

Cabot Carbon/Koppers Superfund Site: Record of Decision Summary

Selected remedy
Consideration of public comments
Considerations for Moving Forward

Background

Koppers, a former wood treating site, is a portion of the Cabot Carbon/Koppers Superfund Site that has been the focus of ongoing evaluations designed to provide the basis for selection of a cleanup option (e.g., remedial action) to address contamination that resulted from 100 years of operations.

In July 2010, the United States Environmental Protection Agency (EPA) issued a Proposed Plan for the clean up. EPA was required to review and consider comments received during the subsequent public comment period to modify that Plan as appropriate. The EPA Final Cleanup Plan is formally documented in the Record of Decision or ROD, released on February 2, 2011. Included in that ROD was a "Responsiveness Summary" documenting comments received, and how these were considered in finalizing the decision.

[See Page 7 for sources of additional and more in depth information on the Site]



Contamination Issues Addressed in the Remedy

Source Areas

The 90-Acre Koppers Site includes four source areas heavily contaminated with creosote. This material is in the form of As a Dense Nonaqueous Phase Liquid (DNAPL) this material has, and will continue, to slowly migrate vertically-deeper into the ground. Historically, it was thought clay layers beneath the site would inhibit this migration. However, there is evidence that at some locations contaminants have reached groundwater in the Floridan Aquifer. This is important because the Murphy Wellfield, located ~2 miles northeast of the site, withdraws water from this aquifer.

DNAPL migration can be complex, it can migrate laterally along clay layers as well as vertically through openings in the clay permit. The precise distribution of DNAPL is uncertain, a factor the remedy must consider.

There may be additional source areas on the site that have yet to be characterized (e.g. potentially buried drums). Soil contamination in these other areas may exceed Florida Department of Environmental Protection (FDEP) groundwater protection Soil Cleanup Target Levels (SCTLs). These FDEP's SCTLs are

designed to limit the leaching of soil contaminants into ground water.

Groundwater

In addition to addressing creosote, contaminants dissolved in groundwater can also migrate offsite. Therefore, the remedy must address limiting offsite migration of contamination in groundwater.

Onsite Surface Soil Contamination

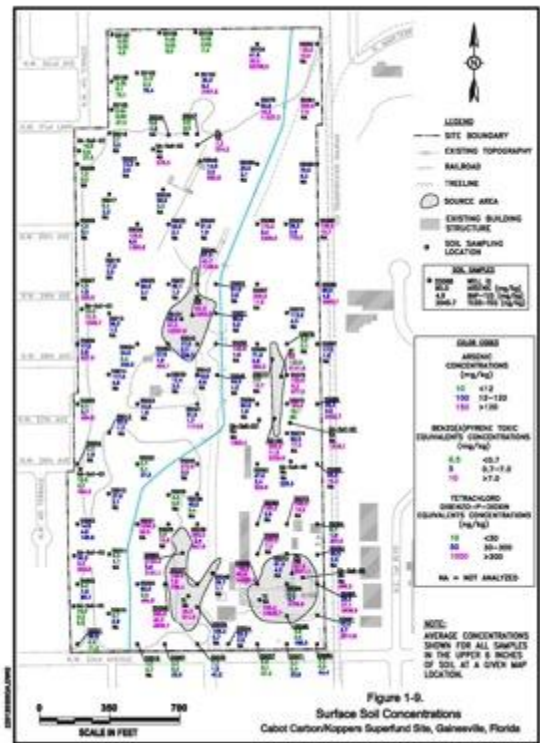
Concentrations of contaminants across most of the 90 acres exceed default FDEP commercial/industrial SCTLs. The remedy must address the potential for unacceptable risks associated with direct contact to these soils. In addition, surface soil contaminants can migrate via air or surface water runoff and impact offsite areas.

Offsite Soils

It is a an EPA requirement that contamination be “delineated” out to where containments meet residential SCTLs or background levels. That is not yet completed. Based on current data, homes to the west of the site have soil concentrations above the Florida default residential criteria for dioxins (7 ppt). Background samples collected in residential areas over a mile from the site were found to be below this value.¹

Creeks and Surface Waters

Sediments in Springstead and Hogtown Creeks have been impacted from historical releases from the Cabot Site and surface runoff from the Koppers Site. Hot spots of pine tar residues have been identified and Cabot has initiated a removal action.



