

**Response to
DEP Comments on Olin Corporation's
Draft Conceptual Design, Generic Remedial Action Plan
Non-Public Properties, Newhall Street Neighborhood
Hamden, Connecticut (the site)
Prepared by MACTEC Engineering and Consulting, Inc. on behalf of Olin Corporation
Dated December 21, 2007**

General Comments:

1. *The Department's comments are not an approval of the Draft Conceptual Design or any document referenced therein. Any absence of a comment on any particular item does not necessarily indicate concurrence. The Department will review the Draft Final Generic Remedial Action Plan when it is submitted, and will approve it if and as appropriate after such review.*

Response: Noted. This process is intended to avoid potential delay by generating concurrence on major design elements early in the design process.

2. *Reference to using 800 mg/kg as a standard for lead during confirmatory sampling is made in several sections of this document as a decision point for determining whether further excavation is necessary. Although the current Remediation Standard Regulations list the Residential Direct Exposure Criterion (RDEC) for lead as 500 mg/kg, the Department has identified the interim RDEC goal for lead as 400 mg/kg at this site.*

Response: Design has been revised to use 400 mg/kg lead level as a standard for confirmation of fill removal. During the removal of fill, compliance with the RDEC will be demonstrated by either comparison to the 400 mg/kg lead level, or by averaging as allowed in the RSRs.

3. *Include an organizational chart showing the individual in command in the field. The chart should identify a contact in the field for the Department.*

Response: An organizational chart for command in the field during construction will be developed later in the design process and included with construction work plans once field personnel have been determined..

4. *The Department's Public Involvement program requires that the public be informed/advised of all major steps and milestones associated with the remediation project. The Department considers the Draft Conceptual Design, Generic Remedial Action Plan (herein after referred to as the "Generic RAP") subject to this requirement. Copies of the Generic RAP and all subsequent submittals must be distributed to the other responsible and interested parties on the document*

distribution list, as well as four copies to Fitzgerald & Halliday, Inc. for placement in the public document repositories.

Response: Requested copies of the Generic RAP have been provided to the document distribution list, including Fitzgerald & Halliday, Inc. Subsequent submittals will also be sent to the parties on the distribution list as requested.

Specific Comments:

1. *p. 1-1, Section 1.1 Regulatory Status. State in the first paragraph that the 2003 Consent Order was issued not only to Olin, but also to the Town of Hamden, South Central Connecticut Regional Water Authority, and State Board of Education. Clearly state that Olin's responsibility, per the Consent Order, lies with remediation of the Non-Public Properties portion of the Site. This fact is indirectly stated at the end of the third paragraph.*

Response: The requested text will be added to the added to the Draft Final Design/Generic RAP.

2. *p. 1-2, Section 1.1 Regulatory Status. In the second paragraph discussing health risks, note in the text that Site groundwater does not present a volatilization issue. The chlorinated solvent plume emanating from the former Hamden Middle School property does not exceed the Department's Proposed Residential Volatilization Criteria, continues to be monitored and does not require remediation.*

Response: The requested text will be added to the added to the Draft Final Design/Generic RAP.

3. *p. 1-3, Section 1.2 Objectives. The Generic RAP must include a discussion regarding safety of residents within the site area and security of property during construction activities. Include a discussion on how excavations will be secured overnight and during other work stoppages (i.e., weekends, holidays).*

Response: General text concerning safety of residents, security of property and securing excavations will be added to the Design Basis. Specific requirements for safety, security and excavations have been added to specification sections 01351, Health and Safety and 02300, Earthwork. The description of safety and security measures will be further described in the Health and Safety Plan that the Contractor will prepare following completion of the Generic RAP.

4. *p. 1-3, Section 1.2 Objectives. The Generic RAP must include discussion about the temporary relocation of residents under applicable state and federal law, including the Uniform Relocation Assistance Act and Real Property Acquisition Policies Act of 1970, as amended.*

Response: Federal law consists of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA). As lead agency under this law, DOT published 49 CFR Part 24 which provides specific rules for conducting permanent relocations and useful guidance for temporary relocations. While the URA and its regulations set the standard for federal and federally assisted projects, they do not discuss relocation performed by a non-federal entities.

Under CERCLA actions, the EPA is the lead agency for relocations. There are no specific regulations, but EPA has published a document entitled “Superfund Response Actions: Temporary Relocations Implementation Guidance”, April 2002. EPA requires that the guidance be included into any ROD, Action Memorandum, or other enforceable decision document.

