

APPENDIX B
RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY FOR PROPOSED REMEDIAL ACTION PLAN
STERLING DRUG SITE #3
TOWN OF EAST GREENBUSH
RENSSELAER COUNTY, NEW YORK
ID # 442011

RESPONSE TO COMMENTS PROVIDED BY STERLING ORGANICS
MARCH 24, 1992

GENERAL COMMENTS

1. The delineation between the onsite and the offsite plume is not evident in the Proposed Remedial Action Plan (PRAP). Collection and containment of the onsite plume is currently being performed, and has been successful at reducing contaminant concentrations in the groundwater beneath the site and eliminating further contaminant migration. The diethyl ether in the offsite plume migrated from the site prior to the initiation of groundwater recovery activities, and is outside of the zone of influence of the existing recovery well. The text should be revised to further illustrate the differentiation between the two plumes.

In order to clarify the actual situation at the site, the language will be modified. There is actually only one plume and the current groundwater treatment system is only collecting and treating a portion of it. As far as differentiation of the two sections of the plume the language will be modified and figures will be added to indicate the zone of influence of the treatment system.

2. The text regarding the impact of the site on groundwater appears to indicate that the constituents of interest are leaching from the entire site, rather than the Clay Breach Area (CBA), where free product is still present. The majority of the site is underlain by a confining layer which minimizes the impact of the residual contaminants present in site soils on the groundwater.

The PRAP is not intended to be an all inclusive document. As suggested in the PRAP, additional details of the results of the investigations can be found in the Remedial Investigation Reports and Feasibility Study. Since the PRAP was written based on the data presented in those documents it can be deduced that the only area where there is a known impact on the groundwater is the area where the landfill monitoring wells are located.

3. Various sections of the text indicate that the soils at the site are "heavily" contaminated with a variety of constituents, including volatile organic compounds and petroleum hydrocarbons. "Heavily" implies that the soils throughout the site contain visible quantities of contaminants, when in fact this is not the case. We suggest that the text be revised to state that the

soils contain contaminants, or that the definition of such terms as "heavily" be provided in the text.

The term heavily was used in reference to the area where the clay like material below the site had been penetrated, the CBA area; where the free product was found in soils and on the water table. It is the Department's belief that the term heavily does not imply that soils throughout the site contain visible quantities of contaminants.

4. Goals and objectives appear to be used interchangeably throughout the text. As detailed in Section 2.0 of the Final Draft Feasibility Study (Final Draft FS) for Sterling Site 3, remedial action goals are theoretical limitations for planning remedial activities, while remedial action objectives are the practicable, specific end point or cleanup goal to be achieved by remedial action. The objective may differ from the remedial action goal because technical, logistical and condition-specific considerations are taken into account when determining the remedial objective, whereas the remedial action goal is a theoretical limit. NYSDEC's Recommended Cleanup Goals, as presented in the Final Draft FS, and the Groundwater Standards and Guidelines presented in the Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES, dated November 15, 1991, will be used as the basis for evaluating the progress of remedial activities, but are not considered to be the remedial objectives for site activities.

The text has been modified to clearly define the goals and objectives for the remediation. As stated in the PRAP the goals for the remediation of the groundwater also include New York State Department of Health's Part 5 Drinking Water Standards.

5. Recovery and treatment of the offsite plume was evaluated as part of the Final Draft FS. Dames & Moore performed mixing zone calculations to determine the potential impact of diethyl ether, the constituent of interest in the offsite plume, on the Hudson River water quality, should this plume contact the river. The results of these calculations indicates that even if the highest concentration of diethyl ether historically detected in the offsite plume (2,230 ppb in Monitoring Well 16-B, approximately 1,200 feet upgradient of the river, in June, 1986) were to be discharged into the Hudson River, the resulting concentration would only be approximately of 0.024 ppb above background within the river system.

There are currently no promulgated standards, criteria or guidelines available for diethyl ether, either health-based ingestion criteria or for protection of aquatic life, so there is no basis for comparison. A risk assessment was performed on the

potential impact of ingesting the groundwater at the site, and the detected diethyl ether concentration was found to be below the acceptable risk-based level of 14,000 ug/l. The exceedingly low concentrations which would be attributable to the plume discharging to the river, combined with available risk-based information previously supplied to NYSDEC, indicate that this concentration is not deemed to be at a level of concern within the riverine system.

A cost analysis was also performed to evaluate the additional costs that would be incurred if offsite plume recovery activities were implemented. The approximate present worth capital and operation and maintenance cost associated with the installation of the recovery system, upgrading the existing groundwater treatment building, process units and discharge systems, calculated over 30 years, is approximately \$2.6 million dollars, as detailed in Attachment J of the Final Draft FS.

The existing onsite groundwater treatment system has proven effective at controlling contaminant transport from the site into the offsite plume. The proposed landfill remediation activities will also reduce subsurface contaminant concentrations and provide additional source control, effectively minimizing the potential for further contaminant migration from the site into the offsite plume. Thus, the offsite plume will continue to naturally degrade and attenuate in the subsurface since the source is being treated and contained at the site. Therefore, based on the negligible impact of the offsite diethyl ether plume on the Hudson River, the potential costs associated with plume recovery, and the operations currently in place to control onsite additional plume migration, a No Action alternative is still proposed for the management of the offsite plume. Further investigation associated with the recovery of the offsite plume is considered unwarranted at this time.

The Department has reviewed your comment and the discussion on the off-site portion of the plume in the FS. As stated in the ROD the Department is deferring the decision on the off-site portion of the plume to a second operable unit. Given that the applicability of NYSDOH Part 5 Drinking water standards relates to the use of the impacted groundwater as a drinking water source and given that the land over the contaminated groundwater could potentially be developed, the department has determined there is a need to evaluate options to achieve compliance with this regulation to address this potential exposure.

SPECIFIC COMMENTS

1. Page 2. Groundwater Hydrology - "The nearest groundwater well is located at the Gold Bond Building Products Plant north of the site and has not been impacted by the site." NYSDOH/NYSDEC has informed Dames & Moore that Gold Bond wells are reportedly not used for drinking water, and that there are no records of sampling available. Dames & Moore cannot comment on the accuracy of this statement.

The text has been modified to reflect that drinking water is supplied by bottled water and the well is no longer used.

2. Page 3, first bullet - A floating layer of chemical product has been found under the site." The term "floating product" is actually not indicative of existing site conditions. The residual contamination present in the subsurface in the CBA area does not exist as a continuous layer, but rather as discrete pockets of material at the saturated/unsaturated zone interface. The preferential flow zone created by the installation of the vacuum extraction recovery well facilitated accumulation of the contaminants into the area around the wellhead, but this is not indicative of current subsurface conditions. This statement indicates that free product is present under the entire site.

