream or downstream of the
12 facility.
13 We've got a gas management system
14 to collect and control and combust any landfill gas
15 that's generated through decomposition of the waste.
16 And then importantly, a monitoring
17 system to monitor all of these other engineered
18 components, to monitor all the groundwater,
19 leachate, gas and air, and surface water around the
20 site.
21 Q. Mr. Nickodem, I would like to move on
22 now to Criterion 4.
23 HEARING OFFICER KINNALLY: We're going to
24 take a break now. Take 10 minutes.

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1 (Recess taken.)
2 HEARING OFFICER KINNALLY: I think we left
3 off, we were done with Criterion 2 and we were
4 moving to 4; is that right, Mr. Moran.
5 MR. MORAN: That's correct.
6 HEARING OFFICER KINNALLY: Okay. Let's get
7 started, then.
8 MR. MORAN: Thank you.
9 BY MR. MORAN:
10 Q. Mr. Nickodem, did you consider whether
11 Willow Run is located within the 100-year
12 floodplain?
13 A. It is not located within the 100-year
14 floodplain.
15 Q. And what did you consider to make that
16 determination?
17 A. We assembled all the flood insurance
18 rate maps for the area. We got them directly off
19 the FEMA websites. We got the most current
20 information from them.
21 We not only assembled the maps
22 directly for the facility, but for areas much
23 greater around the facility, and that map is
24 actually in the Application.

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1 We also looked at any potential
2 changes to that -- those maps listed on the FEMA
3 website, which are letter of map changes, letter of
4 map amendments.
5 We evaluated all those to make sure
6 that there weren't any changes potentially to any
7 floodplains around that could affect the facility;
8 and, in fact, that map and all that information
9 showed us that there are no floodplains on the
10 facility or near the facility.
11 Q. Mr. Nickodem, have you also considered
12 whether Willow Run will accept any hazardous waste?
13 A. It will not accept hazardous waste.
14 Q. Then with respect to Criterion 9, have
15 you considered whether Willow Run is located within
16 a regulated recharge area?
17 A. It is not located within a regulated
18 recharge area.
19 Q. First of all, what is a regulated
20 recharge area?
21 A. It's an area where certain types of
22 development, certain industrial or commercial
23 developments are restricted, really, to protect the
24 groundwater resources that are underneath those

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1 developments.
2 Q. And has the State of Illinois designated
3 any regulated recharge areas?
4 A. Yes. There has been only one regulated
5 recharge area designated in Illinois and that is for
6 the Pleasant Valley Water District near Peoria,
7 which is not near the Willow Run site.
8 Q. Now, Mr. Nickodem, are you familiar with
9 the Kankakee Regional Landfill or at least the
10 proposed Kankakee Regional Landfill?
11 A. Yes.
12 Q. That is located in the City of Kankakee
13 or at least proposed to be located there?
14 A. Yes.
15 Q. And that was a proposal for a municipal
16 solid waste landfill?
17 A. Yes.
18 Q. With approximately a 40-million ton
19 capacity?
20 A. I don't recall the actual capacity, but
21 I'll take your word for it.
22 Q. And that siting applicant is Kankakee
23 Regional Landfill or the entity that Mr. Mueller is
24 representing in this proceeding; is that correct?

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1 A. Yes.
2 Q. Now, that facility, in fact, was
3 proposed and has been proposed to be built on and
4 within the bedrock aquifer; is that true?
5 A. Yes.
6 Q. In fact, that application has been
7 submitted twice, I believe; is that your
8 understanding?
9 A. Yes.
10 Q. And the liner proposed for that facility
11 is a single composite liner; is that true?
12 A. Yes.
13 Q. And then part of that single composite
14 liner has been proposed to be placed directly within
15 the aquifer; correct?
16 A. Yes.
17 Q. Now, are you also familiar with the
18 proposed expansion of the Kankakee Landfill?
19 A. Yes, I am. I worked on it.
20 Q. In fact, you were the design engineer
21 for that landfill; correct?
22 A. Yes.
23 Q. And that was a proposed siting that was
24 submitted to the County of Kankakee; is that

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1 correct?
2 A. Yes.
3 Q. And it proposed an expansion of a
4 municipal solid waste landfill; correct?
5 A. Yes, it did.
6 Q. With a 30-million ton capacity; correct?
7 A. Yes.
8 Q. And Kankakee County was the
9 decision-maker on that siting request; correct?
10 A. Yes.
11 Q. And Kankakee County approved that first
12 siting request; is that your recollection?
13 A. Yes.
14 Q. Now, Mr. Helsten represented Kankakee
15 County in that proceeding; correct?
16 A. Yeah. That's what I remember, yes.
17 Q. Now, as part of that siting approval,
18 Kankakee County imposed a condition; correct?
19 A. Yes.
20 Q. And the condition required that facility
21 to be constructed with a double composite liner;
22 isn't that correct?
23 A. Yes.
24 MR. MORAN: Thank you, Mr. Nickodem.

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1 Mr. Hearing Officer, I have no
2 further questions of Mr. Nickodem.
3 HEARING OFFICER KINNALLY: Okay. Thank you
4 Mr. Moran.
5 Mr. Mueller, you're on deck.
6 CROSS-EXAMINATION
7 BY MR. MUELLER:
8 Q. Good evening, Mr. Nickodem. I guess I'm
9 on now.
10 With regard to the Kankakee
11 Regional Landfill in the City of Kankakee, that
12 application was approved twice by the City of
13 Kankakee, wasn't it?
14 A. Yes.
15 Q. And Waste Management appeared both times
16 and opposed that application, didn't they?
17 A. I wasn't involved in that. I don't know
18 the details of that, but I wasn't involved in the
19 opposition.
20 Q. And you're aware that that design not
21 only has the -- a portion of the liner within the
22 aquifer, but, in fact, has it fairly deep in the
23 aquifer, thereby creating and proposing a strong
24 inward gradient?

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1 A. My understanding is some large
2 quantities of bedrock were actually excavated to
3 create that liner, yes.
4 Q. Well, proposed to be excavated?
5 A. Proposed to be excavated.
6 Q. That landfill is still tied up in the
7 courts to your knowledge, isn't it?
8 A. Yes.
9 Q. And is not operating?
10 A. Correct.
11 Q. This is not a deep bedrock inward
12 gradient design, is it?
13 A. No.
14 Q. In fact, no portion of this is going to
15 be inward gradient; right?
16 A. Correct.
17 Q. Now, I don't want to steal Mr. Helsten's
18 thunder; but the Kankakee County approval of Waste
19 Management's application was reversed by the
20 Pollution Control Board, wasn't it?
21 A. Yes.
22 Q. And then a second application filed with
23 Kankakee County was denied outright, wasn't it?
24 A. Yes.

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1 Q. And that's also tied up in the courts?
2 A. Yes.
3 Q. Mr. Nickodem, you are now the -- the
4 chief designer of the proposal we're viewing
5 tonight; correct?
6 A. Yes.
7 Q. So you're not just basically here in
8 support of someone else's design, this is your
9 program; right?
10 A. Yes. I designed the site.
11 Q. Okay. Did you design the leachate
12 collection system?
13 A. It was done under my direction, yes.
14 Q. Well, who specifically did that?
15 A. Several people. I actually designed the
16 layout of the system in terms of the grading,
17 specifically to grade the site from west to east.
18 Q. I'm sorry to interrupt you.
19 A. Some of the calculations were done by
20 another person under my direction.
21 Q. Well, that's what I'm getting at. Who
22 did the calculations for sizing the elements of the
23 leachate collection system?
24 A. Various people. Actually, various

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1 engineers that I work with.
2 Q. Can you name them?
3 A. Yeah. One is Travis Rutta.
4 Q. Were those calculations done at Earth
5 Tech's office or at Shaw's office in Green Bay?
6 A. That particular one was done at Earth
7 Tech's office.
8 Q. And you don't work for Earth Tech, do
9 you?
10 A. No.
11 Q. Who did the slope stability analysis?
12 A. Now the name escapes me, Mr. Mueller.
13 HEARING OFFICER KINNALLY: If you don't
14 remember, that's okay.
15 BY THE WITNESS:
16 A. I don't remember the name, yes. I don't
17 remember the name. It will probably come to me in a
18 minute here.
19 BY MR. MUELLER:
20 Q. Well, was it someone at Earth Tech or
21 was someone in your office?
22 A. That was actually an Earth Tech person,
23 but I want to clarify that.
24 Q. There's no question pending. You've

