ISSUES CONFERENCE VOLUME 13

In the Matter of the Applications of
CROSSROADS VENTURES, LLC

for the Belleayre Project at Catskill Park
for permits to construct and operate pursuant to
the Environmental Conservation Law

Margaretville Fire House
Margaretville, New York
July 21, 2004

B E F O R E:

HON. RICHARD WISSLER,
Administrative Law Judge

A P P E A R A N C E S:

WHITEMAN, OSTERMAN & HANNA, LLP.
Attorneys for Applicant,
CROSSROADS VENTURES, LLC
One Commerce Plaza
Albany, New York 12260

BY: DANIEL A RUZOW, ESQ., of Counsel
BY: TERRESA M. BAKNER, ESQ., of Counsel

NEW YORK STATE DEPARTMENT
of ENVIRONMENTAL CONSERVATION
Region 3
21 South Putt Corners Road
New Paltz, New York 12561

BY: CAROL BACKMAN KREBS, ESQ., of Counsel
Assistant Regional Attorney
BY: VINCENT ALTIERI, ESQ., of Counsel
Regional Attorney

A P P E A R A N C E S, Continued:

LAW OFFICE OF MARC S. GERSTMAN
Attorneys for
CATSKILL PRESERVATION COALITION,
Robinson Square
313 Hamilton Street
Albany, New York 12210

BY: MARC S. GERSTMAN, ESQ., of Counsel
BY: CHERYL A. ROBERTS, ESQ., of Counsel
BY: MARC YAGGI, ESQ., of Counsel

NEW YORK CITY LAW DEPARTMENT
OFFICE OF CORPORATION COUNSEL
100 Church Street
New York, New York 10007-2601

BY: DANIEL GREENE, ESQ., of Counsel
BY: MICHAEL BURGER, ESQ., of Counsel

YOUNG, SOMMER...LLC
Attorneys for THE COALITION
OF WATERSHED TOWNS
DELAWARE COUNTY,
TOWN OF MIDDLETOWN,
TOWN OF SHANDAKEN
Executive Woods - 5 Palisades Drive
Albany, New York 12205

BY: KEVIN M. YOUNG, ESQ., of Counsel

COALITION OF WATERSHED TOWNS, ET AL.

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(JULY 21, 2004)

(9:28 A.M.)

P R O C E E D I N G S

(8 1/2 BY 11 PHOTOGRAPH "TRAIL TO BELLEAYRE DAY USE AREA FROM PINE HILL TO WEST BRANCH TRAIL" (BLUE-BLAZED) RECEIVED AND MARKED AS CPC EXHIBIT NO. 75, ON JUNE 29, 2004.)

(BELLEAYRE BROCHURE RECEIVED AND MARKED AS CPC EXHIBIT NO. 76, ON JUNE 29, 2004.)

(CV OF STEPHEN RUSHMORE RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 87, THIS DATE.)

(SPRING ISLAND, SOUTH CAROLINA WEB PRINTOUT RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 88, THIS DATE.)

(HILLIER & ASSOCIATES, PA WEB PRINTOUT RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 89, THIS DATE.)

(CV OF EDWIN MCMULLEN RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 90, THIS DATE.)

(CV OF RICHARD RAGATZ AND RAGATZ ASSOCIATES RELATED INFORMATION RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 91, THIS DATE.)

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ALJ WISSLER: Appearances of counsel for the record.

MR. RUZOW: Dan Ruzow and Terresa Bakner for the Applicant.

MR. ALTIERI: Vincent Altieri and Carol Krebs for Staff.

MR. GERSTMAN: Marc Gerstman, Eric Goldstein and Marc Yaggi for the Catskill Preservation Coalition.

MR. BURGER: Michael Burger for the New York City Law Department.

MR. YOUNG: Kevin Young for the watershed communities.

ALJ WISSLER: I know the agenda that was tentatively set today. Has there been some discussion among counsel as to how you want to proceed this morning?

MR. RUZOW: Our assumption is alternatives first, and then --

MR. YOUNG: We would like to go second. We have the stormwater issues.

ALJ WISSLER: After alternatives?

MR. YOUNG: After alternatives.

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MR. RUZOW: Then pesticides in one block, I guess, is just continuing.

ALJ WISSLER: Marc, is that your understanding where we are?

MR. GERSTMAN: Yes, Judge.

ALJ WISSLER: Mr. Ruzow, go ahead.

MR. RUZOW: Your Honor, we have had premarked five exhibits regarding our alternative presentation today. Applicant's Exhibit 87 is the curriculum vitae of Stephen Rushmore of HVS International. Applicant's

Exhibit 88 is a printout, web printout on Spring Island, South Carolina, project -- referred to by Dr. Alschuler in his presentation on -- I believe it was June 10th.

Applicant's Exhibit 89 is an exhibit -- is a web printout and information on Hillier & Associates that prepared one of the studies that are found in Appendix 27 of the DEIS.

Applicant's Exhibit 90 is a curriculum vitae of Edwin McMullen whose letter can be found also in Appendix 27 under the "Letters" tab there.

And Applicant's Exhibit 91 is both the

CV of Richard Ragatz and a printout of the services of Ragatz Associates, formerly RCI Consulting. And RCI's report is also found in Appendix 27.

I would like to start this morning on placing the context of our alternative discussion and debate in terms of the SEQRA requirement. Consideration of reasonable and feasible alternatives to an action under SEQRA, provision found in Section 617.9, little letter "b", No. 5, Roman 5, starts with an understanding of the objectives of the project sponsor, which are clearly stated in DEIS Section 1.3.3 found at page 1-21 of the DEIS.

And I quote, "To develop a recreation-oriented resort that will

compliment the current recreational opportunities at the Belleayre Mountain Ski Center, and together provide a four-season destination resort in the central Catskills region, as outlined in the various studies discussed in DEIS Section 1.3.2."

Many of those studies which we have referred to and include as exhibits, including

the Route 28 Corridor study, the Central Catskill Planning Alliances, Tourist Destination and the various exhibit numbers you recall from last week, including the West of Hudson Economic Development studies, which were also included, among others.

These studies have formed the basis for both local and regional planning for over 40 years, emphasizing that tourism and increased tourism visitation is the primary economic goal for this region.

State agencies, DEC in particular, as well as local government and not-for-profit organizations, have recognized and taken steps to achieve this goal. And we have heard of many in this proceeding so far, various efforts taken by various entities to try to make the area more attractive to tourists, et cetera.

While some improvement and investment has been achieved, the central Catskills still suffer economically with limited employment

opportunities and many business failures, despite its proximity to the New York metropolitan market and the vast protected
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open space that exists here.

There is a recognized public need for improving the local economy, local and regional economy. New facilities and amenities to attract visitors and to provide a more sustainable year-round employment have been identified as needed, including golf courses and destination resorts. They are in the mix of opportunities that are being sought. These goals have been consistently ratified by resolution in their respective towns as development policies in Shandaken and Middletown. And their zoning allows for these uses.

The developers of the proposed Belleayre Resort have participated in and actively followed the local and regional economic and planning studies over the last 12 years. It's their desire to attract a new source of visitor to the region by providing resort facilities not otherwise available locally or regionally.

The project is not simply an investment choice for these individuals. I think this is perhaps where we have our
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greatest odds with Dr. Alschuler's comments and some of the other comments on the DEIS.

They have included -- the project developers have included new amenities and features that are designed to attract visitation year-round and to increase the length of stay over current visitation experience. Such facilities include championship golf courses designed by world-acclaimed professionals, hotels of world-class design and ambience, European-style health spas.

Timeshare and club share elements to be managed by the hotels are modern features of resort development. You'll hear some more about that this morning. And if successful, will help provide the year-round flow of extended visitation to the region, which has been identified as needed.

The recreational and cultural program to be coordinated with state and local facilities and interests will provide opportunities for guests and their families to enjoy the incredible natural beauty and resources available, but largely underutilized

in the central Catskills. The inclusion of each of the project's facilities and features have been carefully considered to address identified opportunities and to maximize the likelihood of the project's programmatic and economic success.

An internationally recognized group of

professionals, whose principal business is related to the development of hotels, resorts and fractional interest and timeshare component, were retained to guide the project sponsors in creating the proposed Belleayre Resort.

These expert advisors include SE Engineering and Walter Elander, who you heard last week; HVS International and Steven Rushmore and Erich Baum. You will be introduced to Mr. Rushmore in just a few minutes. RCI Consulting and Richard Ragatz, whose resume is included here and whose report is included in the DEIS. Edwin McMullen, again, whose resume is here. And the letter from Mr. McMullen has been included in the report. He's been an advisor to the project, though his report has been fairly limited for

DEIS purposes. As well as Hillier & Associates, PA, a law firm that specializes in club memberships and marketing of memberships nationwide. Their work is also in Appendix 27. The resumes are included, as I said, in the exhibits before you.

SEQRA's consideration of alternatives to avoid or minimize significant adverse environmental effects that may arise from a proposal must be viewed in the context of the project sponsor's objective. Suggestions that consideration or further study of an exclusive purported "ecosensitive" residential

development, such as Spring Island, South Carolina, suggested by Dr. Alschuler, will achieve neither the project sponsor's goals, nor the local and regional goals of increased employment and tourist visitation.

Nowhere in the Route 28 Corridor study, Applicant's Exhibit 83; the Tourist, Development Plan for the Central Catskill Planning Alliance, Applicant's Exhibit 8; or the West of Hudson Economic Development Studies, Applicant's Exhibits 70, 71 or 72 and CPC Exhibit 18, is there a recommendation that

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second-home development be the cure for the regional economic ills.

Neither will a project that depends primarily on horseback riding or hiking. Both activities have long been available to this region with only modest economic effect. And there's no reasonable basis to suggest that a luxury hotel or first-class hotel might draw guests seeking such recreational opportunities in the region.

There are other forms of development that have taken place and could take place on a much smaller scale to attract tourists to the area, but they don't have the same profound economic opportunities that a resort hotel provides.

The analysis undertaken by HVS International and included in the DEIS,

undertaken by HVS International at Appendix 27, was in response to a comment letter from NRDC, and later DEC's Staff's direction that the Applicant consider a smaller resort or demonstrate that the proposed project, its scale was needed, and that a smaller project was financially infeasible.

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Specifically, DEC asked that we consider building only the Big Indian Spa and Country Club or the Wildacres Resort, east side or west, or alternatively we can consider eliminating one of the golf courses in either location.

HVS was asked to advise the Applicant on whether such a suggestion was feasible. That is, could the project still be viewed as viable from the perspective of either further equity participants and downstream institutional lenders who would participate in resort financing with or without these components.

Their perspective, their particular expertise, is from the hotel resort development industry. And so their ability to provide that glimpse into how this project would be viewed was, we viewed, as most telling. And that's the basis of their analysis of their input to this proceeding.

HVS's conclusion following their careful analysis was that the proposal, as currently conceived with two hotels and

associated golf courses, was the only
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alternative that was viable in a resort context on these sites.

With that, let me introduce Stephen Rushmore, and ask Mr. Rushmore to describe your educational background and your experience. His resume is Applicant's Exhibit 87. It is particularly lengthy, but it is also instructive in terms of the breadth and depth of his experience in this field.

MR. RUSHMORE: Good morning. I have -- my education, I have a degree in hotel administration from Cornell University. I have an MBA in finance from the University of Buffalo.

My employment history started in 1971 when I was employed as a consultant for Helmsley-Spear in New York City working in their hospitality division doing feasibility studies, market studies, valuations of hotels.

I left Helmsley-Spear three years later in the '70s, and worked for a real estate development trust that was controlled by Bankers Trust. I was a hotel foreclosure specialist. I would go out -- this was during the bust years for real estate investment
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trust in the '70s-- I would go out and foreclose hotels, then I'd change the management and sell the hotels for the trust.

I returned to Helmsley-Spear, headed up their valuation section from the late '70s until 1980 when I established HVS International. That initially stood for Hospitality Valuation Services.

I am president and founder of HVS International. We are a global hotel consulting firm. We have 22 offices around the world, including New York, San Francisco, Vancouver, Sao Paulo, Buenes Aires, London, Singapore, New Delhi, Sidney, amongst offices around the world.

Our specialty is doing hotel market studies and valuations and investment analysis for investors. We offer a wide range of services. We do executive search. We do mortgage financing. We do brokerage. We do interior design. We help hotels obtain casinos. We do restaurant consulting. We do marketing consulting for hotels, and we operate hotels for third parties.

Along the way, I am a member of the
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Appraisal Institute. I began being a member of the Appraisal Institute back in 1976, and I was the first appraiser member that had a degree in hotel administration.

I focused on valuing hotels and doing market studies of hotels. I've written extensively -- I've written all four textbooks for the Appraisal Institute on the valuation of hotels and motels and market studies and

investment analysis. I have written books on how to perform feasibility studies, market studies. I've written approximately 300 articles that appeared in various trade journals, including the Cornell Quarterly, the Real Estate Finance Journal, Real Estate Review, many different types of journals.

I write a monthly column for Hotels Magazine. I teach at Cornell in their summer session on hotel valuations and market studies. I've done that for the past 15 years. I developed a course on hotel valuations and market studies for the Appraisal Institute. I have taught it approximately 75 times around the country.

I have literally trained pretty much

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all the appraisers and people that do hotel market studies on the process for performing these types of studies, analyzing hotel investments.

ALJ WISSLER: Yet you've found time to do this?

MR. RUZOW: And we thank your Honor and the other parties for accommodating the schedule that will allow him to come today.

MR. RUSHMORE: We have about 200 professionals around the world, and we work on approximately 1500 hotels a year. I have worked on pretty much every major hotel in the United States. I have been involved with them

in some form through HVS.

A second aspect of my life is that I'm also a hotel investor. Through a company called HEI Hospitality, we started buying hotels in 1985. We did hotel syndications during the '80s. During the '90s, we bought distressed hotels. During the mid-'90s, we joint ventured with Prudential in their Prissa 2 account.

MR. RUZOW: How do you spell that?

MR. RUSHMORE: It's their pension fund

account, P-R-I-S-S-A.

And we built up a portfolio of 20 hotels that we owned and operate. One of the hotels is the Marriott Seaview Country Club in Absecon, New Jersey, which is right across the harbor from Atlantic City. Very similar to this hotel we're looking at here in the Catskills, it's a 300-room Marriott hotel with two 18-hole golf courses. We own that, and it was operated by Marriott.

We sold our entire portfolio to Starwood in 1997, and we have started acquiring hotels again in the last 12 months. And we have bought 20 hotels, all full-service, first-class hotels. They include Westin Hotels, Marriott Hotels, Hilton Hotels. Similar hotel with golf courses is the Sheraton Ferncroft outside of Boston, a 300-room hotel with an 18-hole golf course that we own and operate.

So the combination of being totally emersed for the last 35 years in the hotel business, and also participating actively as an investor buying hotels, negotiating to transact hotels and also selling hotels, I've

picked up a lot of experience.

ALJ WISSLER: Mr. Rushmore, have you ever been involved in the development of environmental impact statements before?

MR. RUSHMORE: Have I ever done an environmental impact study?

ALJ WISSLER: Yes.

MR. RUSHMORE: No.

MR. RUZOW: When Mr. Baum was here on the 10th, he had given us a brief explanation of some of the analytical work that HVS does in terms of appraisal work and marketing feasibility. The breadth of your clients are included in here, and you have indicated that. As I read them, there's a mix of both financial institutions, as well as hotel management. The nature of the work you do is all focused on hotel hospitality, but for a variety of different types of clients; is that correct?

MR. RUSHMORE: That's correct. We work for virtually every major hotel owner, lender and operator throughout the world.

MR. RUZOW: Can you explain some of the nature of the marketing and the

feasibility analysis that you have done for other projects?

MR. RUSHMORE: As I said, we work on about 1500 hotels a year, of which probably 10 percent are proposed hotels, and 90 percent are existing hotels that we're doing some type of consulting work for. Some of the hotels that we've worked on over the years, resort hotels, we've done the Equinox Hotel --

MR. RUZOW: In Manchester?

MR. RUSHMORE: In Manchester, Vermont. We did the Sagamore Hotel up in upstate --

MR. RUZOW: Lake George.

MR. RUSHMORE: -- Lake George. We have worked on the Greenbriar Hotel, Mount Washington Hotel. Those are some of the major resort hotels that we have worked on over the years.

MR. RUZOW: Can you explain a little bit of the work of HVS International outside of the U.S.? You mentioned the offices you have. What's the nature of the work you have around the world?

MR. RUSHMORE: Very similar. Our London office is our second largest office,

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and they work in Europe and the Mideast and Africa. And they do market studies and feasibility studies and brokerage and financing.

MR. RUZOW: You have had an

opportunity to review the resume of Dr. John Aulschuler that was included in the petition, CPC's petition as -- that was attached to the petition. Are you familiar with Dr. Aulschuler of Hamilton, Rabinowitz and Aulschuler, and their firm's work?

MR. RUSHMORE: No, I am not.

MR. RUZOW: We've included as Applicant's Exhibit 89 the resume of Hillier and Associates, PA, and you have had an opportunity to review their report in the DEIS. Have you been familiar with their work?

MR. RUSHMORE: Yes.

MR. RUZOW: Just -- just in this matter or other matters?

MR. RUSHMORE: We have heard of them. Never worked directly with them, but we have seen their work product over the years.

MR. RUZOW: Are you familiar with Richard Ragatz and RCI International?

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MR. RUSHMORE: Very familiar. Richard is my primary competitor in consulting on timeshare-s.

MR. RUZOW: Are you familiar with Edwin McMullen, Sr.?

MR. RUSHMORE: Very much.

MR. RUZOW: Mr. McMullen's role -- Applicant's Exhibit 90, Mr. McMullen's role in the industry, is he a senior sort of a person in the industry?

MR. RUSHMORE: He's a very distinguished, very experienced and very ethical gentleman involved in the timeshare business. He is one of the persons -- people that have taken a rather sleazy industry that had a very poor reputation, and he worked very hard to make it a very prominent business with very good morals and ethics.

MR. RUZOW: You have had an opportunity to review the DEIS, the letter from Mr. McMullen, the two reports, the Hillier & Associates report in the DEIS and the RCI report in preparing your report?

MR. RUSHMORE: Yes.

MR. RUZOW: Is it fair to characterize

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these nationally recognized experts as enthused about -- enthused is probably a good word -- enthused about the economic prospects of the Belleayre Resort at this stage in its development?

MR. RUSHMORE: Yes, my reading of their reports indicate that they had a positive outlook for the feasibility of this resort, even though it's still in very preliminary stages.

MR. RUZOW: Dr. Alschuler, when he was here on, I believe, June 10th, was -- I would characterize or ask you to accept that he characterized the resort's chances of being associated with a flag, such as the Ritz-Carlton, as remote and was more

pessimistic, I suspect, than these consultants. Is that your read of these other consultants and your own view of the project? Is there an opportunity -- they talk perhaps maybe about a flag, what I have just referred to?

MR. RUSHMORE: The flag, as its known in the hotel industry, is the franchise or the referral organization that you align with to

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give your hotel instant identity. These are relatively easy to obtain, if you have a quality hotel that fits their standards.

For example, if you construct a five-star hotel, it's pretty easy to get Four Seasons or Ritz-Carlton to flag the hotel or put their brand on it, and also to operate it. In both of those cases, Four Seasons, Ritz-Carlton, they will not brand your hotel unless they operate it.

They will give you a management contract to manage your hotel. They typically don't put up any monies so they don't really have any money at risk in the property itself. They obviously have their brand image at risk and their name at risk, so they need to maintain the hotel at certain standard levels.

But as far as a hotel like this with the type of amenities that this hotel will have, will be very attractive to, I would say Ritz-Carlton, Four Seasons for the five-star

hotel. Starwood would be very interested. They would do a St. Regis for the five-star, and probably Sheraton or Westin for the four-star hotel. They would love to operate

this.

It would not compete with any of their hotels in the area because there are not any hotels like this in the area. Usually the problems you run into in trying to get a flag is that if you have a competing hotel in the same market area, you may not be able to get a flag. This occurred out in California. For example, Marriott wanted to brand a hotel that was within ten miles of their Ritz-Carlton Laguna Niguel Hotel, and they couldn't do it because the owner of the Ritz-Carlton wouldn't allow that.

This doesn't occur in the northeast. There are really no five-star resort hotels in the northeast, so obtaining a brand would not be difficult at all.

ALJ WISSLER: What are the minimum amenities that a hotel has to have in order to be five-star or four-star? Must it have. Can you give me a punch list of, you have to have this, you have to have that? Tell me what makes a five-star.

MR. RUSHMORE: Amenity-wise for a five-star hotel, you have to have a restaurant

that serves three meals a day. You would have

to have --

ALJ WISSLER: McDonald's?

MR. RUSHMORE: No, a good dining room that would serve three meals a day.

ALJ WISSLER: Tell me what that means. I'm being flip. Does that mean an executive chef with some reputation? What does that mean?

MR. RUSHMORE: Yes, it would have to be a good executive chef, and it would have to be a four- to five-star dining room. You would have to have room service for a five-star hotel, and also a four-star hotel. A four-star hotel probably would not need to have as good a dining room as a five-star hotel. And really, just the other -- those are really the only amenities that you need to attract an operator of a five-star hotel.

You asked me a very specific question, so if this was in the middle of Manhattan, really all you need are the level of quality of finishes, the size of the guest rooms and the service levels, and a restaurant, and the ability to serve liquor. That would be the

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minimum that you would need to attract the brand.

Up here you are going to need more amenities. You'll attract the brand, but you're not going to be feasible unless you attract the client, the customer.

ALJ WISSLER: Which means what? Means I don't have to have a golf course in Manhattan but I probably ought to have one up here? Is that what you're saying?

MR. RUSHMORE: Exactly.

ALJ WISSLER: Tell me what else has got to be on that list.

MR. RUSHMORE: Up here -- what you want to look at when you get into a resort area, particularly a seasonal resort area, is how are you going to fill up your hotel at least two seasons of the year. That is really the critical part of making a resort hotel that's seasonal feasible. So you need to have two good seasons a year.

Up here you have skiing in the wintertime, and you will have -- you need something to do in the summertime. The most logical thing to put would be a golf course --

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at least one golf course. We think two golf courses for this type of project in this area and the type of business that you're going after is essential.

ALJ WISSLER: But as a minimum, one golf course?

MR. RUSHMORE: No, we're saying a minimum of this would be two. The reason for this is because unlike a lot of resort areas where during the summer period people come seven days a week, up here they seem to only come on weekends. So you need to have enough

amenity that is going to hold people here for the five days during the week.

This hotel -- the only way this hotel is going to survive during the weekdays on a year-round basis is to attract groups. Groups typically want a golf experience.

I belong to a number of real estate groups, and we will not go to -- when we go to a meeting, we will not go to a hotel unless they have a golf amenity.

MR. RUZOW: You don't play golf?

MR. RUSHMORE: And I don't play golf, right, but that's just the way the group

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operates. The golf amenity is essential. Having two golf courses typically, how that typically impacts a hotel operation, it typically takes a group and makes the group stay an extra day.

Typically, a group will come into a resort for -- if they have one golf course, would probably come in for three days. So you have Monday, Tuesday and Wednesday filled, you're going to die Thursday and Friday. By having that extra golf course, what happens is that group will probably stay an extra day. It's a lot easier to sell a four- and five-day stay. So you'll have that Monday through Friday filled up, and that's going to be the key to the feasibility of this property, is the ability to fill up the midweek period of

time.

The weekends are pretty easy to fill in this area in the summertime, the shoulder seasons and certainly in the wintertime.

ALJ WISSLER: The shoulder seasons?

MR. RUSHMORE: The shoulder seasons would be the spring and the fall season. The fall season, that is really the strong season

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for groups. So September, October, beginning of November, you really want to fill that hotel up seven days a week with groups.

MR. RUZOW: You have been involved, as your resume indicated, for many years now at the highest level of hotel and resort financing issues as well?

MR. RUSHMORE: Right.

MR. RUZOW: Have you ever seen a hotel feasibility or financing evaluation by either Dr. Alschuler in the firm of HR&A or RKG Associates or Cashin Associates?

MR. RUSHMORE: No, I have not.

MR. RUZOW: To your knowledge, does Dr. Alschuler or RKG or Cashin Associates share a similar reputation in the hospitality field to that of Hillier & Associates, Ragatz and McMullen?

MR. RUSHMORE: I have never seen them in the hospitality -- at industry events. They really don't have any profile in the industry that I'm aware of.

MR. RUZOW: You've seen

Dr. Aulschuler's resume which indicates -- and
I have worked with Dr. Alschuler on projects,
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he's very well-respected in the real estate development field here in New York, but he appears to be a generalist when it comes to real estate development and valuation and feasibility compared to your work in HVS.

Is there an advantage that you see in focussing exclusively on the hospitality industry in terms of doing both the analysis and an understanding of decision-making by investors?

MR. RUSHMORE: The hospitality industry, particularly the hotel aspect, is a very complicated industry because you are dealing with a real estate component, and you are dealing with a business component.

The real estate component is pretty easy to understand after a while, but the business component is very difficult because you have a labor force you have to deal with, you have management, you have marketing, sales. You have to basically fill your hotel up every four or five days, so you have constant renters coming in. You have marketing. All different types of issues.

