



South Carolina Department of Health
and Environmental Control

Bureau of Land & Waste
Management

State Superfund Program

**EFP PRODUCTS
STATE SUPERFUND SITE**
6247 Campbell Rd, York, SC

**Proposed Plan Fact Sheet
Announcements of Public Meeting
and Comment Period**

DHEC's Proposed Cleanup

SPX Corporation, with the oversight of the South Carolina Department of Health & Environmental Control ("DHEC" or the "Department"), has been conducting an investigation of environmental contamination at the former EFP Products facility located at 6247 Campbell Road in York, South Carolina (the "Site"). The Department recently completed an evaluation of alternatives to address soil and groundwater contamination. Based on this evaluation, the Department has identified a preferred alternative for the cleanup of the Site. Pages 4 through 7 of this Fact Sheet provide a more detailed summary of all of the cleanup alternatives that were considered.

The preferred alternative to address soil contamination includes the following:

- ◆ Deed restrictions on the property to prevent residential development or other unacceptable uses until contaminant levels meet goals and standards for unrestricted use; and
- ◆ Maintaining the existing concrete flooring in the plating building to prevent direct contact with, as well as to minimize potential movement of, contaminants.

The preferred alternative to address groundwater contamination includes:

- ◆ Treating groundwater where chromium exceeds the groundwater cleanup standards,
- ◆ Placing restrictions on groundwater use, and
- ◆ Establishing a contingency plan to provide an alternate water supply if residential wells ever become unusable.

Announcement of Public Meeting

**Tuesday, February 5, 2008 at 7:00 pm at
Hunter Street Elementary School Cafeteria
1100 Hunter Street, York, SC**

At the public meeting, the Department will provide information regarding:

- the Site investigation results,
- the cleanup alternatives considered by the Department, and
- the Department's preferred alternative for the cleanup of the Site.

A comment period is available for the public to submit comments on the Proposed Plan. This comment period ends on March 7, 2008. The Department will make a final decision on the remedy only after review and consideration of any comments submitted to the Department during the comment period.

The cleanup plan that is finally selected will be described in the Record of Decision (ROD), which will include all comments received along with DHEC's response to all comments.

The public is encouraged to provide written comments to Angie Jones on or before March 7, 2008.

January 22, 2008

DHEC-BL&WM
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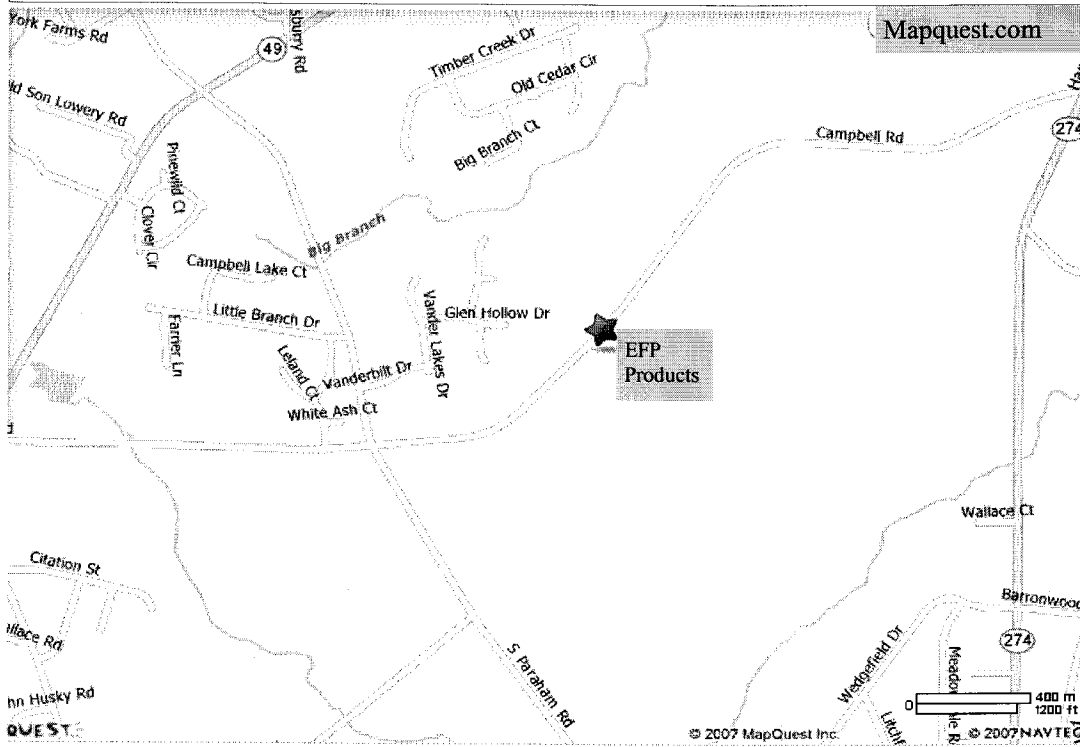
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Site Background

