

**Onondaga Lake Responsiveness Summary
Comment and Response Index**

Name/Agency	Comment Code	Comment Summary	Response
State Government Comments			
Joan K. Christensen, Member of Assembly, State Assembly of New York	S-1.1	Commends NYSDEC for conducting the public meetings. Would like to receive any updated information on the project.	Comment noted.
Onondaga Nation Comments			
Joseph J. Heath, Esq., General Counsel for Onondaga Nation	N-1.1	In its February 8, 2005 comments to the EPA National Remedy Review Board (NRRB), the Onondaga Nation asserts that EPA and NYSDEC failed to “consult” with the Nation concerning the remediation of Onondaga Lake pursuant to the requirements of CERCLA § 126.	This comment asserts a claim that EPA and NYSDEC have violated the law. The Onondaga Nation has asserted this same claim in a Notice of Intent to Sue, dated January 6, 2005 (“Notice”). Because the Notice advises EPA and NYSDEC to expect litigation on this specific issue, the agencies will detail their compliance with the law concerning consultation during such litigation with the advice and representation of their respective counsel, should such litigation be commenced. We do note here briefly that EPA and NYSDEC have participated in a number of technical discussions concerning the Proposed Plan with the Onondaga Nation since November 2004 and that additional technical meetings are anticipated.

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J. Heath, Esq., cont.	N-1.2	The Onondaga Nation identifies its sacred, spiritual, historic, archeological and environmental interests in Onondaga Lake. The Nation is concerned that NYSDEC's preferred remedial alternative is inadequate and will result in permanent, long-term contamination and degradation of the lake due to continuing releases of mercury and other pollutants.	<p>As part of the Superfund process, cultural resource assessments are performed for areas where it is believed that archeological resources may be present. A cultural resource assessment for the project was produced in October 2004; this report noted the likelihood that the proposed project might encounter both recorded and unrecorded prehistoric and historic resources. Consequently, it is likely that once the area of remedial impact becomes established, additional cultural resource investigations will be required before the remedy is implemented.</p> <p>EPA and NYSDEC note these interests and value the views of the Onondaga Nation.</p> <p>See also response to Frequent Comment #6.</p>
	N-1.3	Concerned that NYSDEC's preferred remedy does not adequately incorporate the proper and complete clean up of numerous upland toxic dump sites which continue to release pollutants into the lake.	See response to Frequent Comment #5.
	N-1.4	The Onondaga Nation asserts it is a trustee for natural resources under CERCLA.	EPA and NYSDEC note the concern, but acknowledge, generally, that EPA, the Department of the Interior, the National Oceanic and Atmospheric Administration, NYSDEC, and the Onondaga Nation are subject to the administrative procedures allowed under CERCLA for the designation of trustee(s) of natural resources concerning a Superfund site, and that such procedures operate as a separate process from the remedy selection process.

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J. Heath, Esq., cont.	N-1.5	The Onondaga Nation asserts that consultation with the Nation was required prior to NYSDEC's selection and announcement of a preferred remedy for Onondaga Lake.	See response to Comment N-1.1.
	N-1.6	The Onondaga Nation asserts it is entitled to have been afforded substantially the same treatment as a state under CERCLA and that EPA and NYSDEC have failed to consult with the Nation under CERCLA.	See response to Comment N-1.1.
	N-1.7	The Onondaga Nation asserts that EPA has violated various commitments, policies and its federal trust responsibilities.	See response to Comment N-1.1.
Regional Government Comments			
David Coburn, Director, County of Onondaga, Executive Department, Office of the Environment	R-1.1	Honeywell's November 29, 2004 feasibility study (FS) report is called a "draft final." Has the report been approved by NYSDEC? If not, how will the report be used by NYSDEC in the selection of a remedy for the site?	NYSDEC has approved the FS report in that it provided sufficient information (e.g., regarding the development and evaluation of remedial alternatives) to aid in NYSDEC's preparation of the Proposed Plan for the site and will be approved in that context. However, as the document contains statements that NYSDEC does not agree with, NYSDEC's approval does not constitute a full agreement with the contents of the FS report. NYSDEC's comment letters to Honeywell, which reflect NYSDEC and EPA's concerns raised during the development of the FS report.

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D. Coburn, cont.	R-1.2	Honeywell continues to refer to the concept of a defensible mercury model/mass balance concept in the FS. NYSDEC previously informed Honeywell that the model and associated mass balance were disapproved. Please clarify NYSDEC's position on this matter.	As noted, NYSDEC disapproved Honeywell's mercury mass balance, as it could not account for sources of approximately 75 percent of the total mercury flux through the lake. Subsequently, NYSDEC rewrote the Onondaga Lake RI report, and in it presented mass estimates for additional sources of mercury that Honeywell had not included. NYSDEC's RI report indicates that those sources are of the proper magnitude to close the mercury mass balance for the stratified period. While there are uncertainties in some of the mercury mass estimates, NYSDEC feels that the mercury mass balance for the stratified period is sufficient to identify the major sources and sinks of mercury and their relative importance and to support the selection of a remedy for the site.

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D. Coburn, cont.	R-1.3	It is unclear how the probable effect concentration quotient (PECQ) was used to determine the volume of material to be dredged from each sediment management unit (SMU). Clarify which factors and contaminants dictated the quantity of sediment to be dredged from each SMU and the basis for determining the sediment cap thickness.	<p>For Alternatives 2 through 5, the mean PECQs (which were calculated for sediments within the 0 to 15 cm depth interval) and the mercury probable effect concentration (PEC), were used to determine the areal extent of remediation. The mean PECQs were not used to determine depths of dredging and therefore volumes of sediment removed for these alternatives. The factors determining the depth of removal depend on the SMUs and include targeted dredging in areas with high concentrations of chemical parameters of interest (CPOIs) and high groundwater upwelling velocities in order to increase isolation cap effectiveness as well as dredging to:</p> <ul style="list-style-type: none"> • Ensure that placement of the isolation cap would result in no loss of lake surface area. • Optimize habitat and erosion protection. • Remove non-aqueous phase liquid (NAPL). • Remove materials in areas of hot spots and reduce concentrations prior to capping. <p>For Alternative 6, which includes full removal to the cleanup criteria in SMUs 1 through 4 and 6 and 7, the depths and volumes of removal were based on exceedances of the mean PECQ of 1 or the mercury PEC using available data from all depths. Alternative 7 is similar to Alternative 6, except for the cleanup value used (effects range-low [ER-L] instead of mean PECQ and mercury PEC). Details of volume estimates are included in Appendix E of the FS report.</p>

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D. Coburn, cont.	R-1.3, cont.		<p>For Alternatives 2 through 5, the thicknesses of the isolation layer within the sediment caps for the littoral SMUs are based on the chemicals detected, the concentrations of these chemicals, and the upwelling velocities within each SMU. The cap model was run independently for SMUs 1, 2, 3, 4, 6, and 7 for some or all of the following parameters: mercury, BTEX, chlorobenzene, dichlorobenzenes, naphthalene, fluorene, phenanthrene, pyrene, benzo(a)pyrene, hexachlorobenzene, PCBs, and phenol. The model predicted concentrations in the bioturbation layer at steady state. Therefore, using the maximum concentrations detected in the sediment within each of these SMUs, the cap thickness in the model was increased until none of the modeled parameters exceeded their PECs (or sediment screening criteria for benzene, toluene, and phenol) at steady state. For example, chlorobenzene and dichlorobenzenes dictated the thickness of the isolation layer of the cap in SMU 1. Details of the isolation component requirements by SMU are included in Attachment G of Appendix H of the FS report. Refined cap modeling will be performed during the remedial design. The actual cap will include a safety buffer layer equal to 50 percent of the isolation layer, plus an additional layer will be placed to address possible mixing with underlying sediment and uneven application.</p>

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D. Coburn, cont.	R-1.4	Oxygenation is experimental; its ecological and recreational use ramifications are not known; it is expensive; and it requires constant long-term operation and maintenance. Why is it included as part of the preferred remedy, rather than increasing the amount of thin-layer capping or isolation capping in the profundal zone. What supplemental remedies will be proposed if it is technically impracticable or does not work?	See response to Technical Comment #1.
	R-1.5	The focus on oxygenation wrongly implies that mercury is a problem in the lake because the lake is eutrophic, and undue emphasis is placed on the hypolimnion as the primary site of mercury methylation. In actuality, high mercury levels in fish are due to the industrial operations, past and present, that release mercury into the lake system, and there are other anoxic environments in the lake (e.g., littoral sediments, wetlands).	NYSDEC agrees that methylation can take place wherever conditions are conducive for sulfate-reducing bacteria to thrive. In addition to the water column, methylation can take place in the mercury-contaminated sediments in the lake, and porewater data from the RI and FS reports clearly illustrate this. However, one of NYSDEC's concerns is that the exposure to methylmercury in Onondaga Lake appears to be very closely tied to methylation that takes place in the hypolimnion. As presented in the RI report, in terms of contribution to the methylmercury mass balance for the water column, methylation in the hypolimnion is clearly the largest single source of methylmercury to the system. The fact that only very low concentrations of methylmercury (0.3 nanograms per liter [ng/L]) are seen throughout the water column when the lake is completely oxic prior to stratification strongly suggests that the sediments (either littoral or profundal) are not releasing significant amounts of methylmercury into the water column.

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D. Coburn, cont.	R-1.5, cont.		<p>The water column is home to many types of biota and represents an important route of exposure. It is possible that certain organisms may also be exposed to methylmercury in other locations, such as the littoral zone and wetland sediments. However, the methylmercury concentrations in benthic macroinvertebrates were relatively low (10 to 20 µg/kg in chironomids) throughout the littoral zone, except for SMU 1 (based on 1992 data). Zooplankton in the epilimnion of SMU 8 contained 3 to 25 times as much methylmercury as the benthic macroinvertebrates. This suggests that there is relatively little methylmercury being created in the littoral sediments that is directly available to the food chain, while the methylmercury produced in the water column in the hypolimnion, which crosses the thermocline to the epilimnion, presents a much greater exposure.</p> <p>Thus, NYSDEC has proposed addressing this source of methylmercury in the hypolimnion using oxygenation, as well as addressing approximately 425 acres of littoral zone sediments through dredging and capping, and the profundal zone through monitored natural recovery and thin-layer capping.</p>

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D. Coburn, cont.	R-1.6	All of the alternatives will likely alter the lake's bathymetry. The final remedy should consider creation of an updated bathymetric map of the lake.	An accurate and up-to-date bathymetry map of the current conditions will be developed during the remedial design for the areas requiring remediation. The bathymetry map will have to be updated after remediation in order to assess whether the remediation fulfilled the performance specifications of the design. Furthermore, the bathymetric surveys need to be updated on a regular basis as part of long-term monitoring in order to confirm that there has not been any failure or erosion of the cap and that the design thicknesses are being maintained.
Mrs. Rapp, Onondaga County Legislature	R-2.1	Issuance of Resolution No. 17, which memorializes NYSDEC's intent to issue a Record of Decision (ROD) and select an appropriate remedy by April 1, 2005 and provide implementation of that remedy as quickly as possible.	Comment noted. It should be noted that the court has granted an extension to the ROD signing date to July 1, 2005.
Barbara S. Rivette, Chair, Onondaga County Council on Environmental Health (CEH)	R-3.1	Commends all parties on reaching the current plans for remediation.	Comment noted.
	R-3.2	CEH is glad to see the prospect of action in the near future, rather than more studies. The four-to-seven-year time frame, or sooner, is appealing to people who have worked for a cleaner lake for over 25 years.	The NYSDEC will endeavor to expedite the remediation of Onondaga Lake. See also response to Frequent Comment #12.
	R-3.3	The plans should provide for monitoring and recognition of deficiencies, and allow for changes to be made accordingly.	Extensive monitoring will be conducted prior, during, and after remedial construction to assess the effectiveness and performance of all aspects of the remedy. If it is determined that the remedial objectives are not being met, appropriate steps will be taken to ensure the effective remediation of Onondaga Lake.

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B. Rivette, cont.	R-3.4	Dredging could have a serious adverse impact on the lake and its flow. While impacts may be short term, dredging is of serious concern to CEH.	See response to Frequent Comment #7.
	R-3.5	While disposal in Wastedbed 13 will have immediate, if short-term, impacts, it is the logical destination for dredged material that is not severely hazardous. However, more thought needs to be given to the final configuration of the wastedbed, and long-term monitoring of any disposal area should be required.	Long-term monitoring of the sediment consolidation area (SCA) is included in the selected remedy. The specifics of the monitoring, as well as the configuration of the SCA, will be developed during the remedial design. It should be noted that the location of the SCA has not been determined. See also response to Frequent Comment #9.
	R-3.6	Can capping replace some, or even most, of the proposed dredging?	See response to Comment R-1.3.
	R-3.7	There are community questions that still need to be addressed, such as “is this money being spent wisely or just to meet a standard?” “Will the standard change?” “What does the public see as an acceptable level of risk that would result by leaving some contamination in the lake?”	NYSDEC developed the selected remedy (including the cleanup criteria) so that it will be protective of human health and the environment, comply with laws and regulations, and will be cost effective. In regard to the public’s view, public comments were solicited on the proposed remedy. The purpose of the Responsiveness Summary (RS) portion of the ROD is to provide responses to all questions and comments submitted to NYSDEC during the comment periods associated with the Proposed Plan and the Remedial Investigation/Feasibility Study reports.
	R-3.8	It is important that taxpayers realize that operation and maintenance (O&M) costs are an ongoing part of the proposal. A sequestered fund from Honeywell would be advisable. Local taxpayers need to be protected from any monetary liability.	See response to Frequent Comment #8.

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Local Government Comments			
Mary Ann Coogan, Supervisor, Town of Camillus	L-1.1	NYSDEC should revisit the entire issue of the SCA location. Consider in-water or lakeshore siting.	Construction of an SCA within Onondaga Lake would not comply with NYSDEC regulations. See also response to Frequent Comment #9.
	L-1.2	If Wastebed 13 is used, proactive odor prevention is needed. Suggests a demonstration-size SCA in the part of Wastebed 13 that is farthest from population centers. Use odor-control techniques at this demonstration SCA to determine their effectiveness. Also suggests that an agreed-upon protocol be in place prior to operation of the full-scale SCA in order to shut down operations in case of problems. Need mechanism in place to let SCA managers know as soon as there is an odor problem. Suggest an "Odor Panel" of homeowners.	The potential need for a demonstration-size SCA will be evaluated as part of the remedial design for the project. See also response to Frequent Comment #10. Odor prevention measures will be employed regardless of the SCA location. This will include the development of a plan which addresses the steps (e.g., use of odor control agents, modification of system operations, temporary shut down) needed to be employed if there are unacceptable odors.
	L-1.3	Noise modeling should be done, and mitigation planned for predicted noise impacts, particularly from pumping operations.	The need for noise modeling will be evaluated as part of the remedial design for the project. See also response to Frequent Comment #9.
	L-1.4	On-site construction activities could cause noise and traffic issues, which should be mitigated. Suggest using the stockpile of exempt construction and demolition (C&D) debris that is in Wastebed 15 for construction of SCA to cut down on transporting construction materials to site.	A detailed geotechnical analysis will be conducted on the wastebeds to determine their structural stability when project loads are imposed. Any upgrades to the embankments of the existing wastebeds to handle project loads will be accomplished using materials that possess specific geotechnical properties and that are placed and compacted in a manner prescribed by the project's engineering specifications. It is not likely that C&D debris material could meet the project's technical specifications for material quality, placement, or compaction. See also response to Frequent Comment #9.

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M.A. Coogan, cont.	L-1.5	Modeling a viewscape of the visual impacts of the SCA in Wastebed 13 should be a priority. Develop a screening plan. Planting vegetation should begin soon to shield the view of the SCA.	Attention will be paid to visual impacts during siting, design, and construction. This may lead to the installation of some form of screening or plantings, as suggested by the comment.
	L-1.6	Ability of Wastebed 13 to carry the load of the SCA should be evaluated now. If there are any doubts, the siting of the SCA should be reevaluated.	No final site (e.g., Wastebed 13) for the SCA has been identified. Before a final site is selected, candidate locations will undergo a geotechnical evaluation to determine, among other things, their load-carrying capacity. The final site selection will be made during the remedial design.
	L-1.7	NYSDEC should provide a “plain English” explanation as to why Honeywell’s proposal is not sufficiently protective. Explain whether the real world risk under Honeywell’s plan is unacceptable, and why. A speaker at the first public hearing said that NYSDEC’s risk assessment assumptions are conservative, thus overstating risks and making the FS report remedies even more conservative. Do not dredge more than is necessary because conservative assumptions are superimposed on earlier conservative assumptions.	See responses to Frequent Comments #1 and #11.
	L-1.8	If the SCA is sited in Camillus, suggests a citizen’s panel to be in an advisory role evaluating the final uses of the SCA.	See response to Frequent Comment #17.
	L-1.9	Expects and demands effective monitoring system for SCA during construction, operation, and post-closure. Gives details on what monitoring program should minimally include (e.g., groundwater/surface water quality monitoring).	See response to Frequent Comment #10.

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M.A. Coogan, cont.	L-1.10	Camillus wants to be part of review process for monitoring data and expects to be reimbursed for related expenses.	NYSDEC realizes that the specific design and monitoring of the SCA is of great interest to the local community. As part of the remedial design, NYSDEC will evaluate the appropriate location of the SCA and determine the specifics of the design and monitoring of the SCA. As part of this evaluation, NYSDEC will meet with the local community to discuss the evaluation process and the specifics of the design and monitoring of the SCA.
	L-1.11	New facilities must be secured against recreators and others. Open water or other hazards must be fenced.	The SCA will be designed and maintained in a manner that is protective of the surrounding community.
	L-1.12	Guarantee must be made, via some form of financial instrument, that long-term O&M costs will be covered. Need assurance that no cleanup-related costs will be passed along to the local/county government.	See response to Frequent Comment #8.
E. Robert Czaplicki, Supervisor, Town of Geddes	L-2.1	There has been enough study and delay; begin cleanup. NYSDEC says that once the plan is approved there will be an extensive design phase with more public meetings.	The design phase is a necessary component of the remedial action. See also responses to Frequent Comments #12 and #17.
	L-2.2	Post-cleanup, NYSDEC will require Honeywell to remain involved for at least 30 years to ensure cleanup effectiveness.	Long-term monitoring is crucial to ensuring the success, and continued efficacy, of the remedial action, as well as for protecting human health and the environment. See also response to Frequent Comment #8.
Deborah Warner, Director of Government Relations, Greater Syracuse Chamber of Commerce (GSCC)	L-3.1	GSCC supports the cleanup and is looking forward to the lake becoming a community asset. The faster the lake is cleaned up, the more development and spinoff jobs will occur. Other projects in and near the lake are moving forward.	Comment noted. See also response to Frequent Comment #12.

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D. Warner, cont.	L-3.2	Preserve development opportunities on reclaimed land. We do not want to lose or limit the economic potential of the land adjacent to the lake.	See response to Frequent Comment #18.
	L-3.3	The business community does not doubt the thoroughness or scientific acumen of NYSDEC and EPA. We trust that you have not overlooked any aspect of the RI/FS reports and we trust the monitoring programs that are part of the plan.	See response to Frequent Comment #12.
	L-3.4	Hopes that Honeywell agrees to the NYSDEC proposal.	See response to Frequent Comment #13.
	L-3.5	What assurances can taxpayers be given to ensure that if there is failure in the cap or engineered solution that they will not be responsible for the costs? If Honeywell as a company no longer exists, who will be responsible for costs?	See response to Frequent Comment #8.
Group and Association Comments			
Ríobart É. Breen, Executive Director, Anam Duan Franciscan Ecology Center	G-1.1	Very concerned about the health of the lake ecosystem and human health. Support all efforts to restore the full, natural functioning of the lake ecosystem.	Comment noted.
	G-1.2	Support measures that permanently restore lake's full, natural functions and services; do not support temporary actions that force the lake to depend on expensive, taxpayer-funded solutions in perpetuity.	See response to Frequent Comment #8.

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R. Breen, cont.	G-1.3	Remediation should restore the lake's self-sustaining ecosystems as much as possible. The proposed plan should be reviewed for such opportunities rather than "technology dependency." "Off-site" solutions just shift the problem to other communities and avoid responsibility. The proposed remedy should be revisited in terms of remedies that will not fully restore the ecosystem's health and should be revised to prevent problems for future generations.	See responses to Frequent Comments #8 and #14.
	G-1.4	The capping "solution" appears to allow mercury to leach into the lake and bioaccumulate into the food chain, thus relying on slow bioaccumulation to rid the lake system of mercury.	See response to Technical Comment #2.
	G-1.5	Concerned about effluent water from treated sediment and waste consolidation. Support treatment process that do not produce new/additional toxins.	The wastewater treatment systems that will be utilized will not create new toxins. The systems are all common technologies used to remove contaminants from effluent water. These include settling, precipitation/flocculation, air stripping and capture of volatile compounds, means for collecting any floating NAPLs, and carbon treatment.
	G-1.6	Concerned that goals will only "enhance" the lake as a community resource and only slightly "improve" aquatic habitat. Goals should include restoration of original functions of lake without permanent dependence on costly technology.	See response to Frequent Comment #14.
	G-1.7	Effort should be made to recruit and train community members for jobs related to restoration of the lake. Would like to see opportunities for volunteers to help with restoration.	See response to Frequent Comment #19.

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R. Breen, cont.	G-1.8	Support the initial assessment of effects of contamination on ecology; plan should have ongoing biological assessment and monitoring. Concerned about bioaccumulation, especially in vegetation and migrating birds. Use students or volunteers for monitoring.	See responses to Frequent Comments #4 and #19.
	G-1.9	Would like lake to return to being a cold-water fishery and support previously common fish.	See response to Frequent Comment #15.
	G-1.10	Would like an education and communication program to explain the restoration process and the effects of industrial waste. Include media campaign and opportunities for on-site public visits.	The NYSDEC will continue its outreach to the public as the remediation of Onondaga Lake continues, and will endeavor to provide innovative and effective ways of improving that outreach.
	G-1.11	Would like Honeywell to address how restoration and waste remediation has affected their operations, and what they are doing to prevent contamination at other sites. Other companies and communities could benefit from Honeywell's experience. There should be a "Never Again" memorial at the site explaining what happened and how it was restored.	Honeywell's interaction with the community, other than its role in assisting NYSDEC in the implementation of the community relations plan for the remediation of Onondaga Lake, is a matter within the corporation's discretion and not a matter for NYSDEC response. Therefore, NYSDEC cannot speak as to how Honeywell might address this matter.
Cara Burton, Director, Solvay Public Library	G-2.1	Library trustees are heartened to see that Honeywell is prepared to lead the lake cleanup effort. Library houses the files of Allied Chemical, and as keepers of part of the lake's history, trustees look forward to continuing to keep records of the story of the lake. Community will benefit environmentally, economically, and recreationally from restored lake.	Comment noted.