The text has been modified as follows:

"Pockets of chemical product have been found under the site."

3. Page 3, first bullet - "A groundwater treatment system was installed in 1989 and is currently working to control the migration of contaminants from the site. It is unclear as to what the term "working to control" means in this context. The effectiveness of the groundwater recovery and treatment system should be clarified in the RAP. It is our contention that the contaminants in the offsite plume migrated from the site prior to the installation of the groundwater treatment system (GWTS) in 1989. Based on actual operational data and groundwater monitoring results for the onsite and the offsite wells, the GWTS is controlling the migration of contaminants from the site. The reductions in contaminant concentrations in the offsite plume further indicate that the GWTS is preventing migration of site contaminants into the offsite plume.

The text chosen accurately portrays the situation at the site. While the system is controlling the migration of the on-site portion of the plume and is not controlling the migration of the off-site portion of the plume.

4. Page 3, second bullet - "Sediments and surface water in the Papscaanee Creek do not appear to be severely impacted by the site." The impact of the site on the sediments and surface water in Papscaanee Creek has been minimal, based on the information obtained during previous site investigations. The majority of the polynuclear aromatic hydrocarbon (PAHs) listed in the Table 3 of the PRAP were detected in the upstrea (south of the site) sediments only. Only three (3), benzo(k) fluoranthene, fluoranthene and pyrene, were detected in downstream locations (north of the site). Of these, only benzo(k)fluoranthene was detected in the downstream location exclusively. These results cannot be considered indicative of a site impact on the creek. The general lack of surface water flow within the creek bed limits contaminant transport and distribution, and sediment and surface water samples.

As the PRAP states, the sediments and surface water do not appear to be severely impacted by the site. The impacts from the site and or lack thereof due to the drum removal and final remedial activities will be determined during the proposed sediment and surface water sampling program. Table 3 accurately reflect the results from the Remedial Investigations.

5. Page 3, fourth bullet - "Approximately 185,000 cubic yards of material contaminated soil, research wastes, consumer returns and construction debris remain at the site." The 185,000 cubic yards of material presented in the PRAP as remaining at the site was based on excavation of the entire site to the water table and was used for FS cost estimation purposes only. It was not meant to be indicative of the total amount of contaminated soil, debris, etc., nor the total amount of material requiring treatment after the completion of the Drum Removal IRM.

This volume was used because it was the best estimate provided in the text of the FS.

6. Page 4, second paragraph - "The most significant component of the remaining contamination consists of soils and groundwater contaminated with volatile and semivolatile organic chemicals and petroleum hydrocarbons." Petroleum hydrocarbons are listed as one of the constituents of interest remaining in site soils. Petroleum hydrocarbons have been detected in site soils during previous investigations, but have never been referenced as a constituent of interest in either site soils or groundwater.

Based on the chemical analysis, it appears that the petroleum hydrocarbons are mixed with the semivolatile and volatile contaminants at the site. In order to remove the contaminants it will be necessary to remove the Total Petroleum Hydrocarbons(TPHs).

7. Page 4, second paragraph - "At present, these risks are minimized because the heavily contaminated soils are only present at depth." Please provide a definition of "heavily contaminated" in the RAP. (Refer to General Comment Number 3).

At this location in the PRAP the terms "heavily contaminated" were referring to the area where the free product was found, the Clay Breach Area(CBA) as explained in general comment number 3. This paragraph also indicates where higher concentrations of contaminants were found by referencing Figure 4 of the PRAP.

8. Page 4, third paragraph, second sentence - "The contaminated soils are releasing chemicals into the groundwater in exceedance of groundwater standards." This statement indicates that the soils throughout the entire site are impacting groundwater. The confining clay layer present throughout the majority of the site effectively minimizes the potential for contaminant transport from the other areas of concern into the aquifer. The CBA area, where the confining clay layer is absent, is a potential conduit for subsurface transport, but the impact of this area on the environment is minimized through free product recovery and the effectiveness of the GWTS at controlling contaminant migration from the site.

The PRAP is not an all inclusive document. The document is a summary of the results presented in the Phase I and II Remedial Investigations and Feasibility Study. Since groundwater data has not been gathered from other areas during any of the investigations, it can be inferred that the only confirmed area where contaminants are impacting the groundwater is in the vicinity of the CBA.

9. Page 4, third paragraph, second sentence - "Previous sampling had found benzene to be present off-site." This sentence should be clarified to underscore the fact that diethyl ether is the only constituent of interest present in the offsite plume. The November 1991 sampling round, which utilized the lower analytical detection limit of 0.5ppb for benzene, also did not reveal the presence of benzene in the offsite plume.

The previous sentence has been modified to state that the most recent round of sampling has found only diethyl ether at detectable concentrations.

10. Page 5, Sediments, last sentence - The goal of any remediation of sediments present in the Papscaanee Creek will be first to establish if there are impacts from the site and if necessary, evaluate what remedial alternatives are feasible." Analytical results of sediment samples obtained during previous site investigations indicate that the site has had minimal impact on Papscaanee Creek to date. The goal of the pre-remedial action (RA) sampling event will be to establish a baseline for comparing the surface water and sediment quality of Papscaanee Creek prior to and subsequent to remedial actions at the site. The necessity

for sediment remedial activities will be assessed after the completion of the post-RA sampling event.

The intent of the sampling program of the sediments and surface water in the Papscaenee Creek is to determine if activities during the drum removal have had any impacts and if so to determine if remedial action is warranted. The sampling to be performed after the final capping is to determine what impact if any the final remediation might have had on the Papscaenee. Any subsequent sampling of the surface water and sediments will be performed to determine the effectiveness of the final remediation.

11. Page 7, Second Paragraph - "A temporary PVC cap will be placed over the site to assist in removal of contaminants and stabilize the exposed areas." A temporary PVC cap will be used to eliminate short-circuiting during the operation of the VES, if necessary.

The language in the PRAP was chosen to be similar to what was found in the FS in Section 5.3.3.1 on pages 5-21 and 5-22.

12. Page 9, Alternative 9, last sentence - "Groundwater recovery and treatment activities will continue through the excavation and afterwards until treatment goals or groundwater standards are met." The extent of groundwater recovery and treatment operations under this all alternative, as with the other alternatives retained for detailed evaluation, will be continuously evaluated during the RA. The effectiveness of aquifer restoration activities will be periodically assessed to determine if attainment of the groundwater remedial action goals is feasible. If aquifer restoration goals cannot be achieved, a justification package requesting cessation of recovery activities will be prepared for NYSDEC review and approval.