¹ Interactive map showing offsite Koppers Soil Data is available at the following website: <http://www.alachuacounty.us/Depts/EPD/Pollution/Pages/SoilData.aspx>

Components of the Remedy

Components of the onsite soil/source area remedy



Soils Outside Consolidation Area (Green Area)

- Excavate some hot-spots – where soil contaminants may impact groundwater.
- “Regrade and Cover”
- Investigate for drums/other sources

Consolidation Area (Blue Area)

- Vertical Barrier Wall
- Impermeable Cap
- Source Area Treatment
ISS/S
ISGS

In-situ stabilization/solidification
In-situ geochemical stabilization

Onsite Source Areas

Source Area Treatment:

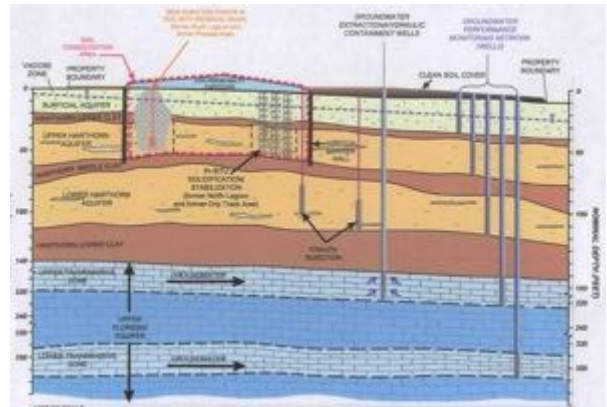
- In two of the four source areas (North Lagoon and Drip Track Area), subsurface soils will be mixed with a solidifying agent to a depth of 65 feet (In Situ Solidification/Stabilization – ISS/S)
- In the remaining two source areas (former Process Area and South Lagoon) chemical treatment injections will be used to reduce, encapsulate and solidify contaminants (ISBS or ISGS)

The clear preference of the community was for excavation, which was consistently rejected because of cost, technical issues, consistency with decisions at other sites, and the lack of significant additional risk reduction for the cost. The remedy in the proposed plan was to use ISS/S in the Hawthorne unit, and ISGS in the surficial. The Local Intergovernmental Team (LIT) and community expressed concerns about ISGS, recommending the technology that has been more demonstrated as effective – ISS/S – be used at all depths.

The ROD cleanup plan is a compromise, to use ISS/S in source areas with documented impacts in the Floridan Aquifer, and ISGS in the other source areas. The effectiveness of ISGS is to be monitored, and if not effective, a contingency plan would prompt alternative remedies in this area. Therefore, the implementation and monitoring of the effectiveness of this action must be carefully reviewed.

Vertical Barrier Wall to a Depth of 65 Feet: This is consistent with the proposed plan, and is necessary in part because of uncertainties in the migration potential of the DNAPL and ability to reduce flow of contaminants in groundwater and surface waters to offsite areas.

Concerns have been raised regarding the long-term effectiveness of this barrier wall, and although it addresses lateral migration, it does not limit vertical migration. It is a standard technology, considered by agencies and technical reviewers to be a critical component of the source area treatment.



Impermeable Engineered Cap Over Consolidation Area: The consolidation area (the “Blue Area”) is approximately 40 acres where the higher concentrations have been identified, including the 4 source areas. The specific boundaries will be defined by the location of the vertical barrier walls. This is necessary to reduce infiltration.

This engineering control will eliminate direct contact with the contaminants in this area. Future monitoring of this cap will be needed to ensure that it remains effective. Contaminated soils from other areas may be placed in this area, and it is necessary to have the cap sloped to promote runoff of rainfall. The community was concerned that this area would represent a large unsightly mound, however, the current information suggests this will not be a large raised mound, but integrated with the overall site.

Onsite Surface Soils Outside the Consolidation Area

Outside the consolidation area (the “Green Area”) a minimum of two feet of clean soil will be placed over all impacted soils on the property to prevent direct contact to contaminants and eliminate contaminant migration pathways (runoff, dust migration). Some hot spots may be removed, including soils that may pose an ongoing threat to groundwater. Some of the soils will be removed in order to construct the stormwater retention basin, or part of the overall strategy to “regrade and cover”.

The previous documents (onsite risk assessments, feasibility study) were designed in part to support a decision to allow elevated concentrations of contaminants to remain at the surface in many areas of the site outside the consolidation area. The risk assessment has been rejected, so the contaminants in the surface soil will not exceed residential or commercial criteria following remedy implementation. However, in most cases this will be by use of a soil cover, not by removing the contamination.

