U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
American Agricultural Chemical Company - Removal Polrep
Final Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #20**
Final Pollution Report
American Agricultural Chemical Company
A4SN
Cayce, SC
Latitude: 33.9682066 Longitude: -81.0594463

To:
From: Chuck Berry, On-Scene Coordinator
Date: 8/26/2013
Reporting Period: March 17, 2013 - August 15, 2013

1. Introduction

1.1 Background

Site Number:	A4SN	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	3/14/2011
Response Authority:	CERCLA	**Response Type:**	PRP Oversight
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:		**Start Date:**	9/26/2011
Demob Date:		**Completion Date:**	8/15/2013
CERCLIS ID:	SCN000407801	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

For background information including Site Description, Location and Description of Threat, please refer to previous POLREPs.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

ConnocoPhillips (COP) was identified as the Potentially-Responsible Party (PRP) and entered into an Agreement and Order on Consent (AOC) to perform the removal action. Half-way through the removal action, COP went through a corporate restructuring, with the exploration and refining divisions retaining the ConnocoPhillips label and the transportation and retail divisions (in which the remediation section operates) spun off as Phillips66 (P66). Therefore the project was completed under direction of P66, and, as such, "P66" is used throughout this report regardless of the dates with respect to the corporate restrucuring.

P66 performed a removal action at the American Agriculture Site to remove lead- and arsenic-containing soil that was deposited during operation of a superphosphate fertilizer plant on the property during the early half of the 20th century. The property was subdivided after the closure of the plant, and a concrete company, Southeastern Concrete Products Company (SEC), is currently operating on the northern end of the site. Additionally, the southern end of the site is occupied by a metals recycling facility, currently OmniSource but formerly the Carolinas Recycling Group (CRG).

When the concrete plant was built, an elevated causeway bridge was constructed so SEC's aggregate trucks could dump directly into the hoppers. Construction of this causeway bridge involved building two approach ramps. These ramps were constructed using fill sourced on site, which happened to be waste from the old lead-acid chambers that was dumped on site. Since the plant had to remain in operation, at least one ramp leading to the bridge needed to remain open during the removal action. P66 implemented a phased approach to the removal. Phase 1 involved removal of the east ramp. In Phase 2, the east ramp was reconstructed while areas outside the ramps were excavated. Phase 3 concluded with the removal of the west ramp and the areas surrounding the west ramp. At the time of this report, SEC is still constructing the western ramp, and P66 remains on standby to perform some final site grading and concrete pad installation as part of the workplan. However, all contamination is either removed or covered with a protective layer as detailed below, and any final site work remaining is incidental to the removal action. EPA is considering the site complete for reporting purposes.

2.1.2 Response Actions to Date

Even prior to the signing of an AOC, P66 developed a comprehensive Remedial Investigation (RI) and Feasibility Study (FS) to delineate the areal and vertical extent of contamination. Beginning in 2005, P66's contractor, URS Corp. (URS) collected soil, groundwater, and sediment samples from the site and adjacent streams. The results indicated that both ramps were constructed of material from the old acid pits, but contamination on the rest of the site was generally limited to just a few feet below the surface. Groundwater impacts were also noted, but remediation of these did not fall under the AOC. The South Carolina Department of Health and Environmental Control (DHEC) directed and oversaw those remediation efforts. (P66 chose to describe and detail those efforts in its final Removal Report submitted in support of the AOC, and they are briefly discussed here.)

In 2006, URS completed the FS with input from the various regulatory agencies. The FS concluded excavation was the most cost-effective and achievable alternative for the contaminated soil. An in situ stabilization method was selected for the groundwater contamination.

In 2011, the AOC was executed, and the site remediation goals were defined as removing all soil with lead levels greater than 400 milligrams per kilogram (mg/kg) and/or arsenic levels greater than 40 mg/kg. Although no absolute depth of excavation was defined, later talks between P66, URS, and the OSC led to the agreement that contaminated soil would be excavated to a minimum depth of 2 feet below ground surface (bgs). However, P66 generally agreed to extend the depth of excavation to 5 feet where necessary, as defined by in situ x-ray fluoroscopy (XRF) or the presence of stained soil. EPA insisted that in no instance shall any remaining contamination be left less than two feet bgs after backfill and restoration activities.

A thorough and exhaustive sampling event was conducted in June 2011 in order to fully characterize and assess the areas previously identified. The assessment report was submitted in September 2011, and included disposal profile sampling for the soil in the two ramps. Both showed lead leachate levels above the regulatory limit. P66 chose to treat the soils with a commercial amendment in order to bind the lead into a non-soluble mineral form.

URS began mobilization in September of 2011, with activities fully up and running over the next month, with construction activities beginning on Octobers 17, 2011. Work proceeded in 10-day shifts, with 4 days off in between. The first and last days of the 10-day shifts were considered mobilization days. Thus, URS was completing an average of 4 field days per week.