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Douglas J. Daley (and students Kyle Williams, Gwen Kernan, Jamie Pentland, Mike Crawford, Rob Conden, Lindsey Clark), Associate Professor, SUNY ESF	G-3.1	Delaying the start of remediation until all upland sources are removed or controlled is not necessary. Commencing dredging and capping actions in SMU 5 at the earliest possible time provides an early benefit.	See response to Frequent Comment #5.
	G-3.2	Oxygenation of the hypolimnion is a short-term interim measure, not a long-term solution. How does one ensure complete mixing of oxygenated waters?	<p>Data collected from Onondaga Lake and examined in the RI report have shown that when the water column in Onondaga Lake is oxygenated, methylation of mercury is severely limited or completely eliminated. This technology is commonly used to improve oxygen resources in eutrophic lakes. Oxygenation is relatively inexpensive, compared to the remediation as a whole. The preliminary estimate of the cost for oxygenation for 30 years is \$7 million out of the \$451 million total of the selected remedy. For these reasons, it is reasonable to use this technology as a long-term solution.</p> <p>Ensuring complete mixing of oxygen in the hypolimnion is one of the major reasons for performing a pilot-scale study. There are two mechanisms that allow the movement of oxygen through the water column: diffusion and advection. The design of the system will have to include a distribution system such that these two mechanisms are sufficient to properly maintain oxic conditions throughout the hypolimnion. See also response to Technical Comment #1.</p>
	G-3.3	In the event of an energy crisis, will the public be faced with the choice of paying operating costs versus shutting off the system? Will a trust fund be established to ensure that the O&M and replacement costs are covered in perpetuity?	See response to Frequent Comment #8.

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D. Daley et al., cont.	G-3.4	How much of the system design will address the lake's already high baseline oxygen demand?	The specifics of the design of the pilot system (e.g., amount of oxygen or air needed, most efficient delivery method) will be determined as part of the remedial design for the project.
	G-3.5	Why is capping necessary? There will be extensive habitat disruption during the dredging and cap placement. What mechanism will be used to restore the habitat at completion of construction? Why disturb the sediments at all, if the main purpose of the cap is to minimize erosion due to wave action, and oxygenation will address the methyl mercury formation in the littoral zone?	<p>There are two major reasons for remediating the sediments in the littoral zone:</p> <ul style="list-style-type: none"> • To eliminate direct exposure of biota (e.g., benthic invertebrates that are at the base of the food chain) to the contaminants in those sediments. This is the basis of the cleanup criteria used in the selected remedy. • To prevent releases of those contaminants into the water column where additional exposures can take place. <p>In many of the areas where isolation capping will be employed, dredging will be necessary to ensure cap effectiveness by removing NAPLs and hot spots of contamination, to preserve the surface area of the lake, to preserve or improve littoral zone habitat, and/or to provide stability.</p>

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D. Daley et al., cont.	G-3.5, cont.		<p>Much of the current littoral zone is very poor habitat because of the toxicity caused by the contamination or because of the physical nature of the sediment/wastes which currently make up the bottom in those areas. The remediation of those sediments will remove poor habitat and replace it with appropriate habitat materials that are more conducive to colonization by plants, benthic organisms, and higher trophic-level animals.</p> <p>The benefits of the reduction in contamination and physical habitat improvements in the long term are considered to far outweigh the temporary habitat loss that will be experienced during remediation.</p>
	G-3.6	After sediment removal, how will the clean sediment used for the cap be repopulated with benthic organisms?	Clean sediment placed in Onondaga Lake as the habitat layer above the isolation cap will be repopulated naturally by benthic organisms (larval and adult) from other parts of the lake and tributaries. There is generally a continuous stream of benthic organisms present in aquatic water bodies, so that the recovery of benthic invertebrates in a place of previous disturbance generally commences soon after the disturbance, if suitable habitat conditions exist.
	G-3.7	Once the lake is “clean” by the nitrification and phosphate removal processes at the Metro plant, will zebra mussels aid in breaking down remaining contaminants? Will they have any adverse effects on the lake, since they are likely to move in once it is cleaner?	There is no evidence that increases in zebra mussels (<i>Dreissena polymorpha</i>) in Onondaga Lake would assist in breaking down remaining contaminants. Zebra mussels require hard substrata for colonization, and therefore are unlikely to influence remediation efforts, which are focused on sediments in the lake.

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D. Daley et al., cont.	G-3.8	What evidence supports the design thickness of the isolation cap as being able to preclude contaminant migration? Methylation of mercury will still occur under the cap and can still be transported through the sand and gravel material of the cap and enter the water column.	See response to Technical Comment #2.
	G-3.9	What consideration has been given to the fact that ebullition will continue after remediation? This will disturb the cap and allow mercury to reach the water column.	<p>Ebullition occurs in sediments that are very rich in organic material and are anoxic, where methanogenic bacteria can thrive and produce amounts of methane so large that methane concentrations exceed the solubility limit and forms bubbles large enough to force their way through the sediments into the water column. As discussed in the Onondaga Lake RI report, these conditions are primarily in profundal sediments in the deepest part of the lake. As presented by Upstate Freshwater Institute (UFI) at the Onondaga Lake Scientific Forum in 2004, the rate of ebullition from the sediment has dropped by a factor of about six since 1992, suggesting that this source of mercury to the water column has already dropped substantially. It is possible that some ebullition will continue after remediation. This will be further evaluated as part of the remedial design.</p> <p>In addition, modeling for the monitored natural recovery (MNR) assessment indicates that the mercury concentrations in the surface sediments (0 to 10 cm deep) of the profundal zone will decrease significantly in the future, further reducing the degree to which ebullition can act to transport mercury associated with particles into the water column.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Daley et al., cont.	G-3.10	What are the management plans for the future use of the lake? Will the ultimate use affect the amount of sediment removed and the areas of removal?	The amount of sediment to be removed and the areas of remediation are based on exceedances of the cleanup criteria for protection of human health and the environment, as well as dredging that is needed to ensure cap effectiveness. Accordingly, future uses of the lake will not influence either the amount of sediment to be removed or the areas of removal. See also response to Frequent Comment #20.
	G-3.11	How exactly do silt curtains work? What is the smallest size particle that can pass through them?	<p>Silt curtains are a form of turbidity barrier that can be employed to limit downstream migration of sediment that has been resuspended by either construction or dredging operations. Turbidity barriers fall into two general categories: structural and non-structural barriers.</p> <p>Non-structural barriers can also be grouped into two categories: silt curtains and silt screens. A silt curtain is an impervious, vertical barrier that is normally made of a flexible plastic or vinyl material. The silt curtain is suspended from a flotation material at the water surface and is weighted at the bottom so that it remains vertical. They typically come in 100-ft sections that are then connected to encircle the work zone. They work best in water conditions that have minimal current (e.g., lakes, bays, slow-moving rivers) so as to maintain a vertical position. The silt curtain's function is to create a quiescent environment that allows the suspended material to settle out of the water column and not migrate from the work zone.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Daley et al., cont.	G-3.11, cont.		<p>Silt screens are deployed in much the same way as silt curtains, but they allow the passage of water through openings in the screening fabric while capturing a fraction of the suspended load in the water column.</p> <p>Openings in silt screens are designated by US standard sieve sizes. Based on a survey of several manufacturers, the standard screens have sieve openings in the range of 60 to 100. These correspond to openings of approximately 0.25 to 0.15 mm.</p> <p>The quantity of sediment that will be disturbed by dredging operations has been estimated in the FS report. Much of the material suspended during dredging is expected to quickly settle to the lake bottom in the immediate work area within the area enclosed by the silt curtains. This material will then be either captured by following dredge passes or will be isolated when the final cap is installed.</p>
	G-3.12	<p>How were the SMUs divided up? Do ecological characteristics vary from SMU to SMU? In SMUs 3, 5, and 6, for example, there are littoral sections that do not require remediation. How were these areas determined, considering areas needing both dredging and isolation capping surround them? Will these areas be isolated during construction?</p>	<p>For the purpose of the FS report, Onondaga Lake was divided into eight SMUs based on water depth, sources of water entering the lake, physical and ecological characteristics, and chemical risk drivers. Appendix B of the FS report provides additional information on the characteristics of the SMUs. Areas that require remediation were based on the locations where the cleanup criteria (i.e., mean PECQ of 1 and mercury PEC) were exceeded. The areas where dredging and capping will occur will be isolated (using silt curtains and/or other controls) from cleaner areas where remediation is not planned.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Daley et al., cont.	G-3.13	Where will the capping materials come from? Are there sufficient resources near the lake to carry out the remediation at a satisfactory cost? Will the materials have a significant impact on the water chemistry?	<p>Quarries that are potential sources of cap materials exist near Onondaga Lake. Materials from these sources would have to be transported to the site and then either loaded onto barges via conveyors for offshore placement or pumped as a slurry from an onshore stockpile of sand to the capping areas. Actual sources of capping material will be evaluated and selected during the remedial design.</p> <p>The sand (silica) cap material is expected to have little direct impact on lake water chemistry, including alkalinity.</p>
	G-3.14	Ongoing oxygenation is not a permanent solution because there are a number of currently unknown factors that could influence its long-term success.	<p>The remedial design for Onondaga Lake will include an oxygenation pilot study (followed by full-scale implementation, if supported by the pilot study results) to address current unknowns associated with oxygenation. However, active hypolimnetic oxygenation is a widely used technology to maintain oxygen resources in eutrophic lakes and ponds. Many such programs have been active for years. For example, hypolimnetic oxygenation was begun at Lake Amisk (5 km², with 60 m maximum depth) in Alberta in 1988, and was begun at Irondequoit Bay (7 km², with 22 m maximum depth) in New York State in 1993. Both of these lakes (as well as others) have been studied extensively for various changes to their ecosystems. While there are specific components that will likely be unique to Onondaga Lake, the science of oxygenation is not new or experimental.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Daley et al., cont.	G-3.15	In-the-dry sediment removal/dredging is more expensive, but potentially offers greatest benefit in the long term. This seems to be a better permanent solution than dealing with the uncertainty associated with oxygenation and isolation cap performance.	<p>NYSDEC evaluated various remedial alternatives, including full sediment removal in several of the SMUs and selected an alternative that is protective of both public health and the environment.</p> <p>In-the-dry removal would not be feasible for all areas where dredging is warranted. However, during the remedial design, in-the-dry removal may be evaluated for some shallow areas of the lake.</p>
	G-3.16	Preference should be given to solutions that are ecologically sustainable. High-energy processes (e.g., oxygenation) have proven to be infeasible at other sites.	Oxygenation is a relatively low cost, highly effective technology that has been used in many places throughout North America. While this technology will require active maintenance, oxygenation is a feasible technology. There does not appear to be any ecologically sustainable solutions for addressing the mercury methylation issue. See also response to Frequent Comment #14.
	G-3.17	Cap material placement is likely to cause displacement of underlying contaminated sediments through advection, even after dredging.	Although there are no standardized methods to predict the degree of contaminated sediment resuspension resulting from cap placement, field data provide some insights. EPA has conducted monitoring of capping-induced resuspension for projects at Eagle Harbor, WA and Boston Harbor, MA (Magar et al., 2002). Capping resuspension was low for both sites and decreased as capping operations continued.

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Name/Agency	Comment Code	Comment Summary	Response
D. Daley et al., cont.	G-3.17, cont.		<p>Similar results were also found for capping resuspension monitored for a large-scale pilot study at the Palos Verdes site near Los Angeles (Palermo et al., 2001; McDowell et al., 2001), where contaminant concentrations quickly returned to background levels. Extensive water quality monitoring of capping-induced resuspension conducted for the Soda Lake, WY project (ThermoRetec, 2001) detected no site-related petroleum hydrocarbons. Recent observations at the Anacostia River Cap Demonstration Project, MD, indicated no observable sediment resuspension due to cap placement with a clamshell operating within a silt curtain enclosure (Reible, 2004). Similar results are anticipated for cap placement in Onondaga Lake.</p> <p>Measures to reduce the potential for resuspension, volatilization, or other contaminant movement will include the proper selection of cap materials and placement equipment, and methods designed to spread the capping material over the site gradually, such as using multiple thin layers (lifts). For the Eagle Harbor project, cap material was hydraulically washed off a barge. A manifold arrangement for placement of cap material slurry was used at a capping project at Hamilton Harbor in Canada. At the Simpson Tacoma project in WA and at Soda Lake, a horizontal auger dredge was used to place cap material.</p> <p>These and other projects illustrate the range of possible approaches successfully used to place caps in a gradual manner so as to minimize potential for resuspension and displacement of contaminated sediments.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Daley et al., cont.	G-3.18	The SCA should be confined to current or inactive waste management areas near the lake. Use of any other site is unacceptable.	See response to Frequent Comment #9.
	G-3.19	Would the export of sediment to Wastedbed 13 change the regulatory status of the wastebeds to an RCRA-permitted facility?	An evaluation of SCA locations will be conducted as part of the remedial design. Any technical or regulatory issues associated with locating the SCA will be addressed during this evaluation.
	G-3.20	Using a cap comprised of sand and gravel merely limits the movement of contaminated sediment in the short term. Many things can contribute to cap failure, thereby exposing humans and wildlife to contaminated sediments.	The design of the sediment cap will include an armor layer designed to protect the isolation layer from erosional processes such as waves, ice scour, and propeller wash. Evaluations described in detail in Appendix H of the FS report determined suitable materials that are predicted to be effective at protecting the isolation layer against such erosional forces. Furthermore, the cap will also include a safety factor buffer layer equal to 50 percent of the modeled isolation layer. However, it is understood that extreme or unexpected events could result in cap failure; therefore, an estimate of the amount of cap repair needed has been included in the cost estimates (Appendix F of the FS report). Also included in the estimates for operation and maintenance are costs related to maintaining the sand, rock, and gravel that make up the cap.
Steven W. Effler, PhD, Director of Research, Upstate Freshwater Institute and Charles T. Driscoll, PhD, University Professor of Environmental Systems Engineering, Syracuse University	G-4.1	UFI would like to clearly indicate that we endorse the plan in general, although with the information provided we cannot endorse one alternative over another. Nevertheless, we strongly believe whatever remediation plan is selected should be implemented as soon as possible.	See response to Frequent Comment #12.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.2	For a variety of reasons, NYSDEC rejected the original mercury model developed by Honeywell for the RI/FS process. We strongly recommend the development of process-oriented contaminant mass balance models, supported by comprehensive monitoring of the site. Effective communication of progress, performance, findings, and model evaluations from this program would allow for the option of utilizing these tools to support potentially important management decisions, as well as providing ongoing critical insights for all stakeholders.	See response to Frequent Comment #16.
	G-4.3	The observation that the measured losses of mercury exceed the measured inputs of mercury by a large extent suggests that there is not an adequate understanding of the sources of mercury to the lake.	See response to Technical Comment #14.
	G-4.4	Although there has been a marked decrease in mercury loading to the lake since the early 1970s, there has been no corresponding change in fish mercury concentrations. One might speculate that total mercury loads to the lake do not regulate mercury levels in fish, but rather these levels are regulated by the very high rate of methylmercury production. It is not clear how the reduction in total mercury loads or control of methylation in the hypolimnion will address mercury concentrations in fish.	See response to Technical Comment #15.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.5	Without a basic understanding of mercury inputs and transformations, how can stakeholders be assured that the remediation program will be successful? The development of a well-tested and credible model that also addresses the fate and transport of selected components of the organic contaminants would go a long way in demonstrating this understanding and guiding the rehabilitation effort.	See responses to Frequent Comment #16 and Technical Comment #16.
	G-4.6	A monitoring program should be conducted by an independent, objective organization with experience in Onondaga Lake and the relevant contaminants. This group should publish the results of these measurements and routinely make this information available to all stakeholders. The program should be comprehensive and include measurements that will allow for complete interpretation of the response of contaminants to changes in inputs from rehabilitation and other drivers, should be initiated immediately, and should be fully integrated with a contaminant modeling effort.	The ROD is the means of documenting the selection of the remedy. The issues raised concerning the monitoring program will need to be addressed during the remedial design.
	G-4.7	An integrated program of monitoring and modeling needs to be implemented. The goals of such an initiative would be to develop a quantitative understanding of the behavior of Honeywell site contaminants in the lake in the form of scientifically credible mathematical models, to apply the models to forecast/predict the benefits of a clean up program, to apply the models to establish reasonable expectations from the cleanup effort, to establish the feasibility of reaching cleanup goals, and to evaluate the effects of other initiatives (i.e., METRO upgrades) and natural variability.	See responses to Frequent Comments #4 and #16.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.8	Lake rehabilitation should be tracked through a comprehensive and long-term monitoring program, and information should be made available to stakeholders and agencies in a timely manner.	See responses to Comment G-4.6 and Frequent Comment #4.
	G-4.9	A rigorous monitoring and modeling program for the lake would provide the tools and understanding that are needed in New York State to address the widespread problem of mercury contamination for other resources beyond Onondaga Lake.	Comment noted.
	G-4.10	The statement on page 9 of the Proposed Plan that the primary waste contaminant associated with soda ash and related material production at the site was Solvay waste is questionable, if not incorrect. Ionic wastes were arguably primary, and had major impacts on the lake and downstream waters. Residual ionic waste inputs continue to have important impacts.	<p>The ROD states “Soda ash (sodium carbonate) and related products such as baking soda (sodium bicarbonate), sodium nitrite, sodium sesquicarbonate, ammonium bicarbonate, ammonium chloride, calcium chloride, and caustic soda (sodium hydroxide) were produced by a non-electrolytic cell process. The primary dissolved waste/contaminant associated with this process was ionic constituents (calcium, sodium, and chloride ions [Ca²⁺, Na⁺, and Cl⁻, respectively]), and the primary solid component was Solvay waste, which is a white, chalky, calcite-rich material.”</p> <p>The words “ionic waste constituents (Ca²⁺, Na⁺, and Cl⁻)” will be added to the top right box of the table entitled “Product Lines and Periods of Production at the Syracuse Works.”</p>
	G-4.11	Several factors contributing to the bi-directional flow regime at the lake’s outlet are listed on page 15 of the Proposed Plan. However, the lake’s elevated salinity, omitted from the listing, is also an important factor. A substantial portion of the elevated salinity is attributed to residual waste inputs from the site.	The words “elevated salinity” will be added to the text for the ROD.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.12	Hypolimnetic oxygen depletion is promoted by anthropogenic phosphorus loading. In the last paragraph on page 15 of the Proposed Plan, tributaries and Metro are listed as sources. While not an inaccurate statement, it is misleading as Metro represents 85% of the bioavailable phosphorus load. The 15% from the tributaries is only partly anthropogenic.	The ROD states “However, oxygen depletion in the hypolimnion of Onondaga Lake is exacerbated by loading of phosphorus to the lake from the Metro Plant discharge, and to a lesser degree from tributaries.”
	G-4.13	On page 16 of the Proposed Plan, the single value of dissolved solids loading from Solvay Wastebeds 9-15 to Ninemile Creek is potentially misleading. For what year does this estimate apply? A progressive decreasing trend has been documented.	The ROD states “The Geddes Brook/Ninemile Creek RI report estimated that the daily total dissolved solids load from Solvay Wastebeds 9 through 15 to Ninemile Creek is on the order of 440 tons (400,000 kg) based on two base-flow sampling events in 1998.” It is correct that this represents a reduced loading of dissolved solids since closure of the Honeywell operations in 1986.
	G-4.14	On page 21 of the Proposed Plan, the fifth item under the second bullet asserts that groundwater inputs are the most important loading pathway for several contaminants. Are any related loading estimates available?	The loading estimates for the various contaminants can be found in Chapter 6 of the RI report. It should be noted that the RI report text makes it clear that the various load estimates have differing degrees of uncertainty based on the type and number of data used to estimate the loading.
	G-4.15	The potential for resuspension of the in-lake waste deposit (ILWD) to be a significant source of mercury (and other contaminants) to the lake has been established, but the magnitude has not. This would have required application of appropriate quantitative tools (models). The profundal sediments as a major source of mercury also lacks quantification.	See response to Technical Comment #17.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.16	Several potential features of mercury cycling are presented on page 22 of the Proposed Plan but remain largely unquantified. One area of particular concern is the role of littoral sediments in supplying methyl mercury to the lake. If this is an important pathway, it would challenge the effectiveness of hypolimnetic oxygenation as a management approach.	An extensive sampling program will be performed during the remedial design. This will include sampling to assess the potential for littoral sediments to be sources of methylmercury to the lake. However, as discussed in responses to Comment R-1.5 and Technical Comment #16, the current information indicates that most of the littoral zone sediments provide a relatively small amount of the current exposures to methylmercury. In addition, approximately 425 acres of the littoral zone will be remediated by dredging and capping, resulting in significantly lower concentrations of mercury and methylmercury in these areas. Therefore, it is expected that the remedy will be effective in reducing exposures to methylmercury.
	G-4.17	Hypolimnetic accumulations are transported to overlying waters during the approach to fall turnover, not after turnover.	The ROD will indicate that the transport of methylmercury from the hypolimnion to the epilimnion takes place during the process of fall turnover.
	G-4.18	Regarding the first item under "Calcite Precipitation and Ionic Wastes" on page 23 of the Proposed Plan, there is no evidence that remediation of the Mud Boils has resulted in reduced in-lake sedimentation rates. Recently presented findings indicated no systematic reduction in solids loading from Onondaga Creek. Perhaps this reflects the large residual in-stream sediment deposits from earlier mud boil inputs.	While US Geological Survey publications (Kappel and McPherson, 1998) have indicated that the total suspended solids (TSS) load from the Tully Mudboil site has been reduced substantially, it is acknowledged that monitoring in lower Onondaga Creek has not shown this reduction to have translated to a reduced TSS load to the lake. The sentence in question will be changed to read "Current sedimentation rates are about half of the pre-1986 sedimentation rates."

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.19	<p>What is the precedence for the PECQ approach adopted, including its manner of determination? How many Superfund sites have adopted this approach? Is there any support for the approach in the peer-reviewed literature?</p>	<p>The mean PECQ approach was proposed by Honeywell as one of the criteria to use for determining remedial areas. The mean PECQ is a single unitless index that accounts for the presence, concentrations, and toxicity of multiple contaminants in sediment samples. NYSDEC evaluated the mean PECQ approach to determine whether it could be applied to Onondaga Lake. The focus of this evaluation was to determine whether the concept is valid as described in the literature, whether the site-specific data provided a basis for using the approach, and to determine a methodology based on the literature which provided the greatest predictive power of the mean PECQ methodology for Onondaga Lake. As discussed in detail in Appendix J of the FS report (Section J.3.3), the mean PECQ approach has been discussed extensively in the literature, with several variations on the concept having been proposed. The FS report lists a dozen sites where the approach has been used, and 13 agencies which have utilized it.</p> <p>The final form of the mean PECQ approach used in the FS report and the selected remedy was based on a final list of 23 contaminants, grouped into five chemical classes, using the consensus-based PECs developed by NYSDEC and TAMS (NYSDEC's contractor) and used in the Baseline Ecological Risk Assessment (BERA).</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.19, cont.		<p>The approach used at Onondaga Lake is consistent with the literature and precedents, but it is unique in several ways. The inclusion of chlorinated benzenes, ethylbenzene, and xylenes has not been proposed before since these highly volatile compounds are not typically associated with sediment contamination, but are found extensively in the ILWD.</p> <p>While the use of a geometrically averaged PEC to provide a consensus-based value is consistent with methodologies published in the literature (e.g., MacDonald et al., 2000; Ingersoll et al., 2000), the combination of the five particular sediment effect concentrations (SECs) used at Onondaga Lake is unique. Also, while the mean PECQ or similar approaches have been used at other Superfund sites as a tool to assess risk reduction, the Onondaga Lake remedial plan has gone further by using the mean PECQ, along with the mercury PEC, directly as cleanup values.</p>
	G-4.20	What is NYSDEC's position with respect to having to base sediment clean-up initiatives on acute toxicity testing results rather than chronic toxicity testing observations?	See response to Technical Comment #7.
	G-4.21	Aeration will interact strongly with the effects of domestic waste inputs. Does NYSDEC agree that the interplay between manifestations of industrial and domestic waste discharges will need to be tracked carefully?	The interplay between manifestations of industrial and domestic wastes discharges in response to oxygenation needs to be closely monitored. Sampling for this purpose will be included in both the pre-design and the long-term monitoring programs.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler and C. Driscoll, cont.	G-4.22	Despite the major reduction in deposition/sedimentation brought about by the reduction in Ca ²⁺ loading associated with closure, most of the continuing sedimentation is arguably associated with residual effects of the industry. Specifically, external sediment loading is dominated by mud boil inputs and internal sediment production of calcium carbonate (CaCO ₃) inputs.	The ROD indicates that although much of the profundal zone is being addressed by MNR (implying that the selected remedy will rely on ongoing processes to bury the contamination, as opposed to an active capping program), a large portion of the sediment entering the lake continues to originate from the Tully Valley, including the residual effects of solution mining, and does not represent a background TSS load that would be expected in a non-impacted lake.
Dereth Glance, Program Coordinator, Citizens Campaign for the Environment (CCE)	G-5.1	Requests that NYSDEC provide at least two additional public meetings during February; public involvement is critical and more meetings are needed.	In addition to the public availability sessions on January 6 and January 12, 2005 and the public meeting on January 12, 2005, NYSDEC provided an additional public availability session and public meeting on February 16, 2005. Following the review of the Proposed Plan by the National Remedy Review Board, and EPA's concurrence with the Proposed Plan, an additional public comment period was opened from April 1, 2005 to April 30, 2005. Further meetings will be held during the design phase.
Dereth Glance, Program Coordinator, Citizens Campaign for the Environment	G-6.1	CCE generally supports the dredging and isolation and thin-layer capping approach to remediation of the lake bottom.	Comment noted.
	G-6.2	CCE generally supports the selected remedy, with contingencies (presented in this index as Comments G-6.3 – G-6.11).	Comment noted.
	G-6.3	The remediation plan should be transparent, and citizen participation should occur throughout the entire process. NYSDEC should establish a Citizens Advisory Committee (CAC).	See response to Frequent Comment #17.