- ◆ Previous owners and operators of the Site property are: Metals Protection Company (“MPC”), Eastern Finishing & Plating Company, and Kent-Moore Corporation. EFP Products, Inc. leased the property from SPX Corporation (formerly known as Sealed Power Corporation). Presently, the facility property is owned by SPX Corporation.
- ◆ In the early 1950s, MPC constructed an office, and plating, production, wastewater treatment and warehouse areas, which supported its steel plating operations.
- ◆ After being removed from chromic acid plating tanks, steel plates were rinsed through various methods. The rinse water from this process was pumped into a settling basin, then into a waste well, and later into steel tanks located on the facility property. MPC’s earlier rinsing methods did not remove chromium from the rinse water and releases occurred at the facility through the settling basin and the waste well.
- ◆ In 1995, SPX Corporation (“SPX”) entered into a Consent Agreement #95-32-HW, which among other things, required SPX to perform a Remedial Investigation and Feasibility Study (RI/FS) in order to determine the source(s), nature, and extent of the contamination at the Site.
- ◆ In early 2004, SPX’s EFP Products Division ceased operations, however, SPX continues to perform its responsibilities under the Consent Agreement.



Technical Reports

- ◆ **A Remedial Investigation (RI)** identifies the potential sources of contamination; and determines what contaminants are at the site, and the extent of the contamination.
- ◆ **A Feasibility Study (FS)** considers various cleanup alternatives for the soil and groundwater.
- ◆ **A Proposed Plan (PP)** describes cleanup alternatives to address contamination.
- ◆ **A Record of Decision (ROD)** identifies the selected cleanup method.
- ◆ **The Remedial Design (RD)** is the development of specifications and drawings necessary for the construction and implementation of the ROD.

Remedial Investigation

Under the Consent Agreement, SPX Corporation conducted a remedial investigation that included extensive sampling of soil and groundwater in the following areas:

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| <ul style="list-style-type: none"> - a wastewater lagoon - sludge drying beds - plating bath areas - a 50-foot deep waste disposal well used in the 1950s - steel grinding machine and associated disposal areas | <ul style="list-style-type: none"> - two septic leach fields - a treated water discharge area - a reported chromic acid disposal area - a reported sludge disposal trench |
|---|---|

Based on the sampling results,

- ◆ Chromium and hexavalent chromium are the contaminants of concern in the soil and in both shallow and deep groundwater.
- ◆ Quarterly and annual monitoring of the monitoring wells, former production wells and adjacent residential wells for chromium and hexavalent chromium have been conducted since 1997.

(Continued on page 3)

Remedial Investigation (Continued)

- ◆ On-site soil samples outside the footprint of the building exceed residential cleanup standards, but do not exceed industrial standards.
- ◆ Soils beneath the building exceed both residential and industrial standards.
- ◆ Chromium has consistently exceeded acceptable regulatory levels in shallow, intermediate, and deep bedrock wells onsite. These wells are located in the general area of the former waste well/plating area, as well as the former lagoon location. Nearby residential wells have never detected any site-related contamination.

Soil & Groundwater Evaluation Standards

To establish soil cleanup goals, the Department considers USEPA's Region IX Preliminary Remediation Goals (PRGs) for direct contact/ingestion as well as USEPA's soil screening levels (SSLs). These soil screening criteria are listed in EPA's Region IX Preliminary Remediation Goals Tables (PRG). For groundwater, the maximum acceptable levels for hazardous substances, pollutants and/or contaminants in a drinking water source are called "Maximum Contaminant Levels" or "MCLs." At this Site, groundwater sampling results were compared to the MCL standards established by the South Carolina State Primary Drinking Water Regulations, R.61-58.

