

**USEPA – AMCO Superfund Site  
Community Advisory Group Meeting, August 10, 2009**

EPA Attendees: Lynn Suer  
Leana Rosetti  
Rose Marie Caraway  
Maurice Jackson  
Rykiel Robinson

EPA Contractors: Roy Hertzig /ITSI  
Yashi Nyznyk/CDM  
Frankie Burton/CH2M HILL

CAG Members: Brian Beveridge  
Lisa Spearman  
Jabari Herbert  
Bradley Angel/Green Action  
John Schweizer /Technical Assistant  
Nicanor Mendoza  
Miguel Avalos  
Bryan Steele  
Manuel Garcia Pimentel

**Public/Technical Assistant Comments**

- Is real time monitoring possible for these remedies? Could the public access a website with real time monitoring data?
- The public is concerned about air quality levels during remediation, construction, etc.
- **TAG:** If the lower aquifer is contaminated, hydraulic barrier technology should be considered for use with other technologies (not as a stand alone technology). A hydraulic barrier is formed by injecting water from a series of wells to form the barrier, and such a barrier would act to prevent contaminants from downgradient migration (see below for further discussion).
- **TAG:** Sheet piling should be retained (not as a stand alone technology) if thermal is used in the source area. It may be necessary to dry out the source area completely to get most of the contaminants to release from the tight soils. Prevention of groundwater intrusion into the source may be desirable if this is the case. Sheet piling should also be retained (not as a stand alone technology) if excavation is chosen to remediate the source area. If excavation is chosen for the source area, it may be needed not only for reasons of excavation, but also to prevent a "peak" in the groundwater concentrations downgradient caused by the disturbance of the soil. Such a "peak" moves slowly downgradient and can prolong monitoring of the site. Such a peak may also occur when thermal methods are used to remediate the source area. EPA discussed this with Mr. Schweizer after the meeting and told him that they would check with thermal vendors regarding whether or not they considered using sheet piling during the heating process. The project manager doesn't remember sheet piling being used to control groundwater

flow during heating. Most of the vendors consider movement of groundwater during the process and for the most part movement is controlled by extraction wells.

- **TAG:** The TAG Advisor suggested that EPA retain Enhanced **Aerobic** Bioremediation for use with other technologies, in order to address the potential increases in vinyl chloride concentration as a result of biodegradation. Vinyl chloride is able to biodegrade under aerobic conditions. EPA favors Enhanced Anaerobic Biodegradation for treatment outside the source area, and for polishing the source area after thermal treatment is completed. If only Enhanced Anaerobic Biodegradation is used, the chlorinated volatile organic compounds may degrade to vinyl chloride, and then further anaerobic treatment may take many more years to reach Preliminary Remediation Goals for vinyl chloride. This problem could be solved by adding an electron acceptor to the aquifer, perhaps simply by aerating the aquifer, after anaerobic treatment has done what it can. EPA said they would discuss degradation issues with the engineer working on the Feasibility Study because Rose Marie thought vinyl chloride would also degrade anaerobically. Data from the Site indicate that vinyl chloride is degrading anaerobically. This is supported by the literature which suggests that under the right conditions, vinyl chloride can degrade directly to ethene. Therefore, there isn't a need to retain aerobic biodegradation. However, EPA does want to note that if there was a need to add other components to a remedy because something unexpected happened in the field, we could do so.

Brian clarified the difference between aerobic and anaerobic.

- Aerobic – uses oxygen.
- Anaerobic – does not use oxygen.
- Are the indoor air sampling results available for the public? Residents would like to see indoor air sampling results at the Open House.

### **Community Advisory Group – Next Meeting's Agenda**

- 08/31/09 from 6:30 – 8:30
- CERCLA and Q&A ~ 50 minutes
- Six Remediation Packages (EPA would identify their preference) and Q&A ~ 50 minutes
- Air Sampling Results ~ 5 minutes
- Lead Update from EPA ~ 5 minutes
- Next Steps ~ 5 minutes

### **Green Action Comments**

#### ***Verbal Exchange between Rose Marie Caraway/EPA and Bradley Angel/Green Action Regarding Maywood Site***

- Were the residents in Maywood satisfied with the technology preferred by EPA? Based on a brief discussion with the community leader and technical advisor in Maywood, Green Action indicated that the community was not satisfied. Green Action provided general statements regarding the basis of the dissatisfaction (e.g., system did not completely clean up the contamination and the equipment broke down).
- EPA provided follow-up details regarding challenges during the remedial action at the Maywood site:

- Equipment did experience a couple operational/ maintenance issues during the first year of operations. As an example, a fan broke down, which resulted in shut down of operations for three days. EPA typically describes the first year of the treatment system as the shakedown period. EPA cleaned up the Pemaco source area within this first year.
- During the one-year duration for the remedial action, there were less than 20 days of down time.
- The thermal treatment was intended to remediate the source area (area of highest concentration), rather than the entire site. The remedial action successfully removed 99% of the contaminant mass in the source area.
- Although like Maywood, AMCO may use thermal heating to heat the contaminants so they are converted to a vapor phase, there is an important difference. At Maywood, after thermal treatment of the soil and groundwater, extracted vapors were treated using a flameless thermal oxidizer. At AMCO, after thermal treatment of soil and groundwater, extracted vapors will be condensed and taken offsite for treatment and/or recycling.