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Name/Agency	Comment Code	Comment Summary	Response
D. Glance, cont.	G-6.4	Provide formal public participation opportunities on especially controversial components of the design phase. The ROD should guarantee the public that the SCA will be subject to a full Environmental Impact Statement, and once the design is complete for the SCA, an official comment period of at least 90 days should be provided to the public.	See response to Frequent Comment #17.
	G-6.5	The SPDES permit for the Metro discharge includes a proposed increase for the allowable discharge (loading) of mercury. This increase is in violation of the spirit and intent of the Proposed Plan. In addition, the monitoring of Metro's mercury discharges is insufficient.	The following discussion relates to the Metropolitan Syracuse Wastewater Treatment Plant ("Metro") and not to the Onondaga Lake remedial project. The NYSDEC Division of Water (DOW) agrees that the reduction in the discharge of mercury to Onondaga Lake from all sources is an important goal and essential to the long-term recovery of Onondaga Lake. The DOW is in the process of revising the mercury effluent limit (including frequency of monitoring) for the Metro discharge to Onondaga Lake. The existing permit Action Level of 0.53 lbs/day was reduced to an effluent limit of 0.196 lbs/day in the initial January 10, 2005 draft permit. The proposed 0.196 lbs/day effluent limit was based on the plant flow of 126.4 MGD. The DOW is in the process of revising its mercury guidance to require an effluent limit of 200 ng/L, using EPA Method 1631A to determine compliance. As this limit is concentration based, rather than mass based, it is inherently more conservative as less mercury will be permitted in the discharge at lower flow rates. These requirements have been included in the revised draft permit dated March 25, 2005.

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Name/Agency	Comment Code	Comment Summary	Response
D. Gance, cont.	G-6.6	Supports ASLF's call for a detailed matrix that clearly defines all subsites of the lake site and provides schedules, remedies, etc., and also integrates all known or suspected sources of contaminants.	See response to Frequent Comment #5.
	G-6.7	The ROD should use a conservative assumption on the groundwater upwelling rate, as was presented in the Proposed Plan.	Comment noted. The ROD is consistent with the Proposed Plan in this regard.
	G-6.8	The ROD should provide for additional sediment removal if action levels for contaminants of concern are detected at greater depths, as was presented in the Proposed Plan.	Comment noted. Additional dredging (up to an additional meter in depth) will occur in hot spots at depths below the initial dredge cut of 6.6 ft (2 m). The ROD is consistent with the Proposed Plan in this regard.
	G-6.9	The ROD should support the goal of no loss of lake area or volume.	NYSDEC's remedy would not result in the loss of any lake surface area. There may be some areas of the lake where there will be minimal loss of volume following capping, and other areas where there may be a minimal gain in volume. However, it is expected that there will not be a significant (if any) net loss of volume of the lake as a whole.
	G-6.10	The ROD should propose use of hydraulic dredging, as mechanical (clamshell) dredging is environmentally insensitive.	Hydraulic dredging was selected as the representative process for detailed evaluation in the FS report and the ROD; however, the actual dredging method(s) would be determined during the design. Whatever dredging methods are used will be employed in an environmentally protective manner.
	G-6.11	Supports the remediation goals for sediment, biological tissue, and water. Strongly believes that NYSDEC should require public education and outreach efforts about the human health risk of fish consumption.	Comment noted. See also response to Frequent Comment #19.

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Name/Agency	Comment Code	Comment Summary	Response
D. Gance, cont.	G-6.12	CCE looks forward to moving forward and ending the legacy of toxic industrial contamination in the lake.	Comment noted. See also response to Frequent Comment #12.
Martha Holly Loew, Chair, Sierra Club, Iroquois Group	G-7.1	Congratulates NYSDEC and Honeywell for holding outreach meetings, the most impressive effect of which is a public awareness of and hope for the future of the lake.	Comment noted. See also response to Frequent Comment #12.
	G-7.2	Request that NYSDEC and Honeywell web sites be augmented by weekly "State of the Lake" in local newspapers. This would include questions/answers, assure the public that concerns are addressed, and be a place to establish goals and endpoints with public participation. The proposed goals, such as edible fish tissue need to be put to the public for input.	See response to Comment G-1.10.
	G-7.3	Contaminated sediment dredging, storing, and transportation should involve input from health departments; constant monitoring; and communication with people in close proximity to the SCA.	Comment noted. See also response to Frequent Comment #17.
	G-7.4	Support the cleanup actions and long-term monitoring starting as soon as practical.	See response to Frequent Comment #12.
Robert E. Long, MD, Onondaga Audubon Society, Inc.	G-8.1	<p>The southeast shoreline of Onondaga Lake should be restored as follows:</p> <ul style="list-style-type: none"> • <i>Phragmites</i> should be removed to improve visibility, recreational activities, and birding. • Control dogs on the loose so that they do not disrupt shorebirds. • Build observation blinds in two locations. • Plant tree and shrub species that will attract songbirds. 	The specific details associated with the remediation of the shoreline areas of Onondaga Lake will be determined as part of the remedial designs for the lake and the upland sites. Therefore, the proposed approach to improve the southeast shoreline of the lake will be evaluated as part of the remedial design.

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Name/Agency	Comment Code	Comment Summary	Response
Cornelius Murphy, President, and Neil H. Ringler, Chair, Faculty of Environmental and Forest Biology, SUNY ESF	G-9.1	Propose bi-monthly meetings to coordinate participation in the cleanup plan.	See response to Frequent Comment #17.
	G-9.2	Propose seminars/courses that deal with some of the major issues and opportunities at the lake.	See response to Comment G-1.10.
	G-9.3	Propose comprehensive monitoring plan that blends the county plan with university monitoring.	See response to Frequent Comment #4.
Neil H. Ringler, Distinguished Teaching Professor and Chair, Faculty of Environmental and Forest Biology, SUNY College of Environmental Science and Forestry	G-10.1	Generally pleased with Proposed Plan. Technical pitfalls could emerge, such as if oxygenation cannot bring SMU 8 into compliance.	It is expected that oxygenation of SMU 8 will be successful. The ROD discusses the implementation of oxygenation pilot studies prior to full-scale implementation to assess the most effective method of maintaining sufficient oxygen to achieve the remedial goals, and also to assess the changes to the ecosystem. See also the response to Technical Comment #1.
	G-10.2	Glad to see ESF's work on littoral habitat considered during the RI report and that habitat is a major part of the plan. There has been headway made in assessment of a Permanent Habitat Module on the lake's northwestern shoreline. This work will need to be integrated into the overall plan.	Comment noted. See also response to Frequent Comment #4.
	G-10.3	The plan provides a great educational opportunity for ESF students, and the college is in a position to contribute to the project studies.	See responses to Frequent Comments #17 and #19.
Samuel H. Sage, President, Atlantic States Legal Foundation	G-11.1	A detailed matrix presenting the status and schedule for the Onondaga Lake subsites should be provided.	See response to Frequent Comment #5.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.2	Information on the contamination in the wetlands near the mouths of Ley Creek (Wetland SYW-12) and Harbor Brook (Wetland SYW-19) should be provided. These areas should be remediated and restored as valuable wetland habitat.	See response to Technical Comment #3.
	G-11.3	The effectiveness of the groundwater remediation along the lakeshore is critical to the success of the selected remedy. The Proposed Plan should have included a scenario for which the barrier walls are found to be ineffective.	See response to Technical Comment #4.
	G-11.4	The ROD should make it clear how the public will be informed of any changes in plans and how they can respond to any such changes.	NYSDEC will continue its public outreach throughout the design phase of the Onondaga Lake remediation such that the public is informed of ongoing remedial activities. In addition, NYSDEC will inform the public of any significant changes to the selected remedy.
	G-11.5	Alternative approaches to sampling and analysis of organic pollutants are available that greatly improve on detection limits. These techniques should be considered for determining the effectiveness of the remediation.	An effective monitoring program is necessary both to establish baseline conditions and to assess the effectiveness of the remedial program. The potential use of these alternative approaches will be considered during the remedial design.
	G-11.6	The Effects Range-Median (ER-M) or Probable Effect Level (PEL) values should be selected as reasonable indicators of acute toxicity rather than the PECs. Clarify if the SECs for the organic contaminants were normalized to organic carbon content. Also, the PECs do not include any margin of safety for chronic toxicity.	See response to Technical Comment #5.
	G-11.7	The Proposed Plan indicates that only 23 of the 46 CPOIs were used in the calculation of mean PECQs. It is unclear why some contaminants were retained and others were not. A more conservative approach based on all 46 CPOIs should be used.	See response to Technical Comment #6.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.8	The mean PECQ methodology does not explicitly address chronic toxicity and the mean PECQ threshold of 1 does not appear to be adequate for the protection of benthic organisms. A mean PECQ threshold of 0.3, which will result in additional areas requiring remediation, may be adequate.	See response to Technical Comment #7.
	G-11.9	There is a concern for worker exposure during dredging activities in areas containing high levels of VOCs and/or NAPLs. Consideration should be given to foams and protective gear for workers.	Since the potential to encounter pure-phase liquids such as NAPLs exists at the lake, air monitoring would be performed to protect workers at the site. Emissions of hazardous substances at the site may be controlled by reducing the rate of dredging operations, modifying the dredging equipment, or using an alternative dredge. If there are emission problems, upgrades could be made to the standard protective clothing and gear that workers wear if monitoring indicates that air concentrations are becoming elevated. Thus, workers could switch from conventional work clothing (Level D protection) to respirators, gloves, and fully protective external garments (Level C protection). Higher levels of worker protection are also possible (e.g., use of a self-contained breathing apparatus). The above would be detailed in the Health and Safety Plan that will be developed before construction commences.
	G-11.10	There will be a large spike in emission rates when pockets of highly contaminated sediments are dredged and pumped to the SCA. Soil washing and emission control systems should be used prior to discharging the dredged material to the SCA.	It is appropriate to assume that some fraction of the lake deposits being discharged to the SCA would carry organics that may volatilize. The pre-design sampling and analysis program, as well as available RI report data, would provide information on the potential level of organic emissions that can be expected at the SCA.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.10, cont.		<p>Using this information, and an appropriate meteorological dispersion model, estimates would be made of the expected organic concentrations at the SCA boundary. Measures to control off-site emissions could then be incorporated in the project's design to limit emissions to levels that would not exceed public health thresholds established by NYSDEC and New York State Department of Health (NYSDOH).</p> <p>As further suggested by the comment, there are implementable control measures that can be employed at the SCA during disposal operations. It is not clear at this time that soil washing would be an effective strategy for the incoming sediment slurry. However, systems have been successfully employed directly at SCAs to capture volatilizing organics. In one such case, a floating cover was placed over the point of slurry discharge into an SCA and then the air space between the cover and the water surface was evacuated through a filtration system. Also, fine carbon material has been applied to an SCA surface to absorb organics prior to their release to the atmosphere. Finally, as mentioned in the comment, oil/water separation or oil absorption technology could be considered should a noticeable sheen occur on the SCA surface.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.11	<p>The number of contaminants such as PCBs, metals other than mercury, and heavy polyaromatic hydrocarbons (PAHs) that are not unique to former Honeywell operations should be given greater scrutiny, including in the profundal zone (SMU 8). A successful remedial strategy must address all contaminants in the ecosystem.</p>	<p>While it is acknowledged that there are contaminants in Onondaga Lake which are not unique to the former Honeywell (Allied/Solvay Process) operations, the extent, distribution, and impact of these contaminants were assessed throughout the RI/FS report process. PCBs and PAHs are included in the mean PECQ; thus, they have been included in the selection of areas for remediation. The non-mercury metals, through extensive analysis, were not found to have an impact to acute toxicity at the concentrations detected within the bioturbation zone on a lakewide basis (see response to Technical Comment #6 for more detail). There was one discrete location (Station S327) where data suggested that very high levels of non-mercury metals may be contributing to acute toxicity. However, this location is already being addressed as it is in an area that was selected for remediation based on exceedances of the mean PECQ of 1 and the mercury PEC.</p> <p>Regarding the sediment within the profundal zone, as is illustrated in RI report Figures 6-32 through 6-35, data from high-resolution sediment cores collected in 1992 and 1988 indicate a significant decline in the concentration of metals over the last few decades within the deep basin area. Non-mercury metals appear to have had historical inputs similar to those of mercury, with peak concentrations detected at depths below 20 cm in the cores collected in 1992 (with the exception of zinc in Core S-51, which peaked at 12 to 15 cm).</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.11, cont.		While it is not disputed that the peak levels of these metals are elevated above the NYSDEC screening standards, data indicate that these high concentrations have generally been buried below the bioturbation zone. It is expected that non-mercury metals will continue to be buried in the profundal zone through natural recovery, as will mercury. To ensure this is occurring, monitoring would include all contaminants that may be of concern in a particular area, as part of the Monitored Natural Recovery action proposed for the profundal sediments.
	G-11.12	How will companies or sites other than Honeywell that have contributed to contamination in the lake be brought into the lake remediation process?	There is a single ROD for the Onondaga Lake Bottom. This Onondaga Lake Bottom ROD addresses all hazardous substances at the Onondaga Lake Bottom subsite that require remediation under the state and federal Superfund laws. After the remedy is selected, NYSDEC will approach the responsible party to design and implement the remedy under a legal agreement. Lead responsible parties are free to pursue cost recovery negotiations with other contributors of hazardous substances to a site in order to apportion costs among all liable parties for a given site.
	G-11.13	ASLF supports getting started on actions to clean up/rehabilitate the Onondaga Lake Bottom site. ASLF agrees that dredging and capping are necessary, and that design work should commence as soon as practical. ASLF believes that organic contaminants should be completely removed. There should also be no loss of volume or lake surface area.	See responses to Frequent Comments #6 and #12.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.14	NYSDEC should develop a matrix of all actions required for the Onondaga Lake Superfund Site, including closure plans with Allied (Honeywell), state hazardous waste site remediation, voluntary clean-ups, and any other regulatory measures that influence contamination of Onondaga Lake. This should be made available to the public and form the basis for remediation schedules.	See response to Frequent Comment #5.
	G-11.15	The entire community should be involved in a debate leading towards a vision for Onondaga Lake and its basin. This vision must take into account scientific realities and is needed to develop endpoints in the cleanup of the lake bottom, all of the subsites, Metro, etc. The detailed remedial design must contain a habitat restoration plan.	With regard to goals, objectives, and vision for the lake, see responses to Frequent Comment #20 and to the NRRB's recommendation #11 (Attachment 1). A habitat restoration plan will be prepared during the remedial design phase.
	G-11.16	An extensive, long-term monitoring plan must be developed. This work should be done by an independent scientific team consisting of biostatisticians, chemists, environmental modelers, and others, and be coordinated with the extensive county monitoring plan. An endpoint needs to be established that would provide a means of determining success of the remediation. An outside group should critique and implement the plan.	See responses to Comment G-4.6 and Frequent Comment #4.
	G-11.17	Honeywell should pay up front for this work by creating a fund to be used solely for this purpose.	See response to Frequent Comment #8.
	G-11.18	The monitoring must begin immediately. Baseline data are needed to validate model predictions and to make sure there is a statistically significant database if a "build and measure" approach is used exclusively.	See response to Frequent Comment #4.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.19	Predictive, mathematical modeling should be done for the most important pollutants. A sampling protocol should be developed immediately and sampling for the models begun as soon as possible so that three years of baseline data can be collected before the actual dredging and capping begins. Ideally the work should be done by an outside consortium of scientists coming together for this purpose. Honeywell should create a fund to pay for this work. An outside peer review group should be convened at key stages of the work.	See responses to Frequent Comments #4 and #16.
	G-11.20	ASLF is the Technical Assistance Grant recipient for this project. However, our resources under this program are minimal. The January meeting on the Proposed Plan should be just the first in regular attempts to inform the public and to solicit their input on a complex program to alleviate a difficult problem. The public needs to be kept informed, asked for input, and kept part of the process. ASLF is willing to continue to be the lead outside agency in making sure the public understands what is happening.	Comment noted. See also response to Frequent Comment #17.
	G-11.21	ASLF is concerned that the human health risk assessment did not use the populations most at risk (i.e., people who disregard the fish advisory, immigrants, economically disadvantaged persons, the Onondaga Nation). The loss to the Onondaga Nation of the spiritual, cultural, and dietary resource of Onondaga Lake must be factored into the risk analysis.	The Onondaga Lake Human Health Risk Assessment (HHRA) used default values for fish consumption (e.g., 25 grams per day reasonable maximum exposure [RME]) assuming that the NYSDOH fish advisory is not in place or is not adhered to (see Section 4.3.1). The potential for the lake to serve as a subsistence source of food was also considered in the Uncertainty Section of the HHRA by utilizing EPA's default fish consumption rate for this subpopulation of 170 grams per day. Also, see the response to the NRRB's recommendation #3 (Attachment 1).

