U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
LCP Chemical - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #1**
LCP Chemical
GAD099303182
Brunswick, GA
Latitude: 31.1499528 Longitude: -81.4914894

To:
From: Galo Jackson, RPM
Date: 9/13/2010
Reporting Period:

1. Introduction

1.1 Background

Site Number:	GAD099303182	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	CERCLA	**Response Type:**	PRP Oversight
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	NPL	**Operable Unit:**	
Mobilization Date:		**Start Date:**	
Demob Date:		**Completion Date:**	
CERCLIS ID:	GAD099303182	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

Site Description

A Site is a former chlor-alkali manufacturing facility. During its operation, a pool of causic brine (a/k/a a "caustic brine pool" or "CBP") was created in the groundwater beneath the cell building process areas, when releases of liquid sodium hydroxide (caustic) combined in the groundwater with sodium chloride (brine). The high sodium chloride component in the brine mixture causes the density of the CBP to b e greater than that of water and thus it tends to sink slowly over time. None of the groundwater wells sampled during the initial remedial investigation displayed detections of Site-related contaminants below the cemented sandstone layer, suggesting no impacts from the overlying CBP. However, a subsequent round of groundwater sampling indicated dissolved heavy metal concentrations that increased over time in the aquifer underlying the sandstone, suggesting that the cemented sandstone layer may be allowing migration of the CBP and its associated contamination.

On March 29, 2006, the Region 4 Waste Management Acting Division Director approved an Enforcement Action Memorandum, requesting a time-critical removal action for the CBP. The Action Memo concluded that the CBP represents a threat to human health and the environment, warranting action on a time-critical basis because: 1) the data suggested vertical migration downwards, towards the Upper Miocene sands, 2) the high solubility of metals within the CBP, 3) the potential for contamination and/or recontamination of the marsh, and 4) the City of Brunwick's urgent need for additional drinking water sources. Plots of the mercury concentrations over time from the 12 horizontal well sampling ports, which underly the cemented sandstone, are shown in the 'documents" tab of this Polrep. The available data are current through May 2010.

The Action Memo proposed to: 1) extract the CBP to meet the removal action objectives, which are to reduce the pH of the CBP to less than 10.5 and the density of the CBP, 2) monitor the groundwater during the removal action to determine if the removal action objectives have been met and 3) provide a plan for additional response actions if the removal action objectives are not met.

2. Current Activities

2.1 Operations Section

Response Actions to Date

- In April 2007, Honeywell International, Inc. and EPA signed the Administrative Settlement Agreement and Order on Consent for Removal Action;
- In September 2007, EPA approved the August 2007 Work Plan for Caustic Brine Pool Removal Action; and
- In late September 2007, two sonic drill rigs were mobilized for extraction and monitoring well installation.

Construction of the CBP extraction system began in November 2009. In early February 2010, construction of the system was complete and the system entered its "shake-down" and testing period. Approximately 185,000 gallons of neutralized brine was conveyed through the system during the initial days of shake-down and testing operations. Four days into the testing period, a small sidewall failure in infitration gallery No. 1 forced system shut-down on February 12, 2010. Approximately 36,000 gallons of neutralized brine may have flowed through the breach in the infiltration gallery sidewall. About 16,570 gallons of ponded water were recovered using a vacuum truck. Repair of the sidewall was completed in early March 2010.

Following the shake-down and initial infiltration performance testing, it was determined that the calculated infiltration capacity of the unsaturated zone soil, as well as the carrying capacity of the aquifer were significantly overestimated. Based on the performance of the system, it was determined that the soil underlying the gallery would not be able to accept up to 120 gallons per minute (gpm), regardless of the water table conditions. A two-dimensional groundwater model confirmed that the calculations used in the

design of the infiltration galleries were inacccurate and that the aquifer would only be able to accept a fraction of the estimated gallons per day effluent. During infiltration gallery assessment, traces of amorphous silica precipitate were encountered in the infiltration galleries, as well as several locations within the neutralization process equipment and storage tanks.

Details of the problems encountered with operation of the CBP sytem are provided in the "documents" section of this Polrep, specifically, the report entitled CBP Removal Action: LCP Chemical NPL Site, Brunswick, GA: Project Update Memorandum, June 24, 2010.

Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

Honeywell International, inc.

2.2 Planning Section

Anticipated Activities

In early June 2010, EPA and the State of Georgia Evironmental Protection Division, as well as representatives of Honeywell and its contractors met at the Site to discuss the status of the CBP system. At this time Honeywell informed EPA and EPD of the problems described above and proposed, in very general terms plans for treating CBP, employing *in-situ* techniques. In July 2010, the Draft Work Plan for Caustic Brine Pool In-Situ Treatment was received and distributed to EPD and the EPA Office of Reseach and Development (Applied Research and Technical Support) in Ada, OK.

The "documents' section of this Polrep contains the Draft Pilot Test Work Plan: Caustic Brine Pool In-Situ Treatment, as well as the Review comments from EPA/ORD.

Planned Response Activities

Continued operation of the CBP recovery system, while the proposal for *in-situ* treatment of the CBP is evaluated.

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

No information available at this time.

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.