**08/04/09 Letter from EPA to Green Action**

- EPA stated that they would like to choose a remedy based on objective scientific data taking into consideration community needs.
- Green Action stated that EPA made an agreement with the community 10 years ago in which EPA would select the remedial technology that the community had approved.
- Of the nine technology evaluation criteria, EPA is required to comply with the first two criteria (protection of human health and compliance with environmental regulations). Of the remaining seven criteria, five are considered to be “balancing criteria,”. The final two criteria (State Acceptance and Community Acceptance) are considered to be modifying criteria.. They are considered after EPA announces a preferred remedy to the community and gives everyone a chance to comment on the preferred remedy. EPA evaluates Community Acceptance and State Acceptance at the end of that process. The purpose of the letter to Green Action and the community was to encourage the community to work with EPA now while the agency is writing the Feasibility Study document and provide input. EPA uses this document as a basis for recommending the preferred remedy.

***There was a request that all materials should be provided in Spanish, including:***

- CAG and other meeting agendas.
- Any documents provided in English (draft or finals).
- Technological summaries (one to two paragraphs).

**EPAs Presentation/Information**

***Discussed at Previous CAG Meeting (07/20/09)***

- Excavation to a certain depth
- In-situ chemical oxidation (after excavation)
- Thermal heating – soil and water (after excavation)

### ***Enhanced Anaerobic Bioremediation***

#### **Less technical description:**

- Enhanced Anaerobic Bioremediation (EAB): Data from previous work indicate that microbes exist at the Site that are capable of degrading the Site contaminants. EAB would entail enhancing conditions within the subsurface to encourage the growth of these microbial populations, leading to degradation of contaminants without harming the environment.
- EPA preference is to design the system to utilize the Site's naturally occurring microbial population, which have been shown to degrade contaminants (VOCs and total petroleum hydrocarbons) within the source area. As part of the remedial action, nutrients or other materials can be added to enhance conditions in the subsurface to facilitate growth of these microbes.
- Additionally, EPA could add the appropriate microbes to the areas outside the source area when they are heating up (thermal treatment) the source area.
- The high residual temperatures following thermal treatment could result in a higher rate of microbial activity in the areas outside the heated zone which could encourage remediation of contamination through bioremediation.

#### **Technical description (see PowerPoint presentation):**

- Deliver organic substrate and nutrients to the subsurface to promote growth of microbes that breakdown VOCs.
- Delivery methods: direct push, injection, recirculation, or fixed barrier.
- Determine effectiveness at stimulation and maintaining anaerobic reductive dechlorination within treatment area.
- Determine distribution of electron donor in aquifer zones.
- Determine required application frequency of electron donor.
- Determine optimum engineering parameters for each electron donor application method to achieve efficient distribution and maintain anaerobic reductive dechlorination in target treatment area.

#### ***On-Site Groundwater Remediation ( technologies not retained)***

- Placement of slurry wall/sheet piles ("box") around site to prevent migration of impacted groundwater from the source area to downgradient locations.
- Source area contaminants to remain in-place.
- No "treatment" of COCs occurs.
- Significant cost while groundwater source remains.

#### ***Groundwater Remediation Technologies Suggested by TAG Advisor (not retained)***

- Enhanced **Aerobic** Bioremediation (see TAG advisor comments above). Enhanced **Aerobic** Bioremediation was suggested by the TAG advisor. EPA has not retained this technology for the following reasons:
  - The targeted COCs at the Site have been shown to degrade under "anaerobic" conditions.
  - The conditions at the site are predominantly anaerobic, with existing data showing ongoing degradation of Site contaminants. It is believed that further enhancing these conditions (i.e., implement Enhanced **Anaerobic** Bioremediation) would be more effective in degrading existing contamination.

- Hydraulic Barrier (see TAG advisor comments above). The TAG Advisor suggested to EPA consideration of a hydraulic barrier to prevent downgradient migration based on injection of water into the subsurface.
  - Based on conditions at the Site (e.g., high regional groundwater table, significant NAPL), this technology is not considered to be effective in controlling contaminant migration.
  - EPA has retained groundwater extraction and treatment for further consideration. Groundwater extraction and treatment is intended to establish a barrier to downgradient contaminant migration.

#### ***Phytoremediation***

- Involves planting of trees and other plants which function to absorb contaminants through their root system.
- Phytoremediation would be used in conjunction with other remedies; not as a stand-alone remedy. This technology is applicable only after an active aggressive remedial action to address residual contamination in groundwater.
- Retained for parts of the groundwater plume; not for treatment of the entire plume.

#### ***Retained vs. Not Retained Technologies***

- EPA has been consistent in retaining technologies for detailed evaluation against the nine criteria that result in **removal of the contaminants**. With many of the technologies that have not been retained are ones in which **the contaminants remain in place**.

#### ***Construction of building on site to enclose treatment plant?***

- EPA's preference is that the treatment plant is enclosed by a building as a way of addressing both safety and noise issues. The current Site buildings are currently still in-place.
- EPA must go through the enforcement process. A discussion of the treatment plant location will be one of the topics on the agenda during the enforcement process.

#### ***Real time monitoring?***

- Real time operational monitoring (geared toward ensuring the remedy is functioning) is able to be implemented as part of the remedial action.
- It is not possible to provide real time chemical concentration monitoring, because the analytical data must be processed in a laboratory, requiring a one to two week period of time.

#### ***Lead***

- West Oakland South Prescott neighborhood Lead Investigation will occur. Soil sampling will begin soon.

***Open House – October 1, 2009***

- Stations with tables, which could be browsed for the first couple hours of the open house.
- The CAG is welcome to have their own table or to share a table with TAG.
- Refreshments will be provided.
- The public prefers a BBQ with hot dogs and burgers – a community event, which will encourage more people to attend. CAG could get involved in this component of the open house, but EPA can not.
- Will send out an invitation two weeks ahead of time.
- Improving mailing list at this time.
- Will report on ambient air monitoring results from June 2009.
- Will move tent further away from the play structure in South Prescott Park than the 2007 meeting (per Green Action's request).
- EPA will send a Draft Station Guide for public input.