The text has been revised to state "treatment objectives" rather than treatment goals.

13. Page 9, last paragraph - "The feasibility study also evaluated enhancing the system to include a collection system to capture all or a portions the off-site plume and an additional treatment unit to effectively treat diethyl-ether." The FS evaluated the feasibility of enhancing the GWTS for collecting and treating the offsite plume, and found it to be unjustified based on the negligible risk associated with the offsite plume on potential receptors and the Hudson River and cost associated with the plume recovery. Refer to General Comment Number 5 for a more detailed discussion of the evaluation performed on the offsite plume.

The Department's policy for evaluating remedial alternatives contains two categories of criteria. The first category, the Threshold Criteria, includes Overall Protection of Human Health and the Environment and Compliance with Standards,

Criteria, and Guidance values. Remedial Alternatives should meet both of these criteria or provide justification for non-compliance. The FS evaluation for the off-site should include NYSDOH Part 5 Drinking Water Standards. Diethyl ether is an "unspecified organic contaminant" and the corresponding drinking water limit is 50 ppb. As stated in the ROD, the Department is deferring the decision on the off-site portion of the plume to a second operable unit so that a further evaluation can be performed.

14. Page 10, Department's Preferred Alternative - "The preferred alternative will include collection and treatment of the off-site plume." Alternative 3, as presented in the Final Draft FS, did not include the offsite plume recovery option. Various other potentially feasible options for groundwater recovery or treatment were never formally developed or evaluated specifically for the offsite plume in the FS. The costs provided for Alternative 3 also did not reflect inclusion of the offsite plume recovery option. Therefore, incorporation of the offsite plume recovery scenario into the selected alternative is not considered justified without further alternative development and evaluation.

The Department has deferred the decision on the off-site portion of the plume to a second operable unit. This ROD will select remedy for the off-site portion of the plume.

15. Page 10, Department's Preferred Alternative - "Therefore, additional information will be gathered during the design phase to determine the efficacy of treating the groundwater [in the offsite plume] to meet the standards." The collection of additional information was never addressed during the preparation of the FS. Available information on the migration of the plume, potential impacts of the plume on the Hudson River, the lack of complete exposure pathway and the overall innocuous nature of diethyl ether indicate that the offsite plume will not have a significant impact on public health or the environment. The collection of additional information will not enhance the feasibility of collecting the plume, which has already been established, nor will it provide additional insight into the behavior or impact of the offsite plume. As stated in Section 2.0 of the FS, recovery and treatment of the offsite plume is not considered imperative or cost-effective at this point in time.

The Department is deferring decision on the collection of the off-site portion of the plume to a second operable unit. Given that the applicability of NYSDOH Part 5 Drinking water standards relates to the use of the impacted groundwater as a drinking water source and given that the land over the contaminated groundwater could potentially be developed, the department has determined there is a need to evaluate options for compliance with this regulation to address this potential exposure.

16. Page 11, Compliance with Applicable or Relevant and Appropriate New York State Standards, Criteria and Guidelines (SCGs, third sentence - "The preferred alternative will include collection and treatment of the off-site plume." As defined in the FS, the preferred alternative does not include recovery and treatment of the offsite plume. This option was never subjected to the FS evaluation process, and is not considered an integral part of the selected remedial alternative.

The Department has deferred a decision on the off-site portion of the plume to a second operable unit; therefore, discussion of a remedy to address the corresponding groundwater contamination has been deleted.

17. Page 14, Summary of the Preferred Alternative - "The estimated present worth cost is \$14,109,640." The present worth cost for the preferred alternative as presented in the FS is \$11,411,141. The costs presented in this section incorporate the recovery of the offsite plume, which is not considered an integral part of the selected alternative.

The Department has deferred decision on the off-site portion of the plume; therefore, the related costs will be deleted from the discussion.

18. Page 14, Summary of the Preferred Alternative, Item 1 - Currently a vacuum extraction pilot system is being evaluated to assist in the final design program." The vacuum extraction pilot test has been completed. VES has been found to be effective at reducing VOC contamination in the areas that were studied, and will be applicable in the hot spot areas remaining at the site.

The ROD will be modified to include this information.

19. Page 14, Summary of the Preferred Alternative, Item 2, - A borehole and sampling program to clearly define the areas to be addressed by the application of the vacuum extraction system." The areas of concern at the site have been defined during previous site activities. Additional sampling activities will be performed during the RA to evaluate the progress of the remediation, not to define the areas requiring remediation.

The statement in the ROD has been modified

20. Page 14, Summary of the Preferred Alternative, Item 3 - "The [VES] treatment system will operate until the treatment

objectives are attained or the Department determines that the system is no longer effective." The treatment objective defined in the Final Draft FS was the 90 percent overall reduction in average organic contaminant concentrations in the soils. The treatment goals are the Recommended Soil Cleanup Objectives provided by NYSDEC, which will be used to monitor the progress of remedial activities. These "objectives" will be used as the theoretical endpoint for remedial activities (i.e., goals), but the actual degree of cleanup attainable at the site will be determined during the RA. This section should be clarified.

The term objectives has been changed to goals. The Department has not agreed to the 90 % overall reduction in average organic contaminant concentrations as a cleanup objective. The vacuum extraction system appears to perform well on most of the soils at lesser depths, however, there is some question as to the effectiveness on soils near the water table. Therefore the vacuum extraction system will be continually evaluated to determine when it is no longer being effective at which time the Department will decide as to whether any additional treatment by alternative means will be required.

21. Page 14, Summary of the Preferred Alternative, Item 7 - During the design an evaluation of the feasibility for collecting and treating the downgradient plume will be performed. Mixing zone calculations on the potential impact of the diethyl ether plume on the Hudson River were provided in Appendix J of the Final Draft FS. The results of these calculations showed that even in the most conservative situation, the increase in diethyl ether concentration in the Hudson River would be approximately 0.024 parts per billion (ppb), assuming that the plume would even migrate to that point. Diethyl ether does not have promulgated water quality criteria available; however, an LD₅₀ value of 2,138 parts per million (ppm) for guppies (*Poecilia reticula*) is available (Handbook of Environmental Data on Organic Chemicals, Verschueren). Based on this criteria, it is our opinion that the impact of the offsite plume on the Hudson River would be negligible, if the plume should advance to that point.

