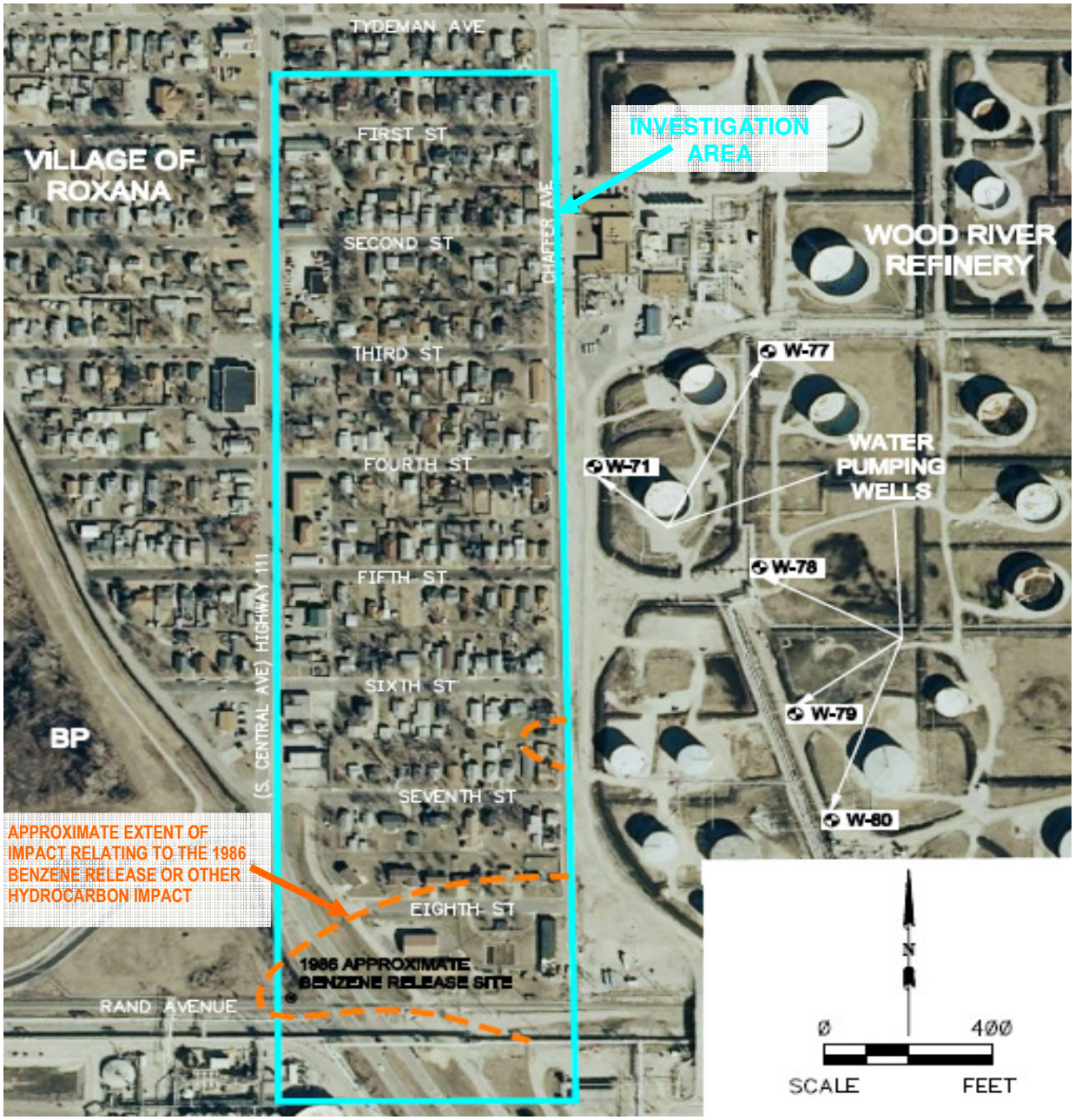
ROUTE 111/RAND AVENUE and WOOD RIVER REFINERY
WEST FENCELINE VICINITY ENVIRONMENTAL INVESTIGATIONS
ROXANA, ILLINOIS
FACT SHEET #1 – February 13, 2009

Introduction

This fact sheet is intended to provide a discussion of the efforts of Shell Oil Products US (SOPUS) to address a benzene release area and other petroleum hydrocarbons discovered during investigations of that release in Roxana, Illinois. These efforts are currently being overseen by the Illinois Environmental Protection Agency (IEPA).

Site Location & Description

The investigation area is located in the Village of Roxana, Madison County, Illinois. The area to be investigated is generally bordered by Route 111 to the west, First Street to the north, and the WRB Refining LLC Wood River Refinery to the east and south (refer to the area outlined in blue below). This area includes mixed industrial, commercial and residential land use.



Background

A benzene release occurred on January 30, 1986, from an underground pipeline used by the Wood River Refinery (WRR) while Shell owned and operated the refinery. The release site is located at the northwest corner of Route 111 and Rand Avenue in Roxana, Illinois in Madison County. The pipeline extended from the refinery to barge loading facilities on the Mississippi River, along a route parallel to and just north of Rand Avenue. Shortly after the release, a portion of the underground pipeline near the release site was abandoned in place and was replaced with an aboveground section following a similar route to the river, which is still in use. There is limited documentation available regarding the cleanup activities at the time of the release other than that the liquids that accumulated at the surface were recovered to the extent possible. Other than this liquid recovery, there is nothing to indicate that the subsurface release was further addressed at that time.