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.22	Despite the great importance of SMU 8 as the source of the methylmercury that contaminates fish, there is almost no remedial action currently planned for the sediments in the profundal zone. According to our estimates, between 25 and 50 percent of the lake bottom (0 to 30 cm) is contaminated at levels above the PEL of 2.2 mg/kg, and this vast area of the lake will continue to be toxic to benthic organisms for a long time into the future.	See response to Technical Comment #10.
	G-11.23	There is considerable uncertainty in the STELLA® model's prediction of the rate of mercury reduction in surface sediments. There are insufficient data to support the model. The model validity was tested based on a single core collected in 1997.	Since the STELLA® model is one-dimensional, it is reasonable to calibrate the model to a single location as long as that point is representative of the system, as is the case with the high-resolution cores. Data from six high-resolution cores collected in 1988 (two cores), 1992 (two cores), 1996 (one core), and 1997 (one core) were available for use in the model development. These cores were from the profundal zone in the north and south deep-basin stations and from the saddle region. These locations provide a reasonable representation of the deep-basin area, which comprises a large percentage of the profundal zone, and mercury profiles in the cores are consistent with each other for the upper layers. Dating of five of these sediment cores (only one of the cores from 1988 was used) resulted in net sediment accumulation rates ranging from 0.45 to 0.63 cm/yr between 1986 (the year that Honeywell's manufacturing operations ceased) and the year of collection, suggesting that although data are limited, deposition rates are consistent between the north and south basins and the saddle region.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.23, cont.		<p>These five cores were used because the slicing and chemical analysis procedures provided sufficiently fine chemical profiles for this model. The mercury concentrations in the model were based directly on the mercury data from the top 2 cm of the 1996 and 1997 high-resolution cores, which provided the most recent sediment concentrations available. Sediment densities and porosities were based on the 1997 core, since this was the only high-resolution core in which data were collected with which to derive values for density and porosity. The accuracy of the model was assessed by comparing the model output with the most recent high-resolution core available (see FS report Figure N.19) (i.e., the 1997 core from the saddle collected by Hairston et al., 1999), although all of the high-resolution cores exhibit similar profiles in the upper layers. This assessment suggested that the general trend of the model agreed well with the actual data, but that the model was conservative (overestimated concentrations) in terms of the final concentration.</p>
	G-11.24	<p>While mercury concentrations have decreased since 1970, the authors of Appendix N of the FS report admit that “there appears to be insufficient surface sediment data to make any conclusions regarding trends in surface sediment concentrations since 1987.” The model provides almost no technically sound basis for predicting a time frame for “natural recovery.” Any claims that MNR is expected to achieve target mercury concentrations within 10 years are without merit. MNR should be considered only as a potential remedial measure.</p>	<p>The basis for this statement in the FS report is that there has only been one widespread sediment sampling program across the profundal zone: the 1992 program. Thus, a direct geographic point-by-point comparison cannot be made for the entire profundal zone between two different points in time. However, the 1992 sampling program did demonstrate that the mercury concentrations in the surface sediments (0 to 2 cm) were uniform across the profundal zone (mean of 2.7 mg/kg, standard deviation of 0.81 mg/kg, and a range from 0.93 to 6.1 mg/kg, n = 45).</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.24, cont.		It should be noted that two stations at the base of the ILWD exhibited mercury concentrations of 5 and 6.1 mg/kg, which exceeded the next closest sample concentration (3.6 mg/kg) by a large amount. This suggests that the three locations where high-resolution cores were collected are representative of a large portion of the profundal zone. The pre-design sampling will address this issue and will allow a complete assessment of the validity of the model and the prediction of MNR-related time frames for the profundal zone. See also response to Comment G-11.23.
	G-11.25	Attempts to quantify the movement of total and methylmercury have been unsuccessful, and there are varied estimates as to the quantity of methylmercury released from the profundal sediments. In addition, estimates of methylmercury production in the RI report differ from the model results provided in Appendix N of the FS report. There is a leap of faith that oxygenation can greatly reduce the downward flux of methylmercury to the sediments. There is no solid scientific basis for remediation of SMU 8. There is no predictive model to determine the effect of remedial actions on methylmercury levels in fish flesh. Other remedial technologies should be considered.	<p>While it is clear that there are uncertainties in the exact quantification of the methylation process, the overall understanding is sufficient to address this issue in the selected remedy. The RI report and FS report examined methylmercury releases from the sediments in different ways.</p> <p>The RI report used a strict mass-balance approach for the stratified period. The releases from the profundal sediments were estimated using conservative calculations of the transfer of methylmercury due to diffusion to arrive at a value of 22 g of upward flux during the stratified period (0.067 kg/yr). However, the RI report did note that the effects of ebullition in the profundal zone likely caused a higher diffusion rate (at least a factor of 3) than was calculated. Furthermore, the RI report pointed out that the methylmercury gradient was not typical or well defined, again likely resulting in a low bias for the calculated diffusion rate.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.25, cont.		<p>The modeling conducted in the FS report presented a higher diffusion rate (0.8 kg/yr), but based on the assumed low biases discussed in the RI report. This is not inconsistent with the RI report estimates. If a factor of 3 for both the ebullition effects and the gradient issues is assumed, a flux rate of 0.6 kg/yr is derived based on the RI report values.</p> <p>The estimates for the downward methylmercury flux are relatively similar (1.6 and 2.6 kg/yr). Both of these estimates are based on the same data. The difference is due to the statistical methods used to determine the flux. The RI report used a mean on a monthly basis, while the FS report used the overall mean to provide flux on a yearly basis. Thus, NYSDEC did not consider these estimates to be in conflict.</p> <p>Of greater importance is the fact that all estimates indicate that the sediments are a net sink for methylmercury, indicating that methylation in the water column is the major source of methylmercury to the lake. As discussed in the responses to Comment R-1.5 and Technical Comment #16, the implications of oxygenation can be discerned under current conditions in the spring turnover period when the entire water column is oxygenated.</p> <p>During this period the methylmercury concentrations in the water column are uniformly low (about 0.3 ng/L) and there is no indication of methylmercury releases from the sediments. Accordingly, oxygenation of the hypolimnion, as well as other remedial activities, is expected to reduce methylmercury levels in fish tissue.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.26	<p>The mapping methodology employed by TAMS in the RI report has, in all likelihood, led to distortions in the predicted distribution of contaminants shown in the FS report. This has resulted in underestimates of mercury, chlorinated benzenes, BTEX, and possibly other contaminants in the profundal zone.</p> <p>SMU 1 should be expanded into the deeper waters of the lake so as to include this contamination. These highly contaminated sediments should be subject to the same dredging and capping remedial approach as the other sediments in the ILWD. SMU 7 and SMU 2 should be reexamined in this light.</p>	See response to Technical Comment #12.
	G-11.27	ASLF agrees that a high priority should be placed on capturing and destroying DNAPL. The removal of DNAPLs via dredging in SMUs 1 and 2, and possibly 7, is necessary. This material must be handled carefully to minimize exposure to workers and residents.	<p>Dredging to remove NAPL will target NAPL (including DNAPL) in sediments and waste, which constitute an ongoing source (and potential source) of contamination to other media in the lake.</p> <p>Implementation of the remedy will remove a large quantity of highly contaminated material (waste, NAPLs, sediment) from the ILWD, which will significantly reduce the concentrations of CPOIs that would remain under the isolation cap. This area of the lake contains the highest concentrations of the more mobile contaminants such as BTEX, chlorobenzene, and dichlorobenzenes.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.27, cont.		The remedy will also address the NAPLs (including DNAPLs) present in SMU 2 through removal to an estimated depth of 30 ft (9 m). This would include the removal of NAPL in the sediments, as well as the NAPLs that are believed to be present in the marl unit beneath the sediments. These materials will be handled carefully (in accordance with procedures to be developed during the remedial design) to minimize exposure to workers and residents.
	G-11.28	The Proposed Plan identifies NAPL found within the ILWD (SMU 1) as a Principal Threat Waste, and thus, removal of this material is a high priority. However, it is unclear whether the NAPL in SMUs 6 and 7 will be removed, and it is clear that the NAPL in SMU 8 will not be addressed at all. The plan should treat all NAPL as a high priority.	<p>The remedy for SMU 1 will address the NAPLs that are present in the upper 3 m. The removal of the ILWD materials in SMUs 2 and 7 will be performed consistent with how these materials will be addressed in SMU 1.</p> <p>The NAPL in SMU 6 is consistent with compounds found in petroleum/fuel oil mixtures. These compounds tend to be less toxic and more susceptible to environmental degradation. As such, this area is being remediated using isolation capping with some dredging. If, based on pre-design data, it is determined that a cap may not be effective in areas containing NAPL in SMU 6, additional removal in this area prior to capping would be considered during the design.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.28, cont.		<p>The NAPLs noted in the profundal sediments are buried quite deep (60 to 80 cm), below the expected bioturbation/habitat zone for a benthic community (top 10 to 15 cm; see response to Comment P-52.9) and well below the mercury peak concentrations. As discussed in response to Technical Comment #10, the fact that the profundal sediments are very stable in a highly depositional regime provides an opportunity to allow them to be naturally buried by cleaner sediments and thus further isolated from the environment.</p>
	G-11.29	<p>There are reports of a tarry waste in or near SMU 2 which have a different nature. These are more solid than liquid, and are likely to have originated from the Semet-Solvay process. In addition, what appear to be emulsified organic deposits have been documented in SMU 3 along the wastebeds. This material is likely to sequester organic contaminants such as BTEX, PAHs, chlorinated benzenes, and dioxins.</p>	<p>The area associated with Station S435, located along the shore of SMU 2 near Tributary 5A and reported to contain tarry wastes, was selected for remediation in the selected remedy. If additional tarry wastes are encountered in this area during pre-design sampling or during remedy implementation, NYSDEC will evaluate the potential need for their remediation.</p> <p>There are areas in SMU 3 along the shoreline of the wastebeds that will be remediated, including Station S48, which was selected for remediation based on its high benzene concentrations. NYSDEC is not aware of the emulsified organic deposits in SMU 3 that were noted in the comment and will discuss this with ASLF prior to commencing pre-design sampling. This issue will be further investigated and, if warranted, addressed as part of the remedial design.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.30	ASLF endorses all efforts to remove, to the greatest extent possible, all of these organic materials from Onondaga Lake. They are highly toxic, mobile, and unsuitable for capping. This material should be separated from the less-toxic silts, sands, and Solvay waste material which will make up the bulk of the dredged sediments.	Comment noted. See also response to Technical Comment #13.
	G-11.31	Sediments are to be hydraulically dredged and pumped to Wastebed 13. Why was this site, the most distant wastebed from the lake, selected?	The FS report assumed (for costing purposes) that the SCA would be constructed on Wastebed 13 based on its capacity, as well as other factors. However, during the remedial design, various locations for siting the SCA will be evaluated. This will include: Wastebeds 1 through 8, Wastebeds 9 through 11, as well as Wastebeds 12 through 15. The evaluation will consider various factors including potential impacts on the local community, geotechnical stability of the wastebeds, SCA construction requirements, wastebed size, the means for transporting dredged materials to the SCA, costs, etc.
	G-11.32	There are residential neighborhoods near Wastebed 13. ASLF expressed concern about releases and control of volatile contaminants. Residents and workers should not be exposed (via air emissions) to these hazardous substances.	As indicated in the response to Comment G-11.31, the actual location for the SCA will be determined during the remedial design. Please also see response to Frequent Comment #9. NYSDEC and NYSDOH will require the employment of engineering controls to minimize or eliminate odors and emissions. This may include sprayers or misters, foam over the surface water, and the addition of activated carbon. It will also include the use of full-time air monitoring stations at various locations surrounding the work areas in the lake and the SCA.

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S. Sage, cont.	G-11.32, cont.		The monitoring points will detect the presence of any chemical emissions from the dredge areas and the SCA. This is an added level of protection. Other SCA sites and dredging projects with similar contamination and a similar level of monitoring have shown few, if any, emissions. Workers involved in the remediation activities will be required to utilize personal protective equipment and monitoring devices for most construction and treatment activities during remedial design. A Health and Safety Plan (HASP) for these activities will be developed and implemented. See also response to Frequent Comment #10.
	G-11.33	Treatment of the sediments should be required to separate out highly contaminated material. Soil washing technologies, which have been demonstrated on sediments in other places, could be a very effective way to separate the calcareous Solvay waste from the NAPL. Another potential benefit of soil washing lies in its ability to separate sand from fine-grained silts and clays. In the case of Onondaga Lake, this technology could potentially be used to generate clean capping material, while reducing the amount of sediments being disposed of in the SCA.	See response to Technical Comment #13.
	G-11.34	In the RI report and FS report, the lake was divided into two zones: the profundal zone (>9 m deep) and the littoral zone (<9 m deep). This artificially imposed line of demarcation implies a sharp change in sediment concentrations visible in many of the maps (see RI report Figures 5-2 to 5-27).	The 9-m contour is not arbitrary. It is the typical depth of the thermocline in Onondaga Lake. The large physical, chemical, and biological differences between the epilimnion and the hypolimnion were the basis for selecting this contour to differentiate littoral from profundal sediments. See also response to Technical Comment #10.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.35	We have found that contamination characteristic of the ILWD (chlorinated benzenes, mercury, and BTEX) extend beyond the 9-m boundary used by TAMS in the RI report to separate the profundal and littoral zones. The Thiessen polygons used in the FS report result in an underprediction of the contamination in the profundal zone.	See response to Technical Comment #12.
	G-11.36	Kriging is generally accepted among spatial analysts as the optimal spatial predictor, but it is a complex and very time-consuming procedure. Figure 9 of RI report Appendix I was created by TAMS for mercury using kriging, but only with cores located in the profundal zone. This pre-determination of contaminant distribution is not an appropriate application of kriging and cannot possibly represent the true distribution of the lake bottom contaminants.	<p>It was determined by NYSDEC that kriging each individual depth interval down to 8 m for every CPOI presented in the RI report was not warranted. In addition, the RI report maps do present a reasonable conceptualization of the contaminant distribution in the lake at all depth intervals for all CPOIs and were not intended to delineate remedial areas and volumes.</p> <p>In addition to a map (RI report Figure I-9) showing the results of kriging in the profundal zone, a map (RI report Figure I-13) showing the results of kriging in the littoral zone was also included in Appendix I of the RI report. These areas were mapped separately since the sampling intervals (in terms of depth into the sediments) for the 1992 and 2000 data were generally different, which would affect the integrity of the kriging process (see Section I.2.1 of the RI report). It should be noted that the profundal samples were collected almost exclusively in 1992 in 2 and 30 cm segments and that the majority of the littoral sediments were collected in 2000 in 15, 70, and 100 cm segments. See also response to Technical Comment #12.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.36, cont.		With the exception of the profundal area off of the ILWD, surface sediments in the top 2 cm in the profundal zone are generally less contaminated than surface sediments in the top 15 cm in the southern littoral zone. This is supported by the high-resolution cores collected from the profundal zone in the 1990s which show that the highest levels of mercury in the profundal sediments are more than 15 cm below the sediment-water interface. This observation is obscured if only the data from 0 to 30 cm or deeper are used in the data presentation for the profundal zone.
	G-11.37	The comment suggests that ASLF suspects that the demarcation used by TAMS in the RI report was employed with the intent of limiting the sediment removal areas. ASLF does not support the plan to remove sediment only in those areas falling within the 9-m depth contour.	As is stated in the response to Technical Comment #10, use of the 9-m contour was not arbitrary, since it was based on real physical, chemical, and limnological conditions. There was no intent by NYSDEC to limit the dredge area. See also response to Technical Comment #12.
	G-11.38	Another area of concern is that a uniform sediment organic carbon value of 5 percent was applied across the lake in the mapping. We have calculated, to the best degree possible, the variation in organic content across the lake explicitly in order to identify areas that represent unacceptable risks, and we found that roughly one-half of the lake sediment surface could be kriged for organic carbon. This approach should be applied to identify those areas that represent unacceptable risks. Based on this there are several areas of the profundal zone where levels exceed toxicity values. The profundal zone should not be ignored.	Unlike NYSDEC sediment screening standards for organic compounds, the Onondaga Lake site-specific SEC/PEC values and the resultant mean PECQ used in the FS report and the Proposed Plan were derived empirically from toxicity testing and are all on a dry-weight basis, not an organic-carbon basis (see also response to Technical Comment #5). Therefore, normalization to organic carbon was unnecessary for the data in the FS report. The selected remedy calls for phased thin-layer capping, oxygenation, and MNR to remediate the profundal zone and hypolimnion.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.38, cont.		As noted in response to Technical Comment #10, the plotting of data down to 30 cm into the profundal sediments includes highly contaminated sediments below a depth of 15 cm that will not be available to biota in the lake. This method exaggerates the risk caused by contaminants in surface sediments. The data from the 0 to 2 cm samples, along with the high-resolution cores, provide the best indication of the risks posed by the profundal sediments. The suitability of thin-layer capping at the base of the ILWD in SMU 8 will be reviewed during the remedial design based on extensive data to be collected as part of the pre-design program.
	G-11.39	The bins used in the mapping presented in the RI report underrepresent the toxicity levels found in the lake's sediments. TAMS selected their methodology based on "the typical log-normal nature of contaminant data" but no literature reference is given upon which to base this statement. Clearly they have not based it on the actual distribution of this data.	The comment implies that the size of the bins used to define the isoconcentration contours in the contaminant distribution maps (RI report Figures 5-1 to 5-27) distorted the interpretation of risk posed by those sediments. As noted in the RI report (page 5-9), because of the large range of values some consistent step had to be developed that would accommodate data which spanned five orders of magnitude, and was understandable to the reader. A log step (or half-log step) is reasonable to do this. In order to give some perspective to the concentrations, an effort was made to include NYSDEC risk-based sediment screening values as part of the binning process. However, it should be emphasized that the purpose of these maps was to allow for an understanding of contaminant distribution, both laterally and vertically, and was not to describe risk, which is done in the risk assessments.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	G-11.39, cont.		<p>As stated in the RI (page 5-9), “the organic CPOI maps must be interpreted with caution from a risk-based perspective. Specifically, the organic carbon-based criteria shown on the maps represent a general guide to those areas exceeding NYSDEC screening criteria. However, these contours should not be considered exact for the purposes of identifying areas that present unacceptable risks.”</p> <p>“NYSDEC sediment criteria have been used as a screening tool to identify areas affected by various contaminants. Site-specific risks are discussed at length in the BERA and HHRA (TAMS 2002a,b). While many of the NYSDEC screening criteria are not generally applied to sediments at depth, they are used here to assist in describing contaminant concentrations.”</p> <p>It should also be noted that the contaminant distribution maps presented in Chapter 5 of the RI did not use the site-specific risk-based values (i.e., the SECs and PECs) that were generated as part of the BERA since these values were finalized after completion of these RI maps. Maps showing the locations of stations throughout the lake that exceed the various site-specific SEC/PEC values are presented in Appendix F of the BERA. A compilation of the exceedances of the site-specific PEC values was presented as Figure 8-2 of the RI based on the mapping presented in the BERA.</p>

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Name/Agency	Comment Code	Comment Summary	Response
Honeywell Comments			
David L. Wickersham, Director, Remediation & Evaluation Services, Honeywell	H-1.1	Honeywell summarizes some differences and similarities between its recommended alternative and NYSDEC's preferred remedy. Honeywell believes that its recommended alternative is as protective as the preferred remedy.	See responses to Frequent Comments #1 and #11.
	H-1.2	NYSDEC determined that the original mercury model developed by Honeywell could not be used as a predictive tool for selecting a remedial alternative. The mercury mass balance later developed by NYSDEC in the RI report, together with the data collected for the RI report and for upland site investigations, provides a substantial understanding of mercury fate and transport in the lake. Upland source controls, dredging and capping of sediments, and hypolimnetic aeration are expected to eliminate ongoing sources of mercury to the lake ecosystem, protect against mercury bioaccumulation, and result in decreased mercury concentrations in the food chain.	Comment noted. See also response to Frequent Comment #16.
	H-1.3	Honeywell believes that the use of a mean PECQ of either 1 (as used in NYSDEC's preferred remedy) or 2 (as used in Honeywell's recommended alternative) for defining areas for remediation is protective of benthic organisms. Both Honeywell's and NYSDEC's remedies address potential human health risks associated with consumption of contaminated fish and recreational contact with contaminated sediments.	Comments noted. See also responses to Frequent Comment #3 and Technical Comment #7.
	H-1.4a	Most of the sediment data in SMU 1 were collected within the top 2 m. The limited data at depths greater than 2 m cannot be considered representative of conditions over the 84-acre area of SMU 1.	See response to Technical Comment #8.

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Name/Agency	Comment Code	Comment Summary	Response
D. Wickersham, cont.	H-1.4b	Honeywell believes that the depth of removal and associated cap design (thickness) in its recommended alternative is sufficiently protective since many conservative assumptions were used in its cap model. In addition, Honeywell believes that its recommended alternative for SMU 1, rather than the preferred remedy for SMU 1, is a more appropriate balance of the statutory and regulatory criteria governing remedy selection.	See response to Technical Comment #9.
	H-1.5	Honeywell and NYSDEC propose an on-site SCA; any changes to the remedy that result in substantial volumes of sediment being sent off-site for disposal may not be supported by an analysis of the requirements governing remedy selection.	The estimated volume of sediments/wastes that will be removed from the lake that is presented in the ROD is the same as the volume stated in the Proposed Plan. The majority of the dredged sediments will be disposed in an SCA constructed on one or more of the Solvay wastebeds. Only the most highly contaminated materials (e.g., pure phase chemicals segregated during the dredging/handling process) will be sent off-site for treatment and/or disposal. The means for identifying those materials which would be sent off-site will be determined during the remedial design.
	H-1.6	Although the cost estimates in the Proposed Plan assume advanced water treatment may need to be used, the plan recognizes that the specific treatment process used will be developed during the remedial design after additional sampling and treatability testing. Should there be changes to the preferred remedy set forth in the Proposed Plan that substantially increase the estimated cost of treatment (such as the generation of significantly increased volumes of sediment), NYSDEC's conclusion that the Proposed Plan is cost effective may no longer be appropriate.	Comment noted.

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Name/Agency	Comment Code	Comment Summary	Response
D. Wickersham, cont.	H-1.7	Requests that Honeywell's additional memoranda (a list is provided as Exhibit A of Honeywell's comments) be made part of the Administrative Record.	See response to Comment H-3.1.
	H-1.8	Specific criteria should be developed during the remedial design for delineating areas and volumes of the SMU 1 ILWD to be removed, including specification of portions of SMUs 2 and 7 subject to potential dredging for NAPL.	Additional data collected as part of the design phase of the Onondaga Lake remediation will be evaluated such that actual removal areas and actual removal depths can be determined. Confirmatory sampling will also be a component of the remedial construction phase of the project to ensure that remedial construction objectives are met.
	H-1.9	Community participation should be ongoing.	NYSDEC concurs with the need for ongoing community participation. See response to Comment G-1.10.
	H-1.10	Targeted dredging should be allowed in lieu of a barrier wall along SMU 7, contingent upon the results of the design investigations.	If data collected as part of the design phase of the Onondaga Lake remediation indicate that targeted dredging in SMU 7 would be as effective as the hydraulic control system, NYSDEC may allow targeted dredging in place of a hydraulic control system for SMU 7.
	H-1.11	The methods for complying with the bioaccumulation-based sediment quality value (BSQV) of 0.8 mg/kg for mercury should be made clear in the ROD.	The manner in which the BSQV would be applied to the remediation of Onondaga Lake is discussed in the "Remedial Action Objectives" and "Description of Selected Remedy" sections of the ROD.
	H-1.12	Honeywell summarizes some differences and similarities between their recommended alternative and NYSDEC's preferred remedy. Honeywell believes that their recommended alternative is as protective as NYSDEC's preferred remedy.	See responses to Frequent Comments #1 and #11.

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Name/Agency	Comment Code	Comment Summary	Response
D. Wickersham, cont.	H-1.13	Believes the RI/FS report is adequate to allow the selection of an appropriately protective remedy at this time. Years of additional study would not benefit the community or the environment.	See response to Frequent Comment #12.
	H-1.14	With regard to dredging in the ILWD, the FS report modeling establishes that any dredging beyond that in the Proposed Plan would not be warranted. Also, any changes regarding the use of the SCA would have to be reevaluated in terms of overall cost effectiveness.	See responses to Comment H-1.5 and Technical Comments #8 and #9.
	H-1.15	NYSDEC determined that the original mercury model developed by Honeywell could not be used as a predictive tool for selecting a remedial alternative. The mercury mass balance later developed by NYSDEC in the RI, together with the data collected for the RI and for upland site investigations, provides a substantial understanding of mercury fate and transport in the lake. Upland source controls, dredging and capping of sediments, and hypolimnetic aeration are expected to eliminate ongoing sources of mercury to the lake ecosystem, protect against mercury bioaccumulation, and result in decreased mercury concentrations in the food chain.	See response to Comment H-1.2.
	H-1.16	Honeywell believes that the use of mean PECQs of either 1 (as used in NYSDEC's preferred remedy) or 2 (as used in Honeywell's recommended alternative) for defining areas for remediation is protective of benthic organisms. Both Honeywell's and NYSDEC's remedies address potential human health risks associated with consumption of contaminated fish and recreational contact with contaminated sediments.	See response to Comment H-1.3.

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Name/Agency	Comment Code	Comment Summary	Response
David L. Wickersham, Director, Remediation & Evaluation Services, Honeywell	H-2.1	Honeywell agrees with the NRRB that most hot spot material would likely be removed by dredging to a depth of 2 m. Honeywell believes that the cap would be effective without additional dredging beyond its recommended alternative. Honeywell concurs with the NRRB's recommendation that the ROD should include flexibility in dredge depth and cap thickness.	Determination of the amount of removal below a depth of 2 m will be made based on additional sediment data that will be collected during pre-design sampling. See also response to Technical Comment #8. The remedy described in the ROD includes flexibility in dredge depth (with regard to hot spot threshold concentrations, as they may be modified as a result of the additional cap modeling that will be performed during the remedial design) and cap thickness so that cap effectiveness and cost effectiveness can be attained.
	H-2.2	Honeywell recommends that the ROD contain sufficient flexibility concerning the location of the SCA to allow for an evaluation of other Solvay wastebeds as potential SCA locations.	The Proposed Plan and the ROD provide flexibility concerning the location of the SCA on the Honeywell wastebeds.
	H-2.3	The mean PECQ provides a rational and conservative means to identify sediments that pose risk to benthic macroinvertebrates. The selected remedy would result in a reduction of chronic toxicity in those areas of the lake where contaminated littoral sediments would be capped.	Comment noted. See also response to Frequent Comment #3.
	H-2.4	Honeywell appreciates the substantial opportunities NYSDEC has provided for public comment on the Proposed Plan.	Comment noted.
	H-2.5	Honeywell supports some of the comments offered by the public. In light of the stated willingness of NYSDEC and Honeywell to continue to engage the public during the remedial design, Honeywell respectively urges NYSDEC to move forward promptly with issuing the ROD.	Comments noted.

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Name/Agency	Comment Code	Comment Summary	Response
Thomas H. Milch, Arnold & Porter (legal counsel to Honeywell)	H-3.1	Requests that documents identified in Comment H-1.7 be replaced with documents identified in this comment (H-3.1) and be made part of the Administrative Record.	As requested, these documents have been added to the Administrative Record.
Public (Individual) Comments			
Joan E. Bardeen	P-1.1	Who is paying the difference between Honeywell's \$237 million proposal and NYSDEC's \$449 million proposal?	After the remedy is selected, NYSDEC will approach the responsible party to design and implement the remedy under a legal agreement. For clarification, please note that the estimated cost of the selected remedy is \$451 million.
	P-1.2	We will be in the courts for another 20 years over this.	Comment noted.
David J. Bonner	P-2.1	It will be good to see activities on the lake and development at a cleaned-up lake.	Comment noted. See also response to Frequent Comment #12.
Howard Bragman	P-3.1	We have been down this route before. If Allied were still here, we would not be here tonight.	Comment noted.
	P-3.2	Damming it is the one true way of getting to the bottom of things. Cap all waste in containers and leave it there.	Damming is not a viable remedial technology for Onondaga Lake. Capping involves putting a "cover" as an isolation layer over the waste, but not putting it in containers. Putting the waste in containers is not feasible for the lake site, given the large volume of contaminated sediments to be remediated. See also response to Frequent Comment #2.