<p style="text-align: right;">Page 157</p> <p>1 answered it.</p> <p>2 HEARING OFFICER KINNALLY: Well, he can</p> <p>3 finish his answer.</p> <p>4 BY THE WITNESS:</p> <p>5 A. All the personnel that we worked with at</p> <p>6 Earth Tech that actually when I worked with Earth</p> <p>7 Tech were in my department on this project worked</p> <p>8 under my direction, just like any other</p> <p>9 subcontractor that we would use on any project. So</p> <p>10 it was all done under my direction.</p> <p>11 And, in fact, I spent</p> <p>12 significant -- a significant amount of time at the</p> <p>13 Earth Tech office directing this design and ensuring</p> <p>14 that the calculations were done properly.</p> <p>15 BY MR. MUELLER:</p> <p>16 Q. My point is, though, that the Earth Tech</p> <p>17 people, they do not work for you on a regular basis?</p> <p>18 They're not your employees, are they?</p> <p>19 A. No.</p> <p>20 Q. You don't manage them day to day?</p> <p>21 A. No.</p> <p>22 Q. You manage them on this project as you</p> <p>23 would manage any other independent subcontractor;</p> <p>24 right?</p>	<p style="text-align: right;">Page 159</p> <p>1 Q. So the height of waste up to the top of</p> <p>2 the berm is between 10 and 13 feet?</p> <p>3 A. On the -- yeah. On the east side, yes.</p> <p>4 Q. What about the west side?</p> <p>5 A. It varies.</p> <p>6 Q. What's the maximum?</p> <p>7 A. The maximum is 13 --</p> <p>8 Q. Okay.</p> <p>9 A. -- on the east side.</p> <p>10 Q. And that berm which contains the waste</p> <p>11 is sort of equivalent to an earthen dam; correct?</p> <p>12 A. That's correct, yes.</p> <p>13 Q. Now, you testified early on -- and I</p> <p>14 don't have the exact words, but that some of these</p> <p>15 design elements that you have now were a response to</p> <p>16 concerns that -- that you had heard from members of</p> <p>17 the community?</p> <p>18 A. From the last hearing from --</p> <p>19 Q. Okay.</p> <p>20 A. -- from either the Board members or</p> <p>21 members of the community, yes.</p> <p>22 Q. Now, is it your practice as a designer</p> <p>23 to respond to concerns that you don't believe are</p> <p>24 legitimate?</p>
<p style="text-align: right;">Page 158</p> <p>1 A. Yes.</p> <p>2 Q. Now, you indicated that a part of this</p> <p>3 project design -- well, let me ask you this.</p> <p>4 Who designed the -- the 3-to-1</p> <p>5 sideslope for the berm at the side of this facility?</p> <p>6 A. Are you referring to the base grades?</p> <p>7 Q. Yes.</p> <p>8 A. I designed that.</p> <p>9 Q. So you selected the 3-to-1 sideslope on</p> <p>10 the interior side of the landfill and the 4-to-1</p> <p>11 sideslope on the exterior side; right?</p> <p>12 A. On the final cover you're talking</p> <p>13 about --</p> <p>14 Q. Yes.</p> <p>15 A. -- the 4-to-1? Yes.</p> <p>16 Q. Now, how tall is that berm going to be?</p> <p>17 A. It varies. I think the deep -- are you</p> <p>18 talking now specifically about the base grade berm?</p> <p>19 Q. Right. The point that the elevation at</p> <p>20 which the 4-to-1 or the 3-to-1 sideslope stops.</p> <p>21 A. Well, on the interior of the landfill,</p> <p>22 meaning the top of the liner, I think one of the</p> <p>23 deeper points is 13 feet. It ranges 10 feet,</p> <p>24 13 feet.</p>	<p style="text-align: right;">Page 160</p> <p>1 A. I'm not sure what -- what you're asking.</p> <p>2 Q. Is there any word in that sentence you</p> <p>3 didn't understand?</p> <p>4 HEARING OFFICER KINNALLY: Well, why don't</p> <p>5 you just rephrase it.</p> <p>6 BY THE WITNESS:</p> <p>7 A. Can you ask it again?</p> <p>8 HEARING OFFICER KINNALLY: He said he didn't</p> <p>9 understand it --</p> <p>10 THE WITNESS: Yeah.</p> <p>11 HEARING OFFICER KINNALLY: -- so try it</p> <p>12 again.</p> <p>13 BY MR. MUELLER:</p> <p>14 Q. Is it your practice in designing to</p> <p>15 respond to outside concerns that you don't believe</p> <p>16 are valid?</p> <p>17 A. Sometimes, yes. Yes.</p> <p>18 Q. Why would you respond to invalid</p> <p>19 concerns?</p> <p>20 A. Oh, they aren't -- I'm not sure what</p> <p>21 you're -- you're defining validity there.</p> <p>22 I mean, they're -- they may be just</p> <p>23 a concern someone has. Maybe it doesn't have any</p> <p>24 engineering basis that -- in our design, but, you</p>

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1 know, we want to make sure that we take everybody's
2 concerns into account. That doesn't necessarily
3 mean that we address every concern, but we certainly
4 want to take them all into account.

5 Q. Well, what do you mean by a concern that
6 doesn't have an engineering basis?

7 A. There may be -- I don't know anything
8 specific. I guess I could think of an example; but,
9 you know, someone may have a concern, for instance,
10 let's design the site to manage a -- a 24-inch
11 storm, which is way far and above any storm that's
12 ever occurred in this -- in this area that I have
13 knowledge of.

14 I mean, that would be a concern
15 that certainly we would look at; but we would say,
16 well, that's not a valid engineering thing that we
17 would want to do, way overdesign a site.

18 Q. So you're not going to reduce your waste
19 capacity in response to a concern that does not have
20 a valid engineering basis?

21 A. That would be correct, yes.

22 Q. So that would mean, then, that the
23 concerns which caused you to -- to raise the base
24 elevation so that it is -- it is at least five feet

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1 above the top of the aquifer were valid engineering
2 concerns?

3 A. That was a concern that was brought up
4 in the last hearing about the site being in the
5 bedrock aquifer. We wanted to be completely out of
6 the bedrock aquifer to address that concern. It
7 wasn't necessarily an engineering issue.

8 Q. Was it a valid concern in your opinion?

9 A. Well, I believe the County Board and
10 some residents felt it was a valid concern; so, yes,
11 I would say it was a valid concern.

12 Q. Valid to them, but was it valid to you
13 as an engineer?

14 A. No, really not necessarily. I've
15 mentioned in the past that when -- you know, I've
16 worked in a lot of different states, I think 40
17 different states, in all different types of geologic
18 environments, all over the country; and we do
19 consider the geology.

20 I know I've mentioned this before;
21 but we can engineer around, I would say, any geology
22 that -- I have engineered sites around many
23 different types of geologies. So no, it's not
24 necessarily a concern to me.

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1 Q. Now, this time you moved the landfill
2 entirely to the east of Walley Run; right?

3 A. Yes.

4 Q. And does that mean that the concern
5 about relocating Walley Run was a valid engineering
6 concern from your perspective?

7 A. No. From -- not from an engineering
8 standpoint, no.

9 Q. So the changes that you made here by way
10 of moving the base of the landfill higher and moving
11 the footprint completely outside of Walley Run were,
12 in your opinion, not necessary from an engineering
13 standpoint?

14 A. That's correct.

15 Q. And I appreciate your being forthright
16 about that.

17 Now, as I recall, you testified
18 last year that if -- if you were going to design the
19 site from the get-go, to use your own terms, you
20 would start with a single capacity liner, didn't
21 you?

22 A. Yes.

23 Q. And, in fact, you did design this site
24 from the get-go, didn't you?

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1 A. Yes, I did.

2 Q. But you didn't start with a single
3 composite liner?

4 A. No.

5 Q. In your opinion, a single composite
6 liner would be just as protective as this one;
7 right?

8 A. I've stated that before, yes.

9 Q. And you've also stated many times in the
10 last hearings that the geology at this site is not
11 essential to your design?

12 A. Correct.

13 Q. In fact, you said you don't rely on any
14 of the geology for any measure of protection; is
15 that correct.

16 A. Not for protection, that's correct.

17 Q. So in your mind, the fact that the site
18 is now going to be a minimum of five feet above the
19 aquifer doesn't really provide any additional
20 protection over what the previous design provided;
21 isn't that correct?