Objectives of Cleanup/Remedial Alternatives

SPX also conducted a Feasibility Study that compared various cleanup alternatives. Three alternatives were evaluated for contaminated soils and four alternatives were considered for groundwater cleanup. The main objectives of the remedial action at any site are to ensure protection of human health and the environment, and compliance with governmental regulations. The Department uses eight criteria to evaluate alternatives:

Threshold Criteria That Must be Met:

1. Overall Protection of Human Health and the Environment: describes how the alternative achieves and maintains protection of human health and the environment and how risk posed through each pathway are eliminated.
2. Compliance with State and Federal Regulations.

Balancing Criteria

3. Long-Term Effectiveness: expected residual risk and ability to maintain reliable protection of human health and the environment.
4. Reduction of Contaminant Toxicity, Mobility, and Volume: measures the performance of the treatment technologies in reducing the toxicity, mobility and volume of contaminants through treatment.
5. Short-Term Effectiveness: period of time needed to achieve protection and any adverse impacts to human health and the environment that may be posed during the cleanup.
6. Implementability: technically and administratively successful cleanup.
7. Cost: includes the estimated initial costs and estimated future costs of operating and maintaining any treatment or monitoring activities at present values.

Modifying Criteria

8. Community Acceptance: summarizes the public's general response to the Proposed Plan based on public comments received.

Remedial Goals

Based on the Remedial Investigation, the Department has established the following remedial goals:

1. Prevent exposures to levels of chromium exceeding the MCL at the Site and in any off-site residential drinking water wells.
2. Minimize further migration of chromium to the groundwater.
3. Restore groundwater to MCLs for chromium.

SOIL CLEANUP/REMEDIAL ALTERNATIVES			
Alter-native #	Soil Remedial Alternative	Description Summary	Explanation of Evaluation Criteria
S-1	<p>No Action</p> <ul style="list-style-type: none"> ◆ <u>Estimated Present Worth Value:</u> \$0 	<ul style="list-style-type: none"> ● Required to consider. ● Baseline for comparison. 	<ul style="list-style-type: none"> ◆ Does not meet Evaluation Criteria. ◆ Not protective of human health & environment & does not comply with state and federal regulations.
S-2	<p>No Action with Deed Restrictions</p> <ul style="list-style-type: none"> ◆ <u>Estimated Present Worth Value:</u> \$150,000 	<ul style="list-style-type: none"> ● Existing plating building flooring prevents infiltration from runoff. ● Plating building flooring or another protective cap will be maintained ● Deed restrictions to prevent residential development or other unacceptable site use of the property is required. 	<ul style="list-style-type: none"> ◆ Meets Evaluation Criteria 1-7.
S-3	<p>Excavation & Off-site Disposal with Contingency for Soil Stabilization and Deed Restrictions</p> <ul style="list-style-type: none"> ◆ <u>Estimated Present Worth Value:</u> \$800,000-1,500,000 	<ul style="list-style-type: none"> ● Removal of soils beneath plating building with plating building removal likely (otherwise severely restricting soil excavation). Does not guarantee all impacted soils will be removed if building is not removed. ● Has contingency for possible stabilization of soils if chromium levels are high. ● Ultimate disposal of soils (& building materials if demolished) to be determined based on standards. ● Deed restrictions to prevent residential development. ● Potential human contact with contaminated soil creates greater short-term risk & implementability hurdles. 	<ul style="list-style-type: none"> ◆ Meets Evaluation Criteria 1-7. ◆ Most complicated to implement. ◆ Less short-term effective when compared to Alternative S-2 as removal activities may affect community and workers.

**DHEC's Preferred Soil Cleanup/Remedy:
Alternative S-2: No Action with Deed Restrictions**

Alternative S-2 consists of establishing property deed restrictions or other institutional controls to restrict future site use and maintaining the restrictions on the flooring of the plating area. Deed restrictions are rather easy to implement, ensure future direct exposures to chromium impacted soils are minimized, and are cost effective (an estimated \$150,000). By eliminating the vertical flow of liquids through the vadose zone soils, associated leaching of chromium from the soils into the groundwater is also minimized.

A more detailed description of each soil remedy alternative considered and the explanation of each evaluation criteria reviewed is detailed in the Remedial Investigation/Feasibility Study dated January 2005.