URS began excavating contaminated soil on the east ramp. The entire east ramp was excavated down to ground level. As most of the ramp would be covered by several feet of fill from the reconstructed ramp, EPA and P66 felt the reconstructed ramp would be sufficient cover for any contamination left in place. However, URS was asked to excavate additional material around the edges of the ramp so that at least 2 feet of clean fill would cover any remaining contamination. XRF was used throughout the areas surrounding the east ramp, and surface contamination was removed where necessary. A figure detailing the excavation can be found at http://www.epaosc.org/site/doc_list.aspx?site_id=5359. The figures referenced above also show the XRF reading of the soil at the bottom of the excavation prior to backfill. Where contamination was left in place, URS covered it with a geotextile fabric and sand to provide both a physical and visual barrier between the uncontaminated backfill and the contaminated soil beneath. Confirmation samples were collected prior to backfill for all excavated areas. Excavated soil was placed into stockpiles of between 400 and 500 cubic yards, and sampled for disposal compliance. Piles that failed the test were amended with 4-5% EnviroBlend CS® reagent. All stockpiles were required to pass the disposal test prior to off-site shipment as non-hazardous material.

Phase 1 was complete in February, 2012. While the east ramp was being constructed, the west ramp had to remain open in order to continue servicing the concrete plant. P66 contracted with the SEC itself to replace their own ramp. SEC's construction crews began the process in February and completed the ramp in May 2012. During the interim, URS conducted Phase 2 operations, excavating areas near the front of the property around SEC's owner's dog kennels. URS designated these as "Discolored Soil Area" (DSA). Areas between the hopper bridge and the plant were also addressed. At the OSC's approval, areas immediately around support pilings and foundations were left in place as de minimus exposure areas. A figure detailing the excavation can be found at http://www.epaosc.org/site/doc_list.aspx?site_id=5359.

Once the east bridge was reopened in May, removal of the west ramp started in June of 2012. URS began Phase 3, although the demarcation between Phase 2 and 3 was not distinct. Contamination around the west ramp was more extensive than the eastern ramp, and much of the surrounding area required removal as well, blending into areas addressed during the interim between ramp excavations. A figure detailing the excavation can be found at http://www.epaosc.org/site/doc_list.aspx?site_id=5359. URS excavated most of these areas to 5 feet bgs. One notable exception was the tongue of contamination that extended south on the CRG property. This was excavated generally to only a foot or two depending on XRF readings. No contamination was left in place in this area or the steep hillside leading back onto the SEC property, and URS backfilled the CRG parking area with gravel. Unlike the east ramp, P66 chose to excavate the western ramp to a full 5 feet bgs. Removal activities in the western area was complete in March, 2013, and the area was ready for SEC to reconstruct the ramp around the 1st of April. As of the writing of this Pollution Report in August 2013, SEC has not yet completed reconstruction of the western ramp, although construction is underway. Design delays, as well as material shortfalls and rain delays, have hampered productivity.

Although not technically part of the AOC, groundwater remediation was a part of the overall site effort. This work was performed under the direction and oversight of DHEC. In February of 2011, URS began a pilot study, injecting AquaMag® into the subsurface to alter the groundwater pH. In October of 2011, a larger pilot test was performed at a greater concentration of reagent. In January, the full-scale implementation started, using the same concentration of reagent but at a greater volume per well. A estimated total of 350,000 gallons of magnesium hydroxide reagent slurry was pumped into the shallow groundwater aquifer through several hundred temporary wells across the southern end of the site. URS is still waiting for the western ramp reconstruction to finish before installing permanent monitoring wells that will be used for quarterly sampling. DHEC will continue to monitor the efficacy of the treatment.

All lead-contamination is removed and/or covered with fill. Although URS will still be required to pour the concrete for the approach to the west ramp, EPA is considering this a private matter between SEC and P66; all response actions are considered complete at this time.

Waste Stream	*Quantity*	*Treatment*	*Disposal*
Non-hazardous lead-impacted soil	63,640 tons	Immobilization with EnviroBlend CS	Republic Northeast Landfill 1581 Westvaco Road Eastover, SC 29044

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

ConocoPhillips Company was identified as a PRP and entered into an Administrative Order on Consent on March 14, 2011. On May 1, 2012, COP spun off the P66 division, of which the remediation services were a part. P66 is now the legal PRP for the site.

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities
There are no additional response activities required at this time.

2.2.1.2 Next Step
P66 will pour some concrete at the approach to the western ramp. EPA is not considering this a response activity but a private contracting issue between P66 and SEC.

2.2.2 Issues
All issues relating to the removal or restoration of the site have been resolved. No outstanding issues remain.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

COP
USEPA
SCDHEC

3.2 Cooperating Agencies

USCG GST

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.