To really stay up to date on what's
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happening in the business of operating hotels is really a full-time endeavor. And I spend

all my time emersed in the hotel industry speaking, writing, teaching, reading trades, interacting with hotel executives on all levels, and I'm not totally up to speed on everything that's happening.

So I can't imagine how a generalist practice can really understand the intimate details of how hotels operate and what the latest trends are.

MR. RUZOW: You drew a distinction in terms of leasing, in effect, or renting to bringing people in every few days. In an office development, the leasing component is done on a different schedule?

MR. RUSHMORE: Right. You lease office space for five to 15 years, and once you've done that, you're finished. A hotel, it's a business you constantly have to work at.

MR. RUZOW: Is real estate development for second-home market different than hotel-resort development?

MR. RUSHMORE: Very much so. Again,

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it's only one component, the real estate component. You build the house, you sell it and you walk away and do nothing. So you're not really operating the business.

MR. RUZOW: From an economic point of view, the second-home market has a different economic effect, in terms of some of the goals that we talked about being sought here in

terms of employment and visitation?

MR. RUSHMORE: Second homes are typically a weekend use, by definition is a second home. So you're not going to benefit the area with anybody coming in or a lot of people coming in midweek that a convention-oriented hotel would attract.

MR. RUZOW: In terms of employees and activity, second home --

MR. RUSHMORE: Far fewer employees. A hotel is very labor intensive. Typically, you'll have one employee for each room in a hotel, at least.

MR. RUZOW: Can you explain the relationship of the timeshare, club share market, this fractional interest market, to resorts in today's market? You talked about

its reputation in the late '80s as being sort of seedy. What has happened and why has it become important today?

MR. RUSHMORE: What's happened is that it's become legitimatized by the major hotel brands going into the timeshare business. Timeshares is a major component of Marriott's profits these day. Disney sells hundreds and hundreds of timeshare units a month. Hilton is involved in timeshare. Westin does -- I'm sorry, Starwood does a lot of timeshare work. And even Ritz-Carlton, Four Seasons have timeshare projects. So these have become

mainstream now. Very credible people running them, not seedy and illegitimate like it was 20 years ago. They form an important component of a resort --

ALJ WISSLER: Excuse me. When you say "seedy and illegitimate," what was the evil that was visited upon them?

MR. RUSHMORE: The evil was that if somebody developed a resort hotel, independent resort hotel, and it didn't work as a resort, it was poorly managed or not in the right location, didn't have amenities, what they did

to try to bail themself out, because they couldn't make money operating as a hotel, they would timeshare the. And they would take these projects that were ill-conceived and not have the right amenities and timeshare it and sell it to unsuspecting buyers who would not -- after a while --

ALJ WISSLER: They would timeshare the rooms in the hotel?

MR. RUSHMORE: Exactly. Right.

MR. RUZOW: There are also timeshare developments that were -- didn't have a based resort hotel but just were in a nice area and people were trying to sell them as well; isn't that true?

MR. RUSHMORE: There were some, but during the '80s, most of them were hotels that didn't work as hotels so they timeshared them.

ALJ WISSLER: And that does not happen

now?

MR. RUSHMORE: No. If you were to buy a Marriott timeshare or Disney, the units that you would buy would be built specifically for timeshare.

A timeshare unit today looks like a

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two- or three-bedroom apartment. It has a full kitchen, it has a large living room, has a dining area, it has large bedrooms. It's certainly much more elaborate than a typical hotel room, from a size point of view.

So it caters to a different type of market here. It's like a second home that you are selling. But instead of selling it to one owner, you're selling it to 50.

ALJ WISSLER: Is the fractional interest always just a couple weeks or can it be longer? Can it be a second home?

MR. RUSHMORE: When you're talking timeshare, you're talking one-week intervals. When you talk fractionals, it can be whatever you want. You can have a quarter share --

ALJ WISSLER: Which means three months of the year?

MR. RUSHMORE: Correct.

ALJ WISSLER: So I could be a Florida snowbird with my condo in the Catskills; is that what you're saying?

MR. RUSHMORE: Yes.

MR. RUZOW: Erich, when you were here

last, you described the way in which the fractional shares, there's certain number of weeks in different periods of the year actually sold rather than a block of just one season?

MR. RUSHMORE: And that varies. It all depends on the market. What you try to do in a fractional -- as a seller of fractional is that you sell maybe one week in the high -- let's say you have -- you're selling 12 fractions, so you're selling four weeks. So you would sell one week in the high season, one week in the -- two weeks in the shoulder season, one week in the low season.

But it really differs from fractional to fractional, the markets, the seasonality and so forth. With this, with two seasons, with the golf and the skiing, you have a lot more flexibility on what you are going to sell.

MR. RUZOW: Does the time -- does the availability of these lodging units and the fractional interest and the timeshares help the management of the hotel as well?

MR. RUSHMORE: It helps the hotel a lot. If you sell a fractional or a timeshare, there will be periods of time when the people don't want to use it and then that goes into your hotel inventory to sell as guest rooms.

As I said, these rooms are equivalent

to large suites in hotels. So they're very desirable for individuals who want more room in their accommodations.

The second thing is that if you sell out your fractionals, you will have occupancy in the fractionals on a year-round basis, even during some low seasons. And they will use your amenities. They will play golf and pay to play golf at your resort. They will use your dining room, your food service. So you won't have the peaks and valleys that a seasonal hotel will have if you have a timeshare or fractional component to it.

MR. RUZOW: I believe it was Mr. Ellsworth of Cashin Associates' presentation, and in their comments on the DEIS, he noted that in the tables that were included in the Hillier report and the RCI report, that not all of the comparables that were listed in those reports had timeshare components to them. What do you think that's

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a function of?

MR. RUSHMORE: It's probably a function of timing. As I said, timeshare really has not been adopted in a lot of resort hotels more than 10 years ago. It's a recent phenomena that you see timeshare being a component of a hotel or more of a mixed-use development, they're called now. Ritz-Carlton, Four Seasons have only been

selling timeshares for the last five years or so.

MR. RUZOW: Is there anything to suggest that this trend is going to go the other way, back to not having timeshares as a component, based on your crystal ball?

MR. RUSHMORE: No, it's going to be a more important part of hotel development, more -- particularly upscale hotels. We're seeing this even in center city hotels. You look at related companies that developed the Ritz-Carlton in Boston, the Ritz-Carlton in New York and the Ritz-Carlton in Washington, D.C., they all have residential components. And they're called Condominiums by Ritz-Carlton. They have all the amenities

-- use of all the services that a Ritz-Carlton hotel would have. So you could buy a condominium and order room service from the Ritz-Carlton restaurant to come up to your condominium.

MR. RUZOW: But here we're not talking about a condominium-type ownership, we're focused on the fractional interest shares and timeshares?

MR. RUSHMORE: Right.

MR. RUZOW: In preparing your report, you relied on the RCI and Hillier Associates reports that were in the DEIS, and then you indicated that these firms are in the -- they're expert in the timeshare marketing.

Have you relied on their reports of these firms in the past?

MR. RUSHMORE: We have relied on Ragatz reports, where we have -- that's formed the timeshare component of a resort development.

MR. RUZOW: We've talked about the changes. These reports were prepared -- the RCI was 2001 and Hillier was in 1999, and you've indicated, has the timeshare market

changed even in the last two or three years?

MR. RUSHMORE: Yes, it has grown in strength. What we noticed after 9/11 was the hotels with the timeshare component might have lost some occupancy for their transient base, but all the timeshare owners came. So as far as the -- the timeshare occupancy was virtually not affected by 9/11.

MR. RUZOW: As you know, the Belleayre Resort has these two components, the five-star and four-star hotels that we have talked about in the past. Can you give us an understanding of the factors that will affect the success of establishing a new hotel here in the northeast, sort of the key issues as you see it that you're familiar with? You've been at the site, you've been in the area. You talked about the two-season component. Perhaps talk also about the relationship to the market and the location itself.

MR. RUSHMORE: As I described, the seasonality is important, and whenever you design a hotel, you design to try to maximize the seasons that you can draw people from. So the golf component is a critical component of

this project. Being a group-oriented hotel and having enough meeting space is important. Spa is also important because the golf component tends to attract the male customer, the spa tends to attract the female customers. You have some synergies there.

The secondary area that is positive is the proximity to large population bases, being New York and Boston and Philadelphia, and some of the secondary cities of Albany.

It's relatively easy to get up here. The transportation is good. The driving is easy. That's very important for a resort location is to have access.

A lot of resorts depend on airlift to get people there. That would be all the Caribbean resorts, that would be a lot of the Florida resorts, certainly the Hawaiian resorts.

If you eliminate that airlift factor, that eliminates one of the risks. Hawaii suffered terribly after the crash of a DC-10 approximately 15 years ago because it lost its airlift for three or four months.

Another area that is positive for this

site is the lack of competition, the fact that there is no five-star resort of this type in the northeast. The lack of the golf resorts in the northeast also is a positive for this project.

MR. RUZOW: The letter from the National Golf Foundation, in the "Letters" section of Appendix 27 talked of the New York metropolitan area being the 314th out of 314 markets in terms of golf, enough golf facilities.

MR. RUSHMORE: It's very under-served as far as golf. So the combination of very strong demographics of possible users of this hotel, ease of access, lack of competition and their contemplated facilities, I think makes this an attractive project.

MR. RUZOW: The fact it is located in the Catskill Park with some 276,000 of protected forested acres owned by the State, and an increasing number of acres owned by New York City, in terms of protecting the watershed, does that amenity -- obviously the natural beauty of the area -- help the project and help its attractiveness to potential

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visitors?

MR. RUSHMORE: Certainly it does. What is even -- I'm not sure more important but equally important is the fact that you have skiing, but you don't have the liability

of operating a ski area. So you have the benefit of skiing without incurring the cost of operation.

MR. RUZOW: So the State's operation of the Belleayre Ski Center provides a valuable amenity to the resort without the liability of having to operate it, the cost of operating it?

MR. RUSHMORE: Correct.

MR. RUZOW: Is that an unusual setting, in your experience?

MR. RUSHMORE: Not really. There are a lot of hotels that benefit from having a ski area nearby, such as Vail and Aspen. You can have a hotel there and somebody else is operating the ski area for you, so it's not unusual that this occurs, but it's nice when you have it.

MR. RUZOW: Is the proximity of the two hotels to the ski center a valuable thing

in terms of making the -- the hotel successful during the wintertime?

MR. RUSHMORE: Absolutely, they're going to be the closest lodging facilities to the mountain.

MR. RUZOW: Are shuttle buses, shuttle vans a technique used by hotels to bring people around in other resort settings?

MR. RUSHMORE: All the time, yes.

MR. RUZOW: If there's a greater need, in effect, or demand on shuttles, would hotel

management provide that in response to -- if guests were -- didn't want to wait too long, et cetera?

MR. RUSHMORE: Typically, if the resort allows it, then the hotel will provide that as a service, particularly the five-star.

MR. RUZOW: I see. We've talked about the meeting space and the midweek convention, the spa, inclusion in the Big Indian Resort, a spa designed for the market. You're familiar with the Emerson operation as well?

MR. RUSHMORE: Yes.

MR. RUZOW: Is the attractiveness of spas and their inclusion in a resort becoming

more commonplace at the higher end of the market?

MR. RUSHMORE: Yes, it's very unusual today to have a five-star resort without a fairly substantial spa. And particularly, if you have a golf course -- as I explained, a woman typically wants to go to a resort with a spa, men typically want to go to a resort for golf. So if you have one, you really need the other.

ALJ WISSLER: You should be careful, Mr. Rushmore.

MR. RUZOW: Your Honor, I believe he's just calling them as he sees it. He's not offering an opinion one way or the other on whether it's a good or bad thing. He's just

observing it.

The mix of amenities, from a business plan perspective, the resort offers golf, skiing at Belleayre, health spa, business conference facilities, the family recreation component, which is the Wildacres, and that -- you have had a chance to look at that recreational piece as well?

MR. RUSHMORE: Yes.

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ALJ WISSLER: Is that something that would be attractive -- and Mr. Elander when he was here from Snow Engineering, Walter Elander -- talked about resort development in mountainous areas having a managed program by the hotel for these types of activities for children or people who want to have wilderness adventures, et cetera. Is that commonplace in your experience at resorts?

MR. RUSHMORE: Yes, it's very important to offer a wide range of activities.

For example, when I travel with my groups, I don't play golf, so I need some other type of amenity that's going to keep me happy during the time the rest of the group is playing golf.

Also, you need to look at -- I keep saying that the key to success is to get a group to extend their stay or get the individual traveler to stay another day. So the more activities that you have, either on the resort or in the surrounding area,

benefits everybody; benefits the surrounding area, but also benefits the resort in that somebody has something to do, extending their

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stay, and also during the periods of time when the weather doesn't permit doing certain activities. So the more activities at the resort, and also the more activities in the area benefits everybody.

MR. RUZOW: Is the development of programs and agreements regarding local touring and local touring opportunities, again, outside the resort, a component these days in resort management, destination resort management?

MR. RUSHMORE: Absolutely, you work with all your local recreational-type activities to provide that.

MR. RUZOW: And local Chambers of Commerce, you mentioned antiquing and other things when you go to different places -- that's something that the hotel or resort would identify for folks and provide them with guidance on?

MR. RUSHMORE: Correct.

MR. RUZOW: Dr. Alschuler, in his written comments that were part of CPC's, I believe it was attachment or Exhibit P to the petition, identified three facilities that he

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characterized as more ecosensitive or

ecotourism-based resort. Those three facilities were, one in Spring Island, South Carolina, which was a residential community, and Applicant's Exhibit 88 is a printout of a description of Spring Island. I'm assuming it's the same Spring Island development that Dr. Alschuler was referring to. Something called the Reserve, another residential community in Indian Wells, California. He also mentioned the Fairmont Sonoma Mission Inn. With respect to the residential communities, do they bear any comparable relationship to a resort hotel?

MR. RUSHMORE: No, they don't. These appear to be second-home developments.

MR. RUZOW: With golf?

MR. RUSHMORE: With golf. And I pretty much know every hotel in the United States, and I'm not aware that these residential communities have any hotel component to them.

MR. RUZOW: Are you familiar with the Fairmont Sonoma Mission Inn and Spa?

MR. RUSHMORE: Yes, we have done work

on that property over the years.

MR. RUZOW: Can you describe for us its setting, in terms of it being comparable to this type of resort?

MR. RUSHMORE: The Sonoma Mission Inn is located in downtown Sonoma, California, which is a wine country of California. The

surrounding outskirts are very attractive. This facility is in -- not the most desirable part of Sonoma. It's a downtown property, it's completely surrounded by residential and retail development. I don't consider it a resort whatsoever. It's a nice hotel with a large spa component, so it would be more of a spa than a resort.

MR. RUZOW: Is the -- the issue of ecotourism, and this area being attractive for ecotourism, are you familiar with any hotel resorts that have been built in the northeast, or the U.S. even, in the last five years that have had as its center rather than a golf attraction, an ecotourism type of attraction?

MR. RUSHMORE: I'm not aware of any, and we have a division of our company that -- actually my daughter started -- it's called

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HVS EcoServices, that helps hotels become environmentally sensitive. But I'm not aware of any ecoresorts that are looking to attract ecovisitors.

MR. GERSTMAN: I'm sorry, I'm really having a hard time hearing.

MR. RUSHMORE: I'm not aware of any ecoresorts that are designed to attract the eco-conscious visitor.

MR. RUZOW: In terms of your division, it deals with management techniques and issues that can help hotels be more sensitive?

MR. RUSHMORE: Correct.

MR. RUZOW: Sewage treatment plant or diminishing water use or reuse of water, et cetera, so those are the types of things?

MR. RUSHMORE: Right. Diminishing water use, recycling programs for hotels, waste management, we set up those programs for hotels.

MR. RUZOW: And those programs for hotels are typically designed once you have, you know, in effect, more details than you have today for this hotel?

MR. RUSHMORE: That's correct.

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MR. RUZOW: From your experience with hotels throughout the U.S. and internationally, is it reasonable to expect the central Catskills to evolve into the kind of ecological destination of either national or international acclaim because -- akin to the rainforests of Central or South America?

MR. RUSHMORE: I don't believe so.

MR. RUZOW: Why is that? It's clearly an area of tremendous natural beauty with a large demographic nearby. From the hotel industry perspective, is there a factor?

MR. RUSHMORE: I don't think the market is deep enough to attract enough people to make a hotel sustainable as strictly an ecoresort.

MR. RUZOW: Would a small lodging unit -- we've seen lots of small lodging units

around here. Last week we heard from the owner whose family's had a 24-unit inn since 1936. Would something on that scale be more possible?

MR. RUSHMORE: That would be more possible, that a hotel like that would sustain it, but I would have doubt that that type of

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hotel would be economically feasible to survive, just as a small hotel.

MR. BAUM: Can I add to that?

MR. RUZOW: Yes, sure.

MR. BAUM: I think also the type of people who would be coming to this hotel could have a natural experience of the sort you have here in an area probably close to their own homes simply by going on a hike. When you're talking about an actual ecological destination, you're talking about a completely different setting, leaving the country or something you wouldn't be able to see in your surroundings.

MR. RUZOW: So the experience of the region to date, which is day-trippers coming in and out to hike, or some folks staying at some of the local lodges for a few days or a weekend, is as much as one would expect? Is that fair?

MR. BAUM: I'm saying you wouldn't have to pay to get in your car to go and drive to the mountains to take a hike. It's

something you can do that would be an
alternative to coming to the Catskills. You
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wouldn't pay for the five-star hotel
experience to have that.

MR. RUZOW: So the market, in effect, as you said, the market isn't there; right?

MR. BAUM: Yes.

MR. RUZOW: Some commentators have questioned the need for the proposed size of the Belleayre Resort, whether it's 150 and 200-room hotel, and the additional 330 lodging units. How does that relative scale compare with the industry and the kinds of places that would be, not perhaps in this immediate region, but outside that would be competitive?

MR. RUSHMORE: With 400 lodging units, I would consider that a large hotel. It's not a mega hotel, but certainly not a small hotel. So I would characterize it as a large hotel.

MR. RUZOW: So the 400 rooms, plus the 330 lodging units?

MR. RUSHMORE: That's right.

MR. RUZOW: Both of those components?

MR. RUSHMORE: Right.

MR. RUZOW: You talked before about the advantages of having the lodging units, when they're vacant, to the hotel. Are there
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particular seasons where that becomes more important in the economic -- in the cash flow of a hotel?

MR. RUSHMORE: For a seasonal hotel where you have high peaks and valleys, you need to create more rooms in order to make more money during the peak periods, because during the low periods, most your rooms are going to be empty. So you need to have enough inventory or rooms to sustain yourself during the relatively short peak periods in order to survive the nonpeak periods. So having more rooms than you would typically have are usually required for seasonal-type properties.

MR. RUZOW: And that would be true -- and this is a seasonal property in that sense?

MR. RUSHMORE: Absolutely.

MR. RUZOW: And mountainous areas tend to be seasonal?

MR. RUSHMORE: Correct.

MR. RUZOW: Going back for just a second in terms of your comments about the occupants and getting someone to stay an extra day; in the economics of managing the hotel,

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is there a different labor need when you have a high turnover of the room compared to more extended-stay hotels?

MR. RUSHMORE: Extended-stay hotel is more profitable than a hotel where guests turn over all the time. You have a Residence Inn, that's a product where people stay two or three weeks, would be a lot more profitable

than a, say, a Courtyard which is a similar product where there's turnover.

So when somebody comes to a hotel and then leaves the hotel, it takes a maid longer to make up a room when somebody leaves. There's more things to check and clean. You have to have more people at the front desk. You have to have more bell people, you need more accounting people, you have more folios coming through.

MR. RUZOW: What's a folio?

MR. RUSHMORE: The folio is an accounting sheet that shows what you've spent. So there's more accounting needs for -- if you have more people staying in your hotel over shorter periods of time.

So anytime you can increase that
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length of stay one day, two days, that makes your hotel more economic, from a labor point of view and operational point of view.

MR. RUZOW: It is also a corollary benefit to the region of having people who will visit, in effect, will have a longer opportunity to visit other places at the same time?

MR. RUSHMORE: Right.

MR. RUZOW: So it's a win-win?

MR. RUSHMORE: It goes hand-in-hand, absolutely.

MR. RUZOW: Another commentator suggested that the timeshare lodging units

could somehow be eliminated or reduced in number, since in your analysis of the feasibility of the project from a hotel investor perspective will ignore the return on the timeshare facilities in making a judgment about whether it's feasible. Is that a valid point, eliminating -- can you eliminate consideration of lodging units simply because your methodology for assessing feasibility doesn't look to them in the first instance for crossing that threshold or making that first hurdle?

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MR. RUSHMORE: Under our Scenario 1, we came up with an internal rate of return of 14.7 percent. And we stated that the cutoff for this type of resort in this area would be about 14 percent. It's marginally -- it's feasible, but it's not -- it's marginally feasible. My opinion, you'll get investors interested, you'll get lenders interested in coming in, based on the IRRs that we came up with in Scenario 1.

ALJ WISSLER: That 14 percent rate of return is return on your investment; right?

MR. RUSHMORE: Correct. It's their total investment. So it could be a combination of debt, it could be a combination of equity. You have leverage. You have debt and equity, but we looked at it as a combined debt and equity, which is 14.7 percent.

As I said, that's feasible, but it's not a home run. There will be a lot of investors that won't touch it for that type of return. It's simply not high enough for some investors.

By adding the timeshare, you're going (ALTERNATIVES ISSUE)

to get more investors interested in this. You'll probably be able to raise more capital. Probably initially you'll offer them a lower rate of return. By having that extra rate of return that you might get from a timeshare -- and at this point in time, without getting the hotel up and operating, no one can really say with any certainty that the timeshare component will be totally feasible. But assuming that it is, that will attract more investors and give this project a better chance of succeeding over an extended period of time. It will -- by having more investment, more capital coming in, because you have an opportunity to have a higher rate of return, I think the downside of having the resort get into financial trouble during its early years will be reduced.

MR. RUZOW: We're going to get into this a little more in a moment. You have talked about the importance of having a flag, a brand associated with it. And it's indeed the Applicant's objective is to obtain that. But are the prospects of getting a brand, a flag, associated with a five- or four-star

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hotel improved by having the number of lodging units that we have proposed? In other words, they see, as part of the project contemplates, some 330 lodging units?

MR. RUSHMORE: Marginally improved. As I said initially, I think it's going to be very easy to get a flag. So having the lodging units, I don't think will impact obtaining the flag significantly. What it will do is assist in obtaining financing.

ALJ WISSLER: It will draw investors?

MR. RUSHMORE: Yes.

MR. RUZOW: Let's talk about the risks. We've had -- both when Erich was here and subsequently -- concerns raised about bearing risks associated with a project like this. And indeed from the Applicant's perspective, the reason that it retained you and retained Mr. Ragatz and Mr. McMullen and Hillier Associates was to have a better understanding going into the development of this of where you can -- what hurdles or traps or pitfalls might occur, in general, as well as when placed in this particular area, given its history and the struggles for increased

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tourism.

Let me turn to you to sort of educate us a little bit about the series of risks in the hotel hospitality business that you have

to face and provide for.

MR. RUSHMORE: The initial risk for this property, I think the most significant risk is the permitting risk. The risk that we're not going to be able -- the owners are not going to get the permit to actually build this hotel. And that is a risk that you really can't bond or insure or whatever. You're out there, you make your case and you either get it or you're not going to get it.

To me, that is the biggest risk at this point in time looking at this project.

MR. RUZOW: And there's a series of investors who, notwithstanding that risk, have put up money?

MR. RUSHMORE: That's right. So they evaluated the risk and they're accepting it and they're going forward at this phase.

Once you get permitted, you face another risk, and that's your development risk, your risk of having cost overruns when

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you actually build the hotel, the risk that you don't get it open on time. So that -- we call that the development risk. That's the construction and getting the hotel to a point of opening. That risk can be mitigated by hiring a good contractor, good architects, good construction management. You can bond that risk. So that risk is fairly controllable if you really understand what you're doing.

Once you get your hotel up and operating, then you have operational risk, and that's the risk that the management company and the flag that is operating the hotel is not doing a good job. They're not doing good marketing. They're not creating occupancy. They're not driving room rate. They're not controlling expenses. You mitigate that risk by hiring Four Seasons, hiring Ritz-Carlton, hiring national chains that do this all the time, and they know how to operate hotels and they know how to attract people and they have quality standards that they want to maintain. So you mitigate that risk in that manner.

ALJ WISSLER: What keeps them in the project?

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MR. RUSHMORE: What keeps them in the project?

ALJ WISSLER: Yes.

MR. RUSHMORE: As long as you pay their fee and maintain the quality standards, the staffing levels, they'll stay with the project.

ALJ WISSLER: But you can be a five-star or four-star resort without having any flag though; right?

MR. RUSHMORE: Absolutely.

ALJ WISSLER: It's just easier to get off the ground when you have a flag?

MR. RUSHMORE: Right. You're able to

penetrate the market and create an instant identity with the traveler, but more importantly with the groups. What Marriott has, what Hyatt has, what Starwood has, all the chains, they know every group in the United States, and also around the world in many cases. They know who the decision-maker is that's going to place that group in a hotel sometime during the year. They know when the decision is going to be made, and they're in
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front of that decision-maker to get them to come to your hotel. That infrastructure you get automatically when you go with a chain. If you try to do this independently on your own, you have to create that infrastructure by yourself, and that takes a long time.