In 2005, analytical results from regular groundwater sampling of monitoring wells at the refinery, now WRB Refining LLC[1] Wood River Refinery, indicated an increase in the levels of benzene in the vicinity of the WRR west fenceline. The monitoring well where a benzene increase was detected is approximately 800 feet from the release location. SOPUS suspects that this occurrence was related to migration of benzene in groundwater from the 1986 release location due to groundwater pumping at the WRR. The uppermost groundwater aquifer occurs at depths of approximately 35 to 50 feet below ground surface (bgs) and, due to a groundwater pumping program at the WRR designed to capture and treat contaminated groundwater, flows generally to the east. Several water pumping wells are located near the western boundary of the refinery (refer to the map on previous page). Based on groundwater measurements, shallow groundwater was encountered in two localized areas of the WRR near the west fenceline. Further evaluation of these areas is proposed as part of a revised work plan being reviewed by IEPA.

Subsurface investigation activities in 2006 and 2008 (soil, soil vapor and groundwater sampling) have been performed by URS Corporation (URS), on behalf of SOPUS. Benzene dissolved in the groundwater has moved with groundwater; the highest benzene concentrations in groundwater originating at the release area generally occur in an approximate wedge-shaped band (outlined in orange on the map on the previous page), passing underneath the Roxana Public Works yard and increasing in width to approximately 200 feet wide at the western fenceline of the refinery.

The investigations also found other hydrocarbons characteristic of petroleum refining at locations in the Village near the WRR's west fenceline. A work plan identifying free petroleum product (i.e., petroleum product not dissolved in water) in several monitoring wells along the west fenceline of the WRR was submitted to IEPA on September 5, 2008. This work plan was prepared to guide future field sampling activities with the aim of assessing the nature and extent of hydrocarbons in soils and groundwater west of the WRR's west fenceline, as well as to refine the current understanding of the extent of benzene from the 1986 release in the subsurface. On November 25, 2008, the Illinois EPA provided comments on that work plan and requested a revised work plan be submitted. The revised work plan was received by IEPA on January 22, 2009. This revised work plan indicates free petroleum product was encountered at a shallower depth than anticipated in two localized areas of the WRR, along the west fenceline. Evaluation of this area is an objective of the proposed work. The revised work plan is currently under review.

What should I know about the health effects associated with benzene?

Benzene is the chemical component of gasoline and other petroleum hydrocarbons with the most serious potential health effects. The potential adverse effect of benzene from long-term exposure is on the blood. Benzene can cause harmful effects on the bone marrow and can cause a decrease in red and white blood cells leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection. As a known human carcinogen, exposure to benzene may cause leukemia (AML – acute myelogenous leukemia). More information about benzene can be found at the Agency for Toxic Substances & Disease Registry website (www.atsdr.cdc.gov/tfacts3.html).

[1] WRB, formed January 1, 2007, is a 50/50 joint venture between ConocoPhillips and EnCana Refineries LLC. The facility is owned by WRB and operated by ConocoPhillips.

Do I need to worry about exposure to benzene in my home?

The most likely exposure to benzene from these sources would occur by using impacted groundwater from private water wells in the area. However, a recently conducted Water Well Survey did not identify any private water wells in the area. Further, given the current information, there is little possibility for benzene from this area to reach the Village water supply wells as they are some distance from the investigation area. **If you know of private water wells existing in the area delineated in blue on the map on the first page, please contact the SOPUS representative listed at the end of this fact sheet.**

Vapor migration from subsurface free product or impacted groundwater could also pose a potential risk of exposure because volatile chemicals such as benzene, when present in groundwater and soil, can migrate as vapor into buildings. SOPUS performed limited soil vapor sampling on Village property, south of Eighth Street. SOPUS believes these results suggest that vapor migration is limited. SOPUS will perform additional soil vapor sampling to verify that residents to the north are not being exposed to volatile chemical vapors from the free hydrocarbon product and contaminated groundwater found on the western edge of the WRR property.

What are the next steps that are going to be taken?

The focus of the next phase of field investigation, which is primarily off the refinery site, includes the area north of that previously investigated, generally from Sixth Street on the south to First Street on the north, and between Route 111 and the refinery along Chaffer Avenue (see map on first page). A work plan was submitted to the IEPA on September 5, 2008. The work plan describes the proposed sampling and testing program. The proposed field activities include soil sampling, groundwater sampling and soil vapor sampling. This work will be conducted on Village or State property or rights-of-way, to the extent possible (e.g., alleys). At this time, SOPUS does not expect to conduct work on individual private properties. This work will be initiated following IEPA's review and approval of the revised work plan.

What is the anticipated schedule for the planned investigation activities?

Field activities are currently planned to be conducted in the Spring 2009 (subject to IEPA approving the work plan), with the results to be reported to the IEPA in Fall 2009. If actual threats to human health and the environment for which it is responsible are indicated during the field work, SOPUS will meet with Illinois EPA to explore ways to mitigate those threats. A detailed project schedule will be developed upon IEPA's approval of the revised work plan. Once the extent of any impact has been adequately delineated, the need for further work in the area will be evaluated and presented to IEPA for consideration and approval at that time.

For more information:

A repository containing the project's work plans, reports and other associated documents has been established at the Roxana Village Hall and also on the World Wide Web and is available at http://RoxanaInvestigation.urs-stl.net. A link to this website will also be added to the Village of Roxana's website (http://www.roxana-il.org). This repository will be updated as information concerning the site is developed.

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