22 A. Yes. From a liner standpoint, that's
23 correct, yes.

24 Q. And, frankly, you felt that the last

<p style="text-align: right;">Page 165</p> <p>1 design was completely protective as designed; right?</p> <p>2 A. I did, and I still do, yes.</p> <p>3 Q. Regardless of its being in the bedrock?</p> <p>4 A. Correct.</p> <p>5 Q. And you never felt in the previous</p> <p>6 design that there was any risk to the bedrock</p> <p>7 aquifer?</p> <p>8 A. Correct.</p> <p>9 Q. And so if there was no risk to the</p> <p>10 bedrock aquifer, then this redesign doesn't reduce</p> <p>11 any risk because there never was one; isn't that</p> <p>12 right?</p> <p>13 A. Well, that's a fair question, I guess.</p> <p>14 We responded to the concerns, and we decided to</p> <p>15 raise the grades outside of the bedrock aquifer.</p> <p>16 It really doesn't have any</p> <p>17 engineering basis in -- in terms of what I do, but,</p> <p>18 you know, we just responded to what the concerns</p> <p>19 were.</p> <p>20 Q. And would it be fair to say,</p> <p>21 Mr. Nickodem, that Waste Management told you to</p> <p>22 respond because if you had been given a free hand</p> <p>23 from an engineering perspective, you would have just</p> <p>24 stuck with a single composite liner and maximized</p>	<p style="text-align: right;">Page 167</p> <p>1 the, you know, previous proceedings, the previous</p> <p>2 application, the hearings, and we all worked</p> <p>3 together to identify those concerns.</p> <p>4 And I wasn't working in a vacuum</p> <p>5 where, you know, Waste Management just told me, You</p> <p>6 have to design this way. We worked together as a</p> <p>7 team to come up with this design.</p> <p>8 Q. But you felt the 2007 design was</p> <p>9 completely safe?</p> <p>10 A. Yes.</p> <p>11 Q. And this one's completely safe?</p> <p>12 A. Yes, it is.</p> <p>13 Q. So there's no difference or improvement</p> <p>14 in safety? Complete is complete; right?</p> <p>15 A. That's correct, yes.</p> <p>16 Q. And I believe when you were asked in</p> <p>17 2007 whether all things being equal you would prefer</p> <p>18 a site with a thick layer of clay between the bottom</p> <p>19 of the liner and the top of the aquifer, you said it</p> <p>20 really didn't matter to you.</p> <p>21 Do you remember that?</p> <p>22 A. I don't remember that specifically, but</p> <p>23 I guess I've stated that we can design around just</p> <p>24 about any geology.</p>
<p style="text-align: right;">Page 166</p> <p>1 airspace; right?</p> <p>2 MR. BLAZER: Mr. Kinnally, I'll object to the</p> <p>3 relevance of this.</p> <p>4 HEARING OFFICER KINNALLY: No, I think it's</p> <p>5 relevant.</p> <p>6 You can go ahead and answer the</p> <p>7 question.</p> <p>8 MR. MORAN: Mr. Kinnally, I'm going to object</p> <p>9 to the form of that question indicating maximizing</p> <p>10 airspace. There's no basis --</p> <p>11 HEARING OFFICER KINNALLY: All right. Well,</p> <p>12 I'll sustain it.</p> <p>13 He can rephrase the question,</p> <p>14 Mr. Mueller, please.</p> <p>15 BY MR. MUELLER:</p> <p>16 Q. So let me rephrase it a different way.</p> <p>17 Is it fair to say, Mr. Nickodem,</p> <p>18 that the redesigned elements which I've identified</p> <p>19 here, moving east to Walley Run, raising the</p> <p>20 elevation of the base grade, those were at the</p> <p>21 direction of your principal and not because you</p> <p>22 thought they would enhance protection?</p> <p>23 A. Actually, we worked together as a team</p> <p>24 from the beginning on this; and we all looked at</p>	<p style="text-align: right;">Page 168</p> <p>1 Q. So is it still your opinion that you</p> <p>2 don't prefer a thicker amount of clay between the</p> <p>3 bottom of the aquifer -- or the bottom of the liner</p> <p>4 and the top of the aquifer, all things being equal?</p> <p>5 MR. MORAN: Objection; relevance. What</p> <p>6 difference does it make what Mr. Nickodem prefers or</p> <p>7 doesn't prefer.</p> <p>8 MR. MUELLER: From an engineering</p> <p>9 perspective.</p> <p>10 HEARING OFFICER KINNALLY: I don't know -- he</p> <p>11 said he doesn't remember; so if he doesn't remember</p> <p>12 the question before, how could he remember this</p> <p>13 question?</p> <p>14 MR. MUELLER: Well, then, let me ask it a</p> <p>15 different way.</p> <p>16 HEARING OFFICER KINNALLY: All right. The</p> <p>17 objection is sustained, but not for relevance. He</p> <p>18 just didn't -- go ahead, Mr. Mueller.</p> <p>19 BY MR. MUELLER:</p> <p>20 Q. Mr. Nickodem, all things being equal,</p> <p>21 would a thick layer of clay between the bottom of</p> <p>22 the liner and the top of an aquifer be preferable as</p> <p>23 a natural condition?</p> <p>24 MR. MORAN: Object to the form of the</p>

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1 question. The identification or definition of that
2 term thick is -- is ambiguous.
3 HEARING OFFICER KINNALLY: Do you understand
4 the question?
5 THE WITNESS: Yes.
6 HEARING OFFICER KINNALLY: Go ahead and
7 answer it. The objection is overruled.
8 BY THE WITNESS:
9 A. It wouldn't matter to -- to me as an
10 engineer, Mr. Mueller. We designed the liner to be
11 protective independent of the geology, and it is.
12 BY MR. MUELLER:
13 Q. Now, last year you had proposed a -- in
14 your rebuttal testimony a third HDPE liner at the
15 bottom of the liner system?
16 MR. MORAN: Objection. That mischaracterizes
17 his testimony from last year. Mr. Nickodem didn't
18 propose --
19 HEARING OFFICER KINNALLY: I don't know if it
20 mischaracterizes it because I don't know if -- do
21 you remember your testimony on rebuttal last year?
22 THE WITNESS: Yes.
23 HEARING OFFICER KINNALLY: Do you understand
24 the question?

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1 THE WITNESS: Yes.
2 HEARING OFFICER KINNALLY: Okay. It's
3 overruled.
4 Can you answer the question?
5 THE WITNESS: I'm sorry?
6 HEARING OFFICER KINNALLY: Do you remember
7 the question?
8 THE WITNESS: Yes.
9 BY THE WITNESS:
10 A. I didn't propose a -- an additional
11 liner. That was going to be proposed Waste
12 Management felt as a condition; and on behalf of
13 Waste Management, I was saying that they would
14 accept that as a condition in that particular
15 application, but I didn't propose that as an
16 additional liner.
17 BY MR. MUELLER:
18 Q. Fair enough.
19 If I could have you turn,
20 Mr. Nickodem, to your slide on facility development
21 that had all the phases shown, the first one. That
22 one, yes. Thank you.
23 Now, if you could look at Table 6-1
24 of the Application.

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1 A. Okay.
2 HEARING OFFICER KINNALLY: Do you have it?
3 THE WITNESS: Yes.
4 HEARING OFFICER KINNALLY: Okay. Next
5 question.
6 BY MR. MUELLER:
7 Q. Now, as I read -- as I understand this
8 table, am I correct that you're going to be filling
9 in Phases 1 and 2 in 2015, and then you're going to
10 stop and not come back to those areas until 2018?
11 A. That's what it says on the table, yes.
12 Q. And that if you go, then, to Table
13 6-2 -- I don't think it's my microphone that's
14 causing the feedback.
15 HEARING OFFICER KINNALLY: I didn't hear any.
16 MR. MUELLER: Maybe I still have high-pitched
17 hearing even though I'm old.
18 HEARING OFFICER KINNALLY: We're all old,
19 George.
20 (Laughter.)
21 MR. MUELLER: And it's beautiful, isn't it?
22 HEARING OFFICER KINNALLY: So you have
23 Table 6-2?
24 THE WITNESS: Yes.

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1 BY MR. MUELLER:
2 Q. In Table 6-2, you indicate when areas
3 are going to go to final closure?
4 A. Yes.
5 Q. Now, that shows final closure of Area 1
6 in 2017, doesn't it?
7 A. Yes.
8 Q. But, in fact, you're not going to finish
9 filling Phase 1 until 2020; isn't that right?
10 A. Actually, Table 6-2 does not refer to
11 Phases 1, 2, 3, 4, and 5. It refers to a closure
12 sequence shown on Figure 6-11 with Areas 1, 2, 3, 4,
13 and 5 of final closure. It doesn't correspond to
14 the phases.
15 Q. Okay. So those numbers are not phase
16 numbers; they refer to something else?
17 A. Correct.
18 Q. When is Phase 1 going to receive final
19 cover?
20 A. Well, a portion of it, if you look at
21 Figure 6-11, which is right before Table 6-2, a
22 portion of it will receive final cover in 2017 and a
23 portion of it will receive final cover in the year
24 2023 as the waste height increases in that area.

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1 Q. What is the most acreage that will be
2 under open or intermediate cover at any time under
3 this phasing plan?
4 A. That would be when we get to the end of
5 the life of the site or close to the end of the life
6 of the site where you see in Table 6-2 in the year
7 2025 or at final closure, we'll be placing 66 acres
8 of final cover.
9 So prior to that, just prior to
10 that, those areas would have intermediate cover in
11 those areas. So that would be the largest area that
12 would be -- have intermediate cover at one time.
13 Q. Now, with regard to the HDPE liners that
14 you proposed to install in the base liner system, do
15 you agree that those have a useful life of maybe
16 160 years?
17 A. I don't -- I don't agree with that. I
18 mean, they could be longer. You know, that --
19 several hundred years for sure.
20 Q. All right. Well, are you aware of
21 that -- you know who Kerry Rowe is, don't you?
22 A. Yes.
23 Q. He's the author of the migrate model
24 that you folks used in this project?