The risk assessment performed as part of the FS indicated that the acceptable groundwater ingestion concentration under a light industrial land use scenario would be 14,000 ppb. The most downgradient concentration of diethyl ether detected in the offsite plume during the most recent round of sampling (November 1991) was 255 ppb, which is significantly lower than the health-based concentration. The potential risks associated with the ingestion of the offsite groundwater plume would be minimal.

Therefore, based on the results of the mixing zone calculations and the risk assessment, the risk associated with the diethyl ether in the offsite plume is considered minimal. The feasibility of recovering the offsite plume may be performed

using information obtained during previous site activities, but it is our opinion that this work is not warranted.

Please refer to response to general comment 5.

22. Page 15, Item 8.1 - The remedial goals for the subsurface soils are to attempt to clean the soils to the levels found on Table 5. Table 5 is entitled "Contaminant Specific Cleanup Objectives." As stated in the Final Draft FS, the remedial objectives for the soil RA are a 90 percent reduction in overall average organic contaminant concentrations across the site; the remedial goals for site oils are specified in Table 5 of the PRAP. Please revise the table accordingly.

The term objectives has been changed to goals.

23. Page 15, Item 8.2 - The remedial objectives for the groundwater are the standards contained within the NYSDEC 700-705 groundwater and surface waster standards and NYSDOH Drinking Water Standards." The remedial objectives for the groundwater RA have not been formally defined and will be evaluated during the course of GWTS operation; the remedial goals are the standards and guidelines contained within NYCRR 700-705 groundwater and surface water standards and NYSDOH drinking water standards.

The text of the ROD has been modified.

24. Page 15, Item 8.2, first star - "engineering controls such as long term gradient controls by low level pumping, will be implemented as containment measures;" We are unsure of the exact meaning of "low level pumping" and request further clarification of what would be required if this contingency was implemented.

At some point during the operation of the groundwater treatment system, the Department may decide that it is no longer effective. At such time, alternate means for adequate groundwater treatment may need to be implemented. Low level pumping is one of the potential alternatives the Department may consider. Low-level pumping would likely involve a modification to the current system by changing location of extraction and/or reinjection wells to minimize the amount of water to be pumped in order to control off-site migration of contaminants.

25. Page 16, Last paragraph - "The decision to invoke any or all of these measures may be made during a periodic review of the remedial action, which will occur at 5 year intervals." It is our understanding that a periodic review of the effectiveness of the RA may occur prior to the expiration of the 5-year interval, depending on the progress of remedial activities at the site. This should be specified in the RAP.

The sentence has been modified to say "at a maximum" of 5-year intervals.

26. Table 2 - "Groundwater Results On-Site and Off-Site" The contaminant concentration range presented in this table appears to indicate that significant concentrations of the constituents of interest were detected in all wells installed at the site, and that elevated concentrations of contaminants are still being detected to date. This table should be revised to indicate that contaminant concentrations in the offsite wells have been steadily decreasing since the implementation of the groundwater recovery and treatment operations, and that a number of the wells have not exhibited detectable concentrations of the constituents of interest listed in this table.

Again, the PRAP is a document that summarizes the data collected from the Remedial Investigations and Feasibility Study. The PRAP refers to these documents for more detailed information.

27. Table 5 - Contaminant Specific Cleanup Objectives" The word "objective" in this table should be replaced with "goal."

The term objectives has been replaced with goals.

RESPONSIVENESS SUMMARY CONTINUED
FOR STERLING DRUG SITE #3 ID 442011

RESPONSE TO COMMENTS FROM JEANNE CASATELLI AND ROBERT FAKUNDINY

- Q1. Can the State provide plume maps showing the distribution of pollution in the groundwater and the concentration values at all sample points?
- R1. Plume maps are included in the feasibility Study which is available for public review at the Rensselaer Public Library.
- Q2. How much land and water(surface and groundwater) are truly impacted both on and off the site?
- R2. The land impacted is limited to the area of the site itself, approximately 10 acres. The area under which the groundwater plume exists is approximately 23 acres. The volume of contaminated groundwater is approximately 30 million gallons. No surface water has been significantly impacted.
- Q3,6 and 7. These questions concerned the future use of the site.
- R3,6 and 7. It is estimated that for thirty years the site will remain fenced and capped with no building, farming or other such use made of the site. Beyond this time frame, the answer depends upon site conditions which would have to be evaluated at the time.
- Q4. The PRAP mentions that no wells in the contaminated area are considered "safe" but wells outside the contaminated area are considered "fairly safe". What does "fairly safe" mean?
- R4. It is not apparent where the PRAP mentions that wells outside of the contaminated area are "fairly safe". A review of the document did not reveal the source of this comment.
- Q5. What degree of certainty is there that the technology used to remediate the site will be effective? Has it been used elsewhere?
- R5. Both the groundwater treatment system and the vacuum extraction system have been successfully tested at this site and are commonly used at other hazardous waste sites with similar types of contaminants.

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter

- of -

a proposed Remedial Action Plan for Sterling Drug
Site #3 - ID # 442011

TRANSCRIPT OF PROCEEDINGS at a public
hearing in the above-captioned matter held by the New York
State Department of Environmental Conservation at the East
Greenbush Town Hall, 224 Columbia Turnpike, East Greenbush,
New York, on the 9th day of March, 1992, commencing at
7:00 p.m.

PRESIDING:

ERIC R. OBRECHT, P.E.,
Hearing Officer

P R O C E E D I N G S

1
2 MR. OBRECHT: All right. We would like to
3 get started. I would like to thank everybody for coming
4 here tonight and welcome you to the public meeting on the
5 proposed remedial action plan for Sterling Site #3. Tonight
6 we have this public meeting and participation activities.
7 It offers you the opportunity to comment on the proposed
8 remedy for the aforementioned site.

9 Some of the people that are present tonight
10 representing the state, John Sheehan, from the New York
11 State Health Department, Bob Filkins, is a geologist for
12 the New York State DEC, and myself. My name is Eric
13 Obrecht and I'm the project manager for the Sterling Site
14 #3.

15 What I would like to do is you see the agenda,
16 I will be opening up going over the normal review of the
17 RI/FS process and discussion where the project is now.
18 Representatives from Dames and Moore, Frank Vernese,
19 will be going over the results of the remedial investigation
20 results as well as some of the IRM's that have taken place
21 and treatability studies we have done to gather informa-
22 tion to develop the feasibility study, and finally, the
23 remed... the cleanup that we've chosen for this site.