ALJ WISSLER: What kind of periodic review is there by Ritz-Carlton or Four Seasons to know the resort maintains their standards?

MR. RUSHMORE: Ritz-Carlton puts their own management team into the hotel, so they're there every day.

MR. RUZOW: In terms of other risks, your resume indicates that you have been -- you indicated you've done workouts, you appeared before the bankruptcy court, as I counted over 20 times, as an expert witness. You have categorized various types of risks and how you can mitigate them. Capitalization and having cash and understanding how much

cash you're going to need or how long you are going to need a backup cash to operate before you reach a stabilized level of occupancy, it seems to be a fundamental issue?

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MR. RUSHMORE: Correct.

MR. RUZOW: Explain -- I think, Erich, you did when you were here last, the stabilization, how long it takes to get to a stabilized point for a resort like this.

MR. RUSHMORE: For our hotels, we have a term called "stabilized occupancy rate," and that's a point in time where a hotel reaches what we consider an occupancy and rate based on local market conditions that we call "stabilized." And typically, for a resort like this, it would be in the high 60s, low 70s for occupancy. And I imagine that the rate would be, depending on which property, 2- to $300 a night, once it opens. It takes a while --

ALJ WISSLER: That occupancy rate is an annualized rate, that 60 percent?

MR. RUSHMORE: That's correct. It will take a while to build up to that level. It may start in the 40s, 50s the first year, and maybe 60s, and then maybe 70 the third or fourth year.

So it typically takes, for a hotel like this, three to four years, particularly

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group-oriented hotels that head the book several years out in advance. As a result, you need to be able to carry the hotel, pay the debt service, pay the management company, maintain the hotel during this period of time that it may be unprofitable during the buildup. If that buildup extends out five to six years, then that means you need to have more money to cover the shortfalls during that period of time.

This is all calculated in the feasibility -- full feasibility study that you ultimately do, the full financial projections. Once you have the operator, you do all this. But you may run into situations such as a downturn in the economy, such as a terrorist attack, that can impact your cash flow and impact the time it takes you to reach stability, and you need capital to carry that.

And some developers have capital to do it and some don't have capital. The ones that don't have the capital are the ones that get in trouble with their lenders and go through foreclosure and maybe bankruptcy as part of the foreclosure process.

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ALJ WISSLER: As an aside, is there an industrywide formula for what kind of working capital you need to have set aside depending -- as a function of the size of project that you're undertaking? Do you understand what I'm saying?

I mean, is there a number that you come up with, say, we need 30 million a year to operate this thing; we need to know we have got letters of credit for 90 million or something like that that will carry us three years?

MR. RUSHMORE: Yes. Before the lender commits, they are going to want to see a full market study and financial projection going out eight to ten years. And that projection will tell you the type of reserves you are going to need to fund the initial operating loss during the buildup period. That's all taken into account by the lender.

The lender will actually ask -- they'll keep the debt service, they're going to keep the reserve for replacement, they'll sweep out some of the profits during the peak seasons. They all have control over

that money, so it's not given to the owner prematurely and not be there to cover a downturn or cover the off-season or so forth. So that's all planned out.

And in today's economy, I would be surprised if a lender gave you much more than a 60 percent loan to value -- or debt coverage ratio of much more than 1.4 times. So the lender will be very conservative, which will mean you will have to raise a lot of equity to do this deal, which means that there will be a

cushion in order to pay the debt service to get the deal done.

MR. RUZOW: The type of analysis or pro forma that would be developed for a lender is not something that is capable of being done at this stage?

MR. RUSHMORE: Absolutely not. You don't know what facilities there are going to be. You don't know who the operator, what chain. All that needs to be done before you will attract a lender or investor.

MR. RUZOW: Dr. Alschuler had suggested that what you have done in determining your feasibility was never

something he would use or provide to an investor to determine an investment choice.

MR. RUSHMORE: I wouldn't either, but it's too premature at this point to do that type of analysis without knowing exactly what project you are analyzing.

MR. RUZOW: So the pro forma that he is talking about and that you're talking about presenting to a bank is something that is done at a different stage of the review than at this stage?

MR. RUSHMORE: Absolutely.

ALJ WISSLER: They're all part of the same continuum; financial analysis?

MR. RUSHMORE: Yes.

MR. RUZOW: Can you explain the difference between an appraisal and a

feasibility analysis?

MR. RUSHMORE: An appraisal is really the last part of a feasibility analysis. We do a lot of appraisals, but every one of our appraisals has a feasibility analysis. We call it a market study, where you analyze the market, the supply, the demand, you do a forecast of income and expense. You can call

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that a market study, you can call that a feasibility study; but you need to do that in order to do an appraisal.

So an appraisal is really a feasibility study taken one step further where you value the cash flows of the feasibility study.

MR. RUZOW: How does a market analysis, investment demand, valuation, how does that all interact in the context of performing an analysis on feasibility?

MR. RUSHMORE: Very simply you have to do a market study in order to forecast your income and expense, your cash flow. Once you get your cash flow, you can either value that cash flow and come up with a value, or you can do an IRR and come up with your -- essentially your discount rate or your IRR.

If you value it, then what you do is you compare the value, come up with the market value of how much your hotel is going to be worth, and you compare that to the cost of the

building. So if you come up with a -- if it's going to cost you $75 million to build the hotel and you come up a value of $100 million,
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it's feasible. That's one way of looking at feasibility.

Or if instead of valuing it, you do an IRR based on cost and come up with a 14.7 percent IRR, that's another way of saying it's feasible. So we're saying the same thing, we're just looking at the equation --

ALJ WISSLER: Part of that analysis depends upon what comes out at the end of the pipe. In other words, it has to be a five-star resort that comes out at the end of the pipe. You wouldn't do this for Motel 6, not that there's anything wrong with Motel 6?

MR. RUSHMORE: Right.

MR. RUZOW: In your choice, in response to the assignment that you were given to determine the feasibility of eliminating one or more of the components of the project, you relied on the IRR methodology?

MR. RUSHMORE: Correct.

MR. RUZOW: Is this a methodology -- this is for a proposed resort. I want to draw a distinction. You use different methodologies for purposes of looking at feasibility, perhaps for proposed resorts
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versus existing facilities -- existing facilities you have more information available

to you --

MR. RUSHMORE: Right. The methodology is basically the same. As you say, for an existing hotel, you have how it's actually operating. You know what the income and expense historically is, and you're taking a historic point and projecting out into the future. The proposed hotel, you don't have that buildup of operating history that you can rely on.

MR. RUZOW: You used an IRR of 14 percent as a means of testing the feasibility of the project as a whole, with all of its elements, the hotel elements; but separating out the timeshare and subdivision components. Dr. Alschuler, at least at one point, didn't question the 14 percent but questioned your reliance on costs, the costs rather than capital invested. You relied on the cost -- you relied on -- and to my knowledge, other than wages, no one has questioned the cost components that you relied on. They all seemed to be within reasonable

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ranges and reasonable expectations. He said that he would never present this methodology to an investor.

Why are you comfortable with the methodology that you have used in determining both the IRR and the analysis that projected a 14.7 combined result, and less than that for

the other components? And Erich Baum -- between the two of you.

MR. RUSHMORE: I read his testimony, and I think we're saying the same thing. We're just using different terminology.

MR. RUZOW: When you said you read his testimony, we had shared with you a rough draft of testimony that the court reporter had provided, so you -- that's what you read?

MR. RUSHMORE: That's right, trying to understand what he was saying. I think we're saying the same thing. We're saying -- when you do an IRR in year zero, you have an outflow of capital. And then hopefully year one, two, all the way up to year 10, you have inflows. IRR is basically what is the discount rate that will discount the inflows to equal the outflow. He calls the outflow

capital, I call the outflow cost. So if it's going to cost you --

ALJ WISSLER: 240 million.

MR. RUSHMORE: -- 240 million to build your hotel, you have to have 240 million of capital to build the hotel. Now, he calls that -- maybe there's going to be a debt component and an equity component. And I say, fine, I agree with you. There's going to be a debt component and an equity component. He seems to say that he's only interested in what the equity component return is, which is fine. I have no problem with that. That's how I

value a hotel. I value using a weighted cost of capital of debt and equity.

If you want to look at just the equity component, what return would the equity component be satisfied with, that return would be probably 20 to 25 percent because of leverage. The equity component would want that as much return.

I could have done the calculation the same way and assumed a mortgage and take my cash flow down to equity and look at just an equity IRR, and I would have come up with

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probably about 25 percent, which I would justify because that's a good hurdle rate for the equity component.

So I think we're saying it the same way. For simplicity, and the fact that the real estate industry and the hotel industry, in particular at this point in the project development cycle, which is very early on, using a combined mortgage equity is a lot simpler and clearer to look at at this point.

ALJ WISSLER: Which was your point just before when you said you're, in effect, both right but you're in a different point in the process?

MR. RUSHMORE: That's right.

MR. RUZOW: In performing this analysis, is the differential between -- assuming for the sake of argument that you

were to employ this other technique and you were to then take into account the alternate scenarios, are you likely to see much in the way of any different differential between performance?

MR. RUSHMORE: We're going to come up with the same conclusion no matter what technique we're using. It's going to come out that Scenario 1 is the only reasonable alternative at this point in time.

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MR. RUZOW: The differences are so dramatic in terms of the return for these other scenarios, is what you're saying?

MR. RUSHMORE: Yeah, but even if they were close --

ALJ WISSLER: Which other scenarios, like Wildacres only, Big Indian?

MR. RUZOW: Right, I'm sorry.

MR. RUSHMORE: Even if they were close -- as I said, the techniques we're using are basically the same. He seems to be looking at just the equity component and not the overall debt and equity component.

If I just carved out the equity component, as I said, the equity would probably be a return of 25 percent. And the other ones would probably be low 20 percent, which means that Scenario 1 would still be the only one that is feasible at this point in time.

ALJ WISSLER: We're talking about a

resort that provides folks, where we can, with
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an extended stay. For the two major seasons, you have got winter and you've got summer. For the summer season, that draw is golf; all right?

MR. RUSHMORE: The main draw. And meeting space for groups.

ALJ WISSLER: So we have spas for the women and men, we have golf for the women and men, we have conference rooms, we have world-class restaurant that will please the palate of the most demanding gourmand; right?

MR. RUSHMORE: Right.

ALJ WISSLER: Why can't we do that all in one hotel?

MR. RUSHMORE: Because you need --

ALJ WISSLER: In other words, you have said that -- you have testified at bankruptcy proceedings, you have watched these operations from start to finish, you have watched them fail.

MR. RUSHMORE: Right.

ALJ WISSLER: I need to understand, alright -- but again, ultimately related to the environment -- but I need to understand how there is less risk by building two hotels
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than there is in doing everything you want to do but with one hotel.

MR. RUSHMORE: I agree with you that

there would be -- it would be better to build one hotel, if you were going after just one market. What's happening here is that you're building a five-star hotel and you're -- a five-star hotel with not a lot of meeting space that is catering to the upper-end user, as far as rate goes. This is very important. Really, the key to success of a hotel is not occupancy, it's room rate. You need to be able to get as high a room rate as you can to support the overall project.

A five-star hotel cannot be a meeting-oriented hotel. People that want to go to a five-star hotel, they want to be isolated. They want to be by themselves. They don't want a meeting down the hall in the banquet room disturbing their stay.

The other hotel is going to be a four-star hotel, and that is going to be the group-oriented hotel. That is critical to get people to come there during the week to build up that week business. You cannot put the

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five-star hotel on top of the four-star hotel and have a mix of people.

ALJ WISSLER: You can't combine them?

MR. RUSHMORE: You can't combine them.

ALJ WISSLER: Can you do one or the other in this scenario? What if you just said we're going to build a single four-star hotel?

MR. RUSHMORE: Then you're not going to get the revenue that a five-star hotel is

going to bring. Remember, rate is very important in order to get enough revenue. You have got a tremendous infrastructure here that you have to support. So that means then you have to have room count, and then you have to have at least one source of real high revenue. Because your five-star hotel, when that is full, is going to generate the profit that is going to support everybody.

The four-star hotel is not going to have the room rate, but it's going to get you the occupancy during the midweek so you don't have to lay people off during the middle of the week because you have nobody there. You're going to have a much easier operation during the week because you have that

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four-star hotel.

MR. RUZOW: The calculation of the return for the Wildacres alone scenario was what?

MR. RUSHMORE: Wildacres was 8.4 percent. It's not going to work.

MR. RUZOW: One comment during one of the presentations was that -- a concern over the scale and the suggestion that somehow some condition might be attached to a permanent decision that would make the buildout of the lodging units somehow conditioned on some future event or the future decision by a permitting agency. How would a hotel view

that type of condition in terms of looking at the feasibility of the project?

MR. RUSHMORE: Depends on the condition.

MR. RUZOW: If the condition left the discretion to build further on something other than a point in time or the completion of a physical component of the project, for example, whether monitoring some ecological condition or traffic or something else that was not defined, but just within the

discretion of the agency?

MR. RUSHMORE: I would say, based on my experience, that would make the addition of the lodging units very speculative. And I don't think an investor would factor much into their analysis, assuming that that may not occur.

MR. RUZOW: So if based on -- at the point down the road that permits were granted, and you do, in effect, a different pro forma and an analysis and contingencies are identified, a permanent condition would be one of the contingencies you looked at, I assume, in evaluating the risk for an investor?

MR. RUSHMORE: Correct.

MR. RUZOW: And the more conditions, the more uncertainties, the greater the risk in terms of evaluation?

MR. RUSHMORE: Absolutely. As I said, the biggest risk to this project is the phase

that we're in right now because of the uncertainties.

MR. RUZOW: So if there are important components of the project that are at risk in terms of the ultimate decisions, then from an

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investor's point of view, that will be looked at very closely in deciding --

MR. RUSHMORE: Right. And probably discounted as not achievable as internal rate of return for their investment evaluations.

MR. RUZOW: Do flag hotels have the ability to have a stabilized occupancy more rapidly than an independent?

MR. RUSHMORE: Yes, that typically occurs for flag hotels.

MR. RUZOW: So your characterization of a two, three, four-year period of time is based on a flag association?

MR. RUSHMORE: That's correct.

MR. RUZOW: Based on your experience with resorts in other communities, indeed around the world, have you seen instances where this resort -- it was characterized in several places as being separate from -- let me step back for a moment.

The Belleayre -- the Big Indian Resort, which is to the east, the five-star resort, will not be able to be seen from the corridor, Route 28 Corridor. Is that visibility or invisibility helpful, hurtful in

the way the project will be viewed?

MR. RUSHMORE: I would say it's helpful.

MR. RUZOW: For a five-star, the exclusivity is important?

MR. RUSHMORE: Right.

MR. RUZOW: And Wildacres, the hotel itself, would not be visible from Route 28, but will be very visible and prominent from County Route 49A. For a four-star, is that a positive thing? It will be at the base of the road to the ski center. Is that a positive thing?

MR. RUSHMORE: I don't really think it's positive or negative whether it's visible or not. A resort is not going to attract somebody driving down the highway and seeing a sign and pulling in for the night. They usually have reservations.

MR. RUZOW: So it's general access to the region is what's most important?

MR. RUSHMORE: That's right.

MR. RUZOW: In your experience, have resorts, mountain resorts or destination resorts, have a positive effect on the local

economy in terms of its impact, visitation impact on hamlets in the area if there are nice little restaurants or shops, or you mentioned maybe tubing -- is it your experience that the visitation is positive

from an economic point of view?

MR. RUSHMORE: Absolutely. This resort will have very positive effects on this area.

MR. RUZOW: And the level and volume of visitation, both during the week and on weekends, that will increase the level of visitation?

MR. RUSHMORE: Absolutely.

MR. RUZOW: Thank you. We're completed with this.

ALJ WISSLER: Why don't we take ten.

(11:21 - 11:38 A.M - BRIEF RECESS TAKEN.)

(RESUME OF KEITH S. PORTER RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 7, THIS DATE.)

(DELAWARE COUNTY COMPREHENSIVE STRATEGY RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 8, THIS DATE.)

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("DELAWARE COUNTY ACTION PLAN DCAP II FOR WATERSHED PROTECTION AND ECONOMIC VITALITY" RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 9, THIS DATE.)

(DCAP REPORT TO THE PHOSPHORUS STUDY COMMITTEE AND PARTNER AGENCIES DECEMBER 2002 RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 10, THIS DATE.)

("PROPOSED PHASE II PHOSPHORUS TMDL CALCULATIONS FOR ASHOKAN RESERVOIR MARCH 1999"

RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 11, THIS DATE.)

("PROPOSED PHASE II PHOSPHORUS TMDL CALCULATIONS FOR PEPACTON RESERVOIR MARCH 1999" RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 12, THIS DATE.)

ALJ WISSLER: Okay, folks, if we can reconvene. With respect to the matter of alternatives, I believe Mr. Altieri has a comment.

Anything from CPC?

MR. GERSTMAN: Just very briefly. And I think the City --

MR. BURGER: Not at this point, your Honor.

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ALJ WISSLER: Okay, nothing from the City.

Mr. Gerstman, did you want to go?

MR. GERSTMAN: I'll be glad to defer to Mr. Altieri.

MR. ALTIERI: How gracious. The Staff has a brief follow-up comment from our last comment, and that's that the purely economic questions are beyond the reach and intent of SEQRA, although the economic aspects do influence what can be considered feasible alternatives for an Applicant; thus it was reasonable for the Department to accept the Applicant's discussion of alternatives as sufficient.

However, if your Honor views the

proffers regarding economic feasibility to allow lesser alternatives, then the environmental assessment of such alternatives would have to be further developed in the record.

ALJ WISSLER: Mr. Gerstman?

MR. GERSTMAN: Yes, Judge. As we have requested in the past, we'd like to reserve the right to have Dr. Alschuler and

Mr. Ellsworth respond to the offer of proof that you've heard today after we receive the transcript from today's Issues Conference.

Briefly, we would first want to remind your Honor that we are not challenging DEC's determination of acceptance of the DEIS, that's not what's at issue here. What's at issue here is the narrow circumscription of the valuation of alternatives by the Applicant based upon their evaluation of what is feasible. And we continue to hear from the Applicant and its experts, what John Alschuler, Dr. Alschuler characterized as circular reasoning. And we feel that there has, as of today, been no support that would eliminate the evaluation or the serious examination of a reduced scale alternative, which we believe is absolutely essential when the magnitude of the environmental impact is so great.

We reserve the right, as we said, to

submit further offers of proof in the form of response by Dr. Alschuler and Mr. Ellsworth. And much of what Mr. Ruzow said in terms of the SEQRA, the parameters of SEQRA regarding
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an alternatives analysis is, again, much too narrow for -- and inconsistent with precedent, especially in light of the magnitude of the impacts that we're facing with this project. Thank you.

ALJ WISSLER: Mr. Burger, anything?

MR. BURGER: Craig Seymour will respond very briefly to this morning's rebuttal testimony.

MR. SEYMOUR: Craig Seymour from RKG Associates. I want to refer back to our memo, I think it's May 20th, where we analyzed HVS's report. And I guess the point that was brought up by Mr. Rushmore today is that he indicated, I think in several parts of his statement, that the connection, direct connection between the need for the timeshare units and for the hotel to be successful, you needed the added inventory, you need the larger rooms for the extended stays to make the hotel resorts feasible.

Yet when it comes to evaluating the economic feasibility, the IRR, the returns from the timesharing was not included. And my simple mathematical exercise that I did,
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taking their assumptions, their estimates for

occupancy and room rates, if you combine the timeshares on an individual basis as well as a whole, the returns, the combined internal rate of returns come out to be very, very similar, 21, 22 percent, which makes it, at least using their rationale, feasible if you include the timeshare in the overall investment picture and economic picture.

So my point was that I just wanted to reiterate that I think that's a way an investor would look at it, particularly stating -- the statements from the market perspective that he made that the timeshare units are a fundamental part of the overall resort project. That's all.

ALJ WISSLER: Okay.

MR. YOUNG: I'm Kevin Young, I'm here on behalf of the watershed communities. The testimony we're going to present today is on behalf of all the watershed communities that we represent, which is Middletown, Shandaken, the Coalition of Watershed Towns and Delaware County.

I have with me on my right Dean

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Frazier, on my left Keith Porter. We have handed out to everybody, I think five exhibits. Exhibit 7 --

ALJ WISSLER: If you would enumerate those for the record.

MR. YOUNG: Exhibit number 7 is the

resume of Keith Porter, who is Director of the New York State Water Resource Institute, Center for the Environment, Cornell University.

Exhibit 8 is Delaware County's Comprehensive Strategy for Phosphorous Reductions dated fall of 1999.

Exhibit 9 is the Delaware County Action Plan called DCAP II, for Watershed Protection and Economic Vitality.

Exhibit 10 is the DCAP Report to the Phosphorous Study Committee and Partner Agencies dated December 2000.

Exhibit No. 11 is the Proposed Phase II Phosphorous TMDL for the Ashokan Reservoir dated March 1999. I think we handed out an excerpt from this, which is Exhibit 5. So this is the complete document from what was Exhibit 5.

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Exhibit 12 is the Proposed Phase II Phosphorous TMDL Calculations for the Pepacton Reservoir, also dated March 1999. And we handed out an excerpt of that, which was Exhibit 4.

Mr. Porter, can you tell us what your position is today?

MR. PORTER: Yes, I'm the Director of the New York State Water Resources Institute.

MR. RUZOW: Kevin, you have to keep your voices up.

MR. PORTER: The institute is

established under federal and state law. Its purpose, basically, is to be an interface between the New York State academic community and those concerned with water resources in New York State. So we assist government agencies and businesses at all levels in engaging scientific resources through the academic community, and maintain as well an educational and technology transfer program. Those functions are mandated in both the state and federal law.

MR. YOUNG: What is your education?

MR. PORTER: My education is I have a (STORMWATER ISSUE)

diploma in horticulture from the Essex Institute of Agriculture in the UK. I have a BA in mathematics from the University of California, and a Master of Laws from DeMontfort University in the United Kingdom.

MR. YOUNG: I'm going to ask you to look at Exhibit 7, your resume, and go to page 2 of your resume. I'm going to ask you about certain professional activities that are listed.

In 1988 to present, you identified that you were chairman of the Expert Review Panel, New York City Water Demand Study. Can you explain what that is?

MR. PORTER: Yes. In the 1980s, New York City was confronted with a very serious shortage of water because of three recurrent

droughts through the 1980s. So the city and the state, through an intergovernmental task force created by the mayor of New York City, was charged to explore alternatives by which the water deficit could be met.

Some of the options being considered were very contentious, including potentially building a new reservoir or increasing the

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abstraction at Chelsea on the Hudson River, which caused concern among some groups who regard themselves as guardians of the Hudson River.

So it became potentially a very contentious kind of discussion and dialogue. At that time, the governor and the state legislature created what was called the New York State Water Resources Planning Council. The chairman of that council was -- requested by the council to invite me to establish a procedure by which the public dialogue might be assisted in terms of being more objective and less contentious. So I was appointed, as a result of that, as the chair of the committee.

We instituted an expert input into the dialogue, which resulted in the city adopting a very aggressive water demand program through metering, leak control and so forth. Very, very aggressive and very successful. To the extent to which it then became unnecessary to increase the supply. So the city was able to

maintain the system as it was without, in fact, seeking additional means of adding water

to meet the demand.

MR. YOUNG: Is says between 1990 and 1992 you were a founder member of the Ad Hoc Task Force on Agriculture in the New York City Watershed. What was that role?

MR. PORTER: When the city released its draft regulations, the New York City Watershed, there was another outbreak of contentiousness. Given that we had assisted the city with respect to the water quantity issue, the DEP invited the institute to assist with respect to the watershed difficulties.

One consequence of that was I arranged a meeting between the Department of Agriculture & Markets and the New York City DEP to explore ways in which a dialogue might be created involving all the stakeholders, all the parties, to do what, in fact, we had done with the water demand problem. That discussion directly led to the creation of the Ad Hoc Task Force for Agriculture.

MR. YOUNG: What is the Ad Hoc Task Force for Agriculture? What was it?

MR. PORTER: It was cochaired by the New York City DEP and the Department of

Agriculture & Markets, and had a policy subgroup which consisted of senior

representatives of the principal stakeholders. And then a larger adviser group, which included invited members at large as representing the various constituencies concerned with protecting the watershed. That task force met for two years.

My principal role then, became primarily to assist the task force in engaging scientific input. The task force took very early the position that whatever options were examined or adopted, they had to have very sound scientific credentials. So I engaged the scientific community in a dialogue to work out the scientific foundations for the lack of those options that were being considered by the task force.

MR. YOUNG: Did the work of that task force result in the city withdrawing its proposed regulations on agriculture in the formation of what we now call the Watershed Agricultural Committee, WAC.

Can you explain what that means? How did WAC address the city's concerns regarding

impacts of agriculture on the watershed?

MR. PORTER: The farmers on the Ad Hoc Task Force took three basic positions. One was that, as I have already said, whatever program was worked out had to be scientifically defensible. Secondly, they also were implacable in insisting whatever was arranged had to be led by farmers, had to be

owned by farmers. And thirdly, whatever is done, New York City should pay for it, given the beneficiaries were not going to be farmers but principally New York City consumers of water.