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1 A. Yes.
2 Q. He's also a prolific author on
3 containment technology generally, isn't he?
4 A. I've seen some papers, yes.
5 Q. All right. Are you aware that Kerry
6 Rowe in an article from 2005 in long -- entitled
7 Long-Term Performance of Containment Barrier Systems
8 indicates that recent research showed that the
9 probable life of an HDPE liner would be about
10 160 years?
11 A. I'm not familiar with that particular
12 paper.
13 Q. What's your best guess as to the -- I
14 don't want to say guess.
15 What's your best information from
16 the studies and literature you're aware of as to the
17 probable service life of a 60-mil HDPE liner?
18 A. Several hundred years. At least 200.
19 You know, it's -- it's a very
20 stable material. It doesn't degrade, and that's why
21 it's used in a landfill because it doesn't degrade
22 over many, many years.
23 And, you know, the key there is
24 that the waste after that -- after, say, 50 years

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1 will be decomposed and will not have the same
2 constituents in there that can potentially
3 contaminate groundwater. So to have a useful life
4 of a couple hundred years is easily within the total
5 biodegradation of the waste time frame.
6 And all that -- you know, Kerry
7 Rowe, and all those papers are interesting theory,
8 but, you know, it -- we don't know, but it's
9 certainly well capable of lasting for several
10 hundred years.
11 Q. I'm not even going to try to get out my
12 exhibit because I won't quibble with you over
13 40 years, so -- but your position is, I think you
14 said, within 60 years the waste will all be
15 decomposed; correct?
16 A. Actually, I said 50.
17 Q. 50 years --
18 A. Yeah.
19 Q. -- it will all be decomposed?
20 A. Or roughly that time frame. That's a
21 general time frame that everyone accepts in landfill
22 design.
23 Q. Can you direct me to a paper in a
24 peer-reviewed journal or a chapter in a book that

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1 recites the research that says land -- or waste in a
2 modern Subtitle D landfill will all decompose in
3 50 years?
4 A. I can't cite one offhand, but I've read
5 papers that talk about the -- I mean, I've read
6 several that have decomposition time frames that are
7 well within that -- that 50-year time frame.
8 Q. All right. Now, heavy metals certainly
9 will not decompose, will they?
10 A. No.
11 Q. Mercury is not going to decompose;
12 right?
13 A. Some of it may be -- some of those
14 constituents over time may change their chemical
15 compositions and actually be changed or the -- the
16 constituents will be less over time as the -- the
17 waste decomposes and as the leachate, you know,
18 is -- is removed from the site.
19 Q. Now, modern landfills, Subtitle D
20 facilities, compact the waste substantially when
21 it's placed into the ground, don't they?
22 A. Yes.
23 Q. I mean, you're able now to achieve
24 compaction of 1,600 pounds per cubic yard and

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1 sometimes even higher; right?
2 A. Yes.
3 Q. And I believe this Application does a
4 lot of its calculations based on 1,600 pounds per
5 yard, doesn't it?
6 A. It does, yes.
7 Q. That's substantially more compacted than
8 the waste is when it's dropped off at a transfer
9 station, isn't it?
10 A. Yes.
11 Q. And as a result of that kind of
12 compaction, and as a result of the composite liner
13 technology in final covers, Subtitle D landfills
14 are -- are properly thought of sometimes as dry
15 tombs; correct?
16 A. That's a term that's used, correct.
17 Q. The goal is to keep the waste dry?
18 A. Yes, so we don't form leachate.
19 Q. And if you keep the waste dry, then it
20 doesn't really decompose because it's the
21 interaction of precipitation or other water with the
22 waste that causes the decomposition; isn't that
23 right?
24 A. No, no.

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1 Q. What causes the decomposition, then?
2 A. Well, for one thing, there is liquid,
3 there is water in the waste.
4 I mean, if we all think about --
5 there's -- there's moisture in the waste when it
6 comes into the landfill. We all think about what we
7 put in our garbage cans; it's not dry. It comes
8 into the landfill with some moisture in there.
9 Then throughout the operating life
10 of the site, even though we try as much as possible
11 to prevent surface water, rainwater from getting
12 into the waste, it still gets into there. That's
13 why we have the leachate collection system.
14 So there is moisture in the waste
15 throughout the operating life and throughout the
16 closure of the site. It's -- we try to prevent it
17 as much as possible, but the reality is there is
18 moisture in there and that does provide
19 decomposition for the waste.
20 Q. All right. But you can't cite me a
21 single article, not even one, that says all the
22 waste in a modern landfill will decompose within
23 50 years?
24 A. I can't think of one offhand right now,

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1 Mr. Mueller, no.
2 Q. And are you aware that there are
3 typically leaks in liners after installation?
4 A. Sometimes. Not always, but sometimes.
5 Q. Are you aware that in published studies
6 leaks are found after completion in half of the --
7 the liners that were surveyed?
8 A. I'm not familiar with that study; but I
9 guess if they're found, someone would fix them. So
10 I mean, that's the whole purpose of checking and
11 doing CQA, and that's what we're going to do on the
12 site.
13 Q. And so we have to rely on the CQA to
14 catch all of the leaks that would occur during
15 construction?
16 A. No.
17 HEARING OFFICER KINNALLY: Can we just say
18 what CQA is for people that don't know that?
19 THE WITNESS: CQA is construction quality
20 assurance.
21 HEARING OFFICER KINNALLY: Thank you.
22 Go ahead, Mr. Mueller.
23 BY MR. MUELLER:
24 Q. Now, Mr. Nickodem, is it your belief

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1 that the leachate collection system is the most
2 important element of the design?
3 A. I actually do, yes.
4 Q. And you said that several times in 2007;
5 right?
6 A. I don't remember, but I -- I say that a
7 lot in a lot of designs because it is very
8 important.
9 Q. In other words, without good leachate
10 collection, the liner system doesn't matter as much;
11 correct?
12 A. I don't know if I'd quite say it that
13 way, but it's a very important system.
14 Q. And it's the most important system?
15 A. Yes, I believe so.
16 Q. Okay. And, now, you indicated that you
17 had increased your leachate holding tanks up to
18 80,000 gallons; correct?
19 A. Yes.
20 Q. But that still doesn't even equal one
21 day's leachate generation during open conditions,
22 does it?
23 A. I'm not sure how you calculated that.
24 Q. Well, I don't have the appendix number

1 in front of me, but do you recall that your peak
 2 average daily leachate during open conditions was
 3 94,000 gallons?
 4 A. No, I don't recall that number.
 5 Q. Does that sound about right?
 6 A. No. I don't recall where that number
 7 would have come from.
 8 Q. What do you think the peak average daily
 9 leachate is?
 10 A. In open conditions?
 11 Q. Yes.
 12 A. About 6,000 gallons per acre per day,
 13 but you have -- you have to apply that to how large
 14 of an area would be open. And typically we keep a
 15 very low -- I mean, Waste Management and any
 16 operator keeps a very small active area with that
 17 daily cover on.
 18 So you're not going to have -- I
 19 don't believe you'll have more than that 80,000
 20 gallons a day in open conditions.
 21 Q. Did you perform the HELP modeling at
 22 this site?
 23 A. Under my direction, but Travis Rutta
 24 actually performed the HELP modeling, yes.

1 Q. Does he work for Shaw, or does he work
 2 for Earth Tech?
 3 A. He works for Earth Tech.
 4 Q. Did you review those numbers?
 5 A. Yes, I did.
 6 Q. Can you turn to -- because I don't know
 7 where they are, the HELP model results and see what
 8 the projected maximum daily -- or peak daily average
 9 leachate is under open and intermediate conditions?
 10 A. As I mentioned, and I was -- I was
 11 pretty close, the peak daily open condition leachate
 12 quantity is 6,150 gallons per acre per day and I
 13 said 6,000.
 14 Q. But doesn't it then tell us how many
 15 acres are going to be open and how many will be
 16 under intermediate at the same time so we can come
 17 up with a total for the entire site?
 18 A. No, not on -- no. No.
 19 Q. What's the maximum number of acres you
 20 would expect to be open at any given time?
 21 A. With daily cover? An active area?
 22 Q. Yes.
 23 A. A couple of acres, two acres. You know,
 24 it's generally a very small area. We try to keep