1 I would just like to briefly go over the
2 RI/FS process and give you some background on what is
3 involved in the development of remedial alternatives for
4 hazardous waste sites, inactive hazardous waste sites in
5 New York.

6 The first step would involve listing the site.
7 This is -- the listing is done at a time when we think there
8 is a potential of hazardous waste to be disposed of in a
9 particular area. The first phase would involve initial
10 studies, preliminary site assessments, Phase I, Phase II
11 studies which determine whether or not in actuality, hazard-
12 ous waste has been disposed of. If it is determined that
13 hazardous waste has been disposed of, the next step we
14 follow into is the remedial investigation feasibility
15 studies phase. What this does is it's an in-depth investi-
16 gation into the different environmental media, groundwater,
17 surface water, soils, sediments, as well as the air, in
18 determining what impacts there are, nature and the extent of
19 the contamination out there. This information is then used
20 to develop remedial alternatives which are evaluated in
21 the feasibility study. Once the feasibility study organizes
22 all of this information and based on an evaluation process,
23 a preferred alternative is selected. The Department

1 develops a record of decision. The document scopes out the
2 process we actually go through to this point in time and it
3 justifies, I guess, the decision that was made for the
4 cleanup that was selected.

5 After the record of decision is developed,
6 a -- the project then goes into a design construction phase
7 and that's kind of self-explanatory. The remedy that was
8 selected, designs and specifications that are developed for
9 that, depends on a lot of things. It would depend on the
10 site-specific characteristics, as well as the contaminants
11 and then the actual construction would take place once the
12 designs are approved. Most -- a lot of the sites that we
13 deal with require a long-term monitoring and maintenance
14 program. Some sites will have groundwater treatment which
15 would involve a groundwater treatment system that would
16 run over a period of years. This would require a constant
17 yearly water monitoring program, as well as replacement of
18 equipment that's either been utilized to its fullest extent
19 or needs to be replaced because of -- for whatever reason.

20 The projects that we have gone through have
21 various types of funding. There are state-financed pro-
22 jects. There are federal-financed projects that we're
23 involved with. There are government-financed projects that

1 are for landfills under Title 3 program and then there are
2 the responsible party projects. The responsible party
3 projects are projects that are paid for and funded by the
4 companies that dispose of waste and -- well, that's what this
5 site is, this is a responsible party project. Sterling has
6 funded all of the investigations, the inner remedial mea-
7 sures, as well as the feasibility study. Under the Depart-
8 ment's -- then all of this under the Department's ap-
9 proval and auspices. And finally, the activities that are
10 involved in fronting the participation activities. We have
11 public meetings -- we previously had a public meeting regard-
12 ing the drum removal that took place out there. Tonight is
13 another public meeting where you're able to comment on the
14 selected remedy or the preferred remedy that we've chosen
15 out there. A couple of dates I want you to be aware of.
16 The public record runs for 30 days. It ran from February --
17 it runs from February 24th to March 24th. Tonight's public
18 meeting, again, I would like to encourage you not only to
19 comment on the selective alternatives, but the other alterna-
20 tives that are outlined in the proposed remedial action plan.
21 Copies are available back there.

22 One other reminder. If you haven't signed up
23 on the sign-in sheet, I would appreciate that you did. O.K.

1 John Sheehan wants to just briefly discuss the Health Depart-
2 ment's role in the remedial investigation.

3 MR. SHEEHAN: Thank you. The bureau of the
4 Health Department I work for is the Bureau of Environmental
5 Exposure Investigations and our role in the -- in hazardous
6 waste sites is evaluating exposure of humans to chemicals.
7 In order for there to be any kind of risk to people because
8 of chemicals or hazardous waste in the environment, there
9 has to be a route of exposure. In this particular case,
10 because the site is so remote, it's kind of a unique combi-
11 nation of an industrial-agricultural area. It's certainly
12 not in a residential area at the present time. We haven't
13 identified any direct routes of exposure, possibly some
14 exposure from the distant past before the site was con-
15 trolled. We would consider that very minor and very inci-
16 dental, so we really haven't identified anything of any
17 significance right at the present time. The -- there's no
18 homes there where people are drinking the groundwater and
19 the site is, as I said, fenced in and controlled. The type
20 of thing we do is to evaluate those situations and the
21 reason that we are involved is to answer any questions that
22 come up, and we try to eliminate exposure, if that is the
23 case, so in this particular case, it is pretty much poten-

1 tial, so if there is any questions along those lines, after
2 the presentation, I would be happy to answer them. Also we
3 have tonight here, Sue Collamer, who is the citizen partici-
4 pation specialist with our department, and I'm not sure that
5 we've done it in this case, but many times we would draw up
6 a fact sheet, if there is a lot of public interest and any
7 questions can also be referred to Sue. Thank you.

8 MR. OBRECHT: Now, Frank Vernese from Dames
9 and Moore will be going over the results of the remedial
10 investigation as well as some of the IRM's that have taken
11 place outside of the site, and the treatability studies.

12 MR. VERNESE: Thank you. O.K. What I'm
13 going to try to do is give you some background on the site
14 and, as Eric mentioned before, the results of our remedial
15 investigation and some of the IRM's, interim remedial mea-
16 sures, that have taken place at the site.

17 I guess the best place to start, where is the
18 site? The site is located approximately two miles south of
19 Sterling Drug's plant site right over here, and here is the
20 Hudson River over here. What we first did is to install
21 wells in order to characterize the site, take borings, take
22 cells, basically what we did is take the Hudson River, this
23 triangular cell of the site, it's seven and a half acres.

1 It's adjacent to the Conrail tracks. Again, this is north
2 and this side, this is south. What we did is we started
3 back in '83-84, with just a few wells to see what was happen-
4 ing at the site. Essentially, what we have are these
5 circles here, are the wells, and we installed them in vari-
6 ous phases. We had one phase, installed the wells, took
7 samples of the soil and the groundwater. We found out that
8 there was some contamination. We wanted to delineate that
9 so we put in an additional phase so eventually we ended up
10 the groundwater is going in this direction towards the
11 Hudson River, so we had wells that are within the groundwater
12 to delineate the extent of the contamination, also to char-
13 acterize the geological conditions at this site.

14 In addition to wells, we also took samples of
15 sediments in the river -- I mean in the creek, Papscanee
16 Creek. It's not ground moving. We also took surface water
17 samples in the creek, both upgrading and downgrading in
18 the landfill. In addition, we took soil samples in the
19 general vicinity of the landfill outside of the landfill
20 itself. In addition to that, there used to be corn and we
21 took samples of corn to see if there was any impact there.
22 Additionally, we did a terrestrial study around the entire
23 site in the landfill, outside of the landfill and around the

1 area, and in addition to that, we also looked at air and
2 tested the air at the landfill itself to see if there was
3 any contaminants that might be volatilizing into the air.