The council that was created jointly through the Department of Ag. & Markets and New York City, in fact was constituted with those three premises imbedded within them. The membership of the council was done somewhat informally. At that time there was no constitution for the council, so it had to be created on the basis of many discussions. But the council consists entirely of farmers with the principal exception being one representative from New York City.

In addition to that, there's also a

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wider body consisting of advisory members. And the council was initially funded in the Phase I program with, I believe, just over $5 million from the city to explore the options developed through the task force on ten pilot farms.

Scientists, primarily at Cornell University, were engaged at a level of, I think, a million a year to assist in developing the planning and management on those pilot farms in terms of looking at the scientific issues that were involved.

MR. YOUNG: I see that you were also,

between 1997 and 1998, on the New York State Pesticide-Fertilizer Technical Working Group.

MR. PORTER: Part of the MOA recommended that there be such a working group established to assess the use of pesticides and fertilizers or nutrient management equivalently, and to explore options by which they could be managed to ensure the integrity of the water supply. It was an interagency body. I represented the Catskill Watershed Corporation on that working group.

MR. YOUNG: I see you're also
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currently on the Cornell Nutrient Management Program Work Team?

MR. GERSTMAN: Kevin, it is impossible to hear you.

MR. YOUNG: I see that you're currently on the Cornell Nutrient Management Program Work Team. What is that?

MR. PORTER: That grew out of the Phase I, the Watershed Agricultural Council Program. What we saw was a way of meeting water quality objectives, while at the same time furthering the business interests of the farmers -- preferably in a way that was done frugally. The premise being, if you rely on farmers to depend on some kind of grant, when the grant ends, whatever it is they're doing, they're likely to stop, unless it's to their economic benefit.

As a result of that, I funded -- the

institute funded a group of scientists to critically assess nutrient management on the farms, and that led to what is now called precision feeding, which I believe Dean Frazier may talk about, and also better crop management in a way that actually increases

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productivity but at the same time has environmental benefits.

That core group of scientists morphed into what became at Cornell an institutionalized -- what's called a program, a Nutrient Management Program Work Team.

MR. YOUNG: I'm going to turn to Dean. Dean, can you identify what your current position is?

MR. FRAZIER: I'm currently the Commissioner of the Delaware County Department of Watershed Affairs.

MR. YOUNG: What is the Delaware County Department of Watershed Affairs?

MR. PORTER: It's a department, obviously, of the county, and -- you want to know what we do?

MR. YOUNG: What do you do? What are your responsibilities?

MR. FRAZIER: We act as the coordinator, leader, management of issues involving Delaware County in the New York City Watershed and Susquehanna Basin, and watersheds below the city impoundments.

They're part of Delaware County. Our office

acts as a liaison to a variety of regulatory and nonregulatory agencies in New York State.

We coordinate the efforts of the Delaware County Action Plan, which we'll get into later; and we act as the voice to the Delaware County Water Supervisors to have a unified voice to that body of all county agencies and regulatory bodies and such. And in turn, speak on their behalf.

MR. YOUNG: What is your education?

MR. FRAZIER: I have a Bachelor's Degree in agriculture from Cornell. I have a Master's in organizational development from Binghamton.

MR. YOUNG: What experience do you have working with -- what were your initial experiences working with New York City Watershed issues? Who were you working on behalf of?

MR. FRAZIER: Actually, my experiences start with my birth. A good share of my heritage is under the Cannonsville Reservoir. But as far as my first initiation in terms of work, the New York City Watershed began in August, a week before the city released their

draft rules and regulations where the city attempted to get the agricultural community of Delaware County to endorse their draft regulations before we saw them. That was my

initiation. From that point forward, I took part in the ad hoc policy discussion, discussions that took place.

MR. YOUNG: Who were you working on behalf of?

MR. FRAZIER: I worked representing Cornell Cooperative Extension. We worked through representing the agricultural community in Delaware County, through the period of the ad hoc policy discussions, took part in those negotiations and the subsequent development and implementation of the Watershed Agricultural Program. Took part in the selection of the Watershed Agricultural council members; and a host of other things.

MR. YOUNG: What is your role now in dealing with watershed issues?

MR. FRAZIER: Well, currently, as I described a little bit before, my primary job right now is to try to coordinate the initiatives of multiple departments and county

agencies, along with local organizations, as well as our partners from the city, from DEC, New York State Department of Agriculture & Markets, Department of Health, EPA, towards the common goal of phosphorous reduction in the Cannonsville Basin, as well as the Pepacton Basin and the Susquehanna Basin on the other part of Delaware County.

MR. YOUNG: Delaware County has three

different watersheds, you might say, the Susquehanna Watershed, the Pepacton Watershed and the Cannonsville Watershed?

MR. FRAZIER: Yes. The Delaware River Basin below the impoundments have regulatory authority right up through the headwaters, just as does the City of New York. So we kind of consider that a separate watershed only in the sense it's outside New York City Watershed boundary. About 25 percent of our County land area is in the Susquehanna Basin, which is also regulated by municipalities that we have absolutely no vote in.

MR. YOUNG: What percentage of your county is located in the New York City Watershed? Do you know?

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MR. FRAZIER: I have to stop and think about that. I think it's about 51 percent. 55 percent of the county is in the New York City Watershed, and it represents 51 percent of the West of Hudson, New York City Watershed.

MR. YOUNG: You make reference to something called the Delaware County Action Plan or DCAP. Can you sort of explain what DCAP is and how it came about?

MR. FRAZIER: What it is is a locally driven, science-based, comprehensive basinwide approach to watershed protection. It's a partnership effort. I've alluded to the variety of regulatory partners and such that

we have already. It reflects the local capacity that exists in the county to address water-quality issues and land-use decision-making.

We developed it under the orders of the Board of Supervisors to be frugal in the solutions that we sought, and it is part of our obligations to numerous grants that we received -- had to be transferable, economically viable in terms of

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transferability to other watersheds.

MR. YOUNG: This DCAP program, does it apply just to the Cannonsville or does it apply throughout the Pepacton and Susquehanna?

MR. FRAZIER: We have already transferred many of the things we developed in the Cannonsville, particularly with respect to land-use decision-making, subdivisions, zoning and all those types of issues, source water protection and all that in the Cannonsville Basin. We've also extended it into the Susquehanna.

MR. YOUNG: What was the primary objective of DCAP? Was it to get phosphorous reductions or to become delisted from some list? What do you think were the primary objectives?

MR. FRAZIER: Initially the primary objective was to reduce phosphorous loads to the extent possible to get below the

phosphorous concentrations in the water below the thresholds that would enable us to get off the phosphorous restricted list.

MR. YOUNG: Has that been successful?

MR. FRAZIER: Well, the concentrations
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currently are below the phosphorous restricted, and we're not on the list. But we felt that that's not good enough. We continued to implement DCAP because of the nonpoint source loading variability, and it's not entirely inconceivable that we couldn't be back on the restricted list.

If the State deems that they need to go to a lower concentration, we'll be in a lot of trouble. So we continue to reduce our phosphorous load, not only for water quality protection but that helps us from an economic liability standpoint.

MR. YOUNG: Dean, I show you what has been marked as Watershed Communities 8, 9 and 10, and ask if you would just sort of identify what each of those documents are.

MR. FRAZIER: Exhibit 8 is the Delaware County Comprehensive Strategy for Phosphorous Reductions prepared for the Delaware County Board of Supervisors in the fall of 1999.

MR. YOUNG: I mean like two sentences. Is that sort of the Bible by which you developed the whole DCAP program?
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MR. FRAZIER: DCAP was borne out of the development of this strategy. Explain why we developed this?

MR. YOUNG: Yes.

MR. FRAZIER: We developed this comprehensive strategy in an attempt to get an expansion of the wastewater treatment plant in Delhi, New York. That was the initial reason for doing that, to enable some expansion of two local businesses.

It's a requirement -- that was a requirement of the watershed rules and regulations. If you have a phosphorous restricted basin, in order -- which in a phosphorous restricted basin, expansion or building of a new wastewater treatment plant was prohibited with the exception there was a pilot offset program or a series of variances we could go through. The variance we selected was to develop a comprehensive strategy that enabled -- and then you could have just put it on the shelf. That's all that was required. That would have enabled the wastewater treatment plant in the Cannonsville Basin to get increased flow. We

took it beyond that.

The Delaware County Board of Supervisors looked at this and said: It's nice, another plan, let's do something about it. That's where the Delaware County Action

Plan came in. That's the tool we're using to implement the issues identified in the comprehensive strategy.

MR. YOUNG: Go to Exhibit 9.

MR. FRAZIER: Exhibit 9, Delaware County Action Plan, DCAP II, in Roman numerals, for Watershed Protection and Economic Vitality.

MR. YOUNG: Is that the steps that Delaware County is implementing to reduce phosphorous?

MR. FRAZIER: Yes.

MR. YOUNG: How does that relate to Exhibit 10?

MR. FRAZIER: Exhibit 10, which is the DCAP Report to the Phosphorous Study Committee and Partner Agencies, December 2002. This document, Exhibit 10, is merely a report that reflects progress made, the initiatives that we have underway -- which by the way is being

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revised because this is two years old, virtually two years old. So it's a reflection of the work that's been accomplished.

MR. YOUNG: Can I point you to the Table of Contents to Exhibit 8, and there's something in the Table of Contents which is identified as the Scientific Support Group. Could you describe what the Scientific Support Group is?

MR. FRAZIER: The Scientific Support Group is part of the institutional framework

behind DCAP. One of the things I didn't mention is that part of the charge of Delaware County Board of Supervisors is that we create an institutional framework to the regulatory bodies and the academic institutions to make sure we have credible programs. So the Scientific Support Group is involved in discussion and decision-making relative to the research questions or technical questions that need to be answered, and direct us towards the appropriate projects to answer the questions that we need to answer.

MR. YOUNG: So you have representatives of every --

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MR. FRAZIER: Well, yeah. As you can see by looking at that, we have membership from EPA that continues today; Enviromental Conservation, New York State Department of Environmental Conservation is the chair of that committee and sets the agenda and directs the discussions.

But you can see we have DEP on that, along with a variety of other state institutions as well.

MR. YOUNG: Any private sector individuals?

MR. FRAZIER: I don't believe we have any private sector individuals on the Scientific Support Group.

MR. YOUNG: All governmental?

MR. FRAZIER: Basically governmental.

MR. YOUNG: University?

MR. FRAZIER: Cornell University.

MR. YOUNG: The County Phosphorous Study Committee, that is -- what's the difference between that and the Scientific Support Group?

MR. FRAZIER: The Phosphorous Study Committee is really an advisory group that

helps in setting direction and policy for the Delaware County Action Plan. It also serves as one of our communication links to the regulatory bodies and academia, as well as -- on this particular committee, I don't see them listed, but we do have Industrial Development Agency, the County Economic Development Department and the Delaware County Chamber of Commerce are members of that committee as well. So we have good input, as well as the local farm bureaus and extensions. So the agricultural and nonagricultural business communities are part of that dialogue.

MR. YOUNG: Briefly, I want to turn to the page in the Table of Contents. I'll summarize the Table of Contents to speed this up a little bit. As I understand the Table of Contents, what you did in this document is that you identified and quantified the sources of phosphorous in the Cannonsville Basin doing your own analysis. And then once you

identified those sources, you then evaluated for each source the best management practices that could be implemented to reduce

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phosphorous.

And finally, at the end you developed and recommended a sort of institutional or administrative structure to implement those strategies. Is that a good summary of the organization of this report?

MR. FRAZIER: Yes.

MR. YOUNG: Chapter 3 talks about phosphorous and water quality of the Delaware County Watershed system. Particularly Section D says: "Assessment of existing and perspective phosphorous loads." Can you tell us how you went about quantifying the phosphorous loads to the Cannonsville Basin?

MR. PORTER: The basin has been thoroughly studied, actually starting in the late 1970s with an EPA Recorded Model Implementation Program. The reservoir basin has been studied continuously since that time. That was a $6 million program, and then when the New York City Watershed regulations were proposed, the level of investigations substantially increased.

Now, what that entails briefly is a lot of water quality monitoring. There are

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six continuous stations in this basin

representing different geographic scales. There's a lot of fieldwork of different land uses. And in addition to that, the work or the output of all that work is assimilated in modeling to provide a means of assessing what the information means in terms of management needs, and also when management options are implemented, how they can be evaluated is a major question. And the fieldwork and the modeling provides a means for critically scrutinizing the efficacy of management steps that have been adopted.

ALJ WISSLER: The models are computer models?

MR. PORTER: Yes.

ALJ WISSLER: What particular models are used?

MR. PORTER: We have used an array of models. They're labeled by letters, TWLF, SWAT, S-W-A-T, and HSPF.

In addition to that, we've used more site specific type of models for stormwater, for example, from urban areas.

ALJ WISSLER: Such as what?

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MR. PORTER: I didn't do that work, so I'm not familiar with that. I think Qualcast, Q-U-A-L-C-A-S-T, is the name of it.

MR. YOUNG: Did you review -- are you familiar with the modeling done by DEP to support the TMDL analysis for the Cannonsville?

MR. PORTER: Yes. Not as an expert.
MR. YOUNG: But did you rely on the -- DEP issued a report in March 1999 called, "Proposed Phase II Phosphorous TMDL Calculations for the Cannonsville Reservoir," which was the basis for DEC's adoption of a TMDL forecast. Did you rely on that data?
MR. PORTER: We used the same data. This is a pooled exercise, and Kim Caine [sic] was part of our group in the early days. So yes, we would use the data.
MR. YOUNG: Did you take the result -- to rely on the data, did you use the same results, the same modeling results --
MR. PORTER: Yes, we accepted, obviously, the TMDL.
MR. YOUNG: But in the Delaware County Strategy, Exhibit 8, do you report exactly the same numbers of phosphorous loads from particular sources as are reported in the TMDL Phase II Phosphorous --
MR. PORTER: There's consistency between what has been done through DCAP and what has been done through the DEP, except this is dated 1999. There's a certain amount of work been done since then. So if you like, we have refined and moved beyond this data.
MR. YOUNG: What did your work identify as sort of principal sources of phosphorous -- I'm going to say principal and

relative sources of phosphorous in the Cannonsville Basin?

MR. PORTER: By far the most overwhelming source of phosphorous is farming. It accounts for about two-thirds of the total phosphorous load. The rest is made up from forested lands, abandoned farms, urban areas and septic systems, primarily.

MR. YOUNG: The urban areas, what percent of the total phosphorous load did you estimate came from urban areas?

MR. PORTER: It was about 2 percent, just a little over 2 percent. It's very, very

low. Again, those data are based on a lot of fieldwork. They're not just modeling data. They're based on monitoring stormwater and so forth.

MR. YOUNG: Based upon that work -- I'll change back to you, Dean. What type of programs did Delaware County come up with to address stormwater, for example, phosphorous loads from stormwater?

MR. FRAZIER: Well, we came up with two different approaches to stormwater. I'll start first with the communities. Through various grants from the Department of State and others, we developed -- we did an inventory using GPS systems to identify inventory of the stormwater infrastructure in all the communities and hamlets in the Cannonsville and in Pepacton. We then

interfaced that with GIS data, other land-use data that we had available, topography, soils, variety of different things.

From that, we developed -- I'll back up a step. The Delaware County Planning Department is in the process of developing, and in some cases already have completed,

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comprehensive plans for each hamlet and community. As part of that process, in other words, we're looking at the whole community as was illustrated in prior testimony a month or so ago, the Comprehensive Stormwater Management Plan is part of the comprehensive plan for that hamlet or town or community. So as a result of doing all that inventory, they're in the process of developing the Comprehensive Stormwater Management Plan for each community and draw maps and set priorities on where is the best place to put stormwater protection in place. That's one thing.

The second component of that were the development -- and this is more in an infant stage than the community, but we developed what we call Highway Management Plans. And that is looking at all the rural highways, be they county or town owned. And in that effort, we're inventorying all the stormwater infrastructures through GPS, interfacing with Geographic Information Systems so we can

identify and inventory each structure, know
where it is, know what its status is.
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And from that, the point we're at now is that we have several towns that want this done for them. We're a little limited by resources. A little help from the city would be nice. But in any event, what we'll do next is an engineer's assessment for each highway and road in each town. That's our goal.

When we do look at that, we will be utilizing the Salt Water Assessment Model, or SWAT, that Keith referred to. We can look at those roads in the context of the subbasins of the Cannonsville Basin. And we know where the primary loads of phosphorous, et cetera, are coming from, so when we're looking at our roads, this Highway Stormwater Management Plan are actually -- highways are typically a delivery mechanism for the runoff from contiguous land uses, be they agriculture or forest.

So we're going to look at that when we look at highway plans. It's all quite integrated in terms of how we're moving forward and where we're setting our priorities.

We also -- yeah, I should back up. We
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also bought a vacuum truck that we are using in the communities and outside the communities to -- where we're going around and cleaning

out the stormwater -- I don't know the names of these things -- catchment basins, and recording the load of phosphorous and sediment that we're taking out of that.

That's all interfaced back into our databases so that we're developing a maintenance plan, identifying each component and saying: Okay, well, we have had to clean this out every three months. This one, only once every six months. And so we can set up a priority for how we need to maintain those and keep those cleaned out.

MR. YOUNG: For the most part, you really focused on agriculture, is that correct, in reducing phosphorous?

MR. FRAZIER: Yes.

MR. YOUNG: To get an idea, how many farms are there in the Cannonsville district?

MR. FRAZIER: That's a fluid number, unfortunately it's fluid downward. My best estimate today is 125 to 135.

MR. YOUNG: Do you have an idea,

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either you or Keith, how many animal units there are in the Cannonsville or Delaware County, whatever one you know?

ALJ WISSLER: Why don't you define an animal unit for us.

MR. FRAZIER: The animal unit -- depending on definition means a lot of different things -- but animal unit in the

sense that any information I'm going to say here is related to a 1400-pound dairy animal, mature dairy cow, exclusive of all the replacements and like that.

There are approximately -- again, this is going back two or three years -- at that time there was about 8,000 mature dairy animals in the Cannonsville Basin. I don't know exactly what it is today.

ALJ WISSLER: Keith, how much phosphorous is in the manure from one mature 1400-pound dairy cow?

MR. PORTER: That is variable, but the number that was used in DCAP was 34 kilograms per 1400-pound animal.

MR. YOUNG: 34 kilograms per year?

MR. PORTER: Yes, 34 kilograms per

year. The precision feeding -- the management program I referred to is succeeding in reducing that substantially through the way the animal is fed. By reducing the phosphorous in the feed, the work that's being done through DCAP shows as much as 30 percent on average can be achieved as a reduction in the manure. So the 34, we know is already coming down.

MR. YOUNG: You're saying that each -- back when you were doing -- developing DCAP, there were 8,000 mature cows in the Cannonsville Basin. Each cow on average generates about 34 kilograms of phosphorous

per year in its manure. Is there any numbers you use to say what percent of phosphorous ends up in the cow manure, ends up being released into the environment of surface waters?

MR. PORTER: The rule of thumb is 10 percent on a well-managed farm.

MR. FRAZIER: In actuality, the one farm that has continuous monitoring, that's exactly what it was.

MR. PORTER: Yes, it's well-managed.

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MR. YOUNG: Can you then describe some of the programs you have come up with to address reducing the phosphorous loads from these farms; precision feeding first?

MR. FRAZIER: Under the DCAP umbrella, there were two basic --

ALJ WISSLER: Let me stop you. The 35 kilograms was what?

MR. YOUNG: Amount of phosphorous.

MR. PORTER: Per animal, per year.

MR. YOUNG: How much phosphorous does a human on average give off? I know it varies.

ALJ WISSLER: It depends on how they're fed.

MR. PORTER: As part of the scientific work, a great deal of research is being done on septic systems, not through the institute but through the Soil and Water Conservation

District of the county. Their best estimate of the per capita phosphorous load is only half a kilogram a year. I find that a little low, actually. I would have expected close to 1 kilogram.

That would mean that an animal has 60

times the amount of phosphorous per year as a human being, if that number were the real number. But that's the number that the county is actually using based on their work, so I can't really question it.

ALJ WISSLER: If I'm milking a 100 Holsteins, that's 3500 kilograms of phosphorous per year?

MR. PORTER: Yes.

ALJ WISSLER: And 350 kilograms of that is getting off the farm?

MR. PORTER: About 10 percent, yeah, over 300 off that farm.

MR. RUZOW: A well-managed farm.

MR. YOUNG: Can you describe, Dean, the program that was developed as far as DCAP called precision feeding, and the logic behind it?

MR. FRAZIER: It goes back to frugality and the charges we have from the Board of Supervisors, but it's a low capital type of initiative. Basically, all you're doing is trying to bring -- assure that the phosphorous consumed is in line with the dairy cattle requirement. And for a variety of

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different reasons, there's a lot of excess phosphorous fed on farms.

So through a quantified process, combined with Cornell and some of the local expertise we have here, we did pilot farms where we actually quantified the reductions of phosphorous in manure on working viable farms. This is not something we're just pulling out of a book, we've actually done it in the county.

MR. YOUNG: And you've done it by controlling the amount of phosphorous in the feed?

MR. FRAZIER: That's the primary thing, but there's other sources of phosphorous. Let me back up. Purchased feed is the largest source of phosphorous coming into the basin, so that's why we focused on that. That was the biggest priority we saw, so that's why we targeted it.

ALJ WISSLER: Let me stop you for a minute. So for a working dairy farm from Delaware County, they don't grow their own corn for feed and stuff like that?

MR. FRAZIER: Sure, they do. I'm

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talking about purchased concentrates, grains, corn, soy.

ALJ WISSLER: Beyond what they --

MR. FRAZIER: What they grow, yes.

That's also their largest expense. It also happens to be the largest source of phosphorous coming onto the farm, and coming into the watershed.

ALJ WISSLER: Phosphorous that wasn't in there before?

MR. FRAZIER: That's right.

MR. YOUNG: How do you get the feed to have less phosphorous?

MR. FRAZIER: That's a little bit tricky, but it goes back to evaluating what they grow on the farm, the quality of that, how much they'll eat of that. And then evaluating the sources of corn, soy, different grain byproducts for phosphorous content, and trying to match that to the requirements.

It varies from farm to farm, so you try to target, to get as close to the requirement as established by the National Research Council. That's the objective.

We have had to overcome some myths

with that because farmers fed surplus phosphorous for some reasons that were -- have no scientific basis.

MR. YOUNG: The amount of phosphorous that goes into the cow is proportional to the amount of phosphorous that goes out of the cow?

MR. FRAZIER: Well, what they utilize, leftover is what comes out, yeah.

MR. YOUNG: So what type of reductions

have you been able to achieve in the phosphorous coming -- is it phosphorous released from the cow or is it phosphorous being released to the stream?

MR. FRAZIER: What's been quantified on farms is that you could see up to 30 percent -- in some farms it's highly variable depending on where they were before you began, but up to 30 percent. I don't think we're going to see 30 percent on every single farm, but that's a substantial reduction compared to almost anything else you could think of, point or nonpoint source, coming into the basin.

MR. YOUNG: So when the Judge has

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indicated a typical farm may release up to 300 pounds -- kilograms a year, 30 percent reduction would be about 100 kilograms?

MR. FRAZIER: Yes.

MR. YOUNG: How many farms are you doing this on now, precision feeding?

MR. FRAZIER: We're still in the pilot phase, but I must tell you that -- we're doing it on ten farms is the direct answer. But it's more than that, in that we've been working with the feed industry and dairy nutritionists and veterinarians for two, three, four years now, and there's been a number of papers generated at professional conferences and such; and the feed industry is

already moving in this direction to evaluate more closely the phosphorous content.

But what we're doing on these farms is a quantification process to demonstrate it can work without harming productivity. In some cases, actually improving profitability. So that goes to the long-term adoption of it.

MR. YOUNG: Long-term, what administrative structure is going to be in place to administer such a thing? How do you

expect it to go on without -- does it require major governmental assistance?

MR. FRAZIER: This is only my opinion. The governmental assistance would be the continued work and support from Cornell through the technical -- like Cornell Cooperative Extension in the field to continue the support of the private sector. You have to have private sector involvement in this in order to make this work. Because they're on the farm much more frequently than you could ever have any governmental agency out there. And it's to that industry's benefit to do that because --

MR. YOUNG: You're talking about the feed industry?

MR. FRAZIER: The feed industry to do that because it's part of the nutritional services. And the farms in the Cannonsville know they've got to -- they're cognizant that phosphorous is an issue and the feed industry

has got to be there to help them through that process.

We have three companies that are the primary providers of that service of the

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farmers in the watershed that are going through the process of education and adopting and utilizing it on more than just the ten demonstration farms. I don't know how many, but it's out there.

MR. YOUNG: The Judge also mentioned the fact that some of the food comes from the farms -- food that the farmers grow themselves. How are you attempting to improve phosphorous reductions from that?

MR. FRAZIER: Basic premise on a dairy farm is the more home grown forage you can feed, the better off you're going to be. That helps reduce the amount of purchased feed with all the phosphorous in it that needs to come on the farm because you're supporting more production by the forage that you grow.

So from that standpoint, you're bringing less phosphorous onto the farm. That goes towards reducing phosphorous accumulation in the soils, which is the issue. We have far more phosphorous being brought into the basin and accumulating in soils which is acting as a bank that slowly releases all the surplus phosphorous. So that's how that goes towards

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reducing the balance of phosphorous because you're bringing less in --

MR. YOUNG: What are you trying to do to make sure that more phosphorous gets recycled within the basin?