1 that very compact.
 2 Q. And everything else gets intermediate
 3 cover?
 4 A. Not everything. I mean, some may get
 5 intermediate, some may get final cover.
 6 Q. Actually, how long does it take to fill
 7 two acres?
 8 A. I'd have to calculate that. I don't
 9 know offhand on this site how long it would take to
 10 fill that.
 11 Q. Well, it wouldn't take 60 days to fill
 12 two acres, would it?
 13 A. Probably not, no.
 14 Q. And intermediate cover is only required
 15 when a facility is not going to put waste in an area
 16 for more than 60 continuous days; isn't that true?
 17 A. That's a requirement. That's not
 18 necessarily what happens in practice. You know,
 19 there are areas that are intermediate covered much
 20 sooner than that depending on operations.
 21 Q. What's the peak daily leachate in an
 22 intermediate covered area, by the way?
 23 A. 2,678 gallons per acre per day.
 24 Q. And you indicated that there would be as

1 much as -- was it 68 acres under intermediate cover
 2 at the maximum amount?
 3 A. Yes.
 4 Q. So if I multiplied that 68 times 2,678,
 5 I believe I come up with about 150,000 gallons per
 6 day. Does that sound about right?
 7 A. For that calculation, yes, that would be
 8 about right.
 9 Q. So 80,000 gallons' storage represents
 10 about one-half of the maximum daily leachate
 11 generation that could be expected; right?
 12 A. Yes, but that's not how we size the
 13 systems on any site.
 14 Q. You sized the system for five days of
 15 leachate in closed conditions, didn't you?
 16 A. Yes.
 17 Q. And that complies with the regulation?
 18 A. Yes.
 19 Q. You chose not to size it for five days
 20 in an open or intermediate condition; isn't that
 21 correct?
 22 A. It's not necessary to do that.
 23 Q. Now, tanker trucks that haul leachate
 24 off-site hold, what, about five or 6,000 gallons?

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1 A. 6,000, yeah.

2 Q. So that means at 150,000 gallons per

3 day, we're probably talking about 25 truckloads;

4 right?

5 A. Yes.

6 Q. Do you know if those 25 tanker trucks

7 per day, which is 50 trips, were included in the

8 traffic study?

9 A. I don't know why they would because

10 that's a hypothetical situation that I don't believe

11 is going to happen.

12 Q. It's a situation that you modeled,

13 though, isn't it?

14 A. No. No. Again, we don't -- these

15 are -- are various results for areas for leachate

16 quantities. I mean, we're not saying -- and it's

17 not going to happen. I don't believe at any one

18 time that we're going to have 160,000 gallons of

19 daily leachate in an intermediate cover area, so I

20 don't really believe that that's going to happen.

21 And that's why we sized the tanks

22 the way we did. I mean, I fully believe that those

23 are adequate, along with supplemental daily trips of

24 tanker trucks in the event that something -- some

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1 large rain event occurs. And that would be on a --

2 on a very worst-case scenario that would not happen

3 on a regular basis, if at all.

4 Q. Now, the leachate holding tanks require

5 a secondary containment system, don't they?

6 A. Yes.

7 Q. And in this case, you have proposed

8 low-permeability soils as the secondary containment

9 system?

10 A. Yes.

11 Q. Which means recompacted clay; right?

12 A. Yes.

13 Q. Am I correct in assuming that the spec

14 for that is one times 10 to the minus seventh

15 centimeters per second?

16 A. I don't know if we had a spec in here,

17 but that's what I would recommend.

18 Q. That's my next question. You did not

19 have a spec for that in the Application, did you?

20 A. No.

21 Q. Now, that compacted clay is going to be

22 exposed to the ground surface, and the leachate

23 tanks sit directly on top of it; right?

24 A. Yes.

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1 Q. That means it's going to be exposed to

2 freeze/thaw cycles?

3 A. I'm sorry, what was the question?

4 Q. That means that that compacted clay will

5 be exposed to freeze/thaw cycles; correct?

6 A. It will be.

7 Q. And it will be exposed to sunshine?

8 A. Yes.

9 Q. It will be exposed to precipitation?

10 A. Yes.

11 Q. It has the possibility of desiccation on

12 hot sunny days?

13 A. It's possible.

14 Q. Why didn't you just put a concrete pad

15 in as your secondary containment?

16 A. I've seen them both ways. The -- the

17 clay-lined containment works just fine.

18 You know, if there's things like

19 desiccation, cracking, I mean, that will be --

20 they're inspected and fixed. I mean, we don't just

21 construct it and leave it. We'll go back and fix it

22 if necessary.

23 Q. Does your CQA plan contain any

24 specifications for maintenance of the compacted clay

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1 that acts as a secondary containment for the

2 leachate collection tanks?

3 A. No.

4 Q. Now, the forcemain that conveys

5 leachate, what is that?

6 A. What is the system?

7 Q. What is a forcemain?

8 A. What is a forcemain?

9 Q. Yes.

10 A. A forcemain is a series of pipes that

11 are connected to the -- the sump and convey leachate

12 through those pipes to the leachate tank area by

13 pumping.

14 Q. And in this particular case, you've

15 designed that forcemain with a secondary

16 containment. It's inside a carrier pipe; right?

17 A. Yes. Outside the limits of waste, yes,

18 it is within a carrier pipe.

19 Q. Can you look at your Drawing No. 39?

20 Those are the large drawings.

21 A. Okay.

22 Q. If I can direct you to Detail No. 4, do

23 you see that?

24 A. Yes.

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1 Q. That looks like the detail of the
2 connection from the leachate discharge pipe to the
3 forcemain?
4 A. Detail 4 is just showing the forcemain
5 itself in a trench.
6 Q. Where is the one that shows the
7 connection to the leachate piping -- to the leachate
8 discharge pipe?
9 A. Detail 3.
10 Q. Okay. And in Detail 3, isn't the area
11 where the leachate discharge pipe connects to the
12 forcemain not double contained?
13 A. No, that's incorrect. It is double
14 contained.
15 Q. It's double contained even at the point
16 of the connection?
17 A. Yes. It's double contained -- the
18 double containment is provided by the vault -- the
19 riser vault at that point, not by the piping.
20 Q. So the pipe there is not double
21 contained with the carrier pipe, but you're saying
22 the vault provides the secondary containment?
23 A. Yes.
24 Q. Okay. So in the place where the

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1 forcemain there actually has the carrier pipe, it's
2 triple contained?
3 A. On the forcemain that goes through, yes,
4 I guess that would be triple contained, yeah.
5 Q. All right. Now, when you did your
6 stability analyses -- and I think you said those
7 were, again, done at Earth Tech; right?
8 A. They were, yes.
9 Q. I assume the purpose of that is both to
10 see if the sidewall will hold up and, also, to see
11 whether the force of the waste could push it out
12 somehow; right?
13 A. That's some of the analysis, yes.
14 Q. Mr. Nickodem, you've got to forgive me;
15 I'm not an engineer.
16 Slope stability analysis simply is
17 trying to see if the thing will be stable and stay
18 together, right --
19 A. Right.
20 Q. -- in a lay term?
21 A. That's true, yes.
22 Q. Okay. And when you -- when you do that,
23 you have to figure the forces that are going to be
24 exerted on those slopes; right?

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1 A. Yes.
2 Q. And the weight of the waste is one of
3 those forces?
4 A. Yes.
5 Q. Now, did you also consider the weight of
6 leachate --
7 A. Leachate?
8 Q. Yes.
9 A. You mean the liquid leachate?
10 Q. Right, that's in the system.
11 A. No, because we're not accumulating
12 leachate on the liner and on the system, so there's
13 no reason to consider that.
14 Q. So you assumed no weight of leachate as
15 part of the weight of the waste mass?
16 A. That's true, yes.
17 Q. And do you know whether you considered
18 what amount of liquid had been absorbed by the waste
19 in figuring the waste -- the weight of the waste
20 mass?
21 A. Yeah. We used a unit weight for the
22 waste that was representative of typical municipal
23 solid waste in landfills in this area, yeah, which
24 would include moisture within that waste.