4 To summarize this, in essence what we found
5 -- we didn't find anything in the creek except some basical-
6 ly based nutrients in the sediment. We didn't find any-
7 thing in the corn. We didn't find anything off site in the
8 soil, and we didn't find anything that was emanating or
9 volatilizing off the landfill property itself. What we did
10 find, however, is that there was some groundwater -- contami-
11 nants entering the groundwater and following the path along
12 here. I'll get into that in a second. So in order to
13 determine the extent of the contaminants entering the ground-
14 water and where they are headed, we had to first understand
15 the geology. I will try to make this as simple as possible.
16 Here is the landfill. Those who are familiar, River Road is
17 here and the Hudson River is over here. What we found is that
18 there are -- the landfill -- basically, this up here is clay.
19 The landfill is underlined by a layer of clay and there is
20 two aquifers. An aquifer is a water-bearing zone, an upper
21 aquifer here and a lower aquifer here. Those two aquifers
22 are separated by clay and, in fact, underneath the landfill
23 the clay is about 40 feet thick and what's the most inter-

1 esting feature about this geology and the controlling
2 feature of groundwater flow at this site, is a geological
3 trough, this dip here is an old channel, a geological
4 channel, so any of the migration of concentration of con-
5 taminants, anything migrating is migrating along that
6 channel.

7 Back in '86 we found that the contaminants of
8 concern were benzene and diethyl ether. This in general
9 shows you the concentration of benzene in '86 and it shows
10 that geological trough moves along right here, so anything
11 entering the groundwater goes moving along this, and the
12 concentrations back in '86 were 20,000 parts per billion,
13 and down that River Road, the furthest extent that we
14 detected it back in '86 was about 700 parts per billion.
15 That's benzene back in '86. We decided that one of the
16 largest concerns or the biggest concern in the landfill
17 were drums that were in the landfill, so we agreed with the
18 state that we should eliminate that source of potential con-
19 tamination. What we did is an interim remedial measure to
20 remove the drums. We removed about 8500 drums from the
21 landfill, but before we started that, what we wanted to do
22 is put in an interim groundwater treatment system and we did
23 it right about here, put a recovery well here. The purpose

1 of the groundwater treatment system was really twofold.
2 One is we didn't want to remove drums that were full of
3 contaminants and if they broke or leaked, they get into the
4 the groundwater. We want to have a fail-safe system, so
5 we had something that would capture any contaminants that
6 would enter the groundwater. That was one reason. The
7 other reason was that we wanted to cut off the source of
8 anything migrating from that landfill by collecting ground-
9 water and treating it. So this shows you in September of
10 '90, approximately one year later after the ground water
11 treatment system was in, we had concentrations, as I recall
12 there were 20,000, there are now 500 of benzene, and then
13 by the river there's 70. The following year, the same
14 benzene concentrations were a little less at that recovery
15 well, an era of triage, 1300, so back down from 20,000, we
16 didn't find anything down here.

17 I have mentioned that the other contaminant
18 of concern was diethyl ether. That followed the same kind
19 of -- in the general direction, and this is the concentra-
20 tion of diethyl ether, essentially in that geological trough,
21 concentrations 230, up by the landfill, and 800 here, and
22 down here, about a hundred. A summary of concentrations in
23 the groundwater are shown in that table here. What it shows

1 is the various wells that we had and we had 34 wells and it
2 showed two contaminants of concern, benzene, diethyl ether
3 in the various years '83 to '91. In fact, we just took another
4 round of samples in November of '91. This was, I believe,
5 in May '91. I outlined here, you can see it, the well
6 triage, that that's right up by the landfill, the recovery
7 well, and you can see benzene going from 25,000 back in '86
8 over to 1300 in 1991. This is the 13-B, which is right at
9 River Road, and you can see that the benzene went from 745
10 down to benzene, 90, they were concentrations. However,
11 down the road, diethyl ether, those are the two main contam-
12 inants, and that's the general history of the concentrations
13 over time.

14 This schematic here shows you the groundwater
15 treatment system. Basically what we used to treat the
16 groundwater is -- the major component was benzene again and
17 diethyl ether. However, what we installed to treat it, we
18 would treat other volatiles in addition to that. In general,
19 the system is -- was installed just outside of the landfill.
20 You have a recovery well to the north of the landfill which
21 recovers water, treats it and then we re-inject the water
22 over here into wells. The treatment system that we used is
23 shown in this next schematic. Basically, water comes in,

1 it's filtered. It goes into an exterior -- an air
2 stripper removes about 90 mic... about 90 percent
3 or higher from the air stripper. Well, before the air
4 stripper, we have some pH adjustment, both before and after,
5 then we have polishing units. These are granule carpeting
6 units that fill the air stripper so that it does not take
7 out the volatiles, the granule activator carpet will -- and
8 this here is just simply the regeneration of the carbon.
9 When the carbon is spent or exhausted to remove everything
10 it can from the water, it's replaced. It's disposed of off
11 site in the proper manner. As I mentioned before, the
12 water is filtered again and it's re-injected into the
13 ground, clean water. To give you an idea of the zone of
14 capture, that means basically how much water is -- the treat-
15 ment system capturing and treating it -- we have been running
16 the system now since '89, and so we have some fairly good
17 data since that time. It's been run at 30 gpm, 40, 50, just
18 to find the different zones of capture. What that shows you
19 here, these dotted lines, these lines show you the zone of
20 influence, what the recovery well is pumping, so in other
21 words, at 30 gallons per minute, this dotted line here repre-
22 sents the zone of influence of the recovery well in the
23 treatment system. At 40, this line here represents that.

1 At 50, this line represents that, and what it has been
2 designed for and recommended, is at 55 gallons per minute,
3 so somewhere out here, so that's the general zone of
4 influence of the treatment.