A Relocation Plan will be developed during preparation of the Property Specific Remedial Action Plan. The Relocation Plan will be generally consistent with the DOT and EPA guidance documents. Text indicating this has been added to the Design Basis.

5. *p. 2-3, Section 2.2.2 Specifications. The Generic RAP must include discussion that best efforts must be taken to find a similar feature for restoration if a property owner has a pre-existing feature that is not on the “menu” of restoration items.*

Response: The intent is to develop the initial list of restoration items during the preparation of the Final Design, and to finalize the list during the preparation of the Property-Specific RAPs based on a detailed inventory of existing features. The selection of specific restoration items will be finalized during the development of property-specific Restoration Agreements, at which time a reasonable effort will be made to find a similar product to replace an existing feature should an appropriate replacement item not be present on the list of restoration items. Text indicating this has been added to the Design Basis.

6. *p. 2-3, Section 2.2.3 Individual Property Sketches. Will Olin prepare an A-2 survey to set property lines? How will cases be handled where a fence or tree line does not follow the actual property line? Will Olin replace a fence where it was located prior to excavation, or to the actual property line if that location is different?*

Response: A-2 boundary surveys will not be prepared. Surveys will be performed to allow features to be replaced in existing locations. The remediation construction will not resolve property line issues or disputes as part of the Work.

Also, discuss the proposed criteria for determining if certain structures, such as sheds and outbuildings, are not permanent structures. State how and where the contents of a non-permanent structure will be stored, and how Olin will address such storage with the owner.

Response: As indicated in section 3.2.2, permanent structures are considered homes, garages, and other buildings with concrete slabs and/or foundations. Moving and storage of contents of non-permanent sheds or outbuildings will be determined and addressed during development of Access and Restoration Agreements with each property owner.

7. *p. 3-1, Section 3.1.1 Staging Areas. If Olin believes it is necessary to stockpile waste fill at a property within the site bounds, instead of directly loading and transporting the waste fill to the designated disposal area(s), Olin must identify the property location and procedure for temporarily relocating the waste fill and obtain permission from that property owner for the temporary storage of the waste fill. The Department's goal is to minimize, to the extent possible, the stockpiling of any waste fill within the neighborhood. If the Department determines that stockpiling of fill is necessary, Olin must take appropriate measures to ensure proper handling and storage of that material, and such measure must be detailed in the project plans.*

Response: Temporary stockpiling of fill will be necessary, as access to backyards is limited and remediation will be conducted on several properties at the same time. The intent will be to minimize the amount of material stockpiles and the amount of time that stockpiles are present on private properties within the neighborhood. Consistent with the Department's comment, appropriate measures will be detailed in the project plans for the proper handling, storage, and disposition of materials.

While the Department recognizes that equipment staging areas will be required for construction of the remedy, DEP has no ability to authorize use of the Town parks identified by Olin as possible staging areas. Unless and until Olin has been granted approval by the Town for Olin to use these parks for staging purposes, the parks should be noted in the Generic RAP and in all relevant drawings as Olin's "Proposed Staging Areas." Olin should also take steps to identify alternative staging locations proximal to the Site, should the Town refuse access for these purposes.

Response: Staging areas can be labeled as "Proposed Staging Areas". Olin is in discussions with the Town of Hamden about use of the parks as staging areas and will attempt to resolve the question of staging areas prior to completion of the Generic RAP.

8. *p. 3-1, Section 3.1.2 Dust Control and Air Monitoring. Olin must identify how it will address daily house keeping and issues arising due to special circumstances (such as unusual weather conditions).*

Response: Daily housekeeping measures or procedures for addressing special circumstances have been included in the requirements specified in specification 01560 Dust Control for preparation of the Air Monitoring Plan.

9. *p. 3-2, Section 3.1.2 Dust Control and Air Monitoring. The Air Monitoring Plan within the Generic RAP must be approved by the Department and the Department of Public Health (DPH) prior to commencement of construction. In addition, detailed best management practices for dust control must be identified in this section.*

Response: The requirements for development, and DEP review and approval, of the Air Monitoring Plan will be included in specification 01560 Dust Control. This specification will include requirements to follow best management practices. The Air Monitoring Plan development will be performed by the remediation contractor as part of the remediation phase.

10. *p. 3-2, Section 3.1.3 Utilities. Given the extensive area involved in this project, Olin and their contractor(s) obviously need to communicate and coordinate with area utility companies (Regional Water Authority, Southern Connecticut Gas Company, AT&T, the Town, the Greater New Haven Water Pollution Control Authority, and potentially others) in advance of the start of remedial construction. Please notify the Department about general communications with utility service providers for the duration of the project. Property owners should be notified as far in advance as possible if utility service to their homes will be interrupted, and the anticipated duration of the interruption.*

Response: Requirements for coordination with local utility service providers and CTDEP notification of communications conducted with the utility services providers has been added to the text. Based on the depth and volume of excavation required at individual properties where service connections are located, residents will be notified as soon as possible of the expected schedule and duration of utility service interruptions, if required.