Many comments recommended excavation of contamination in the green area with offsite disposal, an option that was rejected. Under Florida rules, a property owner is explicitly allowed the use of an engineering controls as opposed to excavation to address reducing risks associated with direct contact to soil contaminants.

Positive Aspect: Most quickly and efficiently “stabilize” the site by eliminating risks associated with directly contacting soil contaminants as well as continued transport offsite. Issues to be considered for implementation and future uses:

- Sources may be present outside the consolidation area. It may be easy to overlook subsurface impacts when simply placing a soil cover over the site. This mandates thorough study and oversight of any remediation outside of the consolidation area.*
- Future development can be safely done on sites where contamination remains onsite. However, reduced flexibility/options and potential increased costs, etc. can decrease incentives to develop in these areas.*
- Strict adherence to any and all "institutional controls" over long periods of time will necessitate involving local government (e.g. land use planning, permitting, property appraising and tax assessing)*

Groundwater Remedy

The source area treatment is designed to address the areas of highest contamination that will continue to impact groundwater. In addition to the actions discussed previously, the following components are also included to address groundwater impacts:

- Collection and treatment of contaminated groundwater.
- Expansion of the monitoring well network
- Contingency plans based upon monitoring data
- Treatment of groundwater on the Cabot Site

Opinion: USEPA did not fully consider citizen comments on the inadequacy of the monitoring network and interpretation of the groundwater data.

Storm Water Management

The plan includes installation of storm water controls and improvements including a retention/detention pond. This has been initiated. With completion of the actions to cap/cover contaminated soils, the pathway for offsite migration of contamination will be addressed. There should be some concerns regarding the need for additional stormwater management that the city will require commensurate with future re-use and development. It would be advisable to have sufficient future stormwater capacity built during the remediation process in order to minimize future disturbance of previously remediated land.

Offsite Soils

The cleanup goals will be consistent with the Florida the default residential SCTLs, primarily this will be determined by identification of properties with surface soil concentrations of dioxins above 7 ppt. Use of risk assessment to derive alternate cleanup levels was rejected. Several options are available and may be negotiated with individual property owners. However, the primary approach will include temporary relocation as the contaminated soils are removed and the property restored.

Note:

While the intent of ROD is clear, there are some contradictory statements, errors in tables, etc. that should be addressed. These are not the focus of this ROD Summary.

The remedy proposed in the ROD makes it clear that EPA was not persuaded by many of the comments. While I cannot state the completeness of the responses decisively, I could not locate some topics and/or specific comments that were submitted.

Moving Forward

The closing of the Koppers wood treating operations in December 2009 not only addressed potential ongoing releases from the industrial operations, but also facilitates more aggressive and rapid remediation efforts to address onsite contamination. However, there are some critical issues to be considered as this process moves forward to restore the nearby neighborhoods and provide benefits to the city/community.

The process leading to the “final remedy” includes:

- Consent Decree. Following negotiations with the PRP, the consent decree will detail the commitments (schedule and responsibilities) for implementation of the remedy. There will be a 30-day comment period on the consent decree. This is a PGC opportunity.
- Remedial Design. This is an engineering document that will provide details that are not included in the ROD regarding additional data collection and remedy implementation.
- Remedial Action Implementation. There will be additional work plans, investigations, and pilot tests as the process proceeds (e.g. delineation of soil contamination offsite, additional onsite source areas, new well installations, etc.)
- Five-Year Reviews. Contamination will remain onsite, and the effectiveness of components of the groundwater remedy remains uncertain. Therefore, it is a requirement that these issues be reviewed and additional actions implemented as appropriate.

In addition to the ongoing reviews by the LIT, the PGC technical advisors will also review the design document and provide updates on the progress of the remedial action to the community, while also encouraging EPA to provide to engage the community in upcoming activities.

However, preparing to engage in the upcoming activities is challenging. I have identified several areas where additional research at this time will provide a better foundation for effective decision-making. These include the following:

Neighborhood Support. The remediation process will be stressful for many of the residents. A clearer understanding of the process will help us anticipate issues and areas where we may provide support. For example,

- How the remediation process has been implemented in other communities, problems that arose, and how these were resolved.
- Reassurance that once remediation is completed it is safe to return.
- EPA relocation guidelines and how these have been implemented at other locations. The procedures for "Temporary Relocation" are onerous and complex. They also are based upon the individual citizen resident paying for their own relocation and then being reimbursed by the Federal Government after EPA approval. Policies in place that mandate "Permanent Relocation" that may be further evaluated.
- Potential ways to provide support to individuals and potential engagement of the Stephen Foster Neighborhood Association for resident's participation and feedback. This may lead to opportunities to assist in creating and implementing a master plan that could enhance the neighborhood.