5 Now, I had mentioned that we removed drums.
6 What we did is sample the entire landfill. We characterized
7 the entire landfill. This grid system shows you basically
8 the areas that we tried -- we sampled them. We have taken
9 over 130 samples in the landfill, including trenched various
10 areas and while we were removing the drums, we excavated
11 each of these areas here in the grids, so we have a good
12 handle of what's in the landfill and what is, as I mentioned,
13 all of these grids here, we removed 8500 drums. What was
14 left, we characterized and sampled after we removed the
15 drums again, so we sampled before the drum removal and after
16 the drum removal. What we were left with, these shaded
17 areas here, we identified as being areas that had higher
18 concentrations than -- and we didn't feel -- and we felt
19 that these needed to be treated, so these areas of high
20 concentrations that needed to be treated, what we recommend-
21 ed to treat these areas -- and let me just put this up for
22 just one second. I mentioned before, there is clay through-
23 out the entire landfill. However, there is one area here,

1 and that's good. The reason that's good is because --
2 that's why we can't see very much migration from this landfill
3 of anything of significance, other than the benzene in
4 that one geological trough, but that's good because clay is
5 impermeable, so it's very difficult for anything to get into
6 the clay, into the groundwater. However, in this one area
7 here we're calling the CBA -- that means the clay beach
8 areas -- the clay was missing in one spot, so what we have
9 recommended in the -- our feasibility study, we want to
10 address these areas and basically the best way to address
11 them, these volatile organics, was through vacuum extrac-
12 tion, bioremediation, and these are two pilot studies and
13 treatability studies that we have implemented to get the
14 information of the recommendations we have made in the
15 feasibility study. The vacuum extraction is a process by
16 which you put a well in the ground above the groundwater
17 table, you put a vacuum to it, and essentially what you're
18 doing is pulling air over the contaminants and that's a form
19 of in situ treatment and volatilization of the contaminants.
20 What we did is we ran the vacuum extraction test, any
21 contaminants that we pulled out, we ran through carbon, so
22 they wouldn't get into the atmosphere and we ran that test
23 for approximately 700 hours, and this here shows you the

1 cumulative volatile organics what were removed over time,
2 so in the matter of about 700 hours, we removed approxi-
3 mately 1800 pounds of contaminants, and what that tells us
4 is that this does work.

5 If you compare that to ground water treatment,
6 once the contaminants have gotten into the groundwater, the
7 analogy is if you look at our groundwater treatment systems,
8 it's been running for two years, 15 million gallons have been
9 treated and it's removed approximately 300 pounds of vola-
10 tiles, so 15 million gallons it took for 300 pounds of
11 volatiles whereas -- in the groundwater, whereas this is
12 1800 pounds in only 700 hours, so that's -- so what we want
13 to do is make sure that we take the volatiles that are in the
14 soil out before they reach the groundwater, and that again
15 is the reason that we want to use vacuum extraction and
16 whatever else we can in these areas where you have high
17 volatile contamination, and that's what we proposed in our
18 feasibility study.

19 The -- so I think you're getting an idea of
20 some IRMS and what we're proposing here. In addition to
21 treating those areas of higher concentration, once they're
22 treated, we recommended putting a cap over the site, a cap,
23 and the cap basically would look something similar to this,

1 and that is the stone with about three feet of clay, followed
2 by filter fabric, some common fill and topsoil, and the
3 purpose of the cap is really twofold. One is that we do
4 have debris in the landfill, but it's non-hazardous debris.
5 We also have -- we'll be treating those hot -- those areas of
6 higher contamination. We don't want any of the soil from
7 the landfill washing off site, number one, and we don't want
8 animals burrowing into it, and we want to limit the amount
9 of infiltration of rain, so that's the reason.

10 In addition -- just to recap, the recommended
11 final remedial measure here was -- and included already
12 the drum removal. We want to continue the groundwater
13 treatment system at 55 gpm or gallons per minute. That
14 means that we have to modify the system that's out there.
15 We don't want to shut it off, though. We want to modify it,
16 upgrade it. In addition to that, we want to utilize vacuum
17 extraction in those areas where they had high concentrations
18 that I showed you. We're also looking right now at the
19 bioremediation to enhance the vacuum extraction and quicken
20 the process there. In addition to that, we would like to put
21 the cap on the site, and in addition to that, we would like
22 to control surface water runoff, so that is basically what
23 is being proposed and how that process works, the

1 feasibility, I'll later explain, but that's basically the
2 background, what we did, what the results of the remedial
3 measures were and which we proposed, and that's all in this
4 two-volume booklet. O.K.

5 MR. OBRECHT: As Frank said, what I would
6 like to do is briefly discuss the process that was -- we
7 went through, actually Dames and Moore went through, to
8 develop the remedial alternatives from which we finally --
9 we selected the preferred alternatives.

10 Basically what we do is we utilize informa-
11 tion from the remedial investigation treatability studies to
12 develop remedial objectives and goals. The goals and
13 objectives are set from New York State standards, criteria
14 and guidance values. If we don't have a standard, we have
15 some guidance that gives you a way to determine what kind of
16 cleanup levels we would be trying to attain at this site.
17 From these remedial action -- remedial goals and objectives,
18 we developed a general response action. The response add-
19 resses types of -- basic broad types of treatment/contain-
20 ment options that can address various media. You would
21 have treated options for the groundwater. You would have
22 contaminant and treated options for the site. At this site,
23 we only found contamination present in the soils and in the

1 groundwater, so those are the kind of general response
2 actions we're looking at as treatment and containment
3 options. What those general response actions are, there
4 are a laundry list of technologies that could be supplied
5 to treat the soil, to treat the groundwater. Those are
6 looked at to see if they're actually implementable at the
7 site and whether or not they're feasible, dependent on the
8 site characteristics and the geological characteristics.
9 From those technologies, we develop alternatives. Alterna-
10 tives are a combination of the technologies that can be
11 applied to groundwater and soil and combine those into
12 alternatives that would address all the contamination at
13 the site. Then the final analysis on those alternatives,
14 the alternatives are evaluated against several criteria.
15 The criteria includes two threshold areas, the first one
16 being overall protection in the environment, the second
17 being compliance with New York State -- the applicable
18 appropriate and relevant New York State standards, criteria
19 and guidelines. From there, the alternatives are -- are --
20 is necessary for any alternative that goes beyond this
21 point for further evaluation, must meet those two criteria.
22 If they don't, especially in the area of compliance with the
23 standards, there should be further justification for waiving

1 the standards or the criteria that the state has established
2 in their promulgated regulations. Then there are five
3 primary balancing criteria. These are used to evaluate each
4 of the alternatives relative to the -- to themselves, in
5 comparison of how easy it is to implement or compare to one
6 of the other alternatives. These include short-term impact
7 and the effectiveness, long-term permanency and effective-
8 ness, reduction in toxicity, mobility and volume of waste
9 at this site, the implementability included the administra-
10 tive implementability feasibility, as well as technical
11 feasibility, and finally, the cost would be the last primary
12 criteria.