GROUNDWATER CLEANUP/REMEDIAL ALTERNATIVES

Alternative #	Groundwater Remedial Alternative	Description Summary	Explanation of Evaluation Criteria
GW-1	No Action ♦ Estimated Present Worth: \$0	<ul style="list-style-type: none"> • Required to consider. • Baseline for comparison. • No institutional controls. • No active groundwater monitoring; only naturally occurring reduction of contaminants. • No restrictions on groundwater use at the facility & no protections for contamination traveling to nearby residences. 	<ul style="list-style-type: none"> ♦ Does not meet Evaluation Criteria. ♦ Is not protective of human health & environment & does not comply with state and federal regulations.
GW-2	Groundwater Extraction, Treatment and Discharge, with Groundwater Use Restrictions, & Continued Groundwater Monitoring ♦ Estimated Present Worth Value: \$7,700,00	<ul style="list-style-type: none"> • Installing wells in potential source areas & other areas from which groundwater would be pumped to surface for treatment. • Targeting groundwater containing chromium at levels above MCLs & onsite treatment. • Treated groundwater discharged to the publically owned treatment works (POTW) would require new sanitary sewer line. • Groundwater use restrictions with potential water supply to facility required. • Potential provision of public water to nearby residences if contamination detected in future. • Continued monitoring to ensure compliance with groundwater remediation goal. 	<ul style="list-style-type: none"> ♦ Provides high overall protection of human health & environment and does comply with state & federal regulations. ♦ Greater short-term risks with handling extracted groundwater and sludge for treatment.
GW-3	Source Area Groundwater Extraction, Treatment and Discharge, In Situ Treatment, Groundwater Use Restrictions and Continued Groundwater Monitoring ♦ Estimated Present Worth: \$8,100,000	<ul style="list-style-type: none"> • Using existing wells where possible, otherwise installing wells, in potential source areas only with the highest contaminant detections. • Using the wells, groundwater will be pumped to surface for treatment. • Targeting groundwater containing chromium at levels above MCLs & onsite treatment. • Treated groundwater discharged to the publicly owned treatment works (POTW) would require new sanitary sewer line. • Pump & treat in source areas would be combined with in situ treatment in areas with lower groundwater chromium levels. • Injection of appropriate treatment materials to reduce hexavalent chromium to less toxic and less mobile trivalent chromium. • Groundwater use restrictions & monitoring to ensure chromium is not migrating off-site. • Continued monitoring to ensure effectiveness of in situ treatment process. 	<ul style="list-style-type: none"> ♦ Provides high overall protection of human health & environment and does comply with state & federal regulations. ♦ Greater short-term risk with handling extracted groundwater and sludge for treatment. ♦ May be more effective by using ex situ & in situ treatment.

GROUNDWATER CLEANUP/REMEDIAL ALTERNATIVES

Alternative #	Soil Remedial Alternative	Description Summary	Explanation of Evaluation Criteria
<p>GW-4</p> <p><i>In-cludes: GW-4A</i></p> <p><i>Or GW-4B</i></p>	<p>In Situ Treatment, Groundwater Use Restrictions and Continued Groundwater Monitoring</p> <p align="center">*****</p> <p>Injection of Treatment Materials into Saprolite and Fractured Bedrock – with contingency</p> <p><u>Estimated Present Worth Value:</u> \$2,600,000 (\$3,000,000 with contingency).</p> <p align="center">*****</p> <p>Injection of Treatment Materials into Fractured Bedrock only – with contingency</p> <p><u>Estimated Present Worth Value:</u> \$1,100,000 (\$1,500,000 with contingency).</p>	<ul style="list-style-type: none"> • Uses in situ treatment for potential source area and other areas with chromium over MCLs. • Would not require sanitary sewer line as there is no discharge. • Contingency in case residential wells are determined to be impacted above drinking water standards, alternate water would be provided to affected residents. • Groundwater use restrictions at facility & during installation of cleanup method, to prevent unacceptable exposures. • Continued monitoring to reach goals & ensure process is effective. • Monitoring of both on-site wells and off-site residential wells will occur. <p align="center">*****</p> <p align="center">**</p> <ul style="list-style-type: none"> • Includes injection of appropriate treatment in shallow and deep groundwater. <p align="center">*****</p> <p align="center">**</p> <ul style="list-style-type: none"> • Includes injection of appropriate treatment materials in deep groundwater only, with continued monitoring of shallow groundwater. 	<ul style="list-style-type: none"> ◆ Provides greatest overall protection of human health & environment & has the greatest potential to reach remedial goals. ◆ Injectability could affect remedial goals. ◆ Able to achieve cleanup goals within the shortest overall remedial timeframe. <p align="center">*****</p> <ul style="list-style-type: none"> ◆ See Preferred Alternative explanation on page 7. <p align="center">*****</p> <ul style="list-style-type: none"> ◆ Minimal short-term risks and limited barriers to implementation.

