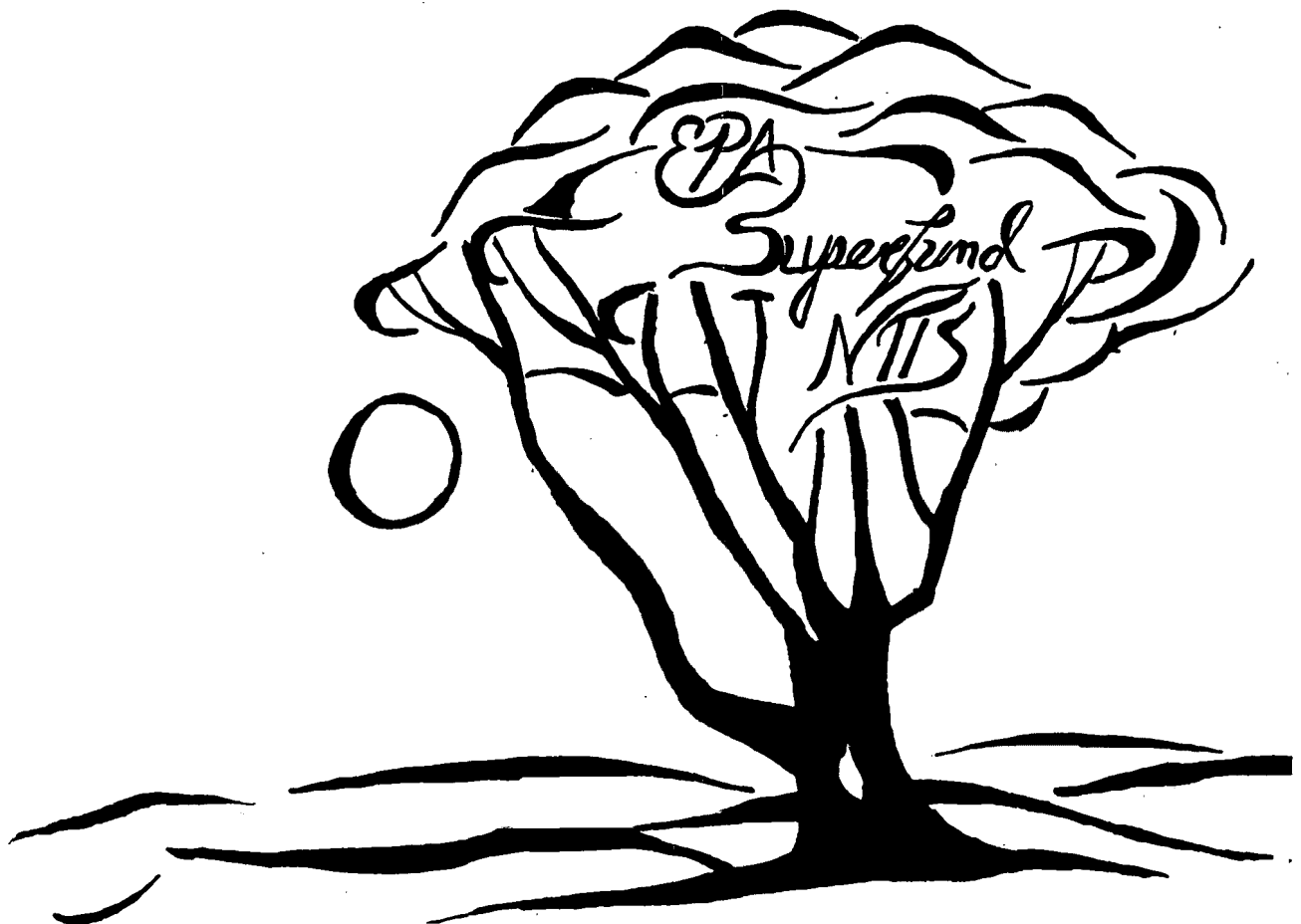


PB94-964079  
EPA/ROD/R04-94/213  
March 1995

# **EPA Superfund Record of Decision:**

**Rock Hill Chemical Co.  
Rock Hill, SC  
6/27/1994**



**RECORD OF DECISION**  
**SUMMARY OF REMEDIAL ALTERNATIVE SELECTION**

**RUTLEDGE PROPERTY SUPERFUND SITE**

**ROCK HILL, YORK COUNTY,  
SOUTH CAROLINA**

**PREPARED BY:**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION IV  
ATLANTA, GEORGIA**

## DECLARATION FOR THE RECORD OF DECISION

### SITE NAME AND LOCATION

Rutledge Superfund Property Site  
Rock Hill, York County, South Carolina

### STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Rutledge Property Superfund Site (the Site), located in Rock Hill, York County, South Carolina, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. §§ 9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300 et seq. This record of decision is based on the administrative record for this Site.

The State of South Carolina concurs with the selected remedy.

### ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this record of decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

### DESCRIPTION OF THE SELECTED REMEDY

This remedial action addresses groundwater contamination.

The major components of the selected remedy include:

- ☐ Extraction of contaminated groundwater;
- ☐ Direct discharge to POTW of extracted groundwater;
- ☐ Deed restrictions;
- ☐ Long-term groundwater monitoring; and,

- Additional work during the remedial design phase including: determining the relationship of the contamination detected in the private wells to the contamination detected in the on-site monitoring wells, collecting additional background surface soil samples to confirm that the variance in manganese levels is consistent with the environmental setting, and collecting additional surface water and sediment samples to determine if the selected background sample is representative of true background conditions.

#### STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. This remedy utilizes permanent solutions to the maximum extent practicable for this Site. The selected groundwater remedy satisfies the preference for treatment for this Site.

Since selection of this remedy will result in contaminated groundwater remaining on-site above health-based levels until the remedial action is complete, a statutory five (5) year review will be performed after commencement of the remedial action to insure that the remedy continues to provide adequate protection of human health and the environment.

Detrick M. Tobin for  
John H. Hankinson, Jr.  
Regional Administrator

June 27, 1994  
Date

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**DECISION SUMMARY**  
**RUTLEDGE PROPERTY SUPERFUND SITE**  
**ROCK HILL, YORK COUNTY, SOUTH CAROLINA**