13 As Frank said, the preferred alternative
14 involves first the impermeable cap, actually that's part of
15 the last part of the remediation. The first part would be
16 continue the current groundwater treatment system. At this
17 point in time, we plan to evaluate further capturing of off-
18 site plume. What we know, it's technically feasible, but
19 at what point do we -- is it not a -- where we spend an
20 inordinate amount of funds to catch a minimum amount of
21 contamination, so we plan to evaluate that further.

22 Next would be a vacuum extraction. A vacuum
23 extraction would be done on the areas where Frank had pointed

1 out where he found the highest degree of contamination.
2 Those areas we were told to be GMA organics, so in addition
3 things that would be done out there would be grading the
4 surface water diversion to minimize infiltration to this
5 site once the cap is in place, as well as controlling
6 erosion of the cap so that the maintenance -- it doesn't require
7 a lot of maintenance. The other, which actually is kind
8 of a site-specific part of the remedy, would be a flood
9 plain management system in the Hudson River, would be mea-
10 sures taken to protect the cap, the integrity of the cap
11 from any potential flood that would take place. In -- we
12 also would be doing some monitoring out there to evaluate
13 the performance of the vacuum extraction, as well as the
14 groundwater recovery treatment system.

15 The final remediation would include the
16 permeable cap. This would be done after the vacuum extraction
17 system has been in decommission and we determine that no longer
18 to be effective in the remedial contamination, and at that
19 point in time, it would be determined that a significant
20 amount of contamination has been removed from the site and
21 any additional attempt at removal would be infeasible. The
22 cost for remediation in the present worth terms is around
23 \$14 million and that includes the cost for collection of the

1 treatment of the off-site plume. We are going to evaluate
2 that further. I have included the cost because of the
3 potential that it could cost that much.

4 What I would like to do now is open up to any
5 questions and comments that you may have on the preferred
6 alternative. And if you would, would you please state your
7 name and any pertinent affiliation that you might have.
8 Anybody who would like to make a comment, have any questions?

9 MS. WEBB: My name is Sue Webb. I'm wonder-
10 ing what the feasibility of building anything in that area is
11 in the near future?

12 MR. OBRECHT: In the area, I don't think
13 there's a problem of building in that area.

14 MS. WEBB: What about wells?

15 MR. OBRECHT: Well, the putting in of wells
16 out there? We would have -- we would -- in order -- well,
17 that comes along with evaluating the -- the potential or
18 collecting any off-site -- collecting the off-site plume.
19 If we were to determine in the future that we weren't going
20 to cut that plume, there would be restrictions that would
21 have to be placed on that particular area where the plume
22 has been identified.

23 MS. WEBB: How much more time into the future

1 do you see as -- or is there only one answer to that?

2 MR. OBRECHT: For --

3 MS. WEBB: For cleanup.

4 MR. OBRECHT: Well, the majority of the
5 cleanup involves a vacuum extraction on site, would take
6 from one to three years, we estimate.

7 MS. WEBB: From now?

8 MR. OBRECHT: The groundwater -- at this
9 point in time, it's difficult to say. Groundwater remedia-
10 tion, we find that they aren't as easy to predict, the
11 duration of any groundwater cleanup, because you'll find
12 that a lot of chemicals that we deal with a lot of times
13 would be -- would tend to be caught up on the sands, the
14 formation of the aquifer, the sands or the clays, and so
15 it's difficult to predict with any real accuracy, the dura-
16 tion of a groundwater cleanup, and that would be done over a
17 period of years from pumping and treating the water and see
18 what kind of response you get for the -- decreasing the
19 concentration of it.

20 MS. WEBB: Hypothetically, if someone was to
21 build a building, say for its own light industrial, would
22 there be any consequences to the employees in the buildings
23 or, you know, if it was over an area that you considered you

1 were still trying to clean up?

2 MR. OBRECHT: Where the groundwater was
3 contaminated?

4 MS. WEBB: Yes.

5 MR. OBRECHT: No, it's actually a health
6 question, but I'll just say unless you build a cellar, I
7 don't see a potential, but John --

8 MR. SHEEHAN: As far as if a well has to be
9 put in, we would certainly at this point with all the
10 investigation, we know where the contamination is and you
11 should certainly be careful about putting a well into the
12 contaminated area. If you're outside that contamination,
13 chances are you're going to be fairly safe, as far as con-
14 tamination from the site. If there's any contamination of
15 the soil, which there is because the vacuum extraction seemed
16 to be working there, has the potential of coming up into a
17 building, again, you want to be outside that immediate area
18 of the contamination area, but that's outside of the landfill
19 itself.

20 MS. WEBB: Right, but I --

21 MR. SHEEHAN: You're a property owner down in
22 that area?

23 MS. WEBB: The point I'm trying to reach, is

1 it a good idea to build anywhere in the area.

2 MR. SHEEHAN: Each case would have to be
3 looked at as an individual case. It would depend on where
4 you wanted to put a facility, what type of facility it would
5 be. You would have to come to, you know, submit the proper
6 permit applications and have everything evaluated depending
7 on what you wanted to do with the land.

8 MS. WEBB: Thank you very much.

9 MR. OBRECHT: Any other questions or comments?
10 O.K. I have some business cards here, if you want to get in
11 contact with me, if you have any questions, the cards are
12 back on the back table and we have an address to send
13 written comments to and my phone number, if you need to
14 contact me, if you have any questions. I appreciate every-
15 body coming here tonight and -- Darwin will get everyone's
16 complete name and address for mailing.

17 MR. ROOSA: Will you produce a response
18 summary?

19 MR. OBRECHT: Yes, I'm sorry. There really
20 weren't a lot of comments, but there will be -- as you can
21 see, we have a stenographer here who has recorded the whole
22 meeting. Any questions that we have had will be addressed
23 in the response to the summary which will be attached to a

1 record of decision which will be available for public review
 2 at the depository which we named in the PRAP. Thank you
 3 very much.

4 (Whereupon, at 7:45 p.m., the hearing in the
 5 above-entitled matter was concluded.)

6 STATE OF NEW YORK)

7 COUNTY OF ALBANY)

8
 9 MELISSA A. MATTHEWS, being duly
 10 sworn, deposes and says: That she acted as the
 11 Official Reporter at the hearing herein on the
 12 9th day of March, 1992; that the transcript to
 13 which this affidavit is annexed is an accurate
 14 transcript of said proceedings to the best of
 15 deponent's knowledge and belief.

16 

17 Melissa A. Matthews

18 Sworn to before me this

19 27 day of March, 1992.

20 

21 My Commission expires 3/30/93