

Site Briefing

for

Stauffer Chemical Company Superfund Site

Tarpon Springs, Florida

United States Environmental Protection Agency Region 4

November 29, 1999

Site Background

Site Summary

- The Stauffer Chemical Company and their predecessor manufactured elemental phosphorous at the 130-acre facility from 1947-1981. See Figure 1-1 for site location. See Figure 1-2 for a key map of the site.
- The facility was shut down in 1981 and dismantled in early '90's. Only a few structures remain on-site. See Figure 2-3 for the layout of the Stauffer Plant as it existed in operation.
- The site is located along the Anclote River, approximately two miles from the City of Tarpon Springs and two miles upstream of the Gulf of Mexico.
- Surrounding land use is a mixture of light commercial and residential. The nearest commercial/industrial facility is directly across the street to the east of the site; the nearest single family residences are directly adjacent on the west site, a few hundred feet to the north and to the east of the site. The Gulfside elementary school is directly north of the site.
- Approximately 9,000-10,000 people live within a mile of the site; also within a mile of the site are a nursing home, and childrens' group home.
- The school is approximately 600 feet to the north of the slag processing area.
- Hydrogeology:
 - 1) Sandy thin surficial aquifer - depth to aquifer is 8 feet below surface. Used for irrigation purposes.
 - 2) Squeaky Clay "semi-confining" layer
 - 3) Floridan Aquifer - Limestone - depth to aquifer ranges from 17- 37 feet below surface. Floridan is primary source of potable water.
 - 4) Ground water flows to the southwest, into the Anclote River
- Approximately 300,000 cubic yards (cy) of radiologically and chemically contaminated soils, pond sediments, and slag materials are present at the Stauffer Site. 300,000 cy is equivalent to an area of 30 football fields piled 6 feet high. Soils also contain elemental phosphorus, which spontaneously ignites when in contact with air.

Stauffer Process Summary

- Elemental Phosphorous was produced by mining phosphate ore, heating the ore in an electric arc furnace, removing the elemental phosphorous in its gaseous state, and returning it a liquid state in an on-site condenser. The ore was mined by others offsite.

- Remaining phosphorous sludge was re-heated to recover remaining phosphorous.
- Process wastes were disposed of in on-site, unlined lagoons.
- By-products included slag, which contained radium-226, arsenic, beryllium, and other heavy metals. The slag was processed and sold as aggregate from the slag processing area in the northern part of the site.

Regulatory History/Site Status

- The site was proposed for the National Priorities List in 1992 and was listed in 1994.
- Stauffer entered into a voluntary Administrative Order on Consent to conduct the Remedial Investigation/Feasibility Study (RI/FS) in 1992. They completed it in 1996.
- Stauffer conducted a removal action in 1997 to remove crude phosphorous material from above ground storage tanks in the clarifier.
- EPA signed the Record of Decision addressing source materials in July 1998. Ground water, while evaluated as part of this RI/FS, will be addressed under a separate OU.
- The EPA and Stauffer have signed the Consent Decree (CD). The CD is currently being routed through the Department of Justice.

Record of Decision (ROD)

The major components of the remedy include the following. The estimated cost is \$9M.

- Limited excavation of radiologically and chemically contaminated soils which exceed residential cleanup standards, consolidation and capping materials on-site.
- Institutional controls including deed restrictions, land use ordinances, physical barriers, and water supply well restrictions. These controls will prohibit residential use.
- In-situ solidification/stabilization of contaminated materials below the water table, in the consolidation areas only. Note: Capped soils above the water table will not be solidified

Note: EPA is proceeding with the remedy selected; however, the ROD does not cast the remedy in stone. If during the design or construction of the remedy, EPA finds that it is not protective of human health and the environment, we will revisit the remedy and make the necessary changes.

- The anticipated future land use is commercial/industrial. However, the cleanup standards assume future residential land use. The more stringent requirements were put in place to address community concerns. The Stauffer Management Company currently is considering the construction of a golf course and marina at the site.

Ground Water Issues

- Materials to be solidified/stabilized will be within the surficial aquifer. Quality control and long term effectiveness are primary concerns. EPA plans to address these issues during design.
- Slight vertical gradient between the Surficial and Floridan Aquifer. Direction of gradient dependent on location within the site.
- More characterization of Floridan Aquifer required. Current data shows little impact.

Community Concerns/EPA Community Relations

EPA is sensitive to the concerns of the Tarpon Springs community regarding this remedy and will address them as we proceed through the design of the remedy. EPA has worked closely with the community, holding many public hearings from 1993 to the present. In 1999 alone, EPA made a site visit to each individual home that EPA sampled to discuss results of the offsite sampling effort. This was followed with a public meeting to formally announce the results of offsite sampling to the community at large. In addition, the EPA will invite the community to assist in the review

In addition, the EPA will invite the community to assist in the review and comment on the design submissions.

Studies Conducted to Date

1. Hydrogeologic Assessment - 1987 - Seaburn and Robertson, Inc.
 - a. Study the hydrogeologic characteristics of the surficial and Floridan aquifers at the site.
2. Final Expanded Site Investigation - 1989 - NUS, Inc.
 - a. Evaluate surface soils, ground water, subsurface soils, ground water in surficial and Floridan aquifers, surface water in Anclote River.
3. Interim Final Listing Site Inspection - 1991 - NUS, Inc.
 - a. Evaluate surface soils at school, re-sample ground water, collect sediment samples from the Anclote River.
4. Radiological Studies - 1990 - PBS&J.
 - a. Conducted external gamma radiation surveys of roadways, ponds
5. Site Sampling Program - 1989 and 1990 - Weston.
 - a. Soil and pond sampling.
6. Environmental Sampling Program - 1990 - Weston.
 - a. Characterize soil and disposal pond materials.
7. Sediment Sampling Program - 1991 - Weston.
 - a. Collected 13 sediment samples on from the Anclote River.
8. Elemental Phosphorous Borings Program - 1991 - Weston
 - a. Collected samples from 47 phosphorous soil borings.
9. Treatability Study - Bench Scale Oxidation Study - 1991 - Weston
 - a. Evaluate performance of various oxidizers in treating elemental phosphorous.