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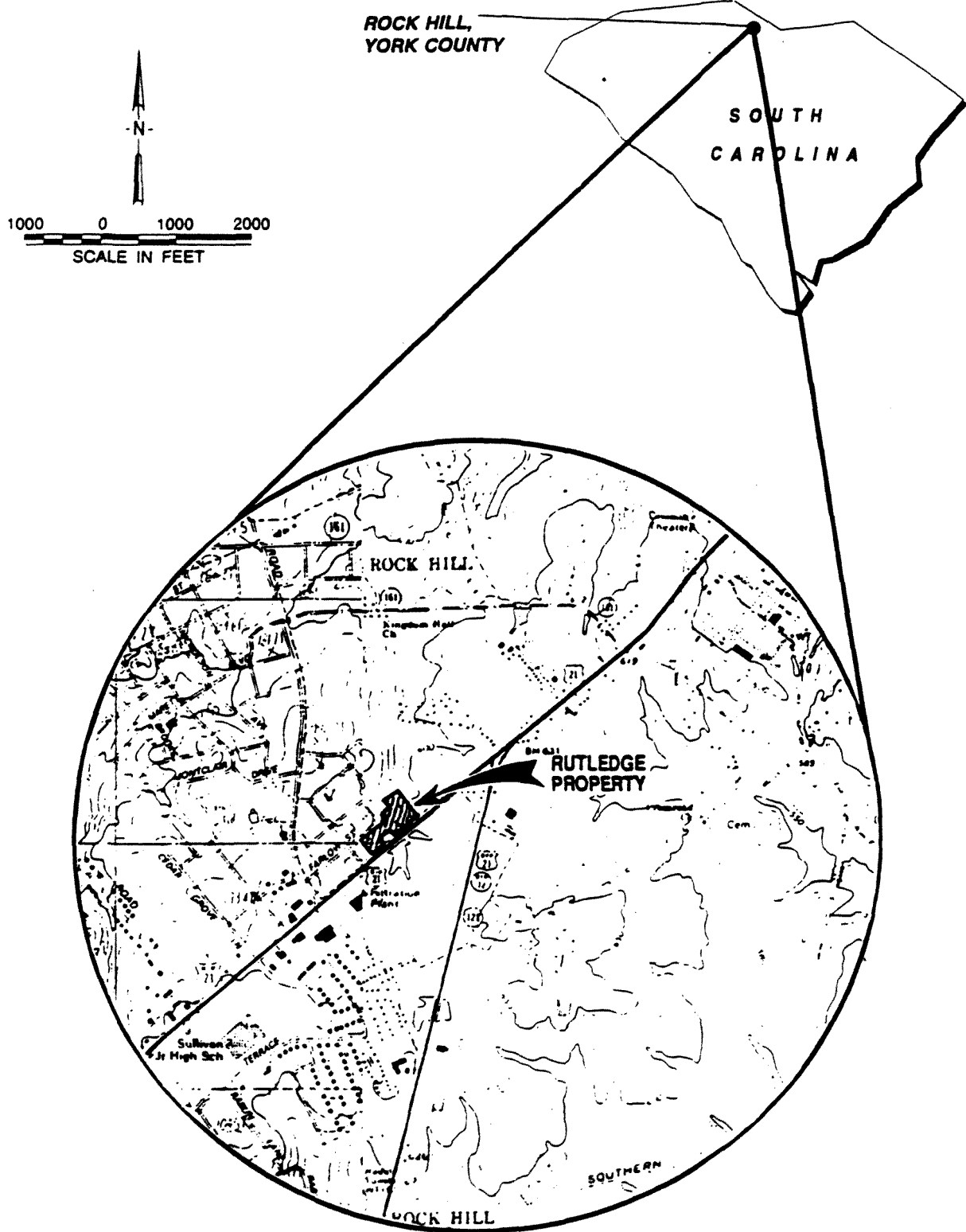
**1.0 SITE LOCATION AND DESCRIPTION**

The Rutledge Property Site (the Site), is a 4.5 acre parcel located between U.S. Highway 21 (Cherry Road) and Farlow Street, just east of Cranford Street in Rock Hill, York County, South Carolina (Figure 1). The Site's geographic coordinates are 34°57'50" north latitude and 80°59'55" west longitude.

The property occupies two (2) plats of land: one parcel, which is owned by William C. Rutledge, Jr., encompasses the eastern portion of the Site; and the second parcel, which is owned by First Union National Bank of South Carolina, encompasses the western portion of the Site (Figure 2). The Site is bounded by Cherry Road and the Rock Hill Mall to the south; First Union National Bank of South Carolina and fast-food restaurants to the west; residential property (single-family dwellings) and an unnamed stream to the north; and the York Shopping Plaza to the east.

On-site drainage is controlled by topography and man-made drainage features. The Site is drained by an unnamed stream, which originates on the northern portion of the Site. There is another smaller drainage ditch that intersects the larger unnamed stream. The unnamed stream receives the majority of surface water from the 72-inch storm drain. The origin of surface water that flows through the 72-inch storm drain includes open land south of the Rock Hill Mall and surface water runoff from the Rock Hill Mall property and Cherry Road. Another 40-inch storm drain also intersects the unnamed stream, in the same area as the 72-inch drain. Water from this smaller drain, originates west of the Site. Site runoff and surface water from the drainage ditch also flow into the unnamed stream. Presently, all surface water that reaches the unnamed stream flows along its course in a northeasterly direction for 1.9 miles and discharges into the Catawba River. Elevations across the Site vary from 606 feet above mean sea level (msl) in the southern and western parts of the Site, to 590 feet above msl in the northern portion of the Site.