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1 Q. But moisture within waste can build up
2 over time as part of a concept called field
3 capacity; right?
4 A. Yes.
5 Q. So waste has the ability to absorb a
6 certain amount of moisture that comes into it from
7 precipitation; right?
8 A. That's correct, yes.
9 Q. What percentage of field capacity did
10 you assume for purposes of the unit weight of the
11 waste?
12 A. I don't recall that exact -- I think we
13 had 59 pounds per cubic foot is the unit weight of
14 the waste; and, again, that's a typical unit weight
15 within a municipal landfill.
16 That could be at field capacity; I
17 don't recall. That -- that, actually, unit weight
18 could be at field capacity.
19 Q. Now, 30 years after closure,
20 theoretically the operator would apply to be
21 released from further post-closure care?
22 A. Yes.
23 Q. And the standard for whether or not
24 that's going to occur is whether or not the EPA

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1 determines if the landfill still poses a danger --
2 right? -- or a threat, I think --
3 A. That's right.
4 Q. -- to the environment?
5 A. Yes, a threat.
6 Q. Now, nobody has ever gotten to the point
7 of even applying for a post-closure release, have
8 they?
9 A. No.
10 Q. And the EPA has, for that reason, not
11 developed a definition of what a threat to the
12 environment is; isn't that true?
13 A. I -- I don't know what EPA has developed
14 in terms of that definition, but --
15 Q. Do you know how they define threat to
16 the environment, if at all?
17 A. Release of contaminants to groundwater,
18 you know, release of gas, things of that nature.
19 Q. Well, can you point me to any reg -- and
20 I presume you're familiar with the Illinois landfill
21 regs; right?
22 A. Yes. It would not say in the
23 regulations.
24 Q. There's no reg --

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1 A. No.
2 Q. -- that defines threat to the
3 environment?
4 A. No, it does not.
5 Q. Okay. And I believe that you testified
6 previously that as long as leachate is still being
7 generated, you don't get out of post-closure?
8 A. Yes, that's true.
9 Q. Well, that's only true if the EPA
10 defines generation of leachate as still constituting
11 a threat to the environment; right?
12 A. I guess that would be true, yes.
13 Q. Now, if you turn in your Application to
14 Page 8-5 --
15 A. Okay.
16 Q. -- and you go to the last paragraph on
17 the page, do you see where it says, The additional
18 70 years after the post-closure care period when
19 leachate removal is not performed?
20 A. Yes.
21 Q. So you anticipate not removing leachate
22 any more after 30 years?
23 A. Not necessarily, no.
24 Q. Well --

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1 A. That's just the way we modeled it,
2 Mr. Mueller, to -- in the event that after 30 years
3 Waste Management applied and was released from
4 post-closure and did not have the obligation to pump
5 leachate, we evaluated what the effect that would be
6 on the system right here. That doesn't --
7 Q. All right. And what the effect would
8 be, if we go on with the sentence, it says, The
9 average annual leachate head build-up on the double
10 composite liner system is 4.0 inches?
11 A. Yes.
12 Q. And that's a true statement?
13 A. That's what we've modeled, yes.
14 Q. Does any portion of the five-foot
15 minimum soil layer underneath the liner have to be
16 installed or is it already all in place?
17 A. I'm sorry. Can you ask that again?
18 Q. All right. That was not -- you're
19 right. That was not artfully asked.
20 In order to achieve a minimum of
21 five feet of soil underneath the liner system, do
22 you have to bring any soil in or is it all already
23 there?
24 A. You're asking about the in situ soil?

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1 Q. Right.
2 A. No. That's -- that minimum five-foot
3 layer is already there.
4 Q. Okay. That's what I was asking.
5 And you proposed to place the liner
6 system directly on that soil regardless of the
7 soil's condition at the place where it's
8 encountered?
9 A. No. No, not necessarily. If some areas
10 were unsuitable, I mean, we would -- if it's, you
11 know, unstable or -- certainly we would remove all
12 the topsoil because that's an organic soil that, you
13 know, can settle and decompose. We remove all that.
14 We want to make sure that it's --
15 has a stable subbase so in the event -- we don't
16 expect that. But in the event there were some
17 unstable soils, we would remove those prior to
18 constructing the liner.
19 Q. Well, actually, your Application doesn't
20 have even a spec for removing topsoil, does it?
21 A. I don't recall if it does or not, but
22 that's a standard construction practice when you're
23 building.
24 Q. And then I suppose that if you see a

<p style="text-align: right;">Page 197</p> <p>1 sand seam, excavating that out would also be a 2 standard practice; right? 3 A. It depends, I mean, on the -- the extent 4 of that and how that would affect the stability of 5 the -- of the liner. 6 Q. So you would evaluate it on a 7 case-by-case basis? 8 A. That's usually a field evaluation by the 9 engineer that's on-site, yes, during the 10 construction. 11 Q. And there's no specification in the 12 Application for how to do that evaluation, is there? 13 A. No, but that's typically -- I shouldn't 14 say typically. When you go to the construction 15 specification stage, which would happen, we would -- 16 we would develop construction specifications and 17 that -- that's part of any -- any liner construction 18 specification. 19 Q. Could you go to Page 7-4 of your 20 Application? 21 A. Okay. 22 Q. Do you see the first section there on 23 the Lemont foundation -- or Lemont Formation? 24 Excuse me.</p>	<p style="text-align: right;">Page 199</p> <p>1 A. Okay. I've got to go find that volume. 2 It's in my -- 3 Q. I think it's -- 4 A. -- box. 5 Q. -- in Volume 5, but I'm not positive. 6 HEARING OFFICER KINNALLY: Do you have it? 7 THE WITNESS: Yeah, I have all the volumes 8 back here. 9 HEARING OFFICER KINNALLY: All right. 10 THE WITNESS: You said K-1-5? 11 MR. MUELLER: Right. 12 THE WITNESS: Okay. 13 BY MR. MUELLER: 14 Q. Let me ask a couple preliminary 15 questions. What is shear strength? 16 A. It's really the strength of the soils, 17 that when they're tested, it's kind of the internal 18 strength of the material to resist any movement or 19 shear forces within the soil. 20 Q. And in a liner system, what is shear 21 strength? 22 A. Well, now, there's two things to that. 23 You've got the soil shear strength, which is really 24 that internal shear strength of those soils, the</p>
<p style="text-align: right;">Page 198</p> <p>1 A. Yes. 2 Q. Am I correct in reading that section 3 that the Lemont Formation, which encompasses a 4 portion of the soils underneath the proposed liner, 5 was not subject to geotechnical testing? 6 A. No, because we don't plan to use Lemont 7 Formation materials in construction of the liner. 8 Q. You do, however, plan to leave Lemont 9 Formation, the materials, in place underneath the 10 liner, don't you? 11 A. Yes. In the areas where it's existing, 12 yes. 13 Q. And it was not subject to geotechnical 14 testing, was it? 15 A. No, because the purpose of that is to 16 look at all of our engineering analyses, such as 17 stability. 18 Q. All right. And for that one might -- 19 some of the things that testing will do is to show 20 you how strong a soil is and how much weight it can 21 bear and so forth; right? 22 A. Yes, yes. 23 Q. Now, if I can direct you to 24 Appendix K-1-5.</p>	<p style="text-align: right;">Page 200</p> <p>1 ability of the soils to resist any movement. 2 There's also shear strength of the 3 geosynthetic materials, which is really the 4 interface shear strength between the -- either two 5 geosynthetics or geosynthetics and the soil. 6 So there's two different shear 7 strengths. 8 Q. And by interface you mean the point of 9 contact between two materials? 10 A. Correct. 11 Q. So the shear strength would be actually 12 the ability of those materials at their point of 13 contact to resist movement? 14 A. Correct. 15 Q. And it's measured in pounds per square 16 foot, isn't it? 17 A. Yes. 18 Q. Which is the amount of force required to 19 cause movement at that interface? 20 A. Yes. 21 Q. And if you look at Table 2 on the page 22 that I had you on, K-1-5 -- 23 A. Yes. 24 Q. -- that analyzes the shear strength of</p>