MR. FRAZIER: Well, we initiated an effort locally called Forage Systems, and in that process -- really quite simple, we're trying to look at different technologies in terms of variety selection, harvesting types, storage and all that type of stuff, to improve the quality on the farm. The higher quality of the forage, the more they'll consume, the less concentrate they have to buy. That goes to the bottom line of the farmer.

ALJ WISSLER: What is the nutritive value of phosphorous for plants for growing corn?

MR. FRAZIER: Nutritive value?

ALJ WISSLER: Is it essential to the plants?

MR. FRAZIER: Absolutely. The problem is, is that we're importing far more -- something like for every pound you bring on the farm, typically, I think this is true

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across New York State, 60 or 70 percent of it is staying on the farm. In other words, some is going out in milk production, some goes off in an animal they might sell, some might go off in the forage that they produce or sell, but the problem is that we have a surplus and

it's staying on the farm.

ALJ WISSLER: If I reduce -- if I reduce the phosphorous content of the feed that I give my animals, then their manure will be less valuable to me as a nutrient for when I plow it into my fields every spring before I plant my corn?

MR. FRAZIER: Not in terms of phosphorous because we have so much surplus phosphorous to deal with, it's very difficult to get to a mass balance of zero with phosphorous. There always seems to be a surplus. Even if you reduce to nutrient requirement needs, you're going to have more phosphorous than the plants need.

MR. YOUNG: Dean, what are your estimates as to the total phosphorous reduction you hope to get just in the Cannonsville from implementing those two

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programs?

MR. FRAZIER: Well, our goal that we had set, our operating goal set a 7,000-kilogram reduction from those two different initiatives.

MR. YOUNG: How much money has Delaware County alone invested in the DCAP program?

MR. FRAZIER: My best estimate is over $4 million. I know that two years ago we were a little over three, and if you add in just

the cost of my department and a few others, it's easily four .

MR. YOUNG: Have you gotten money elsewhere?

MR. FRAZIER: Yeah, we've been fortunate enough to get around seven and a half million dollars in grants.

MR. YOUNG: Where do those grants primarily come from?

MR. FRAZIER: Primarily from the feds, Safe Drinking Water Act monies, and for monitoring models, science demonstrations. Then we also receive a substantial amount from the Watershed Environmental Assistance

Program, WEAP, under the Water Resources Development Act through the Army Corps of Engineers.

MR. YOUNG: I'm going to -- you haven't studied, or have you studied the phosphorous load allocations from this particular project that's the subject of this hearing?

MR. FRAZIER: I have looked at them.

MR. YOUNG: For purposes of this question, I'm going to give you what is in the record so far. In Applicant's Exhibit 47, I think they gave a range -- Applicant's 47 being the Crossroads Ventures, LLC, Total Phosphorous Loading Calculations and Comparisons dated June 2004. They gave a range of phosphorous loadings, I think, in the

Ashokan from this project of somewhere between 196 kilograms to 206. And they gave a range of phosphorous loadings into the Pepacton, somewhere between 167 kilograms to 189. And that's combined both from the wastewater treatment plants and from the stormwater.

Are those significant phosphorous loadings in those watersheds?

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MR. FRAZIER: In terms of the Pepacton Basin.

ALJ WISSLER: Six healthy cows.

MR. FRAZIER: Personally, I don't consider them significant when the available load is in excess of 30,000 kilograms per year under the TMDL. I don't understand the -- maybe it's something that I don't understand, but in terms of phosphorous loading, I don't view those as significant.

To give you a perspective, in the Cannonsville Basin, if we looked at all the urban runoff, our best estimate is maybe 200 kilograms we could capture from urban impervious surfaces flowing into Cannonsville.

Well, we have 50,000-kilogram load compared to 200 kilograms from impervious surfaces, I'm thrown back by that. I guess I would stay away from the Ashokan. I've read it. Even in that one, I'm a bit mystified as to the major concerns, just relative to the total -- or the available load under the TMDL.

MR. YOUNG: You have previously indicated that under the city watershed regulations that if a basin is phosphorous

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restricted, which means, I guess, that it exceeds the water quality standard for phosphorous, that the regulations prohibit new point sources. Why is that an effective way -- or is that an effective way of addressing phosphorous loads in the Cannonsville, for example?

MR. FRAZIER: Not in the context of the total load, at least in the Cannonsville Basin, that's -- it may have issues to do with demand and control. But in terms of the big picture of water quality, it seems to me that what we've done under DCAP is develop a plan that can be done in any basin, identify the priority areas and go after those types of reductions, as opposed to the hundreds of thousands of dollars it takes to chase down 30, 40, 50 kilograms, say, in the Village of Walton.

I'm not saying stormwater isn't important, I'm just saying relative to phosphorous, in terms of our objectives, in terms of a comprehensive plan when point sources make up such a tiny fraction relative to the potential to get the reduction in the

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nonpoint source --

MR. YOUNG: Keith, can you explain the

TMDL process? What is the TMDL process?

MR. PORTER: It's a way of determining what is acceptable in terms of a total loading to a water body. Under Section 303 is not in compliance with some specified water standard. If a water body is not in compliance and the TMDL process is triggered, that can be calculated multiple ways. But it's based on mass balance calculations that allow one to then look at the existing loads relative to the total load that will be permissible as defined by the water standard.

In other words, the concentration, which is how the standards are normally stated, is transformed into a loading ceiling for that water body, whether it's a lake or river or whatever.

Then the existing loads in that watershed for that water body are calculated. On the basis of that, an allocation is performed as a basis for targeting where there should be reductions to bring that water body into compliance with the drinking water

standard.

MR. YOUNG: Have you reviewed the TMDL's for the Pepacton and Ashokan?

MR. PORTER: Not in detail.

MR. YOUNG: Can you identify for us what is the available load, you might say the excess load available for --

MR. PORTER: What's currently available for Ashokan West is about 8,000 kilograms, and Ashokan East is a little more than a thousand.

MR. YOUNG: What about Pepacton?

MR. PORTER: Pepacton is 33,000.

MR. YOUNG: When you say available, that means that what's being used up --

MR. PORTER: That's surplus to requirements right now.

MR. YOUNG: And given that, what's your opinion regarding the loadings from this project?

MR. PORTER: They're de minimus, trifling.

ALJ WISSLER: They're what?

MR. PORTER: Trifling. If you made a complete urban area, say akin toward an urban

area, all 573 acres is now water, you get -- the loading from water is 1 kilogram per hectare per year. And that's measured. So we're going to get 500 kilograms from this site that's now paved over and got houses. Perhaps I'm exaggerating a little bit, but the claims that the reservoirs are threatened by loading from this development makes no sense in terms of the arithmetic.

MR. YOUNG: Thank you. Finally, just for the record, we're going to ask if there is an adjudicatory hearing on this issue, we would ask the Court to take judicial notice --

DEC has published a public notice to modify the TMDL for the Ashokan Reservoir. In doing that, what has been determined is that the Shandaken Tunnel, which takes water from the Schoharie Reservoir system and brings it to the Ashokan system, was an illegal point source. And I think the City was brought to court and was ordered to pay a penalty and was required to submit a SPEDES application for that.

The draft public notice for modification of TMDL indicates that the

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phosphorous loading from the Shandaken Tunnel to the Ashokan is approximately 10,400 kilograms. And our position is that if phosphorous is a problem in the Ashokan, a far more cost effective way of addressing phosphorous would be to install some form of treatment -- which treatments have been available and DEC is currently investing in -- on the Shandaken Tunnel. That's where you're going to get real benefit for your dollar, not by making poor people who live in these watersheds pay these astronomical costs to eliminate phosphorous in the watershed.

MR. PORTER: It is very easy to -- when you slip between units to forget to make the correction. The loading from an urban area in the Cannonsville Basin and Pepacton as we measured it is 1 kilogram per hectare, not

acre. There are about 250, roughly, hectares in this development. So if you take that loading rate, you get 250. I didn't change the acres down to hectares as I should have done, so my loading statement --

ALJ WISSLER: About 4.6 acres per hectare -- about 5 acres; 4 and a half or 5

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acres per hectare?

MR. PORTER: Roughly 2.5 acres per hectare.

ALJ WISSLER: All right.

MR. YOUNG: Thank you.

ALJ WISSLER: Are we breaking for lunch?

MR. GREENE: We can break for lunch. If we respond, we can make a quick statement when we come back. If that's what you want to do.

ALJ WISSLER: Well, if you want to make a brief response now, that will be fine with me. And then we can take lunch and then we can come back and only have to do pesticides.

Why don't we take five minutes and then everybody who wants to make a little statement can make a statement and then we can break for lunch.

(12:59 - 1:10 p.m. - BRIEF RECESS TAKEN.)

ALJ WISSLER: Mr. Green?

MR. GREENE: Just very quickly. We

have never said that the phosphorous from this
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project will impair the reservoirs of their best-intended uses. Clearly, however, the control of phosphorous from this project was an essential consideration in writing the draft SPEDES permits, and in developing the DEIS; therefore, the analysis has to be performed and the Applicant has not accurately analyzed the increments of phosphorous resulting from this project at this time. The SPEDES permits cannot, therefore, be issued until that analysis is performed correctly.

ALJ WISSLER: Anything from anybody else before we break for lunch? I think we are up to pesticides; am I correct?

MR. RUZOW: Yes.

MS. BAKNER: Yes.

ALJ WISSLER: Okay. Any idea how long a presentation that will be?

MS. BAKNER: DEP is next up.

MR. GREENE: We shouldn't be more than a half hour. Should be very short.

ALJ WISSLER: Anything from --

MR. GERSTMAN: Our experts -- we'll reserve our right to reply.

MS. KREBS: Department Staff will be
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about a half hour.

ALJ WISSLER: Mr. Ruzow or Ms. Bakner?

MS. BAKNER: About an hour.

ALJ WISSLER: Okay. So we can get it all in this afternoon? Sounds good. How about we break until 2 o'clock.

(1:11 - 2:12 P.M - LUNCHEON RECESS TAKEN.)

ALJ WISSLER: Going back on the record. Pesticides, Mr. Greene?

MR. GREENE: I'll introduce this briefly. This is, I think, Issue 6 in the City's petition. We'll be presenting the testimony of Charles Cutietta-Olson from DEP, and I'll turn it over to him right now.

MR. CUTIETTA-OLSON: I want to start off pointing out some areas of agreement that we have with Dr. Knisel's testimony regarding the use of the GLEAMS model, specifically some of the parameters that were applied in that model.

First of all, that it was run for only one year -- Dr. Knisel testified that the model looking at pesticide impacts should be run for several years of participation to account for variation. We agree with that.

The Applicant selected practice parameters in the model that took credit for crops grown on contour, and that would not actually reflect the turfgrass condition of the golf course. So we think that as a result, there's probably more runoff from the site than the model would have shown. Use of the default parameters of the soil profiling

were not particularly proper because the site is going to be changed, the soil profile is going to be substantially changed.

Dr. Knisel testified that the DEIS failed to look at pesticide impacts that might occur as a result of grass clippings that would be covered with pesticides and left on-site. There is no discussion how those would be handled, but we expect that issues like that would be addressed in a detailed integrated management plan.

I want to get back to the soil profiles issue for just a minute. The soil -- the way the models were run, they used existing soil profiles. That's what's stated in the DEIS. But in fact, the predevelopment

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soil conditions are not the conditions under which the pesticides are going to be applied, so the models wouldn't accurately reflect the postdevelopment condition.

In Appendix 15, Section 2.2.4, the Applicant states that it used the soil series profiles of the sites where the golf course would be constructed; and Section 3.6 of the DEIS only describes the preexisting soil conditions. There is no description in there of the postdevelopment conditions. In fact, we were not able to find in one single portion, in a single paragraph, a clear and concise description of what postdevelopment

soil conditions and topography was going to be. We actually had to sort of piece it together.

Getting in that -- piecing that together, the Applicant indicates that rock taken from blasting areas to construct golf course holes are going to be used as fill. Use of LEACHM -- the LEACHM model was not used to describe what's going to happen with that crushed rock area. The crushed rock is obviously not going to behave like a soil for

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purposes of infiltration of pesticides.

In the DEIS Section 2 -- I'm sorry, page 2-55, there are some descriptions that I've been asked to read regarding the use of crushed rock. Paragraph B: "Approximately 18,000 cubic yards of rock material from hotel excavation will be crushed on-site for subbase material for roads, drives and parking areas. The remainder of the material will be crushed and available mostly for golf course and site work construction fill material." Golf courses are obviously where the pesticides are going to be applied.

Next paragraph: "Approximately 18,200 cubic yards of rock blasted from the irrigation ponds will be used as fill on holes 1 and 9, will be placed there during Phase 1. The rock will be placed on two and a half acres of logged but not grubbed areas with an average depth of the fill to be 4.5 feet."

Two more paragraphs down:

"34,500 cubic yards of rock will be placed on approximately 8.8 acres that are logged but not grubbed on the range in 15 Phase III areas. Average depth of fill will be

2.4 feet."

Another postdevelopment feature that was not represented in the LEACHM or GLEAMS modeling efforts that could influence pesticide transport offsite are the underdrains of the fairways. The fairways are to be underlain by perforated pipe that are proposed to be connected to the operation phase stormwater basins.

So below the soil profile, they're going to be -- which I'm going to refer back to in a minute -- they're creating a new soil profile on top of the crushed rock, and then there's pipe underneath that so that the soil doesn't get too saturated, because since you are irrigating, keeping the soil moist, there are issues with mold and various other things that golf courses have to control.

So with the underdrains now and the crushed rock, you have a layer -- first of all, the underdrains are going to actually increase a lateral transport coefficient. Where you have infiltration into the ground where LEACHM would have modeled infiltration to the ground, you actually have underdrains

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intercepting that and increasing what would be a lateral transport component that would be normally modeled by GLEAMS.

Or you have a faster vertical transport component because under the soil layer that they're putting on it's crushed rock, which has very high porosity and the water is going to completely fall through it.

This is from page 2-45 of the DEIS Section 5: "Fairway drains will be installed during construction, and during construction these drains will consist of perforated stand pipes surrounded by a gravel rock jacket, all surrounded by perimeter silt fence. Detail 6, Sheet CP-18. These fairway drains will be piped to temporary sediment basins that will be converted to operational phase basins." The storm basins that we have been contending are likely, in some cases, under some precipitation conditions, have contributed to surface discharge.

The Applicant is planning to scrape the site of existing soils and replace with 180,000 cubic yards of new soil for each site. The depth of soil is only going to be

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12 inches at Big Indian, according to the Wildacres Water Budget on page 6 and the Big Indian Water Budget on page 4.

The actual characteristics of the soil are unclear. There was someone who testified

the last time I was here in June who described the soil as being a mixture of topsoil and sand. But in any case, this is not the preexisting soil conditions that was used in the models. The models, therefore, do not accurately represent the conditions under which pesticides are going to be applied. And we believe that in order to accurately characterize the impact of the pesticide, the postdevelopment condition should be described as accurately as possible and represented in the model.

Furthermore, some of the pesticides that the Applicant -- that were listed in the Attachment 4 of Appendix 15 include herbicides that have more than one active pesticide ingredient. And again, to accurately characterize the impact of pesticides, there should be some inclusion of pesticides that would be co-applied. The way the model was

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done, they looked at the concentration of each pesticide individually, but in fact, there may be conditions where you would have the sum of two pesticide concentrations exiting offsite.

In terms of the monitoring wells --

ALJ WISSLER: Explain that to me. I'm not quite sure I follow that.

MR. CUTIETTA-OLSON: The way the modeling was done when they listed their concentrations of pesticides that would be

exiting offsite, and compared these to any applicable standards or LC50s, you're looking at each pesticide individually. But if you're applying two pesticides, you would be looking at the sum of those two concentrations, I would think.

I mean, that's something I think should be looked at. It is not uncommon for pesticides to be co-applied. And in Attachment 4, Appendix 15, several of the commercial products that were listed had two pesticide active ingredients. They were herbicides.

But in the course of turf management on a golf course, there might be -- you might

apply several different pesticides at once.

ALJ WISSLER: So there were herbicides with pesticides in them?

MR. CUTIETTA-OLSON: No, there were herbicide products that had two different active ingredients. So both of these active ingredients are being applied at the same time. So then if there is transport of this material offsite, it's not -- you're not looking at a single concentration of one herbicide, you're looking at two concentrations.

The SPEDES permit identifies some wells that are going to be used to look at potential impacts to groundwater from the pesticides. We were able to find descriptions

of three of them: The Rashid Well, Janus East Well and the Midroad Well in the DEIS. The Mann Cabin Well, we were not actually able to find a reference to, so I'm not exactly sure what the -- where that well is located or what it's monitoring.

In fact, the diagram, Figure 3-16, doesn't show you where any of the wells are specifically. So we don't really know exactly

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where the monitoring points are.

But in each of the three wells that we were able to get some description on, the monitoring depths are 475 feet, and Janus East and Midroad Well are 698 feet deep. These wells are looking at water in deeper aquifers, the drinking water aquifer.

If you want to look at the risk of pesticides migrating offsite, it would be protective of waters of the state to look at shallow groundwater before so that you have some indication of potential impacts before it gets to the deeper aquifer. If you're detecting pesticide concentrations in the deep aquifer, now you have an environmental problem.

ALJ WISSLER: It's too late.

MR. CUTIETTA-OLSON: It would be better to identify if that problem has a potential to occur and change management practices accordingly.

The proposed monitoring wells are located in the deep aquifers. I would suggest, although I would hope that we could actually discuss this further, that if a
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monitoring program were developed, that a shallow well should be located in areas on-site where infiltration is likely to occur, level areas, and then also at the property edges.

Finally, I just want to state regarding the analytes. When we reviewed the list of pesticides that the Applicant is proposing, Table 5 of Appendix 15, we found -- actually with the assistance of the DEC, that 16 of the pesticides are not analyzable by a currently certificate method.

MR. GREENE: I'm going to hand out a list of those pesticides. I'm not sure which exhibit this will be, but it will be City Exhibit --

ALJ WISSLER: This will be City Exhibit 28.

(LIST OF PESTICIDES PERMITTED FOR USE ON PG8-11 OF THE WILDACRES DRAFT SPEDES PERMIT & PG 18 OF THE BIG INDIAN SPEDES PERMIT FOR WHICH CERTIFIED ANALYTICAL METHODS DO NOT CURRENTLY EXIST RECEIVED AND MARKED AS CITY EXHIBIT NO. 28, THIS DATE.)

MR. CUTIETTA-OLSON: There are
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actually 18 pesticides on the Table 5 that are

not analyzable by currently certified methods, but two of them are not listed on the SPEDES permits. So the 16 listed on the page you're holding are actually 16 taken from the SPEDES permit that are not analyzable by currently certified methods.

The SPEDES permit states that: "If EPA methodologies do not exist for a particular pesticide, the Department may, at its discretion, require an MDL/PQL study to be performed by the permittee following review of manufacturer's literature on testing methodology." MDL means Method Detection Limit, and PQL means Practical Quantitation Limit. Basically, the work a laboratory undertakes to determine if they can, in fact, detect a certain analyte, and the concentration at which they can detect it.

MS. BAKNER: That was Exhibit 10 of the Office of Hearings and Mediation record, which is the SPEDES permit that Charlie was referring to.

MR. CUTIETTA-OLSON: DEP believes that DEC should require analytical methodology

development if pesticides that are not analyzable by current certified methods are used on the site. Further, we would expect that if pesticides were detected using a method that is not certified, and the quantity was in excess of the SPEDES permit limit, that

it would be considered a SPEDES violation.

Typically, SPEDES violations are documented with certified laboratory methods. In the case of these 16 pesticides, if they were detected, they would not be detected by certified methods.

That's it for me.

MR. GREENE: So if I could quickly summarize three primary issues that the city has raised here. First of all, the pesticide models used by the Applicant in Appendix 15 are not run using postdevelopment soil in top gravel conditions on the site, therefore, they're not representative of actual pesticide runoff impacts that could result in the postdevelopment phase.

Secondly, the groundwater monitoring wells set forth in both draft SPEDES permits are not adequate for protecting groundwater

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because they are too deep. Therefore, shallow wells should be required under the SPEDES permit as well.

Third, before one of these 16 pesticides are applied, if any of these 16 pesticides are applied, there must be certified analytical methods to verify their presence in surface or groundwater so that they can be detected before there's a serious impact.

ALJ WISSLER: Okay. Marc, you're not weighing in on this?

MR. GERSTMAN: No.

ALJ WISSLER: Do you want to go next or do you want Staff to go?

MS. KREBS: We wanted to hear the response if that's all right with your Honor.

ALJ WISSLER: That's fine.

MS. BAKNER: First of all, we have two exhibits, one is the resume of Dr. Martin Petrovic, and the other is an excerpt from a New York City DEP Bureau of Water Supply Report dated May 15th, 2003. And it is the cover page and page 27 and 28.

ALJ WISSLER: Applicant's 92 and 93.

MS. BAKNER: Yes.

(CV OF A. MARTIN PETROVIC RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 92, THIS DATE.)

("NEW YORK CITY DEPARTMENT OF ENVIROMENTAL PROTECTION BUREAU OF WATER SUPPLY DATED 5/15/03" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 93, THIS DATE.)

("GOLF COURSE IMPACTS TO SHALLOW GROUNDWATER SUFFOLK COUNTY, NY, DECEMBER 2002" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 94, THIS DATE.)

("GROUNDWATER QUALITY, WATER QUALITY IMPACTS BY GOLF COURSES" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 95, THIS DATE.)

("TURFGRASS AND ENVIRONMENTAL RESEARCH ONLINE - USGA" RECEIVED AND MARKED AS

APPLICANT'S EXHIBIT NO. 96, THIS DATE.)

ALJ WISSLER: Ms. Bakner, did you read these into the record?

MS. BAKNER: Not yet. We also have to enter into the record Applicant's Exhibit 94, which is an article -- report dated December 2002 by the Suffolk County Department of Health Services and Division of Environmental

Quality, entitled, "Golf Course Impacts to Shallow Groundwater in Suffolk County, New York."

We also have Applicant's 95, which is a document entitled, "Groundwater Quality, Water Quality Impacts by Golf Courses" by Cohen, Svrjcek, Durborow and Barnes. I'm just looking for a date here. Looks like October 1997.

Lastly, Applicant's Exhibit 96, which is an article from the USGA Turfgrass and Environmental Research Online, Issue 3, Number 4, dated February 15th, 2004. And I will circulate copies of these to the parties when next we're together, or sooner if anyone needs it.

I'm going to hand these to Dr. Petrovic. He'll cover them when we get to his testimony.

First of all, for the record, I want to note that we have covered pesticides and herbicides and fertilizers in several sections of the Draft Environmental Impact Statement,

most significantly in Volume 6, Appendices 14, which is the Integrated Turf Management Plan;
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Appendices 15, which is the Fertilizer and Pesticide Risk Assessment; and also in the following sections: Section 2.4.8 -- Volume 1 of the DEIS, Section 2.4.8; Section 3.2.2; Section 3.2.3; Section 3.3; Section 3.5.3; Section 3.6, which specifically deals with soils; and Section 5.7.

In addition to these areas, we also have figures -- Figure 2-10, Tables 3-12 through 3-15. Table 3-29B and Table 3-30. Those are all in Volume 1 of the DEIS.

The next document that comprises a significant portion of the record for this is Exhibit 10 which Mr. Olson had referred to previously, I believe it's Office of Hearings Mediation Exhibit 10, which is the draft SPEDES permits. And I would just direct you to page 10 of 23, where the effluent limits and quality monitoring of the micropool detention ponds is set forth. That's number 5, which includes the language that Mr. Olson was quoting.

ALJ WISSLER: Specifically, looking at the Wildacres permit?

MS. BAKNER: Yes, specifically looking
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at Wildacres, yes.

And No. 6, which has to do with the

pesticides that can be used. And I just want to note for the record that Section 6B provides that: "Should the permittee wish to use additional or alternate pesticides not included on the above list, authorization from this Department, the Department of Environmental Conservation, shall be required prior to use. All pesticides proposed for use must comply with 6NYCRR Part 326, Registration and Classification of Pesticides."

I also wanted to note that in "C," DEC has required that we make our pesticide application records available to DEP, as well as the Towns of Shandaken and Middletown. It's 6C.

Then if you look at page 15 of 23, that covers the pesticide -- the surface water pesticide monitoring, as well as the groundwater monitoring requirements listing the names of the wells for Wildacres.

For Big Indian, the groundwater monitoring can be found under -- there doesn't appear to be a section, but it's 13 of 21, and

it lists the location of the groundwater wells. And the special conditions for pesticide management are set forth on page 18 of 21. And it's Special Conditions for Pesticides Management. That pretty much covers it for the SPEDES permits.

Today we have, to respond to the comments regarding pesticides, we have two

experts, Kevin Franke of the L.A. Group, whose resume has already been entered into the record, and Dr. Martin Petrovic, whose resume is Applicant's Exhibit 92.

What I'd like to do is start with Kevin and go to Dr. Petrovic. If you could describe your qualifications and your experience in doing these types of models so that we can get into the record your expertise with doing this.

MR. FRANKE: Sure. Started off dealing with pesticides in -- my Master's Degree research was on aquatic pesticides. Upon employment with the L.A. Group, again, analyzing pesticide use on golf courses.