Additionally, should the occupants of a home need to be relocated temporarily due to utility interruption or otherwise, the occupants should also be notified as far in advance as possible. State and federal law regarding relocation will dictate the required services and compensation that a property owner and/or a tenant are eligible for.

Response: Comment noted.

Most buried utilities in the site area, such as water and gas, are likely located within 4 feet of the ground surface. If a utility is located at or just slightly below 4 feet, please explain how excavation would be handled in this circumstance.

Response: Gas or water utility service connections within excavation limits will require shut-off at the street during excavation activities. Depending on the amount of excavation, temporary utility interruption may be for less than a day, or may require several days. To protect utilities that are intended to be left in place, careful excavation (and in some cases, excavation by hand) will be performed. In some locations, it may be more efficient to remove and replace utilities that are at or near the elevation of the excavation.

11. *p. 3-2, Section 3.1.4 Excavation Depth. Per the Remedy Selection Plan, the excavation depth on all of the Non-Public Properties, both residential and commercial, is stated to be 4 feet below ground surface. Olin's Generic RAP proposes that for industrial and commercial properties, 2 feet of waste fill will be excavated and restored with clean soil*

and pavement. This remedial approach was not advocated by Olin in its response to comments on the Department's August 2006 Proposed Remedy Selection Plan.

Generally, a 2' excavation approach to render contamination inaccessible, where there would be a paved surface and an ELUR, is an acceptable remedial strategy at an industrial/commercial property, and is consistent with the Remediation Standard Regulations (RSRs) (see Section 22a-133k-1(a)(28)). However, the Department did not approve this approach in the Remedy Selection Plan. Olin must implement the Remedy Selection Plan.

Response: The Design/Generic RAP has been revised to require excavation of fill up to 4 feet deep. If it is beneficial for the property owner and the project, a property-specific request to DEP to perform a 2' excavation on a specific industrial/commercial property may be made.

12. *p. 3-3, Section 3.1.4 Excavation Next to Permanent Structures and Streets. Olin's Generic RAP proposes that waste fill adjacent to a building will be excavated 1 foot below ground surface at the face of the foundation, off-set 18 inches, and then excavated to 4 feet with a 1:1 slope away from the foundation. The Department does not believe it is reasonable to assume the need for sloped excavation faces adjacent to all building foundations. Unless a building's structural integrity dictates otherwise, which Olin must demonstrate to DEP and receive specific authorization for an alternative remedy at that property, excavation must be to a depth of 4 feet immediately adjacent to the building foundation. Again, it is the responsibility of Olin to determine what, if any, excavation the structure can withstand without being damaged.*

Response: The proposed approach presented in the Conceptual Design/Generic RAP will significantly reduce potential structural issues associated with fill excavation, and can be conducted to be compliant with the RSRs. This would be accomplished by sampling to demonstrate compliance with the 400 mg/kg lead level used by DEP. In addition, sloping of soil excavations next to slab on grade structures will be required to prevent undermining. Additional discussion about this topic may be appropriate.

Many property owners actively garden or plant shrubs in the area adjacent to a building's foundation, and it is reasonable to conclude that a property owner digging for such purposes would extend beyond the depth of 1 foot, and therefore, into the remaining waste fill.

If Olin proposes at specific properties to leave waste fill in the soil wedge adjacent to a building foundation due to construction feasibility reasons, then Olin shall submit a written proposal showing analytical results for lead in the wedge is at or below 400 mg/kg, or for an Alternative Direct Exposure Criteria (as provided in Section 22a-133k-2(d)(2)) to the Department and DPH for approval for the proposed wedge containing waste fill.

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Response: As indicated in the previous response, the approach presented in the Conceptual Design/Generic RAP is technically sound and will demonstrate compliance with the RSRs. In cases where lead levels exceed 400 mg/kg lead and where excavation is not recommended due to the condition of a foundation, Olin will submit a written proposal as requested for approval by the Department and DPH.

If the Department determines that excavation of waste fill to 4-feet adjacent to a structure is not possible, after Olin demonstrates that measures to protect the structure are not feasible, the Department may require protective measures, including but not limited to requiring that the waste fill remaining above 4' to be covered with a durable geotextile so that a homeowner using typical gardening tools cannot easily contact the waste fill.