<p style="text-align: right;">Page 201</p> <p>1 the various interphases -- interfaces in the liner 2 system; correct? 3 A. Yes. 4 Q. And the lowest number there is the 5 interface between the lower textured geomembrane and 6 the low-permeability soil layer? 7 A. Yes. 8 Q. That's the 3,260 pounds? 9 A. Yes. 10 Q. So -- and that is then defined, if you 11 go to the text underneath it, as the critical 12 interface? 13 A. Yes. 14 Q. So your slope stability calculations are 15 based on 3,260 pounds as being -- pounds per square 16 foot as being the critical interface; right? 17 A. Yes. 18 Q. Now, Mr. Nickodem, did you in your 19 consideration of shear strengths and stability in 20 the liner system consider the internal shear 21 strength of the GCL or geocomposite liner? 22 A. Yes, but that's not necessarily going to 23 be the critical -- it isn't the critical interface 24 in stability.</p>	<p style="text-align: right;">Page 203</p> <p>1 A. Yes. That type of -- I'm not sure if 2 that's the reinforced one. 3 Q. Actually, it is. 4 A. Okay. 5 Q. Now, would it surprise you to learn, 6 Mr. Nickodem, that the internal shear strength of 7 Bentomat ST from Cetco is 500 pounds per square foot 8 or about one-sixth of the critical interface that 9 you have now? 10 A. I'd have to look at that. That may 11 not -- you may not be comparing apples to apples, 12 Mr. Mueller, in what we've determined here. 13 It's a different shear strength 14 that you're talking about when you're talking about 15 the internal shear strength; and actually, I can't 16 believe that 500 is the number, but I guess I could 17 take a look at it. 18 MR. MUELLER: I don't have enough copies of 19 this, Mr. Kinnally, and in fairness, I've -- I just 20 found this today. I've given him as much advance 21 notice as I can and would ask to reopen cross 22 tomorrow for the purpose of showing him the 23 document, the spec on the -- the particular product. 24 That gives him a chance to look at it, too, so he's</p>
<p style="text-align: right;">Page 202</p> <p>1 Q. Well, the -- you understand what I mean 2 by the internal -- 3 A. Yes. 4 Q. -- shear strength? 5 A. Yes. 6 Q. Which is the ability of that GCL to 7 resist coming apart? 8 A. Right. 9 Q. That is not shown in Table 2, is it? 10 A. Right, it's not. 11 Q. And if the internal shear strength of a 12 GCL was lower than 3,260 pounds per square foot, it 13 would be the critical interface, wouldn't it? 14 A. It would. 15 Q. Who manufactures GCL's? 16 A. Various manufacturers, GSE, Cetco. They 17 manufacture them. 18 And actually, the one that we've 19 proposed for this is a reinforced GCL, which is a 20 very strong material and really it -- it takes care 21 of those issues of internal shear strength because 22 it's reinforced. 23 Q. A reinforced GCL such as Bentomat ST 24 from Cetco?</p>	<p style="text-align: right;">Page 204</p> <p>1 not ambushed. 2 HEARING OFFICER KINNALLY: Do you want to 3 respond to that? 4 MR. MORAN: Yes. If we do not conclude 5 Mr. Nickodem's cross-examination this evening and we 6 could simply pick up tomorrow at some point with 7 Mr. Mueller, we wouldn't have a problem; but if we 8 finish Mr. Nickodem tonight and conclude him, then I 9 don't think there's any reason for it. 10 MR. MUELLER: We're not going to finish him 11 in total tonight. I might finish tonight, but we're 12 not going to finish the room. 13 HEARING OFFICER KINNALLY: I don't know 14 whether we are or we aren't. 15 MR. MUELLER: All right. 16 HEARING OFFICER KINNALLY: Let's see what 17 happens. 18 MR. MUELLER: All right. 19 BY MR. MUELLER: 20 Q. Mr. Nickodem, in the 2007 application, 21 you did not have a shortage of soils with which to 22 do construction; is that correct? 23 MR. MORAN: Objection; relevance. 24 MR. MUELLER: It's just preliminary.</p>

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1 HEARING OFFICER KINNALLY: Could you read
2 that question back? I don't think I understand
3 that.
4 THE WITNESS: What was the question?
5 HEARING OFFICER KINNALLY: The question
6 was --
7 (Question read.)
8 BY THE WITNESS:
9 A. I don't remember that particular --
10 MR. MORAN: Andy, hold on.
11 HEARING OFFICER KINNALLY: The objection is
12 what?
13 MR. MORAN: The objection is relevance. What
14 difference does it make whether there was or wasn't
15 a shortage of any soil for the earlier application.
16 MR. MUELLER: Well, it actually goes to the
17 downsizing which he graphically depicted and what
18 was in the areas that -- that was eliminated. And
19 it's just preliminary at this point, anyway.
20 HEARING OFFICER KINNALLY: He's already said
21 it didn't make any difference between -- I mean, is
22 this going to safety or something, or what's the
23 purpose of the question?
24 MR. MUELLER: It's to introduce the subject

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1 of the soil deficit that now exists and how we're
2 going to address it.
3 HEARING OFFICER KINNALLY: Well, I'll give
4 you leeway; but, you know, we're getting pretty far
5 afield here, Mr. Mueller.
6 MR. MUELLER: I'll get right back in the
7 field in one second. I appreciate it, Mr. Kinnally.
8 HEARING OFFICER KINNALLY: You can renew your
9 objection if he doesn't get back into the field,
10 apparently.
11 MR. MORAN: Appreciate it.
12 BY MR. MUELLER:
13 Q. Do you remember my question,
14 Mr. Nickodem?
15 A. I don't remember the exact numbers in
16 the 2007 application, Mr. Mueller, in terms of soils
17 available and -- I don't remember exactly.
18 Q. In any case, if you turn to Table 6-3 of
19 your Application, you now propose or calculate
20 something called a total soil deficit of
21 3,172,000 -- 172,000 cubic yards; right?
22 A. I'm turning to that, but, yeah, that
23 sounds -- yes. Yes.
24 Q. What is a soil deficit?

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1 A. That's saying that the -- that you need
2 additional soils other than within the facility
3 boundary to construct and operate the facility.
4 Q. Now, 3,172,000 cubic yards is a lot of
5 soil; right?
6 HEARING OFFICER KINNALLY: I think we would
7 all agree with that.
8 Go ahead.
9 BY THE WITNESS:
10 A. Yes, yes.
11 BY MR. MUELLER:
12 Q. That would be probably in the
13 neighborhood of 150,000 truckfuls?
14 A. I don't know how many truckfuls it is.
15 Q. How do you propose to get that soil and
16 where is it coming from?
17 A. There are borrow areas that are -- that
18 we've proposed to the south of the facility on
19 property that is owned by Waste Management that the
20 site will be -- or that the soil is available and
21 will be taken from those borrow areas along the
22 Church Road corridor to the site.
23 Q. Can you show us anywhere in the
24 Application where those borrow areas are?

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1 A. No. We don't have that in the
2 Application.
3 Q. Do you have any demonstration in the
4 Application that the borrow areas, which are not
5 depicted, contain three million cubic yards of
6 available soil?
7 A. Not in the Application, no, but they do.
8 I know they do.
9 Q. Have you made that calculation?
10 A. Yes.
11 Q. When did you make it?
12 A. I don't recall when we actually made the
13 calculation. We did some investigation of that area
14 over the summer and made the calculation after that,
15 after we did the investigation.
16 Q. So you -- you must know pretty much
17 where these areas are going to be if you made
18 calculations?
19 A. Yes.
20 Q. Looking at the -- can you put the slide
21 up that showed the old facility and the new?
22 THE WITNESS: Can I ask a question,
23 Mr. Kinnally?
24 HEARING OFFICER KINNALLY: Can you ask a

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1 question to me?
2 THE WITNESS: Can I take just a very short
3 break?
4 HEARING OFFICER KINNALLY: Sure.
5 THE WITNESS: Just very short. I will be
6 right back. Sorry.
7 HEARING OFFICER KINNALLY: No problem.
8 (Recess taken.)
9 HEARING OFFICER KINNALLY: How much more do
10 you have, Mr. Mueller?
11 MR. MUELLER: I'll finish by 10:30, if that's
12 your question.
13 HEARING OFFICER KINNALLY: We're going to go
14 home at 10:30.
15 MR. MUELLER: I'll finish by then.
16 HEARING OFFICER KINNALLY: All right. Let's
17 go.
18 BY MR. MUELLER:
19 Q. Mr. Nickodem, looking at the exhibit you
20 have now, can you tell us where the soil borrow
21 areas are going to be that you are proposing to use?
22 A. In this area to the south of the
23 facility.
24 Q. And that's property that was within the

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1 previous facility description?
2 A. Not all of it.
3 Q. Is there a plan in the Application for
4 how to make sure that that soil is available to you?
5 A. No.
6 Q. Can you tell us how you propose to do
7 that?
8 A. We would excavate the soil from these
9 areas, and there is Church Road, which has been
10 vacated. We would use trucks to bring it to the
11 site areas for construction and operations.
12 Q. Well, how would you make sure that
13 the -- the people who control the soil borrow areas
14 will let you use them?
15 A. It's on Waste Management property.
16 Q. All right. And how would you make sure
17 that Waste Management doesn't take the soil from
18 there somewhere else or sell it for some other
19 purpose?
20 A. I don't have any reason to believe that
21 they would do that in this case.
22 Q. So you're telling me that you believe
23 that Waste -- or that the landfill will have
24 exclusive access to that calculated three million

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1 yards of soil?
2 A. That's my understanding, yes.
3 Q. Now, a portion -- or the place where you
4 set your pointer was south of the proposed Prairie
5 Parkway; right?
6 A. Yes.
7 Q. If the Prairie Parkway goes in, how do
8 you continue to use the vacated portion of Church
9 Road in order to keep traffic from going on public
10 roads?
11 A. Well, for one thing, my understanding
12 with the Prairie Parkway, at least this portion of
13 it, is many years off in terms of actual
14 construction.
15 The other thing is that there would
16 be some notice, I mean, a number of years that you
17 would know that Prairie Parkway is going to come
18 through in, say, 2020 in this area, and you would
19 have some notice.
20 And what we would do is,
21 normally -- if Prairie Parkway wasn't constructed,
22 which is possible. Maybe it won't be constructed at
23 all during the life of this site in this area, maybe
24 it will take a few years to get there.