Beginning in 1989, I believe we were the first firm in the state to utilize one of

the models that we've used in this risk assessment, which is the LEACHM model developed by Cornell University.

Then computer modeling of golf courses throughout New York State, as well as golf courses outside of New York State as far away as Hawaii. Models used in here, as well as others.

MS. BAKNER: How many -- give me a ballpark number of how many of these have you run, say, since 1989?

MR. FRANKE: At least one a year, so were you're looking at 15 or so.

MS. BAKNER: Were those models used as part of DEISs for other projects in New York?

MR. FRANKE: Yes, including two here in Region 3 within the last 10 years.

MS. BAKNER: Were those both golf course projects?

MR. FRANKE: Both golf courses, one in Rockland County and one in Dutchess County, both of which are up and running now.

MS. BAKNER: Was there anything unusual about this project relative to the types of modeling that was done here?

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MR. FRANKE: No, the modeling approach wasn't different. Daily use was different from site to site, but the approach is fairly standardized.

MS. BAKNER: Dr. Petrovic, if you could just go over your qualifications and your involvement in these types of projects, that would be great.

DR. PETROVIC: I have a Master's of -- Master's in turfgrass management from the University of Massachusetts in Amherst; a Ph.D in Michigan -- from Michigan State in turfgrass soil science.

I've been on the faculty of Cornell University since 1979, currently as a full professor in the department of horticulture. My area of expertise is turfgrass management. I teach courses in turfgrass management at Cornell.

My primary role at Cornell, however, is research. I've published numerous articles on the fate of fertilizers and pesticides applied to turf, and have done consulting on golf courses, primarily since 1990. I've done over 40 projects of this nature, either

involving writing the integrated turf and pest management plans, doing risk assessment on nutrients and/or pesticides, as well as serving as a consultant for towns on golf course projects. And I have testified before your Honor on other golf course projects, Seven Springs Golf Course project in Westchester County.

MS. BAKNER: And who did you represent in connection with that?

DR. PETROVIC: In that particular project, I represented the Applicant, the Donald Trump organization.

MS. BAKNER: But you do also commonly represent municipalities?

DR. PETROVIC: Yes. I've done several in New York, as well as several in Connecticut.

MS. BAKNER: In terms of the assistance that you provided to L.A. Group on this project, could you describe it for us?

DR. PETROVIC: Primarily, I was used as a person to review the modeling that was done. I have done some research because of

our -- the nature of the work I do at Cornell
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on models, pesticide fate models, in particular, also looked at the integrated turf pest management plan to look to see how contemporary it was, and then the approaches that were taken.

MS. BAKNER: So you did a peer review?

DR. PETROVIC: Yes, peer review version.

MS. BAKNER: And in your peer review of the document that we submitted as part of the Draft Environment Impact Statement, were you comfortable with that? Did you find it to be acceptable? Did you have any concerns about that?

DR. PETROVIC: As in reviewing any project, you can find things that you would see that you would like to improve. I recommended those, and those were implemented into the plan. But by and far, the final product, I felt, is very contemporary, state-of-the-art and scientifically sound.

MS. BAKNER: Thank you.

What I'd like to do now, because really what your Honor has heard so far is sort of what other parties feel is wrong with
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our plans, and what we have produced in the Draft Environmental Impact Statement by way of an Integrated Pest Management Plan, Integrated Turf Management Plan, and what I would like to

have Kevin do is describe for us really Appendix 15 and how it's modeled for this specific project, anticipated leaching of pesticides or other chemicals.

MR. FRANKE: Appendix 15 is the pesticide and fertilizer -- Fertilizer and Pesticide Risk Assessment portion of the EIS, and I want to briefly walk through the methodology of the modeling that was used to generate the data used in the risk assessment.

Essentially, we used three separate models in the risk assessment; the first being the Windows Pesticide Screening Tool; the second being a Leaching Estimation and Chemistry Model or LEACHM; and the third being the model that Dr. Knisel was speaking about, which was the GLEAMS model.

In that order, the Windows Pesticides Screening Tool was used just for that purpose. As the name suggests, it is a screening tool, it's not a quantitative model, it's more of a

qualitative model with limited opportunity for site-specific input. You are allowed to input your site soils and certain information as it relates to precipitation. What comes out of the Pesticide Screening Tool is a qualitative ranking of the potential hazard, ranked from very low hazard to extra high hazard. Hazard ranking is for human health, as well as for a aquatic life. The screening tool is used just

for that. It was an initial cut-through of possible pesticides to be used on the site with the site soils to gives us an indication of which pesticides may become problematic when we take a closer look with quantitative models, which is the LEACHM model and the GLEAMS model.

The LEACHM model predicts the vertical movement of pesticides through the soil profile; whereas, the GLEAMS model was used for the horizontal transport for the runoff component.

Just by way of background of the input data that were used in these models, because we have heard frequently throughout here, garbage in, garbage out, I just want to walk

through some of the key inputs that were used in the site-specific models.

The LEACHM model, as I mentioned, which was developed by agronomists at Cornell University, allows you to integrate site-specific climate data, soils data, pesticides data. Basically, gives you a mass balance of what goes in, has got to go out in some direction. Provides volatilization, what goes through the soil profile, what breaks down in the soil so you can account for all the material that you put in.

There are examples in Appendix 15 of the output files of the LEACHM modeling. The LEACHM modeling, as well as the GLEAMS

modeling, we looked at one full year of data. Precipitation or the climate data that we used in both models included precipitation from 1996. The NOAA station from which this data was collected was the Arkville station. You recall there was some discussion on the Tannersville data over the stormwater, that's because the stormwater on that model required hourly data. This modeling requires simply daily precipitation values.

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So since Arkville is a little bit closer, we used that data. We used the data from 1996 because that was approximately 50 percent higher than total precipitation average yearly amount. The average precipitation here in Arkville is about 40 inches a year. The 1996 data has approximately 60 inches. As you recall, '96 was also the year of the flood in this area, which I believe the rainfall in that was a 4-inch storm in 24 hours.

In addition to daily precipitation amounts, the model also accepts air temperature values, maximums and minimums, daily soil temperatures and daily pan evaporation data. All this data was collected from the nearest NOAA station for which full datasets were available for 1996.

MS. BAKNER: And that was Arkville?

MR. FRANKE: It depends on the

particular parameter. Arkville had the precipitation; Lansing Manor, which is just up Route 30, has pan evaporation data but they didn't have a full year in '96, we had to go to the next closest station. Essentially, the
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closest station that had published the information.

The LEACHM model does not allow the model to calculate when irrigation gets applied. You have to put that in as a rainfall event, if you will. We will talk about that a little more when we get to the GLEAMS model, which does give you an option, kind of model output.

So using precipitation data and pan evaporation data, we calculated when irrigation would be applied during '96. Soil series, all of the soils that were mapped on our high-intensity soils map for the golf courses were modeled in LEACHM. And they ranged in thickness anywhere from 10 inches all the way up to 60 inches, 5 feet.

Many different physical -- mostly physical parameters are specified in the modeling for the soils, including the percolation rates, the amounts of sand, silt, clay, organic matter, et cetera.

Finally, there was a pesticide component of the modeling input in addition to applicational rates and application dates of
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pesticides. Their physical and chemical characteristics that affect their movement are also inputted. Water solubility, their propensity to bind to organic matter, their vapor pressure, the potential to volatilize up into the air.

Just a little background of the pesticides that were analyzed in all of the modeling, all of them are obviously registered for use on turf by the EPA at the federal level, all registered for use in New York State by New York State DEC. In addition to that, all the pesticides that were modeled were recommended for use on commercial turfgrass by an annual publication put out by Cornell University, entitled just that, it's the "Pest Management Recommendations for Commercial Turfgrass," so further narrow down the list of what pesticides can be used on turfgrass in New York State.

The GLEAMS modeling that Dr. Knisel talked about incorporated much of the same input data that the LEACHM model used in terms of weather data, characterization of soils for soils data, as well as pesticide

characteristics. The difference in the GLEAMS modeling from the LEACHM modeling -- because you're dealing with runoff, you have to specify your slopes, your length of your slopes, the steepness of your slopes, as well

as various roughness coefficients for your overland flow.

What we got from the LEACHM and the GLEAMS modeling were quantitative data on pesticide concentrations. The data that's generated with the LEACHM modeling was the concentration of pesticides that occurred at the bottom of whatever soil profile you were modeling. So if you were modeling 10 inches of soil and you have, say, a 5 part per million concentration of pesticide X, that's what we compared against the drinking water standard. We didn't take into account the fact that even though pesticide X was at 5 parts per million, it's going to be entering a pool of groundwater, which some pollution is going to take place. Basically, the water that's coming through, whatever the soil profile was, comparing that to the water standards directly. Anything that was higher

than drinking water standards was basically removed from consideration.

Similarly, when we did the runoff analysis used in the GLEAMS model, the portion of the golf course that we modeled was the 18th fairway on Big Indian Plateau. I don't think we have had a chance to get up the 18th fairway. I can't remember if we walked up. It's the steepest golf hole on either of the two golf courses. Some slopes approaching 25 percent.

ALJ WISSLER: We can do that if you want.

MR. FRANKE: Sure. Like the LEACHM modeling where we just took the bottom soil profile concentration, the GLEAMS model we used what's typically referred to as the edge-of-field concentration. It's typically done for agricultural situations. In this case, it was an edge-of-fairway concentration.

Again, we've heard a lot of discussion of the overall stormwater management of the entire project site. The golf course is just one component of it. But again, we used those edge-of-fairway concentrations and compared

those directly with aquatic toxicology values. So essentially we would be putting the trout in the water that we collected at the edge of our fairway.

Again, those runoff concentrations at the end of the fairway that were above the aquatic toxicology values, those pesticides were likewise thrown out of consideration for use on the project site.

Using those processes, we came up with the list of pesticides that were proposed for use on the project, and it's those pesticides that were incorporated into the draft SPEDES permits.

MS. BAKNER: So the model that you used, they weren't used to establish limits

but just to, in essence, eliminate pesticides that could cause a problem?

MR. FRANKE: Correct.

MS. BAKNER: So it's kind of a different tool in that sense, you're just discarding things that could possibly cause any trouble?

MR. FRANKE: That's correct.

MS. BAKNER: In addition to the

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pesticides that were discarded as a result of all your modeling efforts, were there other pesticides that this Department asked that we not use as well?

MR. FRANKE: Yeah. If I remember correctly, there were at least one -- if not two -- insecticides that because of their -- just their inherent toxicity, they're quite toxic, they felt they would be more comfortable if they were not proposed for use.

MS. BAKNER: Even though they're registered for use in New York?

MR. FRANKE: Registered for use in New York, and what's more ironic, at least one of these insecticides was, quote/unquote, "organic type" insecticide.

MS. BAKNER: Of the suite of pesticides that are now permitted to be used in the SPEDES permit itself, sort of preapproved, as opposed to ones that we might want to use in the future and seek DEC's approval, you and the Department -- you've

basically met the Department's request for discarding any pesticides they were uncomfortable with?

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MR. FRANKE: Yes.

MS. BAKNER: Dr. Petrovic, do you have anything to add to that in terms of how the modeling was conducted in this case?

DR. PETROVIC: Well, there was one concern about using one year's data versus many years' data. And looking at the year that was chosen, it's hard to say it's the worst case, but it's probably hard to imagine -- it's hard to believe it would be much greater likelihood there would be any situation would be more of a worst case.

You would have 50 percent more on average, 50 percent more precipitation on an annual basis in some very large event storms. And we know in research and in -- and confirmed in real-life situations, that the greatest hazards are from very large precipitation events. So that you're capturing, in a bulk, totally more water, as well as having very large events would be a reasonable worst-case scenario. If it isn't the absolute worst, it's probably pretty close to that.

ALJ WISSLER: So that's what was used

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for modeling?

DR. PETROVIC: Yes. So that's what was used for modeling.

ALJ WISSLER: Does the Turf Management Plan at all, and I don't know, does it speak to the application of pesticides in advance of precipitation events and when that can happen and so forth?

MR. FRANKE: Right. Actually, in Appendix 15 in the risk assessment, the last section includes a number of best management practices. And one of those that is listed is if there is rain forecasted within 48 hours, then any pesticide applications are put on hold until the forecast does not include precipitation within 48 hours.

ALJ WISSLER: How does that forecast affect -- National Weather Service forecast for the area or what?

MR. FRANKE: It wasn't specified, but I would assume it was -- National Weather Service, local weather, yes.

MS. BAKNER: I just want to point out that the SPEDES permit has special conditions for fertilizer use, as well as pesticide use

that expressly references and incorporates Appendices 14 and 15. So all of the management methods that we said we would use, and an absolute limit on the pounds, shall not exceed four pounds per thousand square feet per year to golf course fairways. So that is all set forth in the SPEDES permit itself.

To get to the issues which Martin has already jumped ahead for us on here, given that you used the data from 1996, which was 50 percent above average precipitation, would you -- if you inputted 50 years of precipitation data, would you improve the results of your analysis in any respect?

MR. FRANKE: To answer your question, no, I don't think you would because I ran a sensitivity analysis using the LEACHM model for precipitation that was of a lesser amount, very close to the average annual precipitation --

MR. RUZOW: About 40?

MR. FRANKE: 38.5 inches. And I took one of the same input files that I ran using 1996 data, included four insecticides, and using the 1996 data, two of the insecticides

leached some. Two of them did not leach through the bottom of the soil profile.

Just in summary --

ALJ WISSLER: '96 was the year of extraordinary precipitation?

MR. FRANKE: Correct. So using the lesser amount of precipitation, which came from -- what year did I use -- I believe it was 1989. That was just about the average amount of data. The same two pesticides that leached in the higher rainfall amounts also leached in the lesser rainfall amounts.

However, the concentrations were ten times higher and two times higher for the two products under the heavier rainfall event. The concentrations were higher. The two pesticides that didn't leach in '96 didn't leach using the '89 data. The number of weeks in the year-long simulation that any of the pesticides occurred in leaching decreased using the 1989 data from 10 weeks to one week. So it happened more frequently. So you have more quantity more often. And again, the total mass pesticides, not just the concentration, was higher using the 1996 data,

21 times higher for the one insecticide and 7 times higher for the other insecticide.

So you had concentration, total mass and frequency all were much higher using 1996 data compared to the 1989 data, which was an average year.

So if you ran 50 years' worth of data, '96 would probably be one of the highest, if not the highest, precipitation amounts. It was the highest in the 30 years of record, so to go to 50 years -- there's other factors in setting up the modeling. Doesn't make it as easy to do in the modeling as Dr. Knisel made it sound.

MS. BAKNER: Well, let's discuss that. Why don't we run through all the reasons why that is the case, because at heart, the difference is the difference between

agriculture and golf courses.

MR. FRANKE: Essentially, yes, it is. And one of the things that I touched on previously was the GLEAMS model does allow you to have a model, say, okay, we need to do some irrigation. Then the model will apply irrigation as a rainfall event. It does this

by looking at other input data that the modeling puts in. But that data is long-term and it's average data. It looks at monthly wind speed, monthly temperature, monthly sunlight intensity.

The things that Dr. Knisel was saying, you need to use site-specific data or as site specific as possible -- we had already used local NOAA data in the LEACHM modeling for precipitation and evaporation to determine when the irrigation would be needed. We had used the localized and the daily data rather than the long-term monthly averages in the LEACHM model to determine when irrigation was needed and how much irrigation.

So that would have to be done for every year. You would have to take the daily rainfall value, daily pan evaporation data and, basically, it's a cumulative total. And when the evaporation exceeds the precipitation, you have to add irrigation.

So conceivably, if you were to use the model and have it calculate when irrigation

was needed, based on the long-term monthly
averages, that would make it easier to model
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multiple years' worth of data.

Another thing, and it relates to the question you brought up, your Honor, is the timing of pesticide applications. When we do the modeling, we purposely model it the way it would happen on the golf course.

If you know a rainstorm is coming, you're not going to be applying it on that day. If it's raining that day, you are not going to apply pesticides.

So with 50 years, or for many years worth of data, you have to adjust your dates when to apply pesticides, because every year it's going to rain on different dates. So if you had made a pesticide application on the 1st of July in 1996, that it wasn't going to rain for the rest of the week, you have to go back to each one of the years and say, okay, did it rain on July 1st or 2nd or 3rd. So each one of the years you have to adjust your pesticide application dates as well.

Whereas, with agriculture, I don't think that their management approach to pesticide application is as sensitive -- maybe that's not the right word -- to weather
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conditions and the timing of your application.

Similarly, their irrigation sensitivity may not be as high as a golf

course. So that's why it may be very easy to run an agricultural scenario over multiple years just by putting in multiple years worth of rainfall. It's certainly much more data intensive to do multiple years for a golf course scenario.

ALJ WISSLER: When you talk about the concentrations in pesticides and so on, where is that concentration level taken? Is it taken at the surface, taken below the surface? Where is it taken?

MR. FRANKE: It's taken exactly wherever you tell the model to take it. So for soils, I'll determine the thickness of a soil profile. If there's a seasonal high water table, say, at 16 inches below the surface, I'll set my profile 16 inches. Because if it's going to make it through that 16 inches, it's going to hit that shallow groundwater table. If depth to bedrock is greater than five feet, I'll model the full five foot of thickness.

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As I say, for the runoff portion of it, you can pick it anywhere in your runoff path that you want. Really, what I did is I just modeled the whole 18th fairway as it worked its way down, and it's pretty much a straight shot downhill, so I picked the bottom of the fairway.

ALJ WISSLER: In the soils that you

used in that survey that you did at the 18th fairway, that was -- you went out and walked the site and said, look, here are the soils that are here?

MR. FRANKE: Our soil scientist, soil classifier put together a high-intensity soils map, which essentially takes the published soil surveys, takes those large areas and breaks them down into much smaller areas so it's much more precise.

So with that map in hand, I knew exactly what soil series were underneath, especially in the 18th fairway, but underneath all the fairways. And I think there was a total of five soil series that were modeled in the LEACHM analysis. And like I mentioned previously, they ranged in thickness anywhere

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from 10 inches to 60 inches. So I modeled all five of the soils. Whichever one had the highest concentration coming out from the bottom, I specified anywhere from the 10 inches to the 60 inches, that's the concentration that I used for risk assessment.

ALJ WISSLER: When that 18th hole is built, are they going to use gravel that they crushed and brought in from elsewhere on the site?

MR. FRANKE: Not on the 18th, they're not, but on holes 1 and 9, like Mr. Olson mentioned, yes. And to address that comment, I think Mr. Olson addressed the comment when

he said the way these things are going to be constructed, trees are going to be cut, it's not going to be grub, so the native soil is still going to be there. The native soil I modeled. You have rock placed on top of that just to bring the grades up, and you're going to have native soil as a fill, and the topsoil layer brought in on top of that. So what I modeled was just what's underneath the rock, which will be undisturbed.

ALJ WISSLER: You're saying your (PESTICIDES ISSUE)

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approach is even more conservative because as a practical matter there are going to be several layers yet on top?

MR. FRANKE: Yes. I mean, the native soil that's used as filler on top of the rock and the topsoil, sure, you're going to get more attenuation in that area.

ALJ WISSLER: Has that been quantified anywhere in the DEIS?

MR. FRANKE: Not in terms of the pesticide concentration.

MS. BAKNER: So remember, the purpose of it is to discard the ones that would cause trouble.

ALJ WISSLER: I'm just asking.

DR. PETROVIC: Using the approach of edge of fairway, depth of topsoil, those are the highest concentrations you would expect. There should be further dilution if you were

modeling a hundred feet down or 100 feet away from that fairway. In practicality, those levels are going to be substantially less. So you're looking at the greatest concentration and the greatest risk.

MS. BAKNER: Mr. Olson commented at one point that we were going to be scraping the soils off the site and then replacing all those existing native soils. So that description is really not reflective of what we're doing?

MR. FRANKE: The scraping and replacing isn't. But there are going to be cuts and fills to make this golf course, otherwise, we wouldn't have grading plans.

But in order to try and model every postconstruction soil type that would be out there, essentially, you have got a continuum of anything that's going to be filled 4 or 5 feet tall, stuff that's going to be cut 4 or 5 foot. So you would have to have a continuum all the way through. Essentially, countless numbers of soil types to model.

Really, in using that one 10-inch soil profile, which is the Halcott, it's pretty much representative of worst case. Because you can't grow grass in six inches of topsoil. And the golf course architect designed it so you're going to have at least a foot of native soil in place over rock, and then six inches of topsoil placed on top of that.

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The modeling included a 10-inch soil profile, which is thinner than the 12 inches of native that you're leaving. And it doesn't even take into account the attenuation you're going to get from the topsoil layer.

MS. BAKNER: So Dr. Petrovic, in your mind, is that approach the most conservative and appropriate and reflective of a method that will ensure that we don't use any pesticides that will be problematic?

DR. PETROVIC: Well, the purpose of basically screening out potential risks using modeling in this way, yes, I think is very conservative. It's identifying -- identifying at preconstruction what may be a problem and removing that instead of saying, let's put conditions on the use of the material or let's use it just to monitor for -- it's a lot more conservative to say we're not using it at all. We're not even bringing into question whether there's really a risk to it or not. So yes, I believe it is a very conservative approach.

MS. BAKNER: Kevin, you're familiar at all the -- you're familiar with all the grading plans and everything else. Is there

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anywhere on the site where we're going to have less than 10 inches of the lousiest soil?

MR. FRANKE: No. You can't grow grass -- you have to have a soil profile

that's at least a foot or 18 inches thick.

DR. PETROVIC: You could, but you wouldn't want to -- practicalitywise, you wouldn't want to.

MS. BAKNER: There has been a couple of claims made in the various petitions and documents that there was a default assumption of 2.5 meters, which I believe is equivalent to 8.2 feet of soil above the water table or bedrock. I know, because we have tried to find the source of that misconception, is there any truth to that allegation?

MR. FRANKE: No, there isn't. Again, I have tried to find out what the basis of that comment was and haven't been successful. The only thing I can think of, there is an attachment in Appendix 15, which is an example of one of the input files, and it has the soil profile depth in there and it lists a profile depth as 254 millimeters, which is .25 meters. So maybe by some math error somebody came up

with 2.5 meters and assumed this was the soil that was going to be used throughout the risk assessment. This was just an example of one soil in one of the model runs. It was .25 meters rather than 2.5 meters for that particular example profile.

MS. BAKNER: Mr. Olson asked a question or made a comment relative to how the pesticide, the active pesticide ingredients were modeled, in terms of being modeled

separately. Can you respond to that?

MR. FRANKE: Right. The models require that you input them individually, because they have different chemical characteristics affecting their movement. In the case where you have what I refer to as combination products, where you have more than one active ingredient, and one of the better known ones is Trimec, T-R-I-M-E-C, has three active ingredients, three herbicide active ingredients in it. Simply, what you do is you go to the product label and determine how much of each of the component active ingredient is applied and you model them individually.

MS. BAKNER: All right. So if any one

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of the three causes problems, you just get rid of that formulation?

MR. FRANKE: Right, that formulation, exactly.

MS. BAKNER: Is that the common way to do it? Is there any other way to do it using the model?

MR. FRANKE: In my mind, it's the most conservative way. Even if one out of the three ingredients were problematic, then that would not be considered for use.

MS. BAKNER: To get back for a second to the crushed rock and underdrain system. There's an allegation that the underdrain system will somehow promote the lateral

transport of pesticides throughout the system in a way which is not accounted for by the model. And I know you have discussed this a little bit, but can you explain it further?

MR. FRANKE: I could understand why there might be some misconception about this because the detail Mr. Olson referred to on Sheet CP-18 does say, Subsurface Drainage System. It shows it in detail how the drains, which are surface drains, are to be

constructed during the construction phase.

But if you look at Detail 6 or Sheet CP-18, you'll see the piping that's below grade or underground is solid pipe. You don't use solid pipe as drain pipe. It's conveying water collected on the surface underneath. It's not that anything percolated through the soil can be picked up by this drain pipe. So the vertical or the leaching isn't getting shortcutted by this pipe, because the pipe has no openings and the percolation can't enter that pipe.

MS. BAKNER: And the reason for having this underdrain system, you need to know the plans that go along with the Draft Environmental Impact Statement, the full plans. Was there a reason why the golf course architect put those in?

MR. FRANKE: The golf course architect came up with this as another enhancement to our stormwater controls during construction,

primarily. By grading areas such that they create a bowl, so to speak, and by having this riser, you could cut down on the length of the slope that the water would run over during
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construction. So you could pick up the water, shortcircuit it and get it into our stormwater basins where we talked about the flocculation and dewatering. And that's really the primary intent of this.

MS. BAKNER: During construction. During operation, what purpose will they serve?

MR. FRANKE: Basically, it will allow the fairway surface to dry out faster and the golfer should be able to get back on the golf course sooner.

MS. BAKNER: How is that helpful in terms of turf management?

MR. FRANKE: Certainly, anything you do to reduce time when you have got really wet soils or really damp conditions, when weather conditions are favorable, it could enhance the potential for diseases to occur on the turf.

MR. RUZOW: I'm sorry, I'm thinking of a negative. If it stays wet, it enhances the opportunity for mold or disease?

MR. FRANKE: Right.

MR. RUZOW: So if it's dry, you reduce that possibility?
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MR. FRANKE: Yes.