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Name/Agency	Comment Code	Comment Summary	Response
Nancy Ciampi	P-4.1	During the December 9, 2004 Town of Camillus meeting, I understood that only non-hazardous waste would be dumped into Wastebed 13. During the January 12, 2005 meeting, I understood that Honeywell has proposed Wastebed 13, but that NYSDEC has left it open to Wastebeds 9 – 15. How will it be determined which wastebed[s] will be used?	See response to Frequent Comment #9.
	P-4.2	How will the hazardous waste dredged from the lake be separated? If it is determined that low hazardous goes to the wastebed and high goes to the Niagara Falls area, how is it determined what is low/high? If this is still to be determined and to be defined during the design period, what factors will determine what is low/high?	As part of the design phase, specific criteria will be developed to determine what sediment/waste will be disposed of in the SCA and what material will be disposed of off-site. Factors that will be considered when determining what waste will be disposed of off-site include chemical concentrations, presence of NAPL, and the ability of the material to be contained within the SCA.
	P-4.3	If Wastebed 13 remains open during the four-year implementation period and is not capped until one to two years after the dredging is completed, what is keeping the material (some of which will probably be hazardous) from going airborne, and thus potentially affecting our health and property value? While there will be an air and odor monitoring system in effect, what are the parameters of the monitoring range? What steps will be taken if the range shows that levels are harmful? Will the public be informed of the readings on a regular basis, and have access to the readings on a daily basis, if requested?	See response to Frequent Comment #10.
	P-4.4	Will there be public meetings and sufficient notice of those meetings when the design phase begins and during its three-year period? The public should be kept informed as to ongoing actions and how their concerns are being addressed.	See response to Frequent Comment #17.

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Name/Agency	Comment Code	Comment Summary	Response
N. Ciampi, cont.	P-4.5	What will happen if Honeywell does not agree with NYSDEC's decision for the selected remedy? It is my understanding that if Honeywell rejects the plan, the government will implement NYSDEC's remedy, with taxpayers paying for the project, and that the government will bill Honeywell upon completion. Does this mean the government will be reimbursed, but the taxpayers will not be?	See response to Frequent Comment #13.
Katherine J. Comerford	P-5.1	What precautions or remedial actions will take place to prevent contamination from flowing into Lake Ontario via the Oswego River?	See response to Frequent Comment #7.
Charles Coughenour	P-6.1	Capping a few major spots of pollution and dredging certain areas is not "treating" the problem. It is a band-aid solution that ignores the lake as a whole.	See responses to Comment P-16.5 and Frequent Comment #6.
	P-6.2	What are the "standards" that will be used to measure water quality and determine that the lake is clean and safe?	As discussed in the response to the NRRB's recommendation #11 (Attachment 1), the Proposed Plan includes several goals of the remedial program, including: 1) Address toxicity to the benthic community caused by contamination in the sediments. This is measured by the mean PECQ, PECs, and direct measurement of toxicity. 2) Address toxicity caused by bioaccumulation from the sediments to higher organisms such as fish and humans. This is measured by the BSQV.

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Name/Agency	Comment Code	Comment Summary	Response
C. Coughenour, cont.	P-6.2, cont.		<p>3) Reduce the concentration of contaminants in fish to risk-based concentrations. This is measured directly in fish and compared to criteria such as EPA's national recommended water quality methylmercury criterion for the protection of human health for the consumption of organisms of 0.3 mg/kg in fish tissue. This will be achieved by eliminating sources of mercury to the lake and by eliminating methylation of mercury in the hypolimnion by the addition of oxygen.</p> <p>4) Reduce concentration of contaminants in the water column to protective levels. These concentrations in surface water can be compared to state and national standards. Concentrations of methylmercury in the water column will be reduced by controlling sources of total mercury and by oxygenation of the hypolimnion.</p>
	P-6.3	To dump pollutants that could seep into the groundwater is not "treatment." It just moves the problem elsewhere.	The materials placed in the SCA will be completely isolated from the environment. This isolation will be achieved in part by use of an cap and an impermeable liner beneath the dredged materials to prevent seepage into the groundwater. The SCA will be designed to ensure that contaminants in the dredged material do not seep into groundwater.
Kenneth J. Cram	P-7.1	Strongly supports looping the lake. Hopes that the local government will take control of the entire lakeshore, develop it for recreational use only, and keep commercial developers away from the lake edge.	See response to Frequent Comment #18.
JoAnn Cucci	P-8.1	Let's get the job done. Just do it!	Comment noted.

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Name/Agency	Comment Code	Comment Summary	Response
Roger B. Eidt	P-9.1	The [Syracuse] Post made reference to 165,000 lbs of mercury in the lake. Where did this number come from? Was a material balance made on the system? There are several areas where mercury was lost; it seems the largest quantity was lost to the ground, not the lake. They may have used the monthly mercury purchases that were made to maintain cell levels.	<p>The widely cited mass of 165,000 lbs (75,000 kg) of mercury having been discharged to Onondaga Lake is based on analysis in EPA (1973). This mass was derived by applying the mercury discharges reported by Allied Chemical in 1970 (22 lbs/day) to the company's production history. 22 lbs/day was used for the period from 1953 to 1970, when both the Willis Avenue and Bridge Street chlor-alkali facilities were in operation, and 11 lbs/day was used for the period from 1946 to 1952, when only the Willis Avenue facility was in operation.</p> <p>The FS cites a mercury inventory of 536,000 lbs (243,000 kg) currently in the sediments using more recent sediment data from the RI. Estimates of the amount of mercury lost to the ground beneath and adjacent to the facilities were not developed for the Onondaga Lake RI/FS.</p> <p>In regard to mercury being "lost to the ground," data from the RIs for the Honeywell subsites indicate that a substantial quantity of mercury has been identified in the soils at the LCP Bridge Street and Willis Avenue sites.</p>
	P-9.2	How much soil was removed when the peroxide process building was demolished? The "working" solution for the process contained several "nasty" materials.	The ROD for the LCP Bridge Street site called for the top 3 ft of soil at operable unit (OU) 2 (the area of the peroxide process building) to be excavated and placed at OU 1. Some soil from OU 2 was removed for proper off-site disposal due to PCB contamination, but this was a very small volume (less than 10 cy).

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Name/Agency	Comment Code	Comment Summary	Response
R. Eidt, cont.	P-9.2, cont.		The excavation in the OU 2 area was stopped when soil contaminated with the working solution was encountered. At that point only about 1 ft (2,700 cy) of soil had been removed from OU 2 and placed in the cap/slurry wall system at OU 1. The remaining soil in the OU 2 area will be handled as part of the final remedy for OU 2 which has not yet been determined. NYSDEC anticipates that it will propose (to the public) a remedy for OU2 in 2006.
John S. Gibbs, Jr.	P-10.1	Any cleanup of the lake will improve its quality and the potential for aquatic activities, as well as the economic forecast for the community. While there are differences in Honeywell's and NYSDEC's plans, it is time to get the project underway.	See response to Frequent Comment #12.
	P-10.2	Those opposing the project would like a model to hypothesize the project's outcome; is this realistic? Such a process will delay the cleanup. Is not aware of any project similar to what is proposed for the lake and supposes that there is no reference data available.	See response to Frequent Comment #16.
	P-10.3	After 10 years of testing, and with a plan that seems feasible, the cleanup should begin. Encourages NYSDEC to approve the Honeywell plan, with the idea that it may need modification as cleanup progresses.	See response to Frequent Comment #11.

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Name/Agency	Comment Code	Comment Summary	Response
Kevin and Donna Haley	P-11.1	Very concerned about plan to dump 2.65 million cubic yards of contaminated sediments in Camillus. Many children live and play close to the proposed site. Would be living around highly toxic chemicals, like mercury (which is hazardous to humans in even low levels) and PCBs (which cause cancer and many other health problems, and does not readily break down).	It is anticipated that the most highly contaminated materials (e.g., pure phase chemicals separated during the dredging/handling process) will be treated and/or disposed at an off-site permitted facility. The balance of the dredged materials will be disposed in the SCA. The SCA will be designed in accordance with state and federal requirements and will include a liner, leachate collection and treatment, and cap to ensure that the materials would be contained in a protective fashion precluding human exposure in surrounding neighborhoods. During construction and operation of the SCA, extensive and inclusive monitoring will be required and procedures put in place to protect the public from exposure. Post-construction long-term monitoring will be performed to ensure the effectiveness of the containment structures.

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Name/Agency	Comment Code	Comment Summary	Response
K. and D. Haley, cont.	P-11.2	There are many things that could go wrong with the controls proposed for the SCA. Identifies several such problems, including possible failure of the piping.	See response to Technical Comment #11.
	P-11.3	Are there other possible dumping areas or methods? Can the money that would be spent to pipe the waste to Camillus be used to site the SCA in or around the lake?	See response to Frequent Comment #9.
	P-11.4	Will having a waste site nearby affect property values? We are proud of our neighborhood. This is an unnecessary risk.	See response to Frequent Comment #21.
Bill Hanson, Manager, US Business Development, Great Lakes Dredge & Dock Company	P-12.1	Will NYSDEC or Honeywell be completing the dredging work in the lake? Offers to provide comments, as dredging contractors, on potential methods.	After the remedy is selected, NYSDEC will approach the responsible party to design and implement the remedy under a legal agreement.
Dallas Johnson	P-13.1	No point in cleaning up the lake for development unless the development is a continuation of the park.	The lake is not being cleaned up for development but, rather, because it poses an ongoing risk to human health and the environment. Beyond that, however, a cleaned-up lake and lakeshore have significant potential for future use.

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Name/Agency	Comment Code	Comment Summary	Response
Charles G. Jones	P-14.1	Mother Nature is working. The mud boils were sealing the mercury in the bottom of the lake with a layer of clay. This solves the mercury contamination. The lake hasn't been this clean in years, when the zebra mussels came along and have been cleaning the lake at no cost.	See response to Comment P-16.5.
	P-14.2	It is sad that NYSDEC is allowing 20,000 gallons of industrial-strength chlorine to come into a residential neighborhood each month to a regional treatment facility (RTF).	This comment does not appear to be directly applicable to NYSDEC's Proposed Plan, which addresses the Superfund and hazardous waste disposal issues associated with Onondaga Lake. The comment is most appropriately addressed by NYSDEC's Division of Water staff, who can be reached at (315) 426-7400.
P. Garry Klink	P-15.1	The part of SMU 5 that is in front of the yacht club should be a weed-free zone.	NYSDEC will evaluate this request as part of the Onondaga Lake remedial design when actual areas of remedial work in SMU 5 will be determined.
	P-15.2	Can the liner in Wastebed 13 handle the extra material that will be dumped in it as a result of the dredging? Won't the dredged material push the wastebed's existing contents into the watershed and then the lake?	Before any of the wastebeds are used for disposal of dredged material, an extensive geotechnical engineering analysis will be conducted. The engineering analysis will be focused on responding to this issue; i.e., can a particular wastebed handle the weight of dredged material that would be placed on it? The analysis may show that a wastebed can handle the dredged material without modification or that it would be necessary to enhance the stability of the bed before using it as a disposal site. Furthermore, please note that none of the wastebeds have a liner. A liner would be installed as part of the construction of the SCA. See also response to Comment L-1.6.

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Name/Agency	Comment Code	Comment Summary	Response
P.G. Klink, cont.	P-15.3	The underwater and under-silt obstructions (e.g., barges, piers) must be removed before dredging.	A study of any obstructions to dredging/capping and a plan for removing or otherwise managing such obstructions will be developed during the design phase.
J. Andrew Lange, PE	P-16.1	The proposed cleanup plan is extravagant and NYSDEC should start over.	Since the Onondaga Lake site is extremely complex, describing the site and the measures to address the contamination problem required a very detailed and complex discussion. The remedy described in the Proposed Plan resulted from over 10 years of studies of the contamination in Onondaga Lake, the risks posed by the contamination, and evaluation of various alternatives for remediating the lake. While the commentor believes that the proposed plan is "extravagant," the selected remedy is based on the level of remediation necessary to be protective of public health and the environment.
	P-16.2	Dredging is suspect for effectively eliminating mercury. A Hudson River project has found only 50 percent contaminant removal and an anticipated cost overrun of \$500 million.	The removal of PCBs from the Hudson River as called for in EPA's February 2002 record of decision for the Hudson River PCBs site is still in the design phase. Since dredging has not yet begun on the Hudson River project, no contamination has been swept downstream as a result of remedial dredging, and thus no additional costs have been incurred.

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-16.3	<p>Camillus residents are justifiably concerned about having the dredged material from the lake bottom in their township. Given the history of the Metro sewage plant, it is likely that a large portion of the lake bottom material is sewage solids. Sewage sludge should remain in the lake.</p>	<p>The selected remedy calls for the disposal of up to 2,650,000 cy of dredged materials in the existing Honeywell Solvay wastebeds. It is likely that a portion of this material contains solids derived from the sewage treatment plant discharge. It is assumed that the commentor is concerned about odors from this material. NYSDEC is aware that there are concerns about odors and air emissions from the SCA, and there will be plans to institute control measures.</p> <p>It should also be pointed out that any sewage solids from the time that Metro operated as a primary treatment facility have been exposed to the environment for decades. They have undergone additional oxidation and degradation, and will not resemble fresh sewage. Furthermore, the removal/capping of this rich organic material from the lake bottom will likely have a positive impact on the lake beyond that of the hazardous waste issues, since these sediments are likely a source of phosphorus to the lake.</p>

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-16.4	There is little evidence of significant environmental impact by mercury in the lake at the present, except for fish contamination. There is no justification for NYSDEC's expenditure.	<p>The remedy was selected following an extensive study of the lake's contamination and evaluation of alternatives for remediating the lake. Levels of mercury and other contaminants in sediments and fish pose risks to human health and ecological receptors (e.g., invertebrates, fish, birds, and mammals), based on the results of the human health and ecological risk assessments. These risk assessments show that the current contamination in Onondaga Lake has produced adverse ecological effects at all trophic levels examined and people consuming fish from the lake are at risk. The selected remedy was developed to address these risks to humans and ecological receptors.</p> <p>Data collected over the last 30 years indicate that there has been no significant reduction of mercury in fish tissue since the closure of manufacturing processes at the Honeywell facilities, due to ongoing releases from the littoral and profundal zones and upland sources (e.g., tributaries and groundwater). In addition, ionic waste in Onondaga Lake has adversely affected aquatic macrophytes, resulting in the loss of macrophyte habitat that formerly provided valuable feeding and nursery areas for aquatic invertebrates and vertebrates.</p>

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-16.5	<p>The mercury in the lake is currently sequestered (embedded) in the lake sediments. The remedy should allow this sequestration to continue, since dredging would only release mercury. The remedy could be enhanced by installing a permanent cap, which could be rapidly designed utilizing NYSDEC data that are already available. The cost would probably be negligible in contrast.</p>	<p>The FS report evaluated the natural processes in the lake as well as potential technologies that might be used in remedial actions. An important characteristic of the lake is the natural division of the sediments into the littoral and profundal zones. As defined in the RI report, the littoral zone sediments are in less than 30 ft (9 m) of water and are subject to wind-driven waves that resuspend the sediments. It was demonstrated in the RI report that the resuspension of these littoral zone sediments is a major source of mercury, and that the contamination in those sediments is not sequestered from the environment.</p> <p>Unlike the littoral zone sediments, the profundal sediments are protected by the overlying water from resuspension. The pattern of mercury contamination in the profundal sediments shows that the vast majority of the contamination is being buried and secluded from the environment.</p>

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-16.5, cont.		<p>Because of this major distinction between littoral zone and profundal sediments, NYSDEC selected different remedies for each zone. In the littoral zone, where burial of contaminated sediments is not occurring, the primary remedial action proposed is the placement of an engineered isolation cap.</p> <p>In order for the cap to be effective at isolating the sediments containing mercury and organic compounds, some dredging is needed prior to cap placement. The remediation includes targeted dredging in areas with high concentrations of contaminants and high groundwater upwelling velocities in order to increase the effectiveness of the isolation cap, dredging to ensure that the placement of the isolation cap would result in no loss of lake surface area, dredging to optimize habitat and erosion protection, dredging to remove NAPL, and dredging to remove hot spots and reduce concentrations prior to capping.</p> <p>In the profundal zone, the selected remedy calls for allowing the contamination to continue to be buried, with thin-layer capping in selected areas that have elevated concentrations of contaminants, and oxygenation of the hypolimnion to help control methylation of mercury. The cost of placing a thin-layer cap over the entire profundal zone would be greater than the cost for the selected remedy for SMU 8. With regard to impacts from dredging, see also response to Frequent Comment #7.</p>

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-16.6	<p>“Public review” of a huge set of documents is inadequate for public commentary on the NYSDEC plan. A better procedure is needed. An executive summary should be prepared, and a page or two would be released to the newspaper each week. The more significant commentaries would be printed the following week.</p>	<p>While the scope of the Onondaga Lake project is large, and there are many documents available for public review, NYSDEC would be remiss if it did not offer all reports, studies, evaluations, plans, etc. to the public. The Proposed Plan summarizes the many reports that went into its preparation, and is readily available to the public. A fact sheet and a five-page executive summary were released with the Proposed Plan in November 2004 and were made available on NYSDEC’s web site (http://www.dec.state.ny.us/website/der/projects/ondlake/). Fact sheets and/or executive summaries will continue to be issued, as needed, during the next phases of the project.</p> <p>NYSDEC does not judge comments from the public as “more significant” or less so. All public comments are given equal weight and consideration.</p>
J. Andrew Lange, PE	P-17.1	<p>Scooping (dredging) solids from the lake bottom is inefficient. Spillage from the dredging would return a major proportion of each load back to the lake. Mercury contamination could then spread widely and reach the remainder of the lake and the Seneca River.</p>	<p>See response to Frequent Comment #7.</p>
	P-17.2	<p>The impact (of mercury contamination from dredging) would be beyond imagination, as contrasted with the only problem presently reported – minor fish contamination. It is unlikely that mercury found in fish could have come from the multiple layers deposited many years ago.</p>	<p>See responses to Comments P-16.4 and P-16.5.</p>
	P-17.3	<p>The lake bottom layers should remain entombed and not be disturbed.</p>	<p>See response to Comment P-16.5.</p>

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-17.4	Dredging has proven to be a failure on the Hudson River (PCBs removal) project. According to an Albany Times Union article, half of the contaminant was swept downstream when the river bottom was disturbed. The additional work is anticipated to cost more than \$500 million and take more than six years to complete.	See response to Comment P-16.2.
	P-17.5	In a 1/7/05 newspaper letter, Alan Gancy, former director of research for Solvay, stated that dredging is too risky, and proposed an alternative treatment system to eliminate mercury. This might also deal with the minor contamination of fish.	Treatment will not only be needed for mercury but also many organic contaminants such as BTEX, chlorinated benzenes, PAHs, and PCBs. Fish contamination poses unacceptable risks to human health and wildlife and is, therefore, not considered to be minor. See also responses to Comment P-21.2 and Frequent Comment #7.
	P-17.6	For those who have stated than an adequate model for cleanup is lacking, the Hudson River project provides such a model.	While the Hudson River PCBs remediation project is similar in scope and complexity to the Onondaga Lake project, the two systems (river and lake) are not equivalent in terms of modeling. See also response to Frequent Comment #16.
Arnold W. Lathrop	P-18.1	Dredging the lake sounds ridiculous. It would stir up and spread pollutants.	See response to Frequent Comment #7.
	P-18.2	Proposes that the lake be “sumped.” Using a barge with trash pumps, pump pollutants to wastebeds and into “V”-shaped settling ponds with valved drawoffs for removing most of the contaminants.	The suggestion on sumping the sediments of the lake is actually very similar to the hydraulic dredging and sediment consolidation that has been proposed by NYSDEC. Hydraulic dredging uses a suction to remove water and sediment from the lake bottom.
Thomas E. Law	P-19.1	Endow the lake with a “lake keeper” staff that has authority to test progress with respect to ownership responsibilities.	See response to Frequent Comment #19.

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Name/Agency	Comment Code	Comment Summary	Response
T. Law, cont.	P-19.2	Model the lakeshore areas to define candidates for Class B+/A- waters, possibly involving bottom contouring to capture freshwater from tributaries, even possibly with criblike containment for flow throttling (such as levees).	There are various factors that impact the classification associated with a surface water body, and as the conditions in Onondaga Lake change the classification of Onondaga Lake surface water will be appropriately reevaluated.
	P-19.3	Do better georeferencing of all pertinent science and planned engineering for broken-down foci to shorten paper trail and learning curve for lakekeeper staff. Provides predicted numbers of employees and salaries for proposed staff.	See response to Frequent Comment #19.
Richard J. Lightcap	P-20.1	Supports the construction of a trail around the lake, as does much of the general public. Hopes this will be taken into consideration.	See response to Frequent Comment #18.
Robert Marquardt	P-21.1	Dredging could make things worse. Proposes that a 1 percent escape rate would occur during dredging and that this escaped mercury-contaminated sediment will spread over the entire lake.	It is expected that less than 1 percent of the material being dredged will enter the water column. This is because modern environmental dredges are relatively precise machines that can carefully remove targeted sediments without excessive disturbance of the lake bottom. Furthermore, some of the sediments that will be dredged are relatively coarse, sandy materials that will resettle in the immediate dredging vicinity. Therefore, as dredging work proceeds from one location to the next, the sediment that settles quickly could be collected during continuing dredging operations.

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Name/Agency	Comment Code	Comment Summary	Response
R. Marquardt, cont.	P-21.1, cont.		It should also be noted that all dredged areas and some areas that are not to be dredged will be capped by covering any residual contamination with clean material. Within those areas, the cap will isolate any solids that migrate there during dredging operations. Thus, for a number of reasons, the problem of contamination escaping dredging operations is not expected to be as severe as suggested by the comment. It should also be remembered that the areas selected for dredging and capping are not currently isolated from the environment. The RI report indicated that resuspension of contaminated material in the littoral zone is currently one of the largest sources of contamination to the lake. See also response to Frequent Comment #7.
	P-21.2	Proposes the following cleanup plan: 1. Stop all continuing pollution. 2. Clean up the lakefront and make it fit for on-shore recreation. 3. Cover the lake contaminants in place. 4. Experiment with Mr. Gancy's inexpensive idea of "black box" filtering. 5. Let nature assist in cleanup and recovery. If it takes 20 or 50 years, that's okay with most Central New York residents.	Other than the water, or "black box," filtering process, the cleanup described by the commentator is similar to the selected remedy. The other subsites have been cleaned up, are undergoing cleanups, or will be cleaned up. Many of these sites are in the RI/FS process themselves. The implementation of those cleanups will stop the "continuing pollution" and will be coordinated with the implementation of the lake remediation.