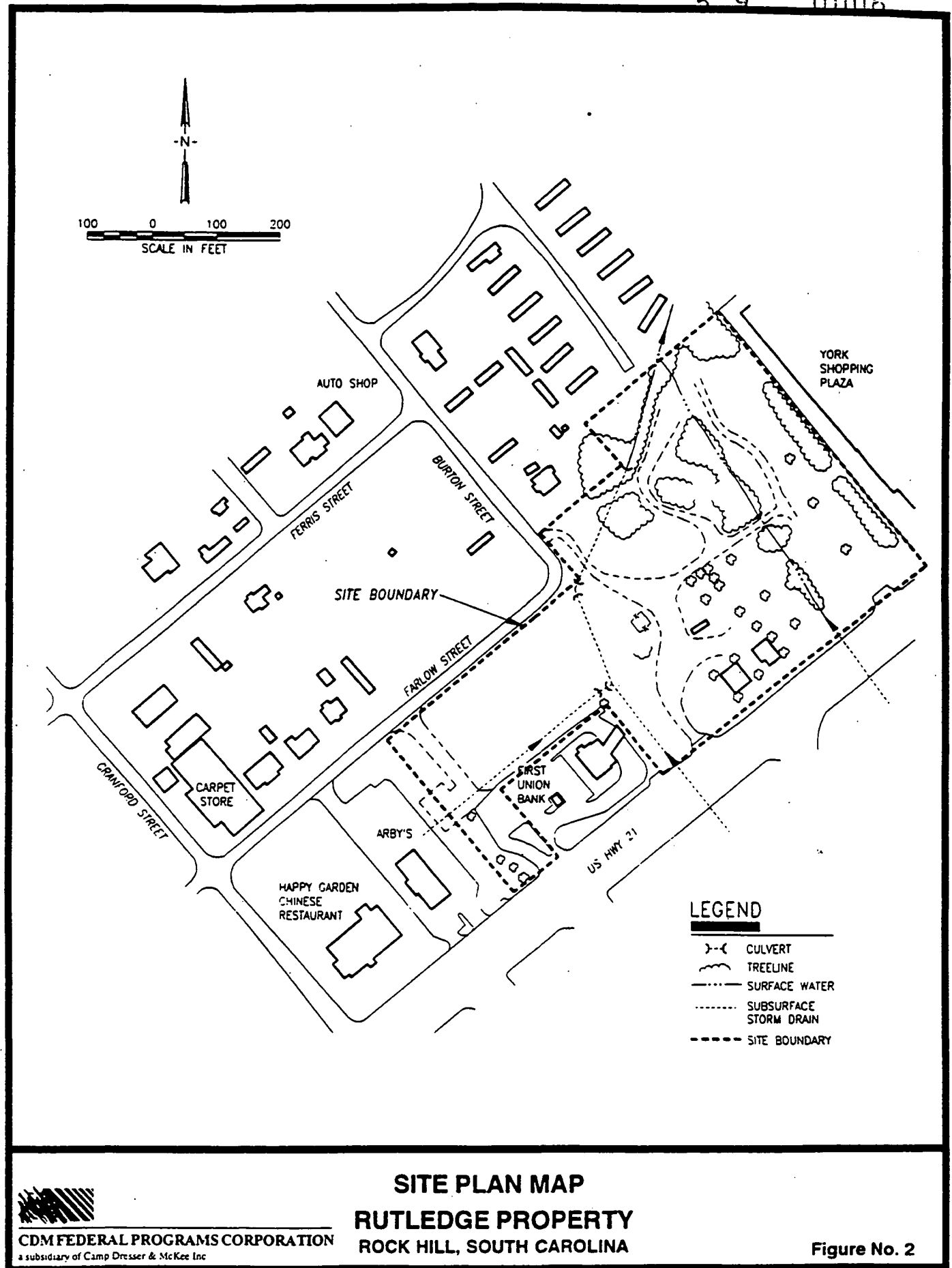
A majority of the Rock Hill residents receive potable water from the City of Rock Hill utilities. The residents who do not receive their potable water from the City of Rock Hill, use both private or community wells.