MS. BAKNER: Will the pipe, the solid pipe, does it have any effect on the way in which you modeled --

MR. FRANKE: The leaching, no. Because it's not -- if we had an underdrain system and we had underdrain set at six inches below the surface, perforated pipe six inches below the surface, I would model six inches of soil. Because that's where you would lose it from your system, you would lose control out the bottom of your soil profile.

MS. BAKNER: Dr. Petrovic, do you agree with that assessment of the drainage system and how it's being used?

DR. PETROVIC: The only way that the crushed rock layer would serve as a drainage system would be under extremely wet conditions, the subsurface water would back up into it. But the way it's designed, it's not specifically designed for that. But that would be the only time it would function to move water off based on the contour of how that water is directed.

MS. BAKNER: Are you satisfied that

modeling the native soils to remain in place under the layer adequately represents the leaching potential?

DR. PETROVIC: The way the model was being used for a screening purpose of materials, I would certainly agree with that,

and it's still, again, giving the greatest risk because you're only taking credit for a very shallow layer of soil, not all the way to the depth of groundwater when it's first released for leaching.

MS. BAKNER: In terms of the project itself, Kevin, what was the reason why the rock is being crushed and being added to the two holes, golf holes that you mentioned? What soil erosion and sedimentation benefits does that provide?

MR. FRANKE: It's soil and sedimentation erosion benefits because you're placing rock on top of the soil. The rock is not going to erode. But it's also a benefit from the standpoint of not having to haul material offsite.

MS. BAKNER: So it cuts down on trucking, and because you're not grubbing the

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stumps in that particular area, you're also not causing sediments to have an opportunity to move offsite?

MR. FRANKE: Right, the root systems will remain in place.

MS. BAKNER: DEP has requested that the Applicant consider some alternative or additional groundwater monitoring wells which would be in a more shallow substrate, wouldn't be down in 400 feet or 625 feet, but closer to the top of the soil profile. And we're going

to make a proposal to do that. We don't necessarily agree with DEP's argument that it's necessary to do this in order to sort of preaddress potential groundwater contamination because, in fact, we're doing a lot of sampling and testing in the stormwater basins where you would anticipate that would show up first in any event; but we're willing to accommodate their request. So we're going to make a proposal and discuss that with both DEC and them to see if we can agree on the number of points.

We're not anxious to have any additional monitoring points, so we may

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propose to do some of the deep ones, or we may propose to do them in close proximity to the deep wells to hold down on the difficulty and cost of doing the monitoring.

As it stands in the SPEDES permit right now, the costs of undertaking the testing, particularly the whole effluent toxicity testing where you actually introduce aquatic species into the leachate or stormwater, if you will, is very expensive. Everything that we're doing here is expensive. So we're not anxious to do more of it, but we don't have any objections to changing some of the wells so some of them are shallower. So we'll make that proposal. Other than that, I don't see any reason to address what DEP has said --

ALJ WISSLER: So if I understand, you'll be speaking with Staff and imposing a special condition --

MS. BAKNER: Yes, a special condition with the monitoring points for that.

Kevin, if you could just address where the groundwater wells are that we proposed to use or that are covered in the SPEDES permit

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already, since Charlie had trouble finding those.

MR. FRANKE: Looking at Figure 3-16 that Mr. Olson referenced, the two wells at Wildacres are the two northernmost north of Gunnison Road. They're known as the Janus, J-A-N-U-S, East Well and the Rashid Well.

The other two that were in the Big Indian draft permit are the only two wells that show up on Figure 3-16 on the Big Indian Plateau. That was the Mann Cabin Well and the Midroad Well. And all these wells are located in proximity to golf holes, and they're all existing wells.

MS. BAKNER: So they're on Figure 3-16 of Volume 1 of the DEIS?

MR. FRANKE: That's correct.

MS. BAKNER: In your opinion, given the amount of testing that we're proposing to do in the stormwater basin, are you satisfied that that testing, if there was any difficulty or problems or unanticipated -- unanticipated

effects from the pesticides that we're applying, are you confident that they would show up in those stormwater basins first?
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MR. FRANKE: They would certainly show up in the stormwater basins first because your runoff is immediate. It's going to occur right after the storm, where leachate -- we're probably going to have some lag time for the material to work it's way through the soil. So certainly from the timing standpoint, you're going to see something in the stormwater basins certainly before the shallow groundwater, and certainly much sooner than your deep groundwater.

MS. BAKNER: You have mentioned a couple of times that modeling was focused on edge-of-fairway concentrations of pesticides. Is there anything more you would like to add to that discussion?

MR. FRANKE: No, really just to reiterate, it's those undiluted concentrations that we compared directly with the drinking water standards or the aquatic toxicology standards.

Again, from the aquatic habitat standpoint, your concern is going to be in Birch Creek, it's going to be in Giggle Hollow Creek. The concentration that you're actually
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going to realize in there is actually going to occur in those creeks -- is going to be much

lower than what's proposed at your fairway in reality, but still we used those edge of fairway values as compared to the toxicology values.

MS. BAKNER: During Dr. Knisel's testimony, he indicated that one of the problems with the way in which the model was run was that there was no information presented on existing conditions as opposed to postdevelopment conditions. Can you explain why existing conditions were not modeled?

MR. FRANKE: Because there's no pesticides being applied out there now. The pre- and postcomparison really has no use if there is no pre. Your post is going to be your net increase because you're starting at zero.

From the nutrient standpoint, I certainly would concur with Dr. Knisel that that's very important. That's a lot of what we talked about two weeks ago when we were talking about phosphorous export, comparing pre and post. And that's where the data used

out of GLEAMS, nutrient data from GLEAMS is used in the bigger picture of nutrient export, because the golf course is only one part of the project site. So the nutrient export data that was used or generated from the golf courses, sort of gave that to Mr. Long and Mr. Carr who were here discussing stormwater

earlier, and they integrated that into their overall nutrient export from the site, compared pre- and post, to get our increases -- going back to the TMDL issue, which we heard more about today.

MS. BAKNER: If pesticides were being used on-site or fertilizers, obviously, we would know about it?

MR. FRANKE: Yeah, we would know about it. And in terms of a risk assessment, I don't think that's relevant information because it's not the increase that you're talking about, it's how much you're exporting, if you're exporting any. And whether those quantities are problematic.

MS. BAKNER: Another suggestion that Dr. Knisel made, which I think you addressed, I just want to make sure, is that using a year

of high rainfall data in the modeling, he suggested that by focusing merely on high rainfall, we may have missed lower rainfall years where you could actually produce higher concentrations of leachate?

MR. FRANKE: Again, back to what I talked about before using a dryer year, we saw lower concentrations, lower total mass and less frequent leaching with lower rainfall amounts.

Within the year that we modeled, 1996, you had storms of varying degrees. You had storms that had lesser amounts of rain, and

then you had the storm that caused the damage that's up on that plaque, which is a fair amount of runoff. So within that year you had different intensity storms and different amounts of water. You could have a quarter inch of rain, four inches of rain.

ALJ WISSLER: No matter what the year does, I mean, maybe nature gives you some of that precipitation, but if she doesn't, you have to make it up through your irrigation system?

MR. FRANKE: Exactly.

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ALJ WISSLER: So the amount of water that's going to be hitting that golf course is going to be pretty much consistent year in, year out?

MR. FRANKE: When you have lower than average precipitation, basically, yeah, you're going to use your irrigation to bring it up to something that's closer to average. But even when you have years where you have got higher than normal precipitation, you're still going to have times during the year that you may need to irrigate them because you might have a dry stretch in the middle of July where you may need to irrigate two or three times a week. And in October the gully-washer comes.

MS. BAKNER: The Attorney General's Office, Office of Watershed Inspector General, prepared and submitted a comment letter of

April 23rd, 2004, which was then not entered into this record by that office but has been relied upon by CPC.

One of the comments that was made was that somehow we just failed to assess the impact of inert ingredients that are part of the pesticide formulation. Can you address

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that for us?

MR. FRANKE: I went back into the EIS, and starting on page 2-89, we have a discussion of inert ingredients. In that discussion of inert ingredients, we discuss how EPA classifies or lists different inert ingredients based on their toxicity, with 1 being inerts of toxicological concern, all the way down to what they call list 4, which is inerts of minimal concern.

We have a table in the EIS that shows that almost all of our products have inerts which are from list 4, which is the inerts of minimal concern, and none of the ones that we proposed are from list 1, which were inerts of toxicological concern. So it was addressed in the EIS. And that was addressed as a result of a very similar comment that the AG's office made. So we're surprised it came up again. But it's in there.

MS. BAKNER: And you're satisfied with respect to inerts, given the information available from the pesticide manufacturer, we have appropriately taken into account and

tried to avoid using any pesticide with inerts
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of toxicological concern?

MR. FRANKE: Yes.

MS. BAKNER: There was also a comment, which I believe I heard from DEP and others, that LC50 is a crude instrument for the assessment of risk since it does not -- they allege it doesn't take into account possible chronic effects.

MR. FRANKE: That's true, LC50s aren't made to take into account chronic effects. They're a measurement of acute toxicity. You usually do chronic tests on something that is going to be exposed to something for a prolonged period of time. If you had industrial discharge that was occurring, you had a certain product that's going to be discharged day after day throughout the year, it's going to be long-term, it's going to be chronic, you could have a chronic effect.

As demonstrated in the modeling, any runoff that's going to reach the streams are going to be related to storm events, which are discrete events. The runoff is going to occur, it's going to hit the stream, that's it. It's not like you will have constant
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input of runoff, and possibly pesticides into these streams. So you wouldn't compare those with chronic toxicity, you'd use acute

toxicity, which is, one measure of that is an LC50, what was used.

MS. BAKNER: In what way does the draft SPEDES permit ensure by monitoring that we're getting a handle on buildup of concentration? Are there surface water monitoring requirements?

MR. FRANKE: Part of the surface water monitoring requirements of the SPEDES permit is we actually do toxicity testing of the stormwater collected on-site.

MS. BAKNER: In addition to just testing surface water and groundwater periodically?

MR. FRANKE: Right. We'll get a concentration from that, but they'll actually do toxicity tests of collected stormwater samples.

MS. BAKNER: L.A. Group has built golf courses in many sort of different geological and climatological regimes. There have been suggestions, most notably by DEP, that this

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site is simply not suited for use as a golf course. Is there anything in your past experience that leads you to believe that golf courses can't be built in these two locations?

MR. FRANKE: Yes. Early in the process there was concern raised from an elevation standpoint in temperature. You have golf courses in New York State, Lake Placid, up to Alaska, golf courses in Alaska, northern

Canada, areas of much higher elevations -- cold or minimum temperatures. There's nothing that makes this site unsuitable from a climate standard.

MS. BAKNER: Dr. Petrovic, are you aware of anything that's unique to theses site that makes these sites unsuitable for golf courses?

DR. PETROVIC: Not that I'm aware.

MS. BAKNER: In your management plans in the appendices, you talk about ways in which you're going to take -- implement other best-management practices before you get to the addition of pesticides, insecticides and herbicides. And my question is: Is it possible or feasible today to have a purely

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organic golf course at this location, and have it still be an effective operating golf course? If you could both answer that, that would be great.

MR. FRANKE: I'll let you step on that first.

DR. PETROVIC: It's been an issue for a number of years on golf course projects, can you have, quote, an all natural golf course or a pesticide-free golf course. In the northeast, to my knowledge, there are none that fit that caliber that would be considered suitable golf courses under most people's definition of golf course.

Research done at Cornell University, and I can refer to Applicant's Exhibit 96, talks about that concept of comparing a pesticide-free management plan, integrated pest management plan that uses low-risk pesticides and many biological and other cultural controlled methods, compared to a traditional program that applies pesticides either routinely or whenever a pest occurs. And in doing that, they observed, in the first year of that study -- this was done at

Bethpage State Park Golf Courses -- the green course, not the black course. They wouldn't allow us to do something like that on the black course. But on the green course, the pesticide free -- they did these on putting greens, on the six putting greens -- on the pesticide-free one died the first year by mid-August. After that, they then had to go to some pesticide use. They did minimize the use to keep that golf course alive. The IPM ones, as well as the traditional ones, have not died.

So even though we've made major gains in plant resistance to pests, to biological and other cultural and nonchemical controls, I still feel we're not at a point where with the type of climate this particular golf course is in, the pests that they would have, that you could consistently have a golf course that wouldn't have dead sections. And maybe people

might say, well, a small part of the golf course, who really cares. Sometimes professional golfers would rather play on dead turf. So we may not want to use that, their kind of perception.

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But environmentally, dead turf is certainly not environmentally friendly. There have been several studies that have shown really dead turf leaches a tremendous amount of nutrients through the profile since there's nothing there to retain that. And we've seen as the density of turf reduces, the amount of runoff, volume of water increases, as well as nutrients and pesticides in that runoff water. So it's not to anyone's advantage to have dead turf out there.

So in that context, I don't believe currently we can do that. Hopefully, we will be able to reach that goal. But at least the standards that we apply to golf today, I don't believe we can do that.

MS. BAKNER: That's not something unique to this site?

DR. PETROVIC: This particular site, it's pretty much unique to probably three-quarters of the United States. There are parts -- if you go to the West, especially in dry parts of the western part of the U.S., whether it's south or north, pesticide use is very minimal. It's mostly because of the lack

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of humidity that they have. And it's diseases that are the primary pest, not the only pest on golf courses. But it's that high humidity for a very long period of time that allow for, primarily fungi, to develop and attack grasses.

And so unless we get global warning that dries us out to the point that we're in Arizona -- it would make it a lot easier to do this if we were in Arizona or Colorado -- than it would be in New York, anywhere in New York, whether it's the Adirondacks to the eastern tip of Long Island.

ALJ WISSLER: Not that you're advocating global warning?

DR. PETROVIC: Not that I'm advocating global warning, but it's the fact that the climate that we live in determines the pest complexes that we have.

MS. BAKNER: Looking at the bigger picture, in terms of the golf courses in the northeast and studies that have been done on levels of pesticide in groundwater, or even, I suppose, surface water after years and years of operation of a golf course, are you aware

of any studies out there that have looked at, say, old golf courses and evaluated how using pesticides for, say, 20 years, 10 years, whatever, has had an impact on the surrounding water resources?

DR. PETROVIC: There's been one semi-national study, in a sense, that there were 36 golf courses in this study. I refer to Exhibit Applicant's 95 entitled, "Water Quality Impacts by Golf Courses." Thirty-six golf courses around the United States, and from Washington, California, Minnesota to Florida, to Georgia, Maryland and Massachusetts, as well as Michigan, to give a geographic orientation, but there weren't a lot in Colorado, kind of western Midwest. So you can say it's a semi-national -- but it pretty much covers climatic and soil variations to a large degree. But if we look at the results of that study, that study was done on golf courses that were required by permitting to monitor either surface and/or groundwater.

Some of those golf courses, in particular the ones that were on Cape Cod,

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were ones that were at least 30 years old. So they weren't new courses. And that was kind of a separate study. The EPA had undertaken that study. But since then, as we see with many new golf courses, monitoring of water quality is required. So that's probably the best example of new versus old.

In that particular study that was done, basically on these 36 golf courses, they reported about 16,500 data points. A data

point would be a water sample tested for a range of materials. So if you analyze for 50 things, that would be 50 data points, in a sense. So that's why over these studies there were 16,000 data points.

In surface water, only .29 percent of those samples for pesticides exceeded an HAL or an MCL for that particular pesticide. In groundwater, was .07 percent of those samples exceeded an HAL or an MCL. For nitrogen, nitrogen was the only nutrient, they didn't report phosphorous; but nitrogen in terms of nitrate, none of the surface water samples that were tested and exceeded the drinking water standard HAL of 10 milligrams per liter

of nitrate nitrogen, and 3.6 percent of the groundwater samples did exceed the 10-milligram per liter HAL.

MR. RUZOW: What is an HAL?

DR. PETROVIC: Health Advisory Limit, drinking water standard, and for nitrate nitrogen, it's 10 milligrams per liter.

MR. RUZOW: And an MCL?

DR. PETROVIC: Maximum Contaminant Level. The nitrate in groundwater in these golf courses, many of those 3.6 percent were attributed to previous land use, and the largest land use for this was a violation in Maryland on previously areas that were farmed with corn. We know corn in the northeast is particularly hazardous to groundwater for

nitrate contamination.

That's probably the best example of old versus new and large in scope. We also have a fair amount of information in eastern Long Island in Suffolk County. I refer to Applicant's Exhibit 94, Groundwater Impacts to Shallow -- "Golf Course Impacts to Shallow Groundwater in Suffolk County, New York." This was a study done, funded by Suffolk County.

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The county wanted to know itself the water quality related to golf courses. They had been looking at land use characteristics and water quality impacts for a number of years.

Initially in this study, they only monitored three county -- Suffolk County golf courses. And then in 1999 expanded that to include another -- basically 14 golf courses. Eleven would be private courses, higher championship level golf courses, and three semi-private golf courses.

They collected -- from 1999 to March of 2002, they collected 91 samples from 18 golf courses that had 31 wells. Typically, using one sample per year, but some golf courses had more than one well attached to them.

They found, in terms of pesticides, looking at the most recent numbers, which was 2002, 22 percent of those wells had a detectable level of pesticide. Only one of

those is currently registered for turf and is not planned to be used on this particular golf course.

One of the three of the seven

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-- actually seven wells of the 31 had a detectable level of pesticides. Only one of those seven detected levels was above the Health Advisory Limit. That happened to be for a pesticide that's no longer used, Dacthal, and that's not currently being used anymore. It was phased out because it did find to show up in groundwater in many places, not just under golf course conditions but in many agricultural settings. It was a widely used agricultural pesticide also. They concluded that golf courses were not -- pesticides were not impacting groundwater. That was their conclusions.

MR. RUZOW: And in Long Island Suffolk, they're dependent upon groundwater to drink?

DR. PETROVIC: That's their primary drinking water source is ground water. Nassau\ Suffolk County was approaching three million people. That's primary source is groundwater. Sandier soils, shallow water table -- and these were shallow groundwater wells. Most of them were anywhere from 10 to 20 feet into the soil. So very shallow

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groundwater, sandy sites.

They also measured nitrogen in the studies. The average concentration of the wells over the study period was about 3.6 milligrams per liter, the drinking water standard for nitrate is 10. This was total nitrogen, which includes ammonium as well as organic nitrogen. The median concentration of all the wells was slightly less than three milligrams per liter.

They also have measured agricultural systems out in Suffolk County, vineyards and lawns. The average concentration for agricultural areas in Suffolk County is 13 milligrams per liter, exceeds the drinking water standard. Vineyards is about 6.6 milligrams per liter, about 60 percent of the drinking water standards. And residential areas, anywhere from 4 to 6 milligrams per liter, 4 being lower density, 6 being higher density. Lawn areas and golf courses being the lowest of the - a land use, managed-land use -- impact on water quality.

So you can talk about modeling all you want, but the real-life situation tells us

that golf courses are not impacting water quality, based on the information we currently have.

MS. BAKNER: Given the age of these golf courses and the practices and the pesticides that were used during some of the

years of their operation, would you expect there to be less or more problems with a golf course like the one we've proposed here?

DR. PETROVIC: We find that newer golf courses, brand-new golf courses obviously use, or more likely use newer pesticides and new materials are coming on line, and older materials, especially ones that have either an environmental and/or health risk, are being removed from the marketplace; that we'll find more and more environmentally friendly materials being used, versus golf courses -- especially golf courses before 1972 when chlordane could still be used, mercury could still be used, cadmium could still be used, lead was used in the '50s. Those golf courses, the older golf courses certainly were using more toxic and long-term impacting materials than we see today.

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MS. BAKNER: In terms of the best-management practices, the ones that are proposed to be used in our documents, do they represent sort of the state-of-the-art and the best -- the best way to ensure that you're not going to develop any type of chronic problems?

DR. PETROVIC: In my review of those, I agree with that, yes, that we're using what we know is the best way to manage particular golf courses. And that's an ever-involving science. So it's something that the manager of this particular golf course will need to

stay abreast of what's coming out because there is a lot of research going on to determine better management practices.

MR. RUZOW: Are the techniques for the design and construction of the turf itself here, the topsoil, soil stability, helpful in terms of a change from 20 years ago, 30 years ago in golf course design and construction? Does it effect what you might see in pesticides?

DR. PETROVIC: In general, I think we see construction of golf courses as being substantially more environmentally friendly.

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Whether you're talking about stormwater and dealing with that -- but also to realize that we're not trying to build a parking lot or a road or something like that, that the idea is to develop a golf course. And I think that's been, from what I have seen in the 30-some years I have worked related to golf courses, is that construction companies specialize in golf courses and, I think, build a -- certainly a better product because of knowing how to do things from that perspective, not in just general earth moving and construction, because it is a specialized field. And luckily, we see most golf courses kind of built in that context.

MR. RUZOW: But a healthier turf or a base for a turf presumably would have less of

a need for pesticides, drainage systems, et cetera?

DR. PETROVIC: Pesticides, you have better utilization of nutrients, less need for irrigation. In general, less resource intensive and less likely to be environmentally hazardous.

MS. BAKNER: There was another piece
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of data or dataset that we ran across which we included in the DEIS but which I redistributed out today as Applicant's Exhibit 93, and Kevin, if you could just address what that is, that would be helpful.

MR. FRANKE: Applicant's 93 is an excerpt from a DEP publication from May 15th, 2003, entitled "New York City Department of Environmental Protection, Bureau of Water Supply." That's the extent of the title. Included in this large report, which Ms. Bakner has included as 93, is a report on a two-year study of Pesticide and Toxic Compound Monitoring Program, which is from page 27, Section 2.3.5.

The report is of a two-year study of over 100 sites in the watershed, including what they describe as targeted sites, which are near both suspected potential pollution sources, e.g., golf courses and landfills. Again, in sampling over 100 sites throughout the two-year process, reading from the top of page 28, "This extensive monitoring effort

identified no significant sources of contamination and no sample results were found

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to exceed any NYS AWQS," which I'm assuming is Ambient Water Quality Standards. "In fact, the majority of water quality analysis performed were reported as nondetect for all monitoring compounds."

MS. BAKNER: Kevin, did you speak to the manager of that program, Tracy Lawrence?

MR. FRANKE: I spoke to Mr. Lawrence yesterday, as recently as yesterday, and he confirmed that this is the latest information that the Department has in this program.

MS. BAKNER: There was a suggestion by Dr. Knisel that the model may not have accounted for the failure to harvest and remove grass clippings from the site. Kevin, if you could address, in fact, how the model did address that, that would be helpful.

MR. FRANKE: Because GLEAMS is an agricultural model, it has the ability to model a harvest when crops are removed and possibly even subsequent replanting of the same crop or a different crop. And by harvesting, you take the biomass out of the system, not making it available. For our modeling purposes, we set the day of the

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harvest, which is a term that's in the model, at day 365, which is at the end of the

simulation. So that biomass remained in the system, was not removed from the system as may have been suggested.

MS. BAKNER: So if there was any contribution of nutrients or pesticides or any substance related to the cut grass, it would have been included in the mass balance and led to the pesticide or fertilizer being discarded?

MR. FRANKE: It remained within the system, yes. It wasn't taken out of the system, so it was available.

MS. BAKNER: Is there a discussion, in fact, in the document of what we're doing with the grass in one of the appendices?

MR. FRANKE: Yeah, I believe it's in Appendix 14 under the Integrated Turf Management Plan, about how clippings will be left in place on the fairways.

MS. BAKNER: So, in fact, we describe what our management practices are going to be?

MR. FRANKE: Yes.

MS. BAKNER: Dr. Petrovic, do you have

any concerns about the proposed management practices for this site with respect to grass clippings?

DR. PETROVIC: No. Usually greens and tees, the clippings are collected because it does disrupt the play as well as it can smother the grass. And those are usually distributed fairly close to the area,

sometimes in the rough.

The only suggestion would be is not to put those directly in any stormwater catchment or water body, because there has been an example where clippings have shown up in a surface water monitoring study where they were put, actually in a wetland. So that's the only thing that we recommend. We're not going to make a huge pile and stick a pile right near a water body.

MS. BAKNER: The good news is we said we're not going to put it within 100 feet, so we'll avoid that particular problem.

Kevin, there was a question that Dr. Knisel had about the modeling for the -- I think it was the 18th fairway, I'm not positive, where you used some crop management

notation related to terracing. Could you explain that for us?

MR. FRANKE: Dr. Knisel had mentioned that we had used a Practice factor, of the Universal Soil Loss equation, and he stated in his discussion that we used 0.4. I went back in and checked the actual data file, and 0.4 wasn't for the P factor. It was in the next line of the input data. It was a roughness coefficient.

MS. BAKNER: What's the roughness coefficient from?

MR. FRANKE: The roughness coefficient

is an engineered value, published engineer value. 0.4 is the value for grass. So I'm not sure where that misconception came from.

MS. BAKNER: In fact, that is just an error --

MR. FRANKE: It's the next line in the dataset so --

MS. BAKNER: Maybe he transposed a line or something?

MR. FRANKE: Yes.

MS. BAKNER: The other comment that he made had to do with the updatable parameters, (PESTICIDES ISSUE)

and using -- using the first eight days in the updatable parameters. Can you explain that in fairly good detail so we can understand what it means?