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Name/Agency	Comment Code	Comment Summary	Response
R. Marquardt, cont.	P-21.2, cont.		<p>The selected remedy calls for cleaning up the "lakefront perimeter," with dredging and capping in the littoral zone in areas where sediments exceed the cleanup criteria. The littoral zone and parts of the profundal zone will be capped, with dredging done primarily to address physical and chemical aspects of the capping, including targeted dredging in areas with high CPOI concentrations and high groundwater upwelling velocities in order to increase the effectiveness of the isolation cap, dredging to ensure that the placement of the isolation cap would result in no loss of surface area, dredging to optimize habitat and erosion protection, dredging to remove NAPL, and dredging to remove materials in areas of hot spots and reduce concentrations prior to capping.</p> <p>The selected remedy includes monitored natural recovery in the profundal zone, with oxygenation to allow natural processes to aid in the recovery.</p> <p>It should be pointed out that Dr. Gancy did not claim to have a mechanism that could filter out mercury to concentrations of less than 1 ng/L and other contaminants to very low levels or not detected; rather, he proposed that one could be developed. It should also be pointed out that such a filtering mechanism would have to be large enough to filter all of the water in the lake on a continuing basis until such time that the sediments were no longer a source of contamination to the water column.</p>

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Name/Agency	Comment Code	Comment Summary	Response
R. Marquardt, cont.	P-21.3	NYSDEC's dredging plan is expensive and risky. If dredging backfires, the entire \$449 million plan is a disaster. Uncorrectable pollution could be distributed across the lake bed. The payoff from dredging is not worth the cost and risk.	See response to Frequent Comment #7.
Allen Mazur	P-22.1	The \$449 million is too much money to spend for the primary purpose of removing mercury from the lake bottom and fish. There are more important environmental needs for the lake and county.	NYSDEC is responsible for investigating and, as appropriate, remediating hazardous waste sites located throughout New York State. Onondaga Lake, although a hazardous waste site, is also a valuable natural resource that is and will continue to be utilized by the people of New York State. By remediating Onondaga Lake, NYSDEC will be improving this valuable resource. Please note that the remedy addresses a number of contaminants in addition to mercury.
	P-22.2	Proposes a compromise with Honeywell, where the company would accept a mercury cleanup costing around \$250 million and provide another \$150 million for non-mercury improvements. The first priority after mercury cleanup would be to completely encircle the lake with park and recreational trails, then develop Onondaga Creek Walk. Spend less on mercury and more on people's broader use and enjoyment of the lake.	See responses to Frequent Comments #11 and #18.
Allan Mazur	P-23.1	Would like some of the money intended for cleanup to be allocated for improving the shoreline (e.g., a path and parkland around the lake).	See response to Frequent Comment #18.
Ashley McGraw, Ashley McGraw Architects PC	P-24.1	Transmittal of a petition with 30 signatures in support of looping the lake.	See response to Frequent Comment #18.

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Name/Agency	Comment Code	Comment Summary	Response
Les Monostory	P-25.1	Concerned over NYSDEC plan's extensive use of hydraulic dredging. Dredging is dirty and disruptive and tends to resuspend sediments, which will in turn be transported up the food chain to fish. Expect to see high levels of mercury in lake fish for the duration of the dredging project and for the life span of those fish.	See responses to Frequent Comment #7.
	P-25.2	Recommends capping contaminated sediments with layers of clean stone, gravel, and sand, in preference to dredging.	Much of the dredging that is included in the selected remedy is required, primarily, to ensure that the cap is effective in both the short- and long-term. See also response to Comment P-16.5.
	P-25.3	Hydraulic dredging of contaminated sediments should be limited to nearshore areas where slurry materials can be better contained. Minimize or eliminate dredging in deeper waters.	No dredging is planned for the deep waters in the profundal zone of the lake. See also responses to Comment P-16.5 and Frequent Comment #7.
Barb Motto	P-26.1	Happy to see the lake look cleaner than it has in years. Her brother, Dr. Michael Dahlberg, sent information on a process he patented that reverses the effects of acid rain. This system has worked in waterways in Pennsylvania that were polluted by coal. Provides further details on cleanup system.	This information on the cleanup system is appreciated. However, this system is, primarily, designed to treat surface water, and, thus, would not be effective in treating or removing the organic and inorganic contaminants from the sediments of Onondaga Lake.
Michael Murphy	P-27.1	Proposes putting rafts with 30 – 40 ft of old tires suspended into the water at random spots around the lake. The tires will provide zebra mussel habitat, filter the water, and provide cover and feeding grounds for fish. Once or twice a year pull [the tires] through a set of large rollers and let the shells coat the [lake] bottom. Wind-driven or solar-powered turbines would be on top of the rafts and drive a pump that would deliver aerated water to the lake. These ideas may be far-fetched but are cheap. You have engineers to solve the problems.	The commentor suggests two interesting approaches to address contamination in the water column: bioremediation using zebra mussels as a filtering medium and the addition of oxygen to the deep waters of the lake using wind or solar power. The addition of oxygen to the lower waters of the lake (hypolimnion) to reduce dissolved concentrations of mercury and eliminate methylation of mercury in the water column has been selected as part of the remedy.

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Name/Agency	Comment Code	Comment Summary	Response
M. Murphy, cont.	P-27.1, cont.		<p>The exact technology to be used will be determined in the design phase, and the possibility of using a renewable energy source can be considered. The other suggestion (which involves filtering of lake water), unfortunately does not address the major focus of the remediation process, which is to control the sources of mercury and other contaminants from the sediments to the lake and its biota.</p> <p>A large percentage of the lake sediment is actually toxic to the animals that live there, and these sediments act as a continuing source of contamination to the water column. The removal, capping, and natural burial of these sediments are needed regardless of other possible remedial activities and, along with the oxygenation of the hypolimnion, will result in the reduction in the concentrations of contaminants envisioned by the author.</p>
	P-27.2	A creek flows out of Oneida Lake near the headwaters of Ley Creek. If the land between the two could be purchased or right-of-way secured, a channel could be cut between them. This would increase clean-water flow in both the lake and the creek and wouldn't cost much. These waters all used to be connected by wetlands. This may also help to heal the rift between the Onondaga and Oneida Indians.	The commentator suggests adding additional inflow of clean water from Oneida Lake to Onondaga Lake to dilute the concentrations in the water column. This suggested alternative will not address the contamination in the primary medium of concern (i.e., lake sediments), and its associated toxicity.
Susan and John Murray	P-28.1	Understand importance of cleanup, but are concerned about dredged sediment disposal area. Recently built a home in the area because of its clean, country-like feel. Concerned about effects (including odor) of having contaminated sediments near their home and children.	See responses to Frequent Comments #9 and #10.

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Name/Agency	Comment Code	Comment Summary	Response
S. and J. Murray, cont.	P-28.2	Concerned about decreasing land values.	See response to Frequent Comment #21.
	P-28.3	Support the concept of cleaning the lake, but if a cleanup plan causes potential harm to people and the community, it is better to leave the pollution at the lake bottom. Asks NYSDEC to consider other options.	See response to Frequent Comment #9.
Temple W. and Mary A. Myers	P-29.1	Heartened to see substantial discussions and proposals taking place for improvement of the lake. Prefer the word "improvement" to "cleanup."	Comment noted.
	P-29.2	Clearly define the desired outcome and time frame. Be sure the goals and alternatives are clearly stated.	See response to Frequent Comment #20.
	P-29.3	If Honeywell walks away saying it has satisfied its part of the agreement, and yet the government and the community are dissatisfied with the so-called "cleanup," what is the next step? Who pays for the next stage? How long must we and our children's children wait?	See response to Frequent Comment #13.
	P-29.4	What are "acceptable levels of pollution" after the so-called "cleanup"?	The remedial action objectives (RAOs) and preliminary remediation goals (PRGs) specified in the ROD provide the goals of the remediation for various site media, including sediment, water, and fish. For additional information regarding these goals, please see the response to NRRB's recommendation #11, contained in Attachment 1 of this RS.

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Name/Agency	Comment Code	Comment Summary	Response
T. and M. Myers, cont.	P-29.5	When the waters are finally "improved" enough to support the public fishing, eating fish, wading and swimming, how does the community ensure the waters and shorelines will remain forever accessible to the public? It would be a travesty to see billionaires and politicians promoting the construction of "huge waterfront destinations for the benefit of the community."	See response to Frequent Comment #18.
	P-29.6	Are the waters reasonably protected from future pollution? Is there a master plan to protect the lake and control future development of surrounding properties, shorelines, and drainage systems?	See response to Frequent Comment #20.
	P-29.7	Will my family be able to fish, eat the fish, wade and swim in Onondaga Lake at the end of the Honeywell so-called "cleanup"? If not, then we have wasted a lot of time and money.	It is expected that after the remediation of the lake and after the improvements at the Metro plant are complete, Onondaga Lake fish consumption advisories will be less restrictive and swimming will be more likely. See also response to Frequent Comment #20.
	P-29.8	There are a lot of unanswered questions. If I were an astronaut and this was the first moon shot, I'd be extremely upset.	The questions from the public have been answered in this RS. Any additional questions posed by the public will be addressed as they come up.
	P-29.9	Five generations of my family have lived and played on the shores of the lake; we'd like children and grandchildren to have the same opportunity. Thank you for bringing this most serious undertaking to the public forum; and thank you for listening to our concerns.	Comment noted.

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Name/Agency	Comment Code	Comment Summary	Response
Michael P. Nowak	P-30.1	Has not seen any plans for remediation of Lakeview Point, which was a prime amusement area before Solvay Process began dumping soda ash at the site (encloses a picture of neglected Lakeview Point). Hopes that point is also considered for cleanup and development. If untreated, it may compromise lake cleanup plans.	Lakeview Point is part of the Wastebeds 1 to 8 site, which is currently being investigated. Plans for remediation of this site have not yet been developed.
Daniel L. Orzell	P-31.1	Onondaga Lake should never have been allowed to get in such a bad condition. I grew up on its shores and am sick over what has happened to it.	Comment noted.
	P-31.2	It should be restored to its original condition. No shortcuts.	See response to Frequent Comment #14.
Rusi Poncha	P-32.1	Dredging and burying the sediment in a wastebed will create more problems, in addition to the odor and the possibility of toxic matter leaching out.	See responses to Frequent Comments #7 and #10.
	P-32.2	A better method would be to immobilize the pollutants by mixing them with cement and disposing the cement blocks in a landfill or the ocean. Carefully consider all schemes before proceeding with cleanup.	The concept of blending contaminated dredged material with cement or cementitious additives has been considered at numerous contaminated sediment sites. In fact, this approach may be used to a limited degree as part of the Onondaga Lake remedial work. Some of the most highly contaminated material would be disposed of off-site. This more contaminated fraction would then either be dewatered or, alternatively, stabilized using cement additives and hauled off to treatment/disposal facilities outside the region. The major difference between the suggestion made in this comment and the approach that could be taken at the project site is that the material being disposed off-site would not be turned into "cement block" but rather would be "stabilized" with cement-like additives and then disposed of in a secure landfill.

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Name/Agency	Comment Code	Comment Summary	Response
Garrie Procopio	P-33.1	<p>Supports a cleanup of the lake but doubtful that it can be accomplished. Outraged that NYSDEC is considering disposing of the contaminated sediment in his back yard (i.e., in the Belle Isle Road Construction Landfill) (see P-34.1 in this comment index). Does not understand why NYSDEC's cleanup remedy repeats the mistake that contaminated the lake in the first place, by showing disregard for the way a contaminated environment affects the community. Suggests that NYSDEC visit the neighborhoods and businesses that have the landfill in their backyards to see where NYSDEC is proposing to bring contaminants. Wants NYSDEC to know that there are residences and schools in the area.</p>	<p>As indicated in a follow-up e-mail from the commentor, the FS report evaluated the potential disposal of dredged materials at Wastedbed 13 and not the Belle Isle Road Construction Landfill. NYSDEC and EPA do not have any plans to evaluate this landfill as a potential site for the SCA.</p> <p>Furthermore, it is not known whether Wastedbed 13 would be an appropriate location for constructing the SCA. The FS assumed (for costing purposes) that the SCA would be constructed on Wastedbed 13 based on its capacity, as well as other factors. However, the actual Solvay wastedbed location(s) on which the SCA(s) would be constructed would be determined during the remedial design based on various factors including geotechnical testing and screening that would be performed during the remedial design.</p> <p>Once a site is selected, the SCA will be designed in accordance with state and federal requirements and guidance, and would include, at a minimum, the installation of an impermeable liner, leachate collection and treatment, and a cap. The operation of the SCA would employ the appropriate controls to address concerns with odors, noise, etc. Thus, it is not anticipated that there would be any significant impacts to the environment or the local community as a result of the SCA. See also response to Frequent Comment #9.</p>

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Name/Agency	Comment Code	Comment Summary	Response
G. Procopio, cont.	P-33.2	What will NYSDEC do about issues such as health hazards to children from the SCA, decrease in home value, contamination to air and water, and odor problems?	The SCA will be designed in accordance with state and federal requirements and will include a liner, leachate collection and treatment, and cap to ensure that the materials would be contained in a protective fashion precluding human exposure in surrounding neighborhoods. During construction and operation of the SCA, extensive and inclusive monitoring will be required and procedures put in place to protect the public from exposure. Post-construction long-term monitoring will be performed to ensure the effectiveness of the containment structures.
	P-33.3	If the project cannot be stopped via community or legal action, I will be forced to move to protect my children. Will NYSDEC reimburse me for the loss in property value?	The ROD is the process for selecting a remedy under CERCLA. CERCLA is concerned exclusively with encouraging fast, efficient cleanup of hazardous substances. CERCLA does not provide any basis for claims for personal injuries or property damage. Therefore, there is no basis for a CERCLA claim for legal damages due to the diminished value of a home owner's property. Nonetheless, it should be noted that the ROD indicates that the SCA will be used only temporarily, during lake remediation, after which it would be closed. Closure of the SCA would include capping, seeding as a green area, and possible reuse, potentially for park or other recreational purposes. Upon closure of the SCA, and, more broadly, as other aspects of the lake remedy are completed, it is possible that property values in Camillus and other municipalities near Onondaga Lake may increase as a result of overall lake remediation. See also response to Frequent Comment #21.

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Name/Agency	Comment Code	Comment Summary	Response
G. Procopio, cont.	P-33.4	Formally requests that more open forums be held before a decision is made.	See response to Frequent Comment #17.
	P-33.5	The community has not been given proper notice or enough time to oppose the proposal. Would like to be notified of a deadline for submitting a petition.	<p>The comment periods were a total of four months in duration, which is considerably longer than the required 30-day period. In addition to two public meetings and three availability sessions, NYSDEC has met with citizens and officials of the Town of Camillus as well as several local organizations. There will be additional meetings during the design phase.</p> <p>During the remedial design, NYSDEC and EPA will evaluate various locations for siting the SCA. This will include wastebeds included in the following groups: Wastebeds 1 through 8, Wastebeds 9 through 11, as well as Wastebeds 12 through 15. The evaluation will consider various factors including potential impacts on the local community, geotechnical stability of the wastebeds, SCA construction requirements, wastebed size, the means for transporting dredged materials to the SCA, costs, etc.</p> <p>As part of an extensive public outreach program, local communities would be provided opportunities to have input on SCA-related issues both during the design/construction of the SCA, as well as during the operation of the SCA.</p>
Garrie Procopio	P-34.1	Made an error in earlier comment (P-33.1 in this comment index) in referring to the SCA as being sited at the Belle Isle Road Construction Landfill, not at Wastebed 13.	Comment noted.
Garrie Procopio	P-35.1	Similar comment to that made in P-34.1. Notes that the remainder of his original comment (P-33 in this comment index) is unaffected by this error.	Comment noted.

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Name/Agency	Comment Code	Comment Summary	Response
Tom Rhoads	P-36.1	It is excellent that a lake remediation plan is close to happening. I suggest a plan of action by April 1, 2005. Act now; no more studies.	See response to Frequent Comment #12.
	P-36.2	More information is needed on the movement and disposal of dredge spoils.	This topic will be addressed in the design phase.
	P-36.3	More information is needed on liners and the design of the upland dredge spoil disposal sites.	This topic will be addressed in the design phase.
	P-36.4	More information is needed on capping and closure of the upland disposal sites.	This topic will be addressed in the design phase for the lake, as well as when proposed remedies for the upland sites have been developed and made available for public review and comment.
	P-36.5	In the three-year design phase, do another public hearing on the transportation and upland disposal fill areas. Make these elements the best for our environment.	See response to Frequent Comment #17.
Tom Rhoads	P-37.1	Thank you for providing the public with the opportunity to participate in the plan. NYSDEC has done a very good job in discussing the Proposed Plan.	Comment noted.
	P-37.2	Present plan documents do not provide adequate detail for work related to: <ul style="list-style-type: none"> • Conveyance of dredged sediments • Design of SCAs • Treatment of leachate from SCAs • Closure and post-closure monitoring of SCAs • End use of the wastebeds and the SCA, including recommended recreational opportunities 	The level of detail associated with the design for the items noted is typically not included in an FS report, the document upon which the Proposed Plan was primarily based. These aspects of the remedy will be evaluated in much greater detail during the design phase. Once available, the public will be provided with additional detail on these issues, as well as others associated with the design of the lake remedy.
	P-37.3	Would like the design of SCAs to be topic of public hearing. Points out potential flaws and engineering elements to be considered in landfill/system design.	See response to Frequent Comment #17.

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Name/Agency	Comment Code	Comment Summary	Response
T. Rhoads, cont.	P-37.4	Concerned about conveyance of dredge spoils, specifically with respect to odor, fugitive emissions, and traffic. Trucking dredge spoils poses several potential hazards to the community. Conveyance plan should be developed and presented to the public at a hearing.	<p>At this time, it is expected that significant quantities of dredged spoils would not be trucked to the wastebeds. It is likely that a large portion of the dredging will be hydraulic dredging, which conveys the dredged sediments in a slurry form that can be pumped a considerable distance.</p> <p>Thus, it is likely that the principal means of dredged material conveyance for this project will be pumping sediments into the SCA via pipelines. The more contaminated materials will be segregated from the bulk of the dredged material and hauled to an off-site disposal facility. In the case of these materials, it will likely not be necessary to first take them to the SCA; rather, they may be stabilized at the lakeshore and moved directly to the interstate system that runs adjacent to the lake. See also response to Frequent Comment #17.</p>
	P-37.5	Concerned about leachate treatment considerations. Requests a public hearing (separate from that to announce final design). Eventual discharge from treatment facility will likely be to the lake's watershed.	Comment noted. Strict discharge limitations will be imposed on operations at the SCA. See also response to Frequent Comment #17.
	P-37.6	Improvement of habitat must be an integral part of the design for the closure of the SCA and wastebeds. Makes multiple suggestions for habitat types. Public recreation should also be part of design.	The details of the composition of the cover that will be used to close the SCA will be determined as part of the remedial design.
	P-37.7	Taxes lost to future generations by use of wastebeds to hold waste should require significant, ongoing investment in public uses to repay the community.	The SCA will be designed and constructed such that the area containing the SCA can be reused post-SCA closure.

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Name/Agency	Comment Code	Comment Summary	Response
Sandra Russell	P-38.1	Supports creating a multi-purpose recreational trail around the lake. Would be glad to volunteer to help establish such a trail.	See response to Frequent Comment #18.
Jesse Ryder	P-39.1	Proposed plan is both a hard-won victory and a failure. The lake needs a final solution, and capping is unacceptable. If the lake is too polluted then let it go and focus on problems that can be fixed. No capping.	See response to Frequent Comment #6.
William Sanford	P-40.1	Transmittal of a petition with signatures of 12 Liverpool citizens asking NYSDEC and Honeywell to work together to find a solution/begin cleanup as soon as possible. The Honeywell plan is solid in design and has the potential to increase quality of life through economic development and recreational projects.	NYSDEC is working with Honeywell in a cooperative manner in order to further the cleanup of Onondaga Lake. However, NYSDEC determined that the Honeywell plan is not sufficiently protective of humans and the environment (see response to Frequent Comment #11) and the selected remedy will meet the goals as well as allow increased recreational uses of the lake and its vicinity relative to current conditions. See also response to Frequent Comment #12.
Donald L. Schoenwald	P-41.1	Submitted a copy of a letter to the editor [of the Syracuse Post-Standard?] from David C. Ashley of Syracuse that calls for looping the lake with a recreation trail. Letter provides analysis of remedial alternatives proposed and assessment of feasibility of constructing trail. Mr. Schoenwald finds the letter persuasive and hopes the suggestions will be included in the plan.	See response to Frequent Comment #18.

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Name/Agency	Comment Code	Comment Summary	Response
Bill Spizuoco	P-42.1	Incorporate a permeable barrier material within the capping materials. This would allow for treatment of some chlorinated and petroleum compounds. Provides further details of such a barrier.	Reactive materials were evaluated in the FS report as one way to improve the overall performance of cap material. Unlike standard sand caps, reactive caps are often intended to have a finite design life. Depending on the quantity of chemical sources underlying the cap, as the reactive material is used up, cap material may need to be periodically removed and replaced with new reactive materials. Where fluxes of large quantities of chemicals are involved, this may add a considerable ongoing periodic maintenance cost to reactive caps. The performance and effectiveness of standard capping techniques were extensively analyzed in the FS report, and it was found that such techniques will be effective in all SMUs.
James H. Tyler, PE	P-43.1	Supports Honeywell's plan. Time to do the work and prove that all parties are serious about completing the task in a timely manner.	Honeywell's plan was determined by NYSDEC to not be sufficiently protective of human health and the environment. The selected remedy will be protective of public health and the environment, will meet the remedial goals, and will allow increased recreational uses of the lake and its vicinity. NYSDEC is dedicated to seeing that the lake is restored to become an important resource for the Syracuse area. See also response to Frequent Comment #11.
Richard D. Valenti, Jr.	P-44.1	Wonders why the proposal is not being offered as a PDF file on NYSDEC's web site, rather than forcing people to travel to sites where the volumes will likely not be available.	The Proposed Plan can be found (in PDF format) on NYSDEC's web site at www.dec.state.ny.us/website/der/projects/ondlake . The RI, risk assessments, and FS documents are available at six document repositories (including NYSDEC's Syracuse office) in the Syracuse area, as well as at NYSDEC headquarters in Albany.

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Name/Agency	Comment Code	Comment Summary	Response
Deborah Webster	P-45.1	Would like Honeywell to ensure they will not further contaminate the lake by dredging, and that the current marine life will not be disturbed.	See response to Frequent Comment #7.
	P-45.2	Would like the entire lake to be cleaned up; later in time it will be even more expensive to do so.	See response to Frequent Comment #6.
Dennis G. Weller, PE	P-46.1	Time for NYSDEC and Honeywell to reach agreement and move ahead with cleanup. In addition to the other benefits of a clean lake, imagine the boost to the local economy.	Comment noted. See also response to Frequent Comment #12.
Pam Woollis	P-47.1	Has always been concerned about groundwater safety but testing is prohibitively expensive. Do you have a groundwater map of our area so we can determine if there is cause for concern?	According to groundwater maps in the Blasland & Bouck 1989 report "Hydrogeologic Assessment of the Allied Wastebeds in the Syracuse Area," the area of the address noted by the commentor lies in an upgradient position relative to the nearest wastebeds (Wastebeds 12 to 15, but primarily 15). Based on the available data, there should be no impact to groundwater from the wastebeds at this property. However, this interpretation is strictly for shallow groundwater, as there are no data in the report for deep groundwater in the vicinity of this property. It is anticipated that, during the design phase, monitoring wells will be installed at the perimeter of the SCA (regardless of which wastebed it is constructed on) and in off-site areas to evaluate groundwater movement. Furthermore, the design of the SCA will employ proper engineering controls (e.g., liner, leachate collection) to ensure that contaminants associated with the dredge spoils are contained at the site.
June Anna-Fey	P-48.1	The corporate polluters must be forced to do it properly or a bad example will be set for future cleanups.	Comment noted. NYSDEC and EPA have selected a remedy that will be protective. They will oversee the design and implementation of that remedy.

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Name/Agency	Comment Code	Comment Summary	Response
Alex Balboa	P-49.1	Media reports continue to underscore the seemingly lack of progress in thoroughly cleaning up this valuable freshwater natural resource. Please coordinate, collaborate, and cooperate on federal, state, and local jurisdictional levels in addressing concerns potentially impacting adversely public health, lands, trust, confidence, and quality of life issues.	NYSDEC is working cooperatively with Honeywell in order to further the clean up of Onondaga Lake. NYSDEC is committed to remediating Onondaga Lake in an expeditious manner that is protective of both public health and the environment, such that this resource can be better utilized by the people of New York State. A lot of progress has been made over the past several years on Onondaga Lake as well as the various upland sites. See also response to Frequent Comment #5.
Sallie Cappel	P-50.1	Some professors, possibly at SUC Oswego, developed a process using microbes that actually digested pollution. Is this a valid solution for Onondaga Lake? It could be a cheaper and more sound way of doing things.	NYSDEC has reviewed the work conducted by the researchers mentioned in the comment. While work by the team at SUNY Oswego has produced techniques which can effectively destroy several of the organic compounds (such as PCBs and BTEX) found in Onondaga Lake, these methods would not remove all of the contaminants (e.g., mercury) from the sediments. Therefore, these methods would not be adequate as the primary remedial technology for the lake.
Joan Cope Savage	P-51.1	I have not detected a thoughtful evaluation of the innovative technologies that remove mercury from sediments or those technologies that dechlorinate hazardous synthetic chemicals. Provides references for some technologies.	NYSDEC has reviewed the information provided in the comment. Unfortunately, none of the technologies presented in the documents or web sites appear capable of treating the complex mixture of contaminants found in Onondaga Lake, especially those in sediments and wastes of the ILWD. See also response to Frequent Comment #14.