Institutional Controls. One of the problems frequently encountered is tracking and enforcing the land use controls that will be in place.

- Understanding the range of common problems in maintaining these LUCs would help lead to a more effective process for the complex matrix of these that may in place following remediation.
- The strategies, role of local governments, and potential financing of this effort by the PRP should be reviewed to prepare for future effective implementation of this component of the remedy.
- There are current deficiencies in the Florida system for tracking LUCs. This registry would be helpful on a broad scale.

Site Reuse Options/Issues.

- Residual contamination will remain across much of the Koppers site beneath the cap or cover and the selected remedy was to support future commercial uses. EPA guidance (see quote below) considers various aspects to redevelopment, including identifying as early as possible components of the remedial design that may increase flexibility for future use. This information should be understood when preparing comments on the draft remedial design document.
- Many remediated superfund sites remain unused and fenced. Identifying impediments to redevelopment as well as potential future costs/responsibilities of the local government may allow the community better prepare to face these challenges.

"In many cases, a completed remedy may not be able to accommodate the planned use without modification because of technical, legal, or other factors. ... EPA is prohibited from funding, nor can it require PRPs or others to fund, activities that are considered "enhancements" to the remedy."

"The Agency will not for example, leave a site with no means, short of modifying the remedy, to support structures that will be required for the anticipated use. The remedy will allow reasonable areas for them. As a part of the remedy, EPA may provide clean corridors for future utility access when anticipated use makes it likely that they will be needed."

"EPA may fund, or require a potentially responsible party (PRP) to fund such actions as are necessary to ensure that the site is capable of accommodating the reasonably anticipated future land uses, so that the remedy will remain protective over the long term." (Those types of action are not "enhancements")

EPA, 2002

Sources of Additional Information

Sources of More in Depth/ Additional Information on the Site

Basic background information as well as the ROD and EPA Fact Sheet on the remedy can be found at the EPA Website (<http://www.epa.gov/region4/waste/npl/nplfn/cabkopfl.htm>). Alachua County Library (401 E. University Ave., Gainesville, FL 32601) is the information repository where additional documents may be found.

Alachua County Environmental Protection Department (ACEPD) provides information and access to several of the Site documents at the following website:

<http://www.alachuacounty.us/Depts/EPD/Pollution/Pages/CabotKoppersSuperfund.aspx>

In addition, the Local Intergovernmental Team (LIT) presented a summary of the ROD to the City and County Commissions. That presentation, as well as additional site documents, can be located at <http://gainesville.legistar.com/LegislationDetail.aspx?ID=839388&GUID=5E094E49-D5A9-4412-825E-9A74031EAABE&Options=&Search=>

Other Resources

Reusing Superfund Sites: Commercial Use Where Waste is Left on Site (EPA 2002)

http://www.epa.gov/superfund/programs/recycle/pdf/c_reuse.pdf

This report provides industry and government officials with technical information useful in planning, designing, and implementing safe commercial reuse of sites where the remedy calls for on-site containment of contaminated material.

Land Use Controls

Institutional Controls: A Guide to Planning, Implementing, Maintaining and Enforcing Institutional Controls at Contaminated Sites (EPA, 2010)

http://epa.gov/superfund/policy/ic/pdfs/PIME_IC_Guidance-Interim_Final_11.16.2010.pdf

This discusses the potential role of local governments and funding. Many references discuss problems in tracking and enforcing ICs over the long term.

Note: The state of Florida requires sites to be listed in the Institutional Controls Registry (ICR) <http://www.dep.state.fl.us/waste/categories/brownfields/pages/ICR.htm>. *There are no sites listed for Alachua County.* Because of potential complex matrix of properties with restrictions, this process should be clarified and improved as we move forward.

Relocation of affected residents at sites of Remedial Action

These discuss the policies and procedures for relocating residents during the remediation process.

<http://www.epa.gov/superfund/community/relocation/>

<http://www.epa.gov/superfund/community/relocation/tempreloc.pdf>

<http://www.epa.gov/superfund/community/relocation/modelsow.pdf>

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