MR. FRANKE: Hopefully I can do it simply. The updatable parameters lets you change things within the time that you model. Say you were growing corn, and then after you harvested your corn, you could plant winter wheat or something else afterwards. So there would be a change occurring on the day that you harvested that would affect the amount of runoff. So you would set that date when your parameters would change, however many times you wanted to. I think the model allows you to do it up to eight times within a given year. And it gives you the opportunity to change those other parameters that would be different as a result of whatever changes you

may have made on any of these eight given days.

In our modeling, I used days 1 through 8, which correspond to January 1, January 2, through January 8. The reason I did that, is that the data file that's supplied with the

model has values in each one of those days. It's a sample file that you modify for your own purposes. So rather than take those values out and have no value in there or insert a zero, I just put in days 1 through 8. Because as most people who run models know, the people who work with computers, models don't like zeros or empty data. It can crash.

So what I did, I entered January 1st through January 8th in there in place of the days that were in there, so everything was updated, January 1st through January 8th. And nothing was happening, everything was under snow cover. It didn't any affect any of the modeling results. But I kept the value in those data fields just basically to keep the model from crashing, which it has a tendency to do. These are sensitive input files.

MS. BAKNER: Dr. Petrovic, is that your experience with models as well?

DR. PETROVIC: In a perennial turf setting, unless you were doing renovation or something and then you want to model the effect of renovation, I'm not sure what you

would change in that. I mean, if it's an
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annual cropping system, you have the opportunity to do that. But in a perennial system, I wouldn't see how to do it.

MS. BAKNER: It's just grass, that's all it is.

MR. RUZOW: You're modifying what was a model design, obviously for agricultural use, to try to use it for the purpose of the screening methodology, but taking advantage of it as the model you were predicting, but trying to make it match a turf --

DR. PETROVIC: As well as you can.

MR. RUZOW: -- as well as you can.

MS. BAKNER: One of the comments that was made by the DEP was a concern that somehow the SPEDES permit doesn't deal with testing for pesticides that aren't analyzed by current EPA-approved methods. Are you satisfied that the special condition that DEC has included in here adequately takes care of that issue?

MR. FRANKE: I feel comfortable with that. Marty, if you want to add on -- he mentioned as an aside, when we looked at DEP Exhibit 28 -- you want to explain what you told me?
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DR. PETROVIC: Well, actually in looking at that, I looked at Applicant's Exhibit 94, the Suffolk County -- which lists EPA method 24.2-624, lists three of those 16

as materials they analyzed. So I'm not sure this list is accurate, but Suffolk County shows an EPA method for those.

There are some laboratories, and most of these materials that are actually on this list, have had methods, not EPA methods, but laboratory methods with the current parameters developed for them. Because there are a lot of golf courses doing monitoring and EPA just hasn't accepted the methods yet. But the analytical labs have because there's a need for testing. Most of the materials, I wouldn't say all, but I would say the majority can be tested with the other kind of caveat attached to it.

MS. BAKNER: So you're confident that with this special condition, which gives DEC the ability to become involved in deciding how that particular pesticide is tested for, is adequately protective of the environment?

DR. PETROVIC: Within the certainty of (PESTICIDES ISSUE)

it's not an EPA method, but based on good laboratory practices and labs that can do this. The one lab that I'm aware of, Environmental Health Laboratories in South Bend, Indiana, is a New York State certified pesticide analytical lab and has developed methods for many of these, as an example.

MR. RUZOW: Does Cornell have testing of any of these types of things?

DR. PETROVIC: We have an EPA certified lab at our Geneva Experiment Station, part of Cornell, that actually does testing for determining allowable limits of pesticide on food products for minor crops. Its part of the registration of those materials. And quite commonly, tests for materials that there's an EPA method for, those aren't even registered. And so -- but Cornell doesn't typically do outside commercial testing for clients like this. It's again, more for research that's going on.

MR. RUZOW: But you use, in effect, non-EPA certified techniques where you have to --

DR. PETROVIC: Where you can set the

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parameters of protection and reproducibility of those, until an EPA method is approved.

MS. BAKNER: From a cost perspective, it's going to be in the Applicant's best interest to pick something that's easier to get tested, easier to get through the process; but with this provision, essentially the Department has the ability to review the proposed method, the method the labs can use. And you're obviously familiar with labs who test for these types of materials. So it's available on -- presumably the lab in Indiana takes samples from New York?

DR. PETROVIC: Yes, they do. And they are a New York State certified laboratory.

Unfortunately, there aren't a lot of laboratories that do tests for these. It would be nice to see more labs do that, but it is a very specialized test. When they have to develop their own methods, it's a lot. And there aren't many labs to do that.

MS. BAKNER: Sounds like an opportunity for Cornell.

DR. PETROVIC: Or for somebody, private industry, whatever.

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MS. BAKNER: I think that's pretty much all that I have here. I think we have covered all the questions that have been placed in the record. And if we could just have a second to check, then we can wrap up.

(4:14 - 4:14 P.M. - BRIEF PAUSE.)

MS. BAKNER: We have two additional points and we'll be done.

Kevin, we talked a little bit at the beginning here about this erroneous assumption that you modeled -- your LEACHM input file used a 2.5 meter deep soil profile, which would be -- take a long time to reach through 2.5 meters. Can you run through the math on what you believe the origin of that error to be?

MR. FRANKE: The actual value that's in the example 5, Attachment 2 of Appendix 15 is .254 times 10 to the third power, which is 254. And the units are millimeters. Or .254

meters. If you convert that over from metric to English, it comes out to 9.99998 inches or 10 inches of the Halcott soil profile. Example, input file was a Halcott soil profile.

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MS. BAKNER: And that's -- just so your Honor can find it, it's sample LEACHM input file named B-E-L-L-H-A 10 found in Appendix 15, Attachment 2.

Dr. Knisel indicated that from his review of the model results, you appeared to use default values from the help tables in the model in the hydrology portion of the model. He said specifically that modeled soils only included two layers, and the only difference in the two layers was the amount of organic -- excuse me, organic matter. And he interpreted this as a failure to use site-specific data. Could you explain this?

MR. FRANKE: We mentioned previously for the GlEAMS modeling, we used a high-intensity soils mapping and we identified the vly soil series that occurred on the 18 fairway an Big Indian. The data for vly soils was taken directly -- actually, from the Greene County soil survey -- I can give you a reason why the Ulster wasn't used, but I'll continue my train of thought -- in which the number of soil layers were specified which are two. The percent of clay was specified for

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each of the two layers. The amount of organic matter was specified for each, and all these values are those that were used in the GLEAMS analysis.

I guess, all I can say is Dr. Knisel's default values were well researched and well thought out, and they just happened to match up with these particular soils. For example, the default value for clay content for silt loams in the model is 20 percent. For vly silt loams, Greene County soil survey reports that it's 7 to 27 percent. So roughly the midpoint of that is about 20 percent. So taking half of the range of the soil survey that was used, that matched up the 20 percent default value.

Again, the organic matter content and the number of soil layers, percolation rates were taken from the Greene County Soil Survey, as well as the on-site perc. tests that we did on the site soils.

Just briefly, the Greene County Soil Survey is newer than the Ulster County Soil Survey, and after the Ulster County Soil Survey was published in the late '80s, it was

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recognized that the temperature regimes of the Catskills and Adirondacks, as they relate to soils, were somewhat different. So really names changed of the soils. The characteristics basically remained the same,

but their names have a frigid equivalent, and those names appear in the Greene County Soil Survey. So that's why that has a more recent soil series names and why the data was taken from --

MS. BAKNER: And you knew this was vly soils because of the high-intensity soils?

MR. FRANKE: Right, as I stated in the beginning of our on-site soils work.

MR. RUZOW: And the proximity of this site to Greene County, as the crow flies?

MR. FRANKE: Crow flies? Six miles, closest point.

MS. BAKNER: So this use of default values that Dr. Knisel identified was just a freakish coincidence?

MR. FRANKE: There were a few values that matched up exactly with his default values, but again, it was coincidence. It was all on-site and\or published data that was

used to characterize the soils.

MS. BAKNER: That would be all, your Honor.

ALJ WISSLER: We'll take five minutes.

(4:20 - 4:30 P.M - BRIEF RECESS TAKEN.)

MS. KREBS: I have one exhibit, your Honor.

("WILDACRES RESORT - SPDES PERMIT NO. NY 027 0661 PESTICIDES LIMITS EVALUATION" RECEIVED AND MARKED AS DEC EXHIBIT NO. 8, THIS

DATE.)

ALJ WISSLER: Ms. Krebs.

MS. KREBS: Thank you, your Honor. I would like to introduce Mr. Bill Mirabile with the Division of Water, Department of Environmental Conservation, the Bureau of Water Permits. He spoke before on the SPEDES permit. I believe we have a couple comments regarding the pesticide sections of those permits.

Mr. Mirabile, can you explain briefly how the permit limits were derived?

For the record, I handed out Department Staff Exhibit 8, which is entitled,

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"Wildacres Resort, SPEDES Permit," and has the number, "Pesticide Limits Evaluation," two-page table.

MR. MIRABILE: I think it would be most helpful to explain where the numbers came from that are in the draft permit. Before I get into the table here, I would like to give a very quick explanation of what we typically do when we draft a SPEDES permit.

We rely on a number of factors. Typically, with a permit that's associated with a well-established industry, like a metals plating, for example, or some type of industrial process where you have EPA limits that are already established, we call them technology limits. Also -- I'm sorry,

standards -- limits. Then we also have standards that we typically rely upon. They could be effluent standards, or in the absence of effluent standards, ambient standards or guidance values. We call those criteria. Anyway, when we're developing a SPEDES permit, we rely on a number of factors and considerations, and there's typically a protocol for arriving at a permit for a particular type of facility.

I think it's fair to say that the Belleayre Resorts are not typical permits, in fact, with regard to pesticides, I don't believe any other golf course in the state has pesticide limits. So what that leaves the Department without is an established protocol for arriving at establishing limits for pesticides.

So what do we do in a case like that? We look at criteria, if they exist, and if we don't have an integral or an important set of data or information for the permit, we rely on what we refer to BPJ, that stands for Best Professional Judgment. That's a term defined in regulation. And there was a fair amount of BPJ that went into establishing the limits for the permit, for the Belleayre permit.

With that, I'd like to get into the table. You'll see the pesticide name -- and by the way, a pesticide could include an insecticide, herbicide or fungicide. I

grouped them all together for simplicity sake. You'll see the pesticide listed in the left column. They have DEC criteria groundwater,

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DEC criteria surface water, DOH, our state health department criteria, and then SAV and Applicant proposal. And I would like to discuss each one of these and tell you where we went with each consideration. (Indicating)

Right off the bat, you can see from the table that as far as DEC criteria go, there is very little in the way of standards or guidance values for either groundwater or surface water. So we didn't really have a number to even use as a starting point for coming up with a limit in the permit, the draft permits. (Indicating)

We had, I think, for the groundwater, we have criteria for six of the pesticides included in the permit. And as you can see, with surface water, we have one standard, one guidance value. So right off the bat, we don't really have a good number to start with by way of a regulatorily established limit or standard for establishing limits. (Indicating)

DOH criteria, you'll see UOC footnote 1. UOC stands for Unspecified Organic

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Contaminate. UOCs are applied to drinking

water -- I should say the drinking water criteria. And the reason they're called Unspecified Organic Contaminant criteria is because they are basically interim numbers, if you will. (Indicating)

There are so many organic compounds in existence that have not be adequately tested, and as we all know, there are tens of thousands of new ones being developed yearly. And the regulatory agencies cannot keep up with establishing limits -- I'm sorry, with establishing standards.

So what the Health Department did was they came up with a .05 milligram per liter or 50 part per billion, it's the same thing, UOC in the absence of a better number, if you will. And that's quite a stringent number, by the way, 50 parts per billion. (Indicating)

The next column over we have the SAV. If you look at footnotes 2 and 3, footnote 2 -- by the way, I should have pointed out before now that with toxicity considerations here, I relied very heavily on the Department's toxicity expert, Ed Kuzia who is

seated behind me here. (Indicating)

SAV stands for Secondary Acute Value. Ed recommended we consider this approach based upon EPA regulations, the part is -- the citation is given in footnote 40 CFR, Part 132, Water Quality Guidance for the Great Lakes -- the first question is why look into

something that applies to the Great Lakes system. Well, the objective when we were developing the draft permits was to come up, again, bearing in mind there was no real established protocol for this, the objective was to come up with an approach that was not only reasonable and protective of the environment, but that was also consistent. And these regulations gave us something to grasp onto, so to speak, with applying a consistent approach to developing standards -- I'm sorry, developing limits for the draft permits. (Indicating)

And you'll see some other terms defined down here. It gets a little bit complicated. The GMAV, that stands for Genus Mean Acute Value, and the regulations require -- or they specify that you take the

geometric mean of a certain set of LC50 values, depending on how many species are tested, or families are tested. For the draft permits, we did not look at the geometric mean data. The Applicant provided toxicity data, LC50 data, for three different families, and we were even more conservative than the geometric mean. We took the lowest LC50 value of the three, three sets of toxicity data. (Indicating)

Okay. What we always do with establishing a permit limit for toxicity is we

take toxicity data and apply a safety factor to be more conservative, and hopefully more protective. And with the Applicant providing three toxicity data for three different families of organisms, one invertebrate and two vertebrate species or families, the regulations cited above specified that a safety factor of 8 could be applied, or more correctly, 0.125. And the less species or families for which data is provided, the higher or more stringent, I should say, the safety factor is required. (Indicating)

For instance, for only two species, a

safety factor of 21.3 would have been required. I could be wrong on that, but the point being that the more species or families for which toxicity data is provided, the less stringent you can use value for a safety factor. But nonetheless, we still apply a safety factor. So the regulations specify 8. (Indicating)

So what we did here was we took the lowest LC50 value provided by the Applicant for the three families tested, and we divided that by 8, and that is the number that you see in the SAV column, Secondary Acute Value. So that is what that number means. (Indicating)

The last column over, we have the Applicant's proposal, and I have to qualify this. Table 7, one of the DEIS volumes has a list of pesticides proposed, and the Applicant

proposed action levels. Well, we went further than that, and we made them actual limits in the permit, and not just action levels. But nonetheless, the draft limits -- the Applicant proposal, you'll see is .025 milligrams per liter, or 25 parts per billion in most cases. A little lower in some cases. (Indicating)

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So we have DEC groundwater criteria, DEC surface water criteria, which very little exists at this point, DOH drinking water criteria, toxicity data, and the Applicant's proposal all thrown together in the system that we used or the approach that we used. And what we did was we simply took the lowest number of all of the considerations. (Indicating)

Again, applying more conservatism or more stringency to developing permit limits. As you will see, the numbers that are in the draft permit, the proposed limits, are in bold. We have one proposed limit coming from the UOC criteria, Health Department drinking water criteria. That's 5 parts per billion for chloroneb.

ALJ WISSLER: Bill, let me ask you about that one. The table has .005 and the Applicant's proposal is .025?

MR. MIRABILE: Yeah, in some cases they were the same.

MS. BAKNER: The one in bold is the

actual limit they picked.

MR. MIRABILE: I'm sorry, I'm not
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sure --

ALJ WISSLER: Oh, okay, I understand. I got it. I go it.

MR. MIRABILE: The DOH criteria is actually more stringent than what the Applicant proposed, and it's far more stringent than the EPA approach that we applied, the toxicity data.

ALJ WISSLER: And the SPEDES permit is the lower --

MR. MIRABILE: It's the lowest value of all of the considerations, whether it's the Applicant's proposal, the toxicity data or criteria.

ALJ WISSLER: What's in the permit is what's in bold?

MR. MIRABILE: Correct.

ALJ WISSLER: Got it.

MR. MIRABILE: So the SAV, the toxicity data contributed towards using three of the pesticides for proposed limits, and the rest of the proposed limits are the .025 proposal by the Applicant -- actually, with one of them being even lower than that proposed by the Applicant. (Indicating)
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Any questions?

MS. KREBS: Thank you, Mr. Mirabile. That explains the Wildacres. There's been a

question raised regarding the Big Indian draft SPEDES permit, and we don't have the specific pesticide limits in the Big Indian SPEDES permit. Could you briefly explain why, but also how the Department is monitoring and evaluating pesticide use, regardless, in the SPEDES permit?

MR. MIRABILE: For the Big Indian permit, again, one of the considerations in drafting the permit is what is the classification -- classification I should say of the receiving water. With Big Indian, we don't really have any receiving waters for the pond discharges, the stormwater pond discharges. Ultimately, if you want to, you could say that the groundwater is a receiving water because the discharges are to overland flow, they're not to any surface waters per se.

So what happens when you have a discharge to the ground, a number of factors play into it. You do have some degradation

which takes place from the time of discharge until its ultimate fate. You have biological degradation, you have solar degradation, you have biological uptake. You have a number of factors that play into it.

So to establish a limit for the pond discharges for Big Indian, the first question, is, well, what kind of basis do you use for

that limit? We don't have a surface water discharge.

You could say that we could look at the groundwater criteria. But in my review of the table here, I believe that the proposed limits are more stringent than the groundwater standards. So that wouldn't really make any sense either.

However, we're not saying that there's no concern about the discharge from -- of pesticides from the ponds, and what we did was we did build in toxicity testing requirements for several of the ponds. And we also -- we do have pesticide monitoring for the ponds for the pesticides that have been applied within the previous 12 months.

MS. KREBS: I'll refer your Honor to
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page 9, Big Indian Toxicity Testing; page 12 and 13, I believe, are the Surface Water Ambient Monitoring and the Groundwater Monitoring. And there are some more provisions in the Wildacres permit as well on pages 12 through 15.

MR. MIRABILE: Again, we do have a mechanism in the permit for monitoring for pesticides in the groundwater. That's basically if it shows up, that's the first -- that's the first thing we want to determine, will it show up at all. Because, again, there are other factors involved after the discharge.

If it shows up, at what levels would they show up at. And we would consider the concentrations that were detected, if they're detected at all, and a course of action after that.

MS. KREBS: A question has also been raised regarding the 16 of the 31 pesticides are listed in the permits for which certified analytical methods do not currently exist. I think there's a provision in the permits regarding that?

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MR. MIRABILE: Yes, that has been referred to previously by both the City and the Applicant. What it refers to is the MDL study.

ALJ WISSLER: Show me where you're talking about.

MS. KREBS: Page 11 of 21, your Honor, in the Big Indian permit.

MR. MIRABILE: It's in both permits.

MS. KREBS: Page 10 of 23 in the Wildacres permit, and I will get the page, your Honor --

MR. MIRABILE: MDL stands for Method Detection Limit; PQL is Practical Quantitation Limit. The MDL is when a material or a compound is the lowest level that's first detected in a matrix, such as water or wastewater, whatever is being analyzed. Even though it's detected, there's not a high level

of confidence that the instrument is detecting it accurately, as far as precision goes. So the PQL that we sometimes use for a limit in the permit, that's four times the MDL, to have a greater level of confidence in the precision of the analysis.

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The case has been made that EPA methodologies do not exist for all the pesticides. That's absolutely correct. And that's not an uncommon situation. What the Department does in that situation is we typically, but not always, require an MDL study -- we almost always do. The way it's worded, at the Department's discretion -- at its discretion. There may be a situation where we may feel it is not necessary. It can be an expensive study. We consult with the Department's Division of Water's chemist and consult with him in detail on whether or not such a study would be required. Again, we almost always do, but I thought we would build in the flexibility where if there was some reason the chemist felt it was not necessary to perform the study, then the Department would have the authority to state that.

An MDL study typically requires adding -- developing certain concentrations, adding spikes of the material to distilled water. You run duplicates, you run planks, and you run analyses on the different concentrations that are developed. And you establish curves

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with the instrument that's being used. And from the curves, you develop an adequate confidence in the level that the instrument can be detected down to. And that laboratory -- that instrument, the level can be established that way.

As far as certification goes, or approved methodologies, again, the EPA has approved methodologies for quite a few organic compounds, but for quite a few they don't. New York State also requires that the laboratories that do the testing use an ELAP-certified laboratory method. And our Health Department goes around and checks laboratories for this certification yearly. ELAP stands for Environmental Laboratory Approval Program.

So there is a fairly high level -- very high level of scrutiny that is applied to the analytical techniques that are used, whether or not an EPA methodology does exist.

ALJ WISSLER: With respect to the quintozene; is it?

MR. MIRABILE: Quintozene.

ALJ WISSLER: According to the SPEDES

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permit, that's a PQL level that is to be -- or PQL rather that will be determined, and then that value will be placed in the SPEDES permit?

MR. MIRABILE: What that says there, the standard, the DEC criteria is nondetect. That means that there is no level that's acceptable. So with the standard of nondetect, it's not the greatest way to express a standard, but that's what we have to live with.

ALJ WISSLER: As a practical matter, that means less than .005?

MR. MIRABILE: Yes, that's correct -- it's nondetect. The PQL, we use that as -- again, a detection level with acceptable level of confidence.

ALJ WISSLER: In determining the PQL, is that something that evolves over time as technology changes and so forth --

MR. MIRABILE: I'm sorry, what?

ALJ WISSLER: When a permit comes up for renewal or something, as Practical Quantitation Limit, as technology advances, is that a limit that will be -- can be taken

downward as methods --

MR. MIRABILE: Yes, that's absolutely correct. In fact, when I received the list of UOCs from one of our division chemists, he pointed out that one of the compounds was about to receive some type of standard. And so these standards are being developed, albeit very slowly. And as they are developed, and as new EPA methodologies are approved, these are taken into consideration at the time of

permit renewal, or at the time of permit modification.

That's a good point to mention that, or a good time to mention that. If, say, we detected, or the monitoring of the groundwater detected pesticides in the groundwater, and they were at levels which we were concerned about, we could at that time initiate a permit modification to address that problem, or we could do it during the five-year renewal period. But they are evolving documents.

MS. KREBS: I guess we have only two minor points, your Honor, one of them concern the wells. I think you agreed regarding the question regarding the depth of the wells --

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MR. MIRABILE: The depth sampling, I believe the City brought this up, it's a very good point. You do have what we call chemostratification of organic compounds, a high variability in chemical and physical characteristics so they'll settle at different layers in the water column. So it's a good idea to perform that sampling. And you really do need a purpose designed well to do that. So I would say that that's -- we will put that in the permit.

Okay. The City also brought up the fact that synergistic effects of various pesticides are not considered in the structure of the existing draft SPEDES permits. I don't

agree with that. If you turn to -- the toxicity testing page, look at the Wildacres permit.

MS. KREBS: That's page 12 of 23.

MR. MIRABILE: Page 12 of 23; and again, we have the exact same requirements but different outfall numbers in the Big Indian permit.

If you look at the table on the top of this page, "The reason for testing". If you

look at No. 3, the possibility of complex or synergistic interactions of the chemicals. As I mentioned earlier, we don't really know what the fate of these chemicals are when they're going to be discharged. So this is one way to at least look at that consideration, with the acute toxicity testing. So that is in there, but the toxicity testing will indicate some sort of effect of the various compounds, the pesticides that are existing in the matrix.

MS. KREBS: So for instance, I think the example was if one compound had two active ingredients, they might have a synergistic effect. Under the testing, the two things were not tested together, but in the toxicity testing, you would find out if there was a synergistic effect on that compound?

MR. MIRABILE: That's absolutely true. In addition to that, we do have testing for individual pesticides. The pesticides that have been applied within the previous 12

months are required to be tested for -- in the ambient surface waters.

MS. KREBS: Which is on page 15 of 23 for the Wildacres permit, your Honor. Page 12 of 21 of Big Indian.

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With that, your Honor, unless you have any specific questions -- may I have one moment?

ALJ WISSLER: Sure.

(4:58 - BRIEF PAUSE.)

MS. KREBS: Thank you, your Honor.

ALJ WISSLER: Do you have anything?

MR. GREENE: Just briefly, your Honor. First of all, I just wanted to acknowledge that the 2.5 acres that we raised in our brief was a decimal point error -- 2.5 meters, I'm sorry, I'm still making the mistake. The City just wanted to prevent any confusion that that was an error, so we do acknowledge that.

As far as the other issues that we talked about today, we will respond in writing, if we are so allowed at a later time.

ALJ WISSLER: You will be so allowed.

MR. GREENE: Thank you, very much, your Honor.

And lastly I would like to reiterate a point that we made during our stormwater presentation; that we firmly that believe the Big Indian permit should have the same

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concentration based effluent limitation for pesticides as the Wildacres permit, and we refer your Honor back to the testimony of that day.

MR. GERSTMAN: Judge, one brief comment. I would like to reserve the right to have Dr. Knisel review the offers of proof made here today, and reply to them once we get the transcript of the Issues Conference. We believe it's fairly clear that his identification of the problems with the model have not been addressed, and we'll point that out in our reply.

ALJ WISSLER: Very good. Anything else?

(NO AFFIRMATIVE RESPONSE.)

Then we'll conclude for today. And I believe that we will be meeting back here again on July the 29 at 9 o'clock for water supply.

(5:00 P.M. - WHEREUPON, THE ISSUES CONFERENCE PROCEEDINGS ADJOURNED FOR THE DAY.)

C E R T I F I C A T I O N

I, THERESA C. VINING, hereby certify

and say that I am a Shorthand Reporter and a Notary Public within and for the State of New York; that I acted as the reporter at the Issues Conference proceedings herein, and that the transcript to which this certification is annexed is a true, accurate and complete record of the minutes of the proceedings to the best of my knowledge and belief.

THERESA C. VINING

DATED: September 8, 2004.