Response: Comment noted.

Also, please note in the text and on relevant drawings that the Town requires an excavation side slope adjacent to Town owned roads. Individual property owners must also be informed of this Town requirement during negotiation of access agreements.

Response: Comment noted..

13. *p. 3-3, Section 3.1.4 Significant Trees and Landscape Items. DPH, in addition to the Department, will need to review any plans to retain trees or other site features within areas of waste fill. Such plans should include analytical results for lead in any such waste fill.*

Response: The approach/protocol to potential removal of significant trees or landscape items will be documented in the Draft Final Design/Generic RAP. In general, this protocol will be similar to the plan for leaving a wedge of fill adjacent to a house foundation: Olin would demonstrate compliance with the lead RSRs or submit a property-specific request for DEP and DPH approval.

14. *p. 3-4, Section 3.1.6 Additional Excavation due to Confirmatory Sampling. Please see General Comment #1 regarding the Residential Direct Exposure Criteria for lead.*

Response: The Design/Generic RAP has been revised to use 400 mg/kg lead level as a standard for fill removal.

15. *p. 3-6, Section 3.3 Disposal. Please provide additional detail on possible amendments to excavated waste fill to render it compliant with the Material Acceptability Protocol for the Farricielli Tire Pond site.*

Response: Several Fixation/Solidification/Stabilization technologies are available where amendments could be added to the excavated fill material to reduce the leachability of metals in the fill. One possible amendment is a proprietary treatment system (MAECTITE®), described in United States Patent 5916123 - Fixation and stabilization of metals in contaminated soils and materials. Requirements for preparing and implementing a Treatability Work Plan for any

proposed treatment process has been added to specification Section 02120, "Transportation and Disposal". The Contractor will be required to submit detailed information on fixation materials as part of the Treatability Work Plan. Confirmatory sampling requirements for the treated fill material have been added to specification Section 01410, "Confirmatory Sampling".

16. *Specifications, Section 01330, Submittal Procedures, Part 1.5. The Department and its consultant will also require access to the engineer's CAD files of both the final design and as-built.*

Response: Section 01330, Submittal Procedures has been revised to include CTDEP and its consultant access to the engineer's CAD files.

17. *Specifications, Section 01410, Confirmatory Sampling. See General Comment #1 above regarding the Residential Direct Exposure Criteria for lead.*

Response: The Design/Generic RAP has been revised to use 400 mg/kg lead level as a standard for soil removal.

Also, in Part 3.3 of the Generic RAP, please discuss Quality Assurance/Quality Control needs for establishing a correlation between XRF screening results and fixed laboratory results.

Response: Correlation between XRF and laboratory results will be obtained during the soil sampling proposed as part of the investigations at 22 additional properties; text has been added to part 3.3, and the detailed requirements will be included in the QA/QC specification sections and in the QA Plan.

18. *Specifications, Section 02920, Lawns and Grasses and Section 02930, Exterior Plants. As these specifications are developed, please include statements regarding the 2-year guarantee for restored features.*

Response: Industry standard guarantee for plantings is as follows:

- Grass/sod – 60 days, or for at least two mowings, or until a uniform minimum 90 percent coverage is achieved with no bare spots larger than 5"x5".
- Trees and shrubs – 1 year
- Ground cover/perennials/bi-annuals – 6 months

The requested 2-year guarantee/warranty requirement is more than what is typically provided and should be discussed further.

19. *Appendix D, Individual Property Sketches. In some cases it may be beneficial to use slightly larger plan sizes (11 inches x 17 inches) to more clearly depict individual property features. Also, consider using different fill textures rather than, or in addition to, different colors. For example, on the sketch for 461 Newhall Street, the red and green dots depicting different depths of waste fill would be indistinguishable if the sketch is photocopied with black ink.*

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Response: 11x17 size sheets will be considered for larger properties. Different fill textures will be used to help distinguish the different fill depths when black and white copies of the sketches are made.

20. *Appendix E, Schedule. The schedule anticipates actual construction beginning in April 2009. As you are aware, the Department desires to begin construction in Fall of 2008. The Department believes there are several tasks identified in the schedule that can begin at times earlier than identified herein in order to achieve this goal. Please reevaluate the schedule in anticipation of beginning construction in Fall of 2008.*

Response: The schedule has been extensively evaluated in an attempt to shorten the duration and allow construction to begin in 2008. However, it is not reasonably practical to attempt to begin the construction phase of this project this year. Olin would be pleased to meet with DEP to discuss this topic in more detail.