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1 We would just continue to use that
2 until we get all of the three million cubic yards
3 out of that area.
4 If, in fact, Prairie Parkway was
5 constructed before the -- we got all the soils that
6 we needed out of here, we would accelerate that
7 operation and we would actually stockpile on the
8 site within the facility boundary, on top of waste,
9 or possibly in some other areas like where we have
10 our sedimentation basin plan, but that would be a
11 temporary basis.
12 Q. But you're telling us that because Waste
13 Management owns the property that the borrow soils
14 are going to come from and because that property is
15 immediately adjacent to your property, you're going
16 to be able to have exclusive access to it and be
17 able to move it all on interior roads that you also
18 own so that none of that ever gets onto public
19 street traffic?
20 A. Yes.
21 Q. Now, the final cover -- we talked about
22 deterioration of the -- of the HDPE liners; correct?
23 A. Yes.
24 Q. The final cover would also be subject to

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1 some deterioration over time, wouldn't it?
2 A. Yeah, over many years is --
3 Q. We can argue about how fast --
4 A. Yes.
5 Q. -- or how slow it would be?
6 A. Yes.
7 Q. But it will happen; right?
8 A. Yes.
9 Q. And because of the final cover's
10 exposure to the elements and because you don't have
11 a recompacted clay liner in there, would you expect
12 that deterioration to probably be faster than the
13 deterioration of the double composite base liner
14 system?
15 A. Well, it's not really exposed to the
16 elements. It does have three foot of soil cover
17 over the top, so it's covered just like the base
18 liner.
19 No, I mean, I really couldn't say
20 that it's going to degrade any faster than the base
21 liner. It's -- it's a similar material, very
22 similar. It's still polyethylene, which is very
23 resistant to degradation.
24 Q. This one's only a 40-mil, though;

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1 correct?
2 A. That's correct.
3 Q. Do you remember my asking you in 2007 if
4 the final cover was going to deteriorate faster and
5 that your answer was, It's probably more
6 susceptible, yes?
7 A. I don't remember that specifically,
8 but ...
9 Q. Okay. Now, what -- what permeability
10 did you use in modeling infiltration in the final
11 cover for the one-foot grading layer?
12 A. I would have to check that. I don't
13 recall --
14 Q. Let me help out. Does one times 10 to
15 the minus fifth sound about right?
16 A. That sounds about right, yes, for that
17 layer.
18 Q. Now, you don't have any specification in
19 the Application for recompacting the final grading
20 layer, do you?
21 A. For that one-foot layer?
22 Q. Yes.
23 A. No.
24 Q. And, in fact, it's contemplated that it

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1 won't be compacted, it will just be spread; right?
2 A. Based on the Equality Formation soils
3 that would most likely be used for that layer, it
4 doesn't need to be compacted to meet one times 10 to
5 the minus five.
6 Q. And the Application does not specify
7 that the grading layer comes from the Equality
8 Formation, does it?
9 A. No, but essentially that's all the soils
10 on the site and in the borrow area that we'll be
11 using are Equality Formation soils.
12 Q. And you believe that just spreading
13 loose soil will achieve one times 10 to the minus
14 fifth?
15 A. I don't know if you can characterize it
16 as spreading loose soils. I mean, it will be
17 graded, you know. It won't be compacted with a soil
18 compactor, but it will be graded with a piece of
19 equipment, probably a dozer, that will provide some
20 compaction. It won't be just loose.
21 Q. Well, your closure cost estimates just
22 refer to hauling and spreading of the material?
23 A. And spreading would include spreading
24 with a dozer, which, again, when you go over it with

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1 a dozer would -- would include some compaction.
2 Q. Mr. Nickodem, are you aware of
3 Section 811.314 of the EPA landfill regs that deals
4 with final cover systems?
5 A. Yes. Yes.
6 Q. And are you aware that you have to
7 achieve a permeability as low as the permeability of
8 your double composite base liner?
9 A. Yes.
10 Q. And have you made that demonstration in
11 the Application?
12 A. I don't believe we've done that, but the
13 40-mil LLDPE is very low permeability, just like the
14 layers in the double composite liner, and that's a
15 standard that's usually used. We're not trying to
16 compare the grading layer, for instance, to an HDPE
17 liner.
18 Q. But you're aware that the regs require a
19 demonstration of equivalently low permeability in
20 the final cover as in the base liner?
21 A. Yes. And I believe by -- by including
22 the 40-mil LLDPE in the final cover and 60-mil HDPE
23 in the base liner it shows that it's equivalent
24 right there.

<p style="text-align: right;">Page 217</p> <p>1 Q. Once again, you have not done a 2 demonstration or calculation of the equivalency, 3 you're just saying you think it will work; right? 4 A. No. There's -- you know, we have 5 materials were shown -- or material specifications 6 that shows that the permeability is -- is low and 7 equivalent. 8 So I don't think you really need to 9 do a calculation. 10 Q. Okay. Where in the Application do you 11 recite the respective permeabilities of the 60-mil 12 liner versus the 40-mil LLDPE? 13 A. I know, for instance, we used that in 14 the HELP model to determine, you know, the leachate 15 amount. That's certainly in the HELP modeling. 16 Q. That's where you just input numbers; 17 correct? 18 A. Yes, but that's the permeability. 19 Q. Now, the drain tile, you're going to 20 move some of that; correct? 21 A. Not move it. We're going to place a new 22 tile in to intercept the tile that's coming across 23 Whitewillow Road. 24 Q. Well, actually, you've got a section in</p>	<p style="text-align: right;">Page 219</p> <p>1 more infiltration, Type D soils have the most runoff 2 because there's less infiltration, and C is in the 3 middle. 4 A. Uh-huh. 5 Q. Do you understand that too? 6 A. Yes. 7 Q. And your flow calculations for sizing 8 stormwater components and figuring out how much 9 stormwater runoff you're going to get were based on 10 using that middle soil type which is C; is that 11 right? 12 A. Yes, because that's generally the 13 most -- most of the soils on the site. 14 Q. The most conservative would have been to 15 use D, which has the least infiltration; right? 16 A. I guess more conservative, yeah. 17 Q. Okay. Now, you're aware that 18 Ms. Underwood models the soils at the site as being 19 less permeable than the compacted clay liner that's 20 proposed? 21 A. I don't recall the exact numbers that 22 Joan had actually modeled that at. 23 Q. Well, why don't we turn to Page 5-1 of 24 the Application.</p>
<p style="text-align: right;">Page 218</p> <p>1 your Application called "drain tile rerouting"; 2 right? 3 A. Yes. 4 Q. And the spec for how those are going to 5 be routed, what elevation they're going to be at and 6 so forth is not contained in the Application, is it? 7 A. No. We would have a contractor that 8 installs tile do that. 9 Q. And when you did your runoff 10 calculations, you indicated that there's three types 11 of soils at this site hydrologically, B, C, and D; 12 correct? 13 A. Yes. Yes, I did. 14 Q. Did you do that analysis or did someone 15 else? 16 A. That was someone in my office, yes, 17 but -- and I reviewed that. 18 Q. Someone in your office in Green Bay or 19 someone at Earth Tech? 20 A. Green Bay. 21 Q. Okay. Do you remember who it was? 22 A. John Puls. 23 Q. And as I understand it, Type B soils 24 promote the least runoff because there's more --</p>	<p style="text-align: right;">Page 220</p> <p>1 HEARING OFFICER KINNALLY: I think we're 2 3 going to go home. 4 5 MR. MUELLER: Okay. 6 7 HEARING OFFICER KINNALLY: It's 10:30, and 8 9 you said you were going to be done by 10:30 and 10 11 you're not. So we're going to adjourn tonight and 12 13 we'll start again tomorrow, and I appreciate 14 15 everyone coming and see you then. 16 17 * * * * * 18 19 20 21 22 23 24</p>

1 STATE OF ILLINOIS)
) SS.
 2 COUNTY OF DU PAGE)
 3 I, Shannon M. Frey, CSR No. 084-2277, RMR,
 4 CRR, do hereby certify that I reported in shorthand
 5 the proceedings had at the hearing of the
 6 above-entitled cause and that the foregoing Report
 7 of Proceedings, Pages 25 through 119, inclusive, is
 8 a true, correct, and complete transcript of my
 9 shorthand notes taken at the time and place
 10 aforesaid.
 11 I further certify that I am not counsel for
 12 nor in any way related to any of the parties to this
 13 suit, nor am I in any way, directly or indirectly
 14 interested in the outcome thereof.
 15 This certification applies only to those
 16 transcripts, original and copies, produced under my
 17 direction and control; and I assume no
 18 responsibility for the accuracy of any copies which
 19 are not so produced.
 20 IN WITNESS WHEREOF I have hereunto set my
 21 hand this 12th day of September, 2008.
 22
 23
 24 Certified Shorthand Reporter

1 STATE OF ILLINOIS)
) SS.
 2 COUNTY OF K A N E)
 3 I, Amy K. Bateman, CSR No. 84-003803, RPR,
 4 CRR, do hereby certify that I reported in shorthand
 5 the proceedings had at the hearing of the
 6 above-entitled cause and that the foregoing Report
 7 of Proceedings, Pages 119 through 221, inclusive, is
 8 a true, correct, and complete transcript of my
 9 shorthand notes taken at the time and place
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