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Name/Agency	Comment Code	Comment Summary	Response
Susan P. Hammond, MD	P-52.1	Honeywell activities over almost 100 years are the major reason Onondaga Lake is a Superfund site. Honeywell was/is responsible in large part for destroying a thriving economic and recreational asset of the community. There was also a considerable amount of time over which this damage was caused.	Comment noted.
	P-52.2	Mercury is not sequestered but continually resuspended. Thus, unless the sediments are physically removed (dredged) or effectively isolated from the water column, the mercury problem will never be eliminated.	See responses to Comment P-16.5 and Technical Comment #10.
	P-52.3	It appears that underwater isolation by capping, even were it to be "effective," is less satisfactory than dredging because only dredged sediments would be available for treatment.	The selected remedy was determined by NYSDEC and EPA to be consistent with the National Oil and Hazardous Substances Pollution Contingency Plan's (NCP's) preference for removal and treatment. As discussed in the description of the remedy, up to approximately 2.65 million cy of the most contaminated material in the lake will be removed by dredging. This removal includes NAPLs in SMU 2 that are considered to be principal threat wastes. This also includes approximately 1.5 million cy of wastes and contaminated sediments that will be removed from the ILWD, primarily to reduce the concentrations of the contaminants in order to ensure the effectiveness of the cap.

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Name/Agency	Comment Code	Comment Summary	Response
S. Hammond, MD, cont.	P-52.3, cont.		The available data suggest that this would result in the removal of a significant portion of the contaminant mass present in the ILWD. The supernatant water resulting from the dredging will be treated. The remaining, less contaminated sediments will be capped and isolated from the environment. The isolation (in the littoral zone) and burial (in the profundal zone) of these contaminants effectively removes them from the Onondaga Lake ecosystem.
	P-52.4	The PEC for mercury (2.2 mg/kg) is rather close to the ER-M (2.8 mg/kg) which represents a level above which “toxic effects are likely to occur.” Where the proposal relies on capping to achieve a PEC, the cap wouldn’t have to be very “leaky” at all to produce levels equaling or exceeding the ER-M.	The thickness of the isolation layer in the cap for each SMU was chosen to ensure that there would be no predicted exceedances at steady state of the PECs for any of the CPOIs that have been shown to exhibit acute toxicity on a lakewide basis or NYSDEC sediment screening criteria for benzene, toluene, and phenol. The model predicts that it would take well over 1,000 years for mercury to migrate through the isolation layer of the cap in SMU 1 to reach a steady-state concentration which is predicted to be less than the PEC and ER-M for mercury. See response to Technical Comment #2 for information on isolation capping and the model used to evaluate cap effectiveness.
	P-52.5	Since use of ER-Ls is more likely to protect against chronic toxicity than the PECs, how can NYSDEC assume that capping, even if it works at keeping levels below the PECs, will have any significant effect in reducing chronic toxicity?	For discussion on the selection of the appropriate cleanup values for defining areas for remediation and the relationship to chronic effects, see response to Technical Comment #7.

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Name/Agency	Comment Code	Comment Summary	Response
S. Hammond, MD, cont.	P-52.6	<p>Alternatives 4 through 7 in the Proposed Plan call for full removal of NAPLs to a depth of 30 ft in SMU 2, which is considerably deeper than what is typically required for preventing loss of lake surface area or reduction of erosive forces needed for capping. Why trust the cap for contaminants other than NAPL? Why dredge NAPLs out and leave considerable amounts of other contaminants behind?</p>	<p>The effectiveness of an isolation cap for each of the littoral SMUs was assessed during the FS report using a computer model originally developed by EPA and United States Army Corps of Engineers (USACE) (see response to Technical Comment #2 and Appendix H of the FS report). This model incorporates contaminant transport via advection and diffusion, which both depend on partitioning of the contaminants between the solid phase (sediment) and the aqueous phase (porewater), as well as specific physicochemical properties of the modeled contaminants.</p> <p>The selected remedy calls for removal of NAPL deposits to a depth of 9 m below the sediment-water interface in SMU 2 and removal of highly contaminated sediments/waste to depths of 2 to 3 m in the ILWD, which is primarily in SMU 1. The dredging will be performed prior to capping in areas with high CPOI concentrations to improve cap effectiveness, and to remove materials in areas of hot spots and reduce concentrations prior to capping.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Hammond, MD, cont.	P-52.6, cont.		These removals are consistent with EPA guidance on principal threat wastes, which are source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or that would present a significant risk to human health or the environment should exposure occur.
	P-52.7	The Proposed Plan indicates that slope stability is an important consideration for cap stability in the region of the ILWD. Since the lake bed sediments are soft and steep in other areas of the lake outside of the ILWD, slope stability should be a concern in other areas as well.	In general, dredging is expected to improve stability of the sediments in Onondaga Lake, since it provides an opportunity to remove loose or unstable material and to reduce the steepness of the slope. NYSDEC has expressed a concern about the stability of the slopes explicitly for the ILWD since there is evidence of previous slope failures in this area in the geophysical survey report (PTI, 1992). However, an assessment of geotechnical stability will be made in all areas slated for remediation during the design.
	P-52.8	For capping to be effective, groundwater flow patterns and velocities would have to remain within the limits of the capping models when all dredging and capping in the lake and remediation in the surrounding areas are completed. Can NYSDEC ensure this will be so?	The on-shore barrier wall and groundwater collection system will need to be constructed and operating prior to cleanup activities commencing in the southern portion of the lake. Furthermore, the effectiveness of the capping proposed for SMUs 1 and 2 would rely upon the proper functioning of these hydraulic control systems. Likewise, the effectiveness of capping in SMU 7 would rely upon the proper functioning of the hydraulic control system which is proposed to be installed along the lakeshore as part of the remedy for this portion of the lake.

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Name/Agency	Comment Code	Comment Summary	Response
S. Hammond, MD, cont.	P-52.8, cont.		<p>The use of sheet piling barrier walls and groundwater collection and treatment are proven technologies and it is expected that this system will perform as required for the success of the selected remedy. The monitoring program will likely include the measurements of indicator parameters (e.g., advective flux) which could be employed to provide evidence that the system is responding to remedial activities (including the on-shore barrier wall and collection system) as expected.</p>
	P-52.9	<p>The benthic community may thrive to the extent that bioturbation activities may exceed the cap model parameters, decreasing or even eliminating the effectiveness of the isolation layer.</p>	<p>The effects of bioturbation were considered in the sediment cap design in the FS report. During the preliminary design process, the required thickness for bioturbation protection was included in the total cap thickness in addition to the thickness required for chemical isolation.</p> <p>The thickness of the bioturbation layer in freshwater environments was estimated based on the literature, as the current benthic invertebrate community of Onondaga Lake is considered impaired. The majority of invertebrate life is found in the top 5 to 10 cm (2 to 4 in) of sediments, but bioturbation depth may be greater than 10 cm for larger (but fewer) bioturbators, with a pattern of decreasing activity and abundance with depth (Clarke et al., 2001; Cunningham et al., 1999).</p> <p>Based on a review of bioturbation depths, 15 cm (6 in) was used by Honeywell for the bioturbation design depth for the preliminary cap design. The clean habitat/bioturbation layer will generally be placed over an armor layer, which would serve as a barrier to deep bioturbation so that the isolation layer of the cap is not affected.</p>

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Name/Agency	Comment Code	Comment Summary	Response
S. Hammond, MD, cont.	P-52.10	NYSDEC's recommended alternative relies on dredging rather than capping in dealing with NAPLs, thus sending a clear signal that NYSDEC doesn't really consider capping to be "treatment." Alternative 7, which is based on the ER-Ls and includes full removal instead of isolation capping, is the best alternative of the seven proposed alternatives.	See responses to Frequent Comment #6 and Technical Comment #7.
	P-52.11	SCAs are more permanent and reliable for dealing with contaminated sediments than underwater capping of these same sediments. For Alternatives 6 and 7, Honeywell might have to secure additional areas for dredgings or cart them away.	Comment noted. Wastebeds 1 through 15 might not have sufficient capacity for the proper containment of all of the removal volumes (12 to 20 million cy) under Alternatives 6 and 7.
	P-52.12	Alternative 7 is clearly preferable to Alternative 4, yet the Proposed Plan declares that NYSDEC prefers Alternative 4. I strongly disapprove of any remedy that does not clean the gunk out of the lake, no matter what it costs.	See responses to Frequent Comment #6 and Technical Comment # 7.
J. Andrew Lange, PE	P-53.1	Attached a letter partially printed in the Syracuse Post-Standard which opposes hydraulic dredging to remove hazardous materials from the lake.	Comment noted. See also response to Frequent Comment #7.
	P-53.2	The sediment cap provided by nature has been effective since there is no evidence that the buried mercury has any deleterious effect upon the lake water. However, there is minor contamination of fish.	See responses to Comments P-16.4 and P-16.5.

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-53.3	Dredging would disturb the existing cap, resulting in a release of significant quantities of mercury now buried.	The contamination in the littoral zone sediments (including the ILWD, which contains some of the highest concentrations of contaminants in the lake) is not sequestered from the environment. As documented extensively in the RI report, these littoral areas act as continuing sources of contamination to the lake. These are the areas which are to be remediated by a combination of dredging and isolation capping. The sediment in the profundal zone, where burial is taking place in most areas, will not be dredged as part of the selected remedy. See also response to Technical Comment #10.
	P-53.4	According to an Albany Times Union article on the Hudson River dredging project, half of the contaminant sediment was swept downstream when the river bottom was disturbed. The additional work is anticipated to cost more than \$500 million and take more than six years to complete.	The removal of PCBs from the Hudson River is still in the design phase. Since dredging has not begun on the Hudson River project, no contamination has been swept downstream as a result of remedial dredging, and thus no additional costs have been incurred.
	P-53.5	The NYSDEC's plan addresses poor clarity of lake water due to green algae particles. Algal growths are enhanced by the Metro plant discharge. Plant modifications were found to be too costly for action.	The selected remedy will address contamination by hazardous substances under CERCLA. The plan does not address the eutrophic condition (the excessive algae cited in the comment) of the lake. Eutrophication issues are being addressed under the programs administered by the NYSDEC Division of Water. These efforts include the major upgrades to the Metro plant, among others.
	P-53.6	Elimination of hydraulic dredging would substantially minimize the proposed cost and the cost reduction can be used to fund the Metro plant modifications.	The major remedial action for the littoral zone is capping of contaminated sediments and/or wastes. However, for the capping to be implemented and effective in the short and long term, the underlying material must be dredged to varying degrees. See also responses to Comment P-16.5 and Frequent Comments #1 and #7.

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-53.7	The team from the University of Maryland's Biological Laboratory, having experience with the Hudson River project, would be ideal to study this proposal prior to selection of the final plan.	<p>The use of outside peer review of major studies and documents is an acknowledged practice in EPA's Superfund program. The Proposed Plan for Onondaga Lake underwent such a peer review in the form of the NRRB and EPA's Office of Superfund Remediation and Technology Innovation (OSRTI) Sediment Team.</p> <p>The NRRB is comprised of senior EPA managers or experts on remedy selection, cost effectiveness, and program implementation from both the EPA regions and EPA headquarters. Each region has one management-level representative on the NRRB. Headquarters representatives include national experts from the Federal Facilities Restoration and Reuse Office, the Technology Innovation Office, the Office of General Counsel, the Office of Research and Development's (ORD's) National Risk Management Research Laboratory, and the Office of Emergency and Remedial Response.</p> <p>The OSRTI Sediment Team offers consultation to assist site managers in making scientifically sound and nationally consistent risk management decisions at contaminated sediment sites. The OSRTI Sediment Team consists of national experts from OSRTI and ORD. Each region has one representative on the Sediment Team. The OSRTI Sediment Team made recommendations to the NRRB regarding the Onondaga Lake Proposed Plan.</p>

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Name/Agency	Comment Code	Comment Summary	Response
J.A. Lange, PE, cont.	P-53.7, cont.		<p>The NRRB considered the nature of the site, the risks posed by the site, regional and State/Tribal opinions on proposed actions, the quality and reasonableness of the cost estimates, and any other relevant factors or program guidance in making “advisory recommendations” to the EPA Regional Administrator regarding the Proposed Plan. The overall goal of the reviews is to ensure sound decision making consistent with current law, regulations, and guidance.</p> <p>The NRRB’s recommendations to EPA Region 2 and NYSDEC on the Proposed Plan and the responses to those recommendations from EPA Region 2 and NYSDEC are included in Attachment 1 of this RS.</p>
Andy Mager	P-54.1	The plan for cleaning the bottom of the lake seems completely inefficient. Mercury will leach through the cap and will continue to contaminate the lake.	See responses to Frequent Comment #6 and Technical Comment #2.
Alan Markert	P-55.1	I fail to understand the justification for the costs involved in cleaning up the lake. The money should be spent on maintaining or improving other lakes and rivers in the Central NY area. Or better yet, focus on clean air initiatives that would help decrease the alarming mercury levels, particularly in the pristine Adirondacks.	Onondaga Lake was placed on the EPA National Priorities List (NPL) in December 1994. This NPL listing means that the lake is among the nation’s highest priorities for remedial evaluation and response under the federal Superfund law for sites where there have been a release of hazardous substances, pollutants, or contaminants. Based upon the results of the RI report and the human health and ecological risk assessments, NYSDEC and EPA have determined that active remediation of the lake is necessary to protect public health or welfare and the environment from actual and threatened releases of hazardous substances into the environment.

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Name/Agency	Comment Code	Comment Summary	Response
Alice C. Melvin	P-56.1	Get on with the project as soon as possible. We do not want any more delays.	See response to Frequent Comment #12.
Oral Comments (NOTE: These oral comments were given at the January 12, 2005 public meeting. They have been summarized from the meeting's transcript, and are presented in the order they were received.)			
Nick Pirro, Onondaga County Executive	O-1.1	NYSDEC's plan has no schedule, and Honeywell's plan doesn't propose substantial work until 2011. This is too long to wait. An implementation schedule, with start and end dates, needs to be part of the plan and begin much sooner than 2011.	<p>The remedial construction (dredging and capping) components of the selected remedy are estimated to take approximately four years. This does not include the time it would take to design the remedy, which would take approximately three years. The timing of remedial activities in Onondaga Lake would need to be coordinated with the remedial work which would be performed as part of the interim and final remedies at the upland sites.</p> <p>However, as stated in the comment, the specific start or completion dates are not being provided. Doing so would be extremely difficult at this time. For example, one of the steps in moving forward will be to negotiate an agreement with the responsible party for the design and construction of the remedy. Furthermore, NYSDEC and the responsible party will need to work together to finalize a schedule by identifying all of the tasks that need to be completed as part of the remedial design and remedial construction activities related to the lake remedy, as well as those upland activities which need to occur prior to working in a related area of the lake. This schedule would be developed as part of the remedial design and would be provided to the public once it is available.</p>

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Name/Agency	Comment Code	Comment Summary	Response
N. Pirro, cont.	O-1.1, cont.		Please note that NYSDEC will endeavor to identify potential streamlining measures which could be used to accelerate the various remedial design and construction steps. Also see response to Frequent Comment #5.
	O-1.2	Need coordination with cleanup of upland sites, which must be addressed before lake remedy can take place. All of these sites should have been addressed collectively, as part of a single, comprehensive, lake cleanup plan, and not as independent hazardous waste sites. The County recommends that the upland sites be cleaned up as quickly as possible so that the lake bottom cleanup can begin.	See response to Frequent Comment #5.
	O-1.3	Long-term viability of engineered structures (e.g., groundwater cutoff walls; confinement caps; the SCA; oxygenation equipment) proposed in the plan will need permanent O&M. What assurance can NYSDEC and Honeywell provide to the community that it will not inherit the financial burden of these facilities? The final plan must address this concern, including formal legal protections and long-term financial assurances.	See response to Frequent Comment #8.
	O-1.4	Institutional controls typically impose limitations, and, therefore, could impact use of the lake as a recreational resource. Such controls should not be part of the remedy.	Currently there are no plans to impose institutional controls that would limit the future use of Onondaga Lake as a recreational resource to the community. Institutional controls will include the notification of appropriate government agencies with authority for permitting potential future activities which could impact the implementation and effectiveness of the remedy.

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Name/Agency	Comment Code	Comment Summary	Response
N. Pirro, cont.	O-1.5	It appears that the SCA represents a sizable ongoing challenge and potential burden to this community due to issues such as the unexplained procedure to separate out hazardous materials; Wastebed 13's physical stability; potential for odor problems; management of the supernatant; long-term O&M; and loss of redevelopment potential for the site.	See response to Frequent Comment #17.
	O-1.6	It appears that the only option for handling the dredged spoils was the SCA; if no other alternatives were evaluated, the County questions the justification for constructing the SCA.	<p>Other options for handling dredged materials were considered. The assessment of various management disposal options in the FS report included hydraulic dredging with disposal in an SCA and mechanical dredging with off-site disposal (at one or more permitted landfills outside of the Syracuse area). However, on-site consolidation of the sediment in an SCA was identified as the preferred sediment management option.</p> <p>On-site management in an SCA, designed, constructed, and monitored in accordance with federal and state guidance, is a proven and reliable technology for management of contaminated sediment that is protective of human health and the environment.</p> <p>Alternatives that include transporting dredged material to off-site permitted landfills were evaluated in Appendix K of the FS report. The analysis determined that hydraulic dredging with on-site consolidation in an SCA is more cost-effective than transporting and disposing of sediments off-site.</p>

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Name/Agency	Comment Code	Comment Summary	Response
N. Pirro, cont.	O-1.7	Monitoring is generally deferred to the design stage, which is not uncommon; however, for a site as complex as this lake, it could be difficult to accurately monitor change/improvements and determine whether they are due to the remedial measures. In order to assure the community that the remedial measures, once implemented, are working, monitoring should begin now to establish baseline conditions.	See responses to Comment G-4.6 and Frequent Comment #4.
	O-1.8	Understands that it is not easy to develop a plan for complex contaminated sites such as the lake, and the Proposed Plan is a laudable effort. The County's comments are intended as constructive input.	Comment noted.
Dale Sweetland, Onondaga County Legislative Chairman	O-2.1	We have a great opportunity here, and are closer than ever to coming to terms with the lake's pollution. Reserves criticism of the Proposed Plan from an engineering/scientific standpoint, but asks that NYSDEC and Honeywell continue their hard work, use logic and common sense, and make this cleanup happen, even if the plan is not perfect. It is very important to the community to have the lake come back to life and be an asset.	Comment noted. See also response to Frequent Comment #12.
James Corbett, Onondaga County Legislator	O-3.1	Constituents are concerned about pumping of sediments from the lake to the SCA at Wastebed 13, with regard to two aspects in particular: odor control and the length (4 miles) of the pipe carrying the dredged sediments.	It is anticipated that the piping would run along the lakeshore, adjacent to Wastebeds 1 through 8, and then up the shore of lower Ninemile Creek. This would have minimal impact on residential areas. See also responses to Frequent Comments #9 and #10.

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Name/Agency	Comment Code	Comment Summary	Response
J. Corbett, cont.	O-3.2	Another option for dealing with the dredged sediments is putting them in Wastebeds 1 – 8, which would avoid many of the problems with Wastebed 13 (e.g., going through a residential area). The currently proposed trail and possibly other recreational uses could still be options for Wastebeds 1 – 8 in the long run. Asks NYSDEC/Honeywell to seriously consider this option.	See response to Frequent Comment #9.
Marlene Ward, Mayor of Liverpool	O-4.1	Cannot recall a time when the lake was not polluted, and has seen cleanup proposals come and go. Glad that we have apparently reached a point where some of the cleanup goals may be accomplished. Thanks those who have brought us to that point and asks, on behalf of the village of Liverpool, that plans for a clean lake continue to move forward.	Comment noted. See also response to Frequent Comment #12.
Bob Czaplicki, Supervisor, Town of Geddes	O-5.1	While no plan is perfect, the community is ready for us to stop talking and get moving. This can be an economically viable area.	Comment noted. See also response to Frequent Comment #12.
Deborah Warner, Greater Syracuse Chamber of Commerce	O-6.1	GSCC supports NYSDEC's plan and is delighted that a cleanup goal is finally in sight.	Comment noted. See also response to Frequent Comment #12.

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Name/Agency	Comment Code	Comment Summary	Response
D. Warner, cont.	O-6.2	Anticipates tourism benefits and economic development impact as a result of the cleanup and being able to use the lake, and economic benefits of the over \$400 million cost of the plan. Urges final approval and implementation as soon as possible. The faster the lake is cleaned up, the more development and jobs will occur in the community. Looks forward to Honeywell being a valued community member for a long time. Asks that development opportunities are preserved to the largest extent possible on the reclaimed land. Believes there will be strong interest and additional development adjacent to the lake and doesn't want to lose this economic potential.	Comment noted. See also response to Frequent Comment #18.
	O-6.3	GSCC members do not doubt the thoroughness of NYSDEC and EPA and trust the RI/FS report and the monitoring programs.	Comment noted. See also response to Frequent Comment #12.
	O-6.4	Asks that Honeywell consent and agree to move forward with the NYSDEC plan.	See response to Frequent Comment #13.
	O-6.5	If there is a cap or engineering solution failure, what assurances can taxpayers have that they will not be held responsible for the cost? If Honeywell no longer exists, who will be responsible for the costs in the end?	See response to Frequent Comment #8.
	O-6.6	We gained notoriety as the most polluted lake in the land. Now we can have a new reputation as an example of state-of-the-art remediation.	See response to Frequent Comment #12.
Samuel Sage, President, Atlantic States Legal Foundation	O-7.1	ASLF is glad to see that something is finally going to happen, and hope work can begin as soon as possible. Recognizes the need for dredging and capping.	Comment noted. See also the response to Frequent Comment #12.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	O-7.2	Concerned that there needs to be a consensus vision for the lake, as a matter of public policy. What does the community want? We recognize that there are scientific limitations in restoring the lake to what it once was.	See response to Frequent Comment #20.
	O-7.3	Need to start doing baseline monitoring now. Recommends outside input and peer review into developing the monitoring plan.	See response to Frequent Comment #4.
	O-7.4	Would like to see a fail-safe mechanism in place to ensure that the very high cost of the monitoring plan will be funded. One idea is to collect a sum of money up front and keep it in a monitoring-specific fund.	See response to Frequent Comment #8.
	O-7.5	There was a half-hearted attempt at developing a mercury model. Need to start monitoring efforts now in order to do modeling later, especially for mercury, although we should also be modeling for parameters other than mercury.	See responses to Frequent Comments #4 and #16.
	O-7.6	Urges a more comprehensive, continuing public participation effort be conducted along with the remediation.	See response to Frequent Comment #17.
	O-7.7	Has suggested to NYSDEC that a matrix be prepared for the public showing the relationship of the upland sites to the lake bottom and the dates and issues.	See response to Frequent Comment #5.