**DHEC's Preferred Groundwater Cleanup/Remedy:
Alternative G-4A: In situ Injection of Treatment Materials into Saprolite
and Fractured Bedrock—with Contingency**

The preferred groundwater remedial alternative option, Option GW-4A, consists of the following components:

- Pre-design studies,
- In situ groundwater treatment (saprolite and bedrock),
- Continued groundwater monitoring, including nearby residential wells
- Groundwater use restrictions,
- Contingency for future installation of water supply service, and
- Contingency for a groundwater extraction system for groundwater remediation

This alternative consists of the use of in situ groundwater treatment to address areas of saprolite and bedrock contamination where total and hexavalent chromium levels exceed the groundwater remediation goal of 0.10 mg/L (the MCL). Pre-design studies would provide additional information on groundwater characteristics necessary to identify the most appropriate in situ treatment method, as well as indicate those areas of saprolite where the in situ treatment will be technically feasible. Continued monitoring would provide information on the effectiveness of the in situ treatment system in meeting remedial goals, and would confirm remedial goals are not exceeded in the off-site residential wells. A deed restriction on groundwater use at the facility would limit potential future exposures to impacted groundwater. In the unlikely event that off-site migration of chromium prevented the continued use of off-site wells for potable purposes, a potable water supply, would be provided as a contingency action.

Option GW-4A provides protection of human health and the environment through the combination of in situ groundwater treatment and implementation of a deed restriction that would help prevent future exposures to groundwater. The toxicity of the hexavalent chromium in the groundwater would be reduced through in-situ treatment methods to trivalent chromium and would subsequently precipitate from the groundwater. Option GW-4A would also have minimal short-term risks associated with its implementation and is expected to be effective in the long-term. Short-term effectiveness of the option would be enhanced by the reduced overall remedial time frame. The contingency provision included in the alternative ensures its long-term protection of human health.

While in situ treatment of the saprolite aquifer would be expected to meet the chromium remedial goal, the less permeable nature of the aquifer may prevent the injection of the treatment materials into all impacted areas of the saprolite aquifer. The degree of reduction of toxicity through treatment that can be achieved will be dependent upon the ability of the injection system to reach and treat all impacted areas.

There are minimal short-term risks with in situ treatment because it typically uses non-toxic materials, but would require time for construction of an injection grid for the saprolite. Treatment of the fractured bedrock aquifer would use existing bedrock wells where possible. This alternative is readily implemented, requiring common construction methods and readily available remedial technologies.

Again, a more detailed description of each groundwater remedy alternative considered and the explanation of each evaluation reviewed, is detailed in the Remedial Investigation/Feasibility Study dated January 2005.

Administrative Record and Information Repositories

The Site's Administrative Record (AR) will be available after February 5, 2008, and is housed at the following Information Repositories:

1. **York County Public Library**
21 East Liberty St., York, SC
2. **DHEC's Bureau of Land & Waste Management**
8911 Farrow Road, Columbia, SC

An **Administrative Record** includes the Proposed Plan and other documents that form the basis for the selection of the cleanup/response actions.

The Department requires a written Freedom of Information request for persons to make an appointment to review the Site File housed at DHEC. One may use the FOI request form on the Department's website at: www.scdhec.gov/administration/foi/index.htm and click on "Request Form (pdf)", or one may send a simple letter, like the example below:

*Mr. Jody Hamm, FOI Officer
SCDHEC's FOI Office
2600 Bull Street
Columbia, SC 29201*

I would like to review and/or copy DHEC's Bureau of Land & Waste Management's Site File #55322 for the EFP Products State Superfund Site pursuant to the Freedom of Information Act (FOIA). Please call me at [Your Phone Number] to schedule my appointment.

Questions about the Site?

The Department suggests you attend the February 5, 2008 Public Meeting and review the Administrative Record. In the meantime, if you have any questions regarding the information contained in this Fact Sheet or if you feel any of the information provided is not clear, please contact or write the Department's Project Manager, Angie Jones. **Again, all written comments must be provided by March 7, 2008.** It is the Department's hope that the public will be able to understand and be aware of what is occurring in their community and that the public have an active voice in the decision-making process of selecting a cleanup method.

Community Assistance

If a translator or interpreter is needed for the public meeting, contact:

- Pat Vincent: 803-896-4074; email: vincenpl@dhec.sc.gov
- Se Habla: 866-300-9327 for our Spanish-speaking community; or
- Call 800-984-4357 for our Hearing-impaired community.