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**SITE LOCATION MAP  
RUTLEDGE PROPERTY  
ROCK HILL, SOUTH CAROLINA**

**Figure No. 1**



## 2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Rutledge Property (Rock Hill Chemical Company) Superfund Site (the Site) is located on North Cherry Road, in Rock Hill, York County, South Carolina. The Site covers approximately 4.5 acres of land in a light commercial and residential area, across from the Rock Hill Mall. From 1960 through 1964, the Site was the location of the Rock Hill Chemical Company (RHCC), a facility where paint solvents were distilled and reportedly, textile dye products were recovered. While RHCC was operating, residue from RHCC's distillation still bottoms, drum bottoms, and storage tank bottoms, were placed in piles on the surface of the facility property and later covered with fill dirt and construction debris. During its operation, RHCC accepted waste oils and solvents from generators, separated them, and sold the extracted solvents and oils back to the generators.

The reclamation process used a single pot still, a filter press, and a small steam generator. In this operation, waste fluids were reprocessed by separating solvents from the oil phase, filtering the oil through a charcoal filter press, and repackaging the reclaimed oil for distribution to clients. The waste fluids initially were contained in drums, but as the process expanded, above ground storage tanks were added as needed.

Paint sludges, textile dye products, still bottoms, and other wastes generated during the reclamation process, were stored in piles placed directly onto the ground. In some cases, waste products were buried at the Site. Still bottoms generated from the reclamation process, were incorporated into various layers of fill dirt and construction debris was used to fill low areas of the property to help support heavy machinery. Tanks that were used to hold liquid wastes before reclamation had, on occasion, leaked onto the ground, creating a potential source of contamination. One such leak was caused by a faulty tank valve. Another release occurred when a valve on one of the tanks was deliberately opened by a trespasser, which caused chemicals to spill onto the ground.

By late 1961, the demand by RHCC clients for reclaimed oil diminished, and a surplus remained in inventory. Much of this residual inventory was consumed by RHCC as fuel for its steam generator until the company ceased operations late in 1964, or was reprocessed and sold to various customers. In October 1964, a fire at the facility caused drums of oil and chemicals to explode, releasing their contents into the environment. After the fire, the RHCC partnership was dissolved. Since that time, no other industrial activity has taken place at the Site.

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In 1984, First Federal Savings Bank began to construct a branch office on the lots it purchased in 1972. The bank had made no use of the property for the previous twelve (12) years it had owned the land. During construction activities, it was discovered that the property was contaminated. At the time of the 1984 discovery, First Federal Savings Bank promptly notified the State of South Carolina Department of Health and Environmental Control (SCDHEC) and employed consultants to analyze the property and determine the extent of the contamination.

First Federal Savings Bank's consultants discovered distillation still bottoms, metal drums, and other hazardous substances buried beneath the surface of First Federal Savings Bank's property. Under the supervision of SCDHEC, First Federal Savings Bank conducted a removal action on its property which was completed in November 1986, and received SCDHEC approval in December 1986.

During the 1986 removal action, the previously contaminated portion of the property was excavated, the contaminated soil was deposited in an approved landfill, and the affected portion of First Federal Savings Bank's property was covered by a clay cap. In late 1987, EPA's Emergency Response Team used CERCLA funds to remove approximately 46,000 gallons of waste from the above ground tanks, along with an unknown amount of contaminated soil. This material was transferred to a RCRA-regulated facility.