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Name/Agency	Comment Code	Comment Summary	Response
S. Sage, cont.	O-7.8	The welfare of those who will actually be performing the cleanup work must be considered. Proper hazardous management training must be undertaken by these workers and all steps must be taken to ensure their health and safety.	To address personal health and safety issues, all personnel performing remedial work on the lake or at the SCA will be required to successfully complete a 40-hour health and safety training course and other relevant requirements of the Occupational Safety and Health Administration. Personnel will follow the site HASP developed in advance of the work start date. All personnel must read and sign the HASPs prior to performing work on site. Health and safety monitoring will be conducted during all field activities. The plans will specify monitoring procedures, action levels, and response procedures to prevent adverse impacts to the workers.
Chuckie Holstein, FOCUS [Forging Our Community's United Strength] Greater Syracuse	O-8.1	FOCUS conducted community surveys. Out of 87 goals, the number one goal was to build biking and hiking paths along waterways, and the third highest goal was to develop and clean Onondaga Lake.	See responses to Frequent Comments #18 and #20.
	O-8.2	There is good news that there is good fishing in the lake. The carp colony is wonderful and tourists are interested in fishing.	Comment noted.
	O-8.3	You can travel from the lake to the Mississippi River, and vice-versa, and that is a way of bringing tourism to the community.	Comment noted.
	O-8.4	FOCUS meetings showed that the foremost community issue is water quality. Continue the cleanup and have a long-range plan to keep the lake clean.	Comment noted.
	O-8.5	Community wants to be informed of current state and usability for recreation and fishing. They want to get on the lake, not just stand there looking at it.	Comment noted.

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Name/Agency	Comment Code	Comment Summary	Response
C. Holstein, cont.	O-8.6	Create a positive publicity/media campaign about the lake.	Comment noted.
	O-8.7	People want public transportation and access to the lake.	Comment noted.
	O-8.8	FOCUS members want all land around the lake to remain in the public realm, with public ownership of the shoreline and a long-term plan to protect that.	Comment noted. See also response to Frequent Comment #18.
	O-8.9	It is good news that we are beginning this process. Start now – just do it.	Comment noted. See also response to Frequent Comment #12.
Clyde Ohl	O-9.1	There is a scientific way to resolve the lake issues, by having an independent scientist study the lake. The final solution would be based on a master plan. We do not have a master plan as yet. Because scientific study has been subverted by the political process we have the “build and measure” plan, such as was used by Onondaga County to deal with sewage discharge. Such a plan has no precise goals, no independent monitoring, and is more concerned with inching along. As part of “build and measure” polluters are not producing results based upon proper scientific models. While Honeywell is doing many things differently than other organizations, these practices still fly in the face of standard environmental cleanup.	See responses to Frequent Comments #16 and #20.
	O-9.2	The major shortcoming of the plan is the lack of modeling, especially to arrive at predetermined, measurable goals.	See response to Frequent Comment #16.

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Name/Agency	Comment Code	Comment Summary	Response
C. Ohl, cont.	O-9.3	The wastebeds could be an opportunity for Camillus to bring the beds into some type of development profitable for the town. Camillus should be involved in the design process for wastebed development. Using the wastebeds only for dumping flies in the face of economic development. Years ago Allied developed a scheme for golf courses, parkland, etc. for this area, but nothing has happened. None of this mentions economic development. We do not want to lose another opportunity. It's not too early for Camillus to be involved with Honeywell and NYSDEC in the design for a better use of the wastebeds.	See response to Frequent Comment #9.
Jeffrey Freedman, Onondaga Yacht Club	O-10.1	Members of the Onondaga Yacht Club support the efforts of NYSDEC and Honeywell to clean up the lake.	Comment noted.
	O-10.2	Underwater obstructions to navigation, as indicated on National Oceanic and Atmospheric Administration charts, need to be removed.	A study of any obstructions to dredging/capping and a plan for removing or otherwise managing such obstructions will be developed during the design phase.
	O-10.3	Would like a plant-free zone in the marina harbor and the channel between the harbor and the lake in the deep end.	Comment noted. This suggestion will be considered during the development of the lakewide habitat restoration plan.
	O-10.4	Anchoring restrictions over capped areas could pose a danger to boaters.	The cap will be designed and installed to resist boat wakes and anchors, and no restrictions on those activities are expected. However, there may be anchoring restrictions in the immediate vicinity of the oxygenation equipment that would be installed beneath the lake surface.

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Name/Agency	Comment Code	Comment Summary	Response
J. Freedman, cont.	O-10.5	Yacht club sees this as an opportunity (e.g., for day camps, community sailing programs, boating events, etc.) and is appreciative of NYSDEC's and Honeywell's efforts.	Comment noted.
	O-10.6	Understands there is a discrepancy between NYSDEC and Honeywell plans; do not get bogged down in court. Would like the cleanup effort to go as quickly as possible.	Comment noted. See also response to Frequent Comment #12.
Nick Kochan, Chairman, Village of Liverpool Planning Board	O-11.1	Liverpool's economy has changed, as industry has changed, over the years. It is encouraging to see the effort being put into this project.	Comment noted.
	O-11.2	Successful and diligent upland remediation should be one of the first priorities. Make sure that Honeywell stays involved in the long run to ensure maintenance of facilities.	The remediation of the upland sites is a high priority and is an integral part of the overall cleanup of Onondaga Lake. See also response to Frequent Comment #8.
	O-11.3	Encourages Honeywell and NYSDEC to find the best economic and scientific compromise for the project.	Comment noted.
David Chapman, Mountain Eagle Management	O-12.1	Making scientific statements on behalf of Dr. George Putnam (of the same firm). Also commends NYSDEC and Honeywell for moving towards action steps.	See response to Frequent Comment #12.

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Name/Agency	Comment Code	Comment Summary	Response
D. Chapman, cont.	O-12.2	His company has a patent on a reverse of the Solvay process. This is an opportunity to try some new technologies. Would like this to be a forum where new/different technologies can really be considered and not just brushed aside.	The Solvay process used sodium chloride (NaCl) and carbon dioxide from limestone (primarily calcium carbonate, CaCO ₃) to produce soda ash (Na ₂ CO ₃) along with large quantities of wastes, both solid and dissolved. The solid Solvay waste is a white chalk-like material containing large amounts of calcite and salts. It is unlikely that the commentor's reversal method is applicable to the remedial program, since the reversal method is not expected to address all of the varied hazardous substances in the lake (e.g., mercury, chlorinated benzenes, BTEX, PCBs, and PAHs) and it would not address the RAOs of the RI/FS report.
Howard Bragman	O-13.1	We've been down this route before. Not long ago a SUNY ESF professor stated that it would take at least 50 years and we still wouldn't know where we were. Is it emollients, PCBs, mercury, whatever? Onondaga County does not collect taxes anymore. I used to hear rumors that Allied employees were rushed out the door if they thought about polluting the lake. If Allied were still here we would not be here tonight.	Comment noted.
	O-13.2	Proposes damming the lake. Put up big barriers and see what you have, then cap it so well that it will probably never leak again. And they could go back after two years, leaving a space every two or three years. They have barriers they put on highways to work on them; they can use the same type of technology on the lake.	See response to Frequent Comment #2.

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Name/Agency	Comment Code	Comment Summary	Response
Les Monostory, President, Onondaga County Federation of Sportsmen's Clubs	O-14.1	Concerned about shoreline safety issues, in particular the "white cliffs" adjacent to the New York State Fairgrounds parking area. If you walk into the water in this area you could fall through a hardened calcitic sediment, and it could be dangerous to land a boat there. Wrote a letter to NYSDEC and Honeywell on November 26, 2004 about these safety issues. Honeywell responded and described proposed remedial measures specifically for the white cliffs area of SMUs 3 and 4, with the FS report recommending dredging of near-shore sediments and capping. In reviewing both the Honeywell and NYSDEC plans, it is clear that specific areas along the shoreline will be dredged and capped, thus removing calcitic sediments; however, the reports are unclear with regard to specific stabilization measures that will be used for shoreline sediments not targeted for dredging and capping in this area.	<p>The remedy includes habitat enhancement along an estimated 1.5 miles of shoreline (SMU 3) and over approximately 23 acres (SMU 5) to stabilize calcite deposits and oncolites and promote submerged macrophyte growth. The details will be developed during the remedial design, based upon a comprehensive lakewide habitat restoration plan.</p> <p>Habitat enhancement would improve the SMU 3 littoral area by stabilizing the shoreline and restoring an appropriate habitat. The SMU 3 shoreline is unstable and has the potential to erode during wind/wave events. A range of habitat approaches can be considered for SMU 3.</p> <p>The steeper banks at the northernmost portion of SMU 3 are considered part of the Wastebeds 1 through 8 upland areas that are being addressed under a separate RI/FS. The stability and safety concerns regarding the upland portion of Wastebeds 1 through 8 will be evaluated during the RI/FS for that site.</p>
	O-14.2	To address safety issues for anglers or boaters at the shoreline along the white cliffs, I am recommending that solidified calcitic sediments along the entire 2,500-m cliff shoreline be removed to a depth of 1 to 2 m and that the entire shoreline be stabilized with capping material to a minimum depth of 1.5 m.	NYSDEC will evaluate the commentator's concern. If remedial measures are needed in this area, it will be determined whether they should be performed as part of the lake remedy or as part of other activities (e.g., potential remedial work at Wastebeds 1 through 8, which is currently being investigated).

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Name/Agency	Comment Code	Comment Summary	Response
Kaczmar Swiatoslav, Adjunct Professor, Syracuse University; Chief Scientist, O'Brien & Gere	O-15.1	<p>Focused his review of the RI/FS report documents on the risk assessment, which used conservative or unrealistic assumptions for the purpose of being protective. Feels that the remedies proposed in the FS report adequately address those risks. As such, the remedy [proposed in the FS report] is an appropriate remedy.</p>	<p>The assumptions used in the HHRA and BERA were selected to be protective of human and ecological receptors potentially at risk from exposure to contaminants present in the lake. Each risk assessment evaluated two scenarios to assess realistic upper-bound and average exposure. The risk assessments identified and characterized the current and potential threats to human health and the environment from a hazardous substance release.</p> <p>For the HHRA, the RME and the central tendency scenarios were evaluated, while the BERA used a 95 percent upper confidence limit and a mean exposure scenario. Site-specific information was used when available, and when it was not, the closest regional or local data available were used as input. In addition, a range of toxicity (effects) concentrations were used for both risk assessments to evaluate average and upper-bound scenarios.</p> <p>The HHRA and BERA were conducted in accordance with the Onondaga Lake RI/FS Work Plan (PTI, 1991), the NCP, and other applicable guidance documents from EPA and NYSDEC. The HHRA only quantified excess (incremental) risk associated with the site. The methodology used for the HHRA followed standard guidance (including EPA, 1989, 1991a,b, 1998b). The BERA followed EPA (EPA, 1997, 1998a, 1999) and NYSDEC (NYSDEC, 1994) guidance.</p>

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Name/Agency	Comment Code	Comment Summary	Response
K. Swiatoslav, cont.	O-15.1, cont.		All assumptions used in both risk assessments were consistent with federal and state guidance. Based on the results of the HHRA and BERA, as well as evaluations of various lakewide remedial alternatives, the selected remedy is more protective of public health and the environment than Honeywell's recommended alternative.
	O-15.2	Encouraged to see the enhancements present, especially the ones that are not required but are going to make the community a better place.	Comment noted.
Sharon Fulmer	O-16.1	Hopes that Honeywell and NYSDEC can come to an agreement without a long, drawn-out process. Would like to see project go forth as quickly as possible.	See response to Frequent Comment #12.
	O-16.2	Asks for additional repositories of project material at the Liverpool, Solvay, and Camillus libraries.	<p>In response to this and other requests, NYSDEC added three new repositories, in addition to the three existing repositories at NYSDEC's office in Syracuse, the Onondaga County Public Library in Syracuse, and the Atlantic States Legal Foundation in Syracuse. The new repositories are:</p> <ul style="list-style-type: none"> • Liverpool Public Library, 310 Tulip St., Liverpool, NY, 13088. Hours are Mon. – Thurs. 9 – 9, Fri. 9 – 6, Sat. 10 – 5, and Sun. 12 – 5. Phone: (315) 457-0310. • Maxwell Memorial Library, 14 Genesee St., Camillus, NY, 13031. Hours are Mon. – Wed. 10 – 8, Thurs. – Fri. 10 – 5, and Sat. 10 – 3. Phone: (315) 672-3661. • Moon Library, SUNY ESF, 1 Forestry Drive, Syracuse, NY. Phone: (315) 470-6712.

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Name/Agency	Comment Code	Comment Summary	Response
Dereth Glance, Central New York Program Coordinator, Citizens Campaign for the Environment	O-17.1	Appreciates the efforts made by NYSDEC, Honeywell, and others to improve the lake.	Comment noted.
	O-17.2	CCE urges NYSDEC to have additional public hearings in a question-and-answer format.	An additional public availability session and public meeting on the RI/FS reports and Proposed Plan, with a question-and-answer session, were held on February 16, 2005. A public meeting (with a question-and-answer session) was also held on January 12, 2005. Furthermore, an additional public comment period was opened from April 1, 2005 to April 30, 2005 following the review of the Proposed Plan by the National Remedy Review Board and EPA's concurrence with the Proposed Plan.
	O-17.3	NYSDEC should provide ample opportunity for public involvement during the design phase. Recommends that a citizens' advisory committee be established, and provides details about how such a committee would operate.	See response to Frequent Comment #17.
	O-17.4	NYSDEC should require public education as part of the remediation efforts. The public should be informed about the safety of using the lake for common recreational activities. CCE is concerned about PRG 2 (biological tissue goal). The extensive mercury contamination in the lake warrants aggressive public education efforts concerning fish consumption.	An extensive public outreach program will be performed during the design and construction of the remedy. As part of the development of the program, NYSDEC will work with the NYSDOH and EPA to determine the level of education warranted to ensure that the public is adequately informed with regard to the commentor's concerns. See also response to Frequent Comment #19.

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Name/Agency	Comment Code	Comment Summary	Response
Don Hughes, Technical Advisor, Atlantic States Legal Foundation	O-18.1	People should know that remediation heavily depends on the viability of the slurry wall. The wall has to work for the whole plan to work.	To prevent the recontamination of lake sediments, the on-shore barrier wall and groundwater collection systems will need to be constructed and operating prior to cleanup activities commencing in this part of the lake. Furthermore, the effectiveness of the capping proposed for SMUs 1 and 2 would rely upon the proper functioning of these hydraulic control systems. Likewise, the effectiveness of capping in SMU 7 would rely upon the proper functioning of the hydraulic control system which is proposed to be installed along the lakeshore as part of the remedy for this portion of the lake. The use of sheet piling barrier walls and groundwater collection and treatment are proven technologies and it is expected that these systems will perform as required for the success of the selected remedy.
	O-18.2	Why was Wastedbed 13 chosen for the pumped sediments? It seems treatment has not been considered, except cursorily. You can use mining technology to separate the contaminated sediments in the tarry deposits from the Solvay waste. Separation technologies have been demonstrated for sediments in Saginaw Harbor.	The FS report assumed (for costing purposes) that the SCA would be constructed on Wastedbed 13 based on its capacity, as well as other factors. However, during the remedial design, various locations for siting the SCA will be evaluated. This will include: Wastedbeds 1 through 8, Wastedbeds 9 through 11, as well as Wastedbeds 12 through 15. The evaluation will consider various factors including potential impacts on the local community, geotechnical stability of the wastedbeds, SCA construction requirements, wastedbed size, the means for transporting dredged materials to the SCA, costs, etc.

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Name/Agency	Comment Code	Comment Summary	Response
D. Hughes, cont.	O-18.2, cont.		<p>Numerous treatment alternatives were considered by Honeywell in the FS report. Separation processes (i.e., processes that separate contaminants from soils) were not given a high rating in the FS report due to the nature of the in-lake deposits. The bulk of the dredging will take place in areas that contain either primarily Solvay wastes (i.e., the ILWD) or fine-grained organic-rich sediments (e.g., SMUs 6 and 7) with very little coarse-grained material. Solvay wastes are themselves composed of relatively fine-grained materials and it is likely that the contaminants of concern, such as mercury, are adsorbed to the Solvay waste or other fine-grained materials. Thus, it is not expected that physical separation processes which rely on density or particle-size differences could be successfully applied to the contaminated lake sediments, since only a small reduction in the volume of contaminated material to be disposed of would be achieved. Based on NYSDEC's initial research, Saginaw Bay contaminants were PCBs and other industrial organics that were adsorbed, at least in part, to native sediments with a greater variety of grain sizes than are found in Onondaga Lake. See also response to Technical Comment #13.</p>
	O-18.3	<p>What about volatile emissions from the sediments on the wastebeds? The volatile chemicals smell bad and are toxic. We've got to have a good odor and emission control system to protect workers and residents.</p>	<p>See responses to Frequent Comments #9 and #10.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Hughes, cont.	O-18.4	<p>The plan focuses on the littoral (shallow) zone – a wait-and-see approach is taken for the profundal (deep water) zone. That’s what monitored natural recovery is. Doesn’t see how the program STELLA® is going to successfully model mercury concentrations in surface sediments over time. STELLA® is a generic program; we are lacking basic inputs; there are a lot of issues regarding sediment disturbance.</p>	<p>The profundal zone is a distinctly different environment than the littoral zone, including characteristics that made it a candidate for MNR (see response to Comment P-16.5). A model was developed in the FS report using STELLA® software to assess whether MNR is a feasible alternative for remediating contaminated profundal sediments in Onondaga Lake. The primary purpose of the MNR model is to understand how natural recovery might occur (or fail to occur) in the future based on what is known about the system. Another purpose of the model is to provide information on how sediment surfaces might react during and after remedial actions. Site-specific data were used to calibrate the model, which examined the diffusion, bioturbation, groundwater-mediated advection, settling, burial, and degradation mechanisms likely to be present at this site. By assessing these mechanisms over time, a prediction of chemical concentrations and fluxes in the future can be obtained.</p> <p>It is acknowledged that much of the data used in the model will need to be updated during the pre-design sampling to refine the model. However, the data that are currently in hand (see FS report Appendix N, Figures N.13 to N.15) clearly show that the sediments are undisturbed and the overwhelming majority of the mercury (and other metals, as shown in RI report Figures 6-32 and 6-33) is being buried by cleaner material. Based on this evidence, MNR is an appropriate remedial measure for the profundal zone. In those profundal areas where MNR is not sufficient, thin-layer capping is called for in the selected remedy.</p>

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Name/Agency	Comment Code	Comment Summary	Response
D. Hughes, cont.	O-18.5	Generic comment regarding the NYSDEC decision-making process and the standard language, used in the preliminary remediation goals and remedial action objectives, that states “to the extent practical.” Who decides what is practical? Shouldn’t goals and objectives be transparent, achievable, and measurable? Why not define what cleanup levels are technically practicable, given the very best model and cutting-edge remediation technologies, and make those the goals?	See response to Frequent Comment #20. See also the response to the NRRB’s recommendation #11 in Attachment 1 of this RS.
Sara Eckel	O-19.1	Concerned that the plan does not involve a comprehensive cleanup of the wastebeds. The plan should not ignore future problems that could result from leaving these areas untreated. Also understands the importance of moving the plan forward.	NYSDEC’s evaluation regarding the need for closure of Wastebeds 9 through 15 is underway. Furthermore, an RI/FS will be performed at Wastebeds 1 through 8 to determine the nature and extent of contamination and to evaluate potential remedial alternatives for the site.
Steve Effler, Director of Research, Upstate Freshwater Institute	O-20.1	UFI endorses proposed rehabilitation efforts for the site that include removal of toxic sediments, capping, and improvement of degraded habitat. Let’s get on with it.	Comment noted. See also response to Frequent Comment #12.
	O-20.2	There is a continuing review process. If we find new sources of contaminant problems in the course of cleanup, those items would be addressed.	As the remediation process for Onondaga Lake continues, NYSDEC will review new information, as appropriate and applicable, to ensure that the remedial goals are met. If necessary, the remedial design for Onondaga Lake can be adjusted to address this new information.

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Name/Agency	Comment Code	Comment Summary	Response
S. Effler, cont.	O-20.3	Has great concern with the lack of understanding of the behavior of contaminants from the Honeywell site within the lake itself. This lack is largely attributable to constraints within the Superfund process. It is a difficult arena in which to get some of the basic scientific information that we still need. Neither NYSDEC nor Honeywell can tell us how much better the lake will be after cleanup. They cannot quantitatively say, for example, how much lower fish mercury will be. The bottom line is that we are lacking a credible scientific model that can predict responses in the lake to these actions. We support moving ahead without a model, but we do need one in the future. We recommend that this model be developed and tested outside the Superfund process.	See responses to Frequent Comment #16 and Technical Comments #15 and #16.
	O-20.4	The monitoring program is very important, as we do not have adequate monitoring data to be able to assess how much better things will be following remediation. The monitoring program needs to be flexible to allow changes in response to observations, and must support the modeling program. The monitoring program should start ASAP.	See response to Frequent Comment #4.
Nancy Ciampi	O-21.1	The public meetings are important to the success of the plan, and the public needs to know that there will be well publicized, open, honest meetings going forward.	See response to Frequent Comment #17.
Peter Pedemonti	O-22.1	Would like to see the most thorough and complete cleanup of the lake, regardless of time or cost.	See response to Frequent Comment #6.

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Name/Agency	Comment Code	Comment Summary	Response
David Arnold	O-23.1	Illegal acts are committed by some elected officials. How can the Onondaga Lake cleanup succeed? We need someone we can trust to appoint public committees to scrutinize all phases of these projects.	Comment noted. However, the issue raised is outside of the scope of a remedy selection document.
Sherry Mossotti, Executive Director, Leadership Greater Syracuse	O-24.1	Cleanup of the lake is an important topic in the community. We are glad to see Honeywell, NYSDEC, the County, and other parties working together, and implore you to continue doing so and move this project forward.	Comment noted. See also response to Frequent Comment #12.
Terry Brown, Chairman/CEO, O'Brien & Gere	O-25.1	Feels passionately about the lake and the community, and has some ideas about what the sites could be. We have made this too confusing for the public by talking about modeling, science, etc. We can go forward with the information we have.	Comment noted. See also response to Frequent Comment #12.
	O-25.2	Make the science simpler and do the modeling as we go along. We will learn more by doing and addressing the issues during remediation than through modeling. We need to move with urgency so we do not lose this opportunity.	Comment noted.
Les Monostory, Co-chair, Fisheries Subcommittee of the Onondaga Lake Partnership and Vice-president of the Izaak Walton League	O-26.1	Wants to address a fishery goal statement for the lake and tributaries. The Fisheries Subcommittee comments that: <ul style="list-style-type: none"> • We should improve the fisheries we already have. • The lake and its principal tributaries can be promoted as a combination cold/warm-water fishery. • A future goal should be for the lake to be clean enough to support both cold- and warm-water fish. 	See response to Frequent Comment #15.

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Name/Agency	Comment Code	Comment Summary	Response
L. Monostory, cont.	O-26.2	Dan Lemon of NYSDEC, also a member of Fisheries Subcommittee, states that NYSDEC Region 7 does not feel that reestablishing a self-sustaining population of trout and Atlantic salmon in the lake is realistic. A realistic objective is a combination of cool-water and warm-water fish.	See response to Frequent Comment #15.
	O-26.3	NYSDEC Region 7 fisheries has prepared a draft position statement for EPA that recommends adoption of a fishery goal statement for the lake. Presents a specific fishery goal statement for the lake that supports the achievement of a suitable year-round warm- and cold-water fishery. The Fisheries Subcommittee endorses this statement.	Comment noted. See also response to Frequent Comment #15.