Over the years, prior to the remedial investigation, there have been fourteen (14) sampling investigations at the Site. These investigations were directed by Federal, State and local agencies in an attempt to characterize and determine the nature and extent of environmental contamination. In these previous studies, samples were collected from soil, groundwater, surface water, sediment, as well as waste samples from drums and five (5) above-ground storage tanks. Analytical results of these samples have confirmed the presence of contaminants in all of the media sampled.

Based upon this information, EPA proposed the Site for inclusion on the National Priorities List (NPL) on June 24, 1988, and EPA finalized the Site on the NPL on February 21, 1990, with a hazard ranking score of 40.29.

On May 23, 1991, EPA issued special notice letters and general/special notice letters pursuant to Section 122(e) of CERCLA, 42 U.S.C. § 9622(e), along with CERCLA Section 104(e), 42 U.S.C. § 9604(e), information requests to all potentially responsible parties (PRPs). The special notice letters and general/special notice letters offered the PRPs the opportunity to perform, finance or otherwise participate in the remedial investigation/feasibility study (RI/FS) activities at the Site.

On August 21, 1991, however, the PRPs notified EPA that they were not going to sign the Administrative Order on Consent for the RI/FS. EPA notified the PRPs that EPA was conducting the RI/FS utilizing money from the Hazardous Substance Superfund. Field work for the RI began in March 1992.

### 3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

An information repository for the Site, which includes the Administrative Record, was established at the York County Library in March 1992, and is available to the public at both the information repository maintained at the York County Library, 138 East Black Street, Rock Hill, South Carolina, 29731, and at EPA, Region IV Library, 345 Courtland Street, Atlanta, Georgia, 30365. A mailing list was established for the Site and a fact sheet was mailed in March 1992. The fact sheet outlined the following: the objectives of the RI, a summary of the Site history, the various opportunities for public involvement (including Technical Assistance Grants), the location of the information repository, and an announcement of a public meeting that was held in Rock Hill on March 19, 1992.

EPA issued a proposed plan in February 1994, which outlined EPA's preferred alternative. A public comment period for the proposed plan was held from February 22, 1994, to March 24, 1994. EPA held a public meeting on March 1, 1994, where EPA representatives answered questions regarding the Site and the remedial alternatives under consideration, which were outlined in the proposed plan. EPA received a request for an extension to the public comment period, and extended the comment period to April 25, 1994.

EPA received oral comments during the March 1, 1994, public meeting, and written comments during the sixty (60) day public comment period. Responses to the comments received by EPA are included in the Responsiveness Summary (Appendix A).

This ROD presents EPA's selected remedial action for the Site, chosen in accordance with CERCLA, as amended by SARA, and to the extent practicable, the NCP. The remedial action selection for

this Site is based on information contained in the Administrative Record. The public and state participation requirements under Section 117 of CERCLA, 42 U.S.C. § 9617, have been met for this Site.

#### 4.0 SCOPE AND ROLE OF THIS ACTION WITHIN SITE STRATEGY

Two (2) removals, one in 1986, and the other in 1987, reduced the risk from exposure to contaminated soil as well as reduced the leaching of contaminants from the soil to the groundwater. This was confirmed during the remedial investigation. Therefore, according to the Baseline Risk Assessment, no additional cleanup of the Site soil is necessary.

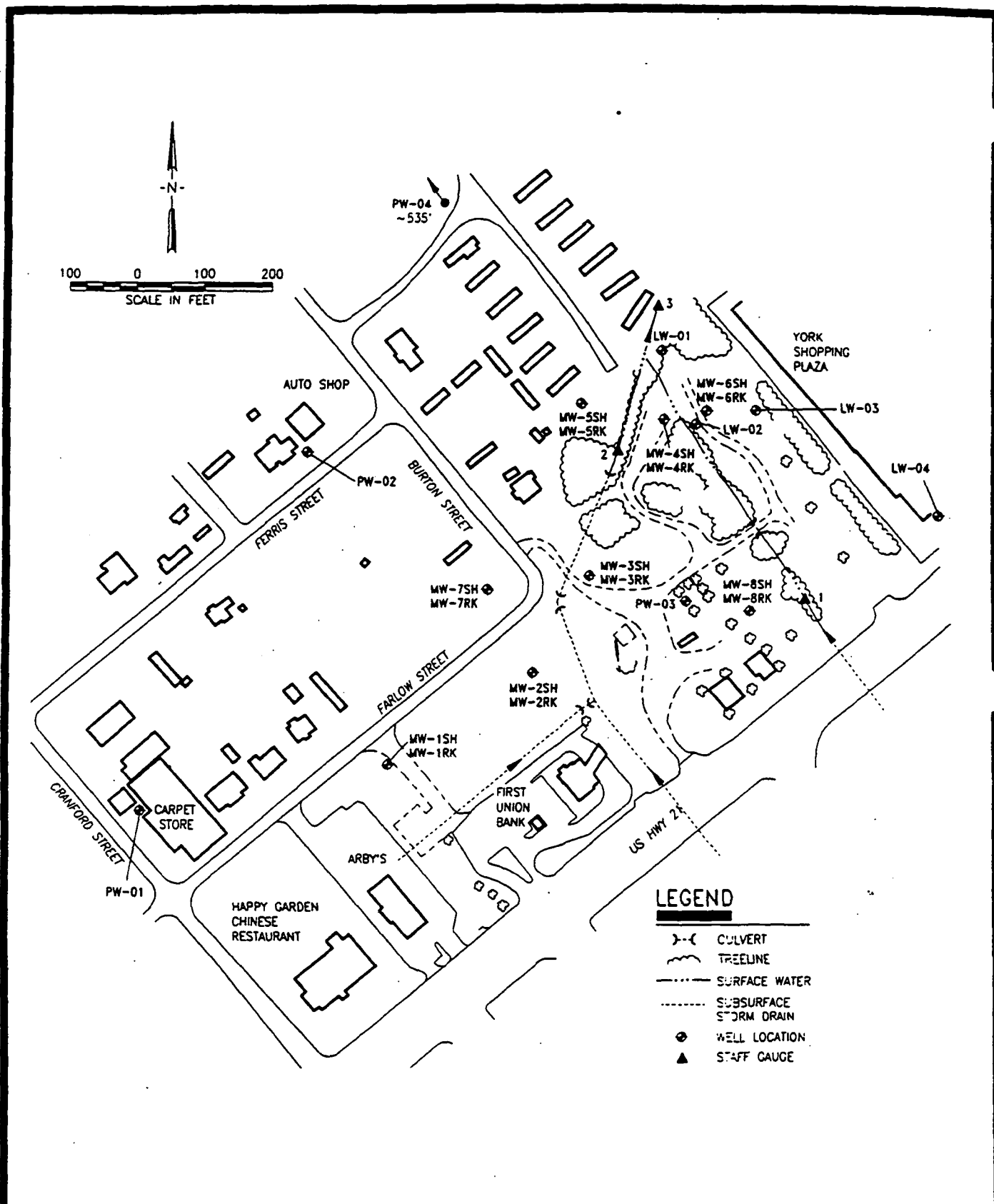
The purpose of the remedial alternative selected in this ROD is to reduce potential future risks at this Site from exposure to contaminated groundwater. There is no unacceptable current risk present at the Site. The groundwater remedial action is expected to eliminate the potential future risks to an on-site resident, that potentially could use contaminated groundwater for potable water supply. This is the only ROD contemplated for this Site.

#### 5.0 SUMMARY OF SITE CHARACTERISTICS

The RI investigated the nature and extent of contamination on and near the Site, and defined the potential risks to human health and the environment posed by the Site. A supporting RI objective was to characterize the Site-specific geology and hydrogeology. A total of sixty-five (65) soil samples, fifty-six (56) groundwater samples, seven (7) surface water samples, and seven (7) sediment samples were collected during the RI. Field work for the RI began in March 1992, during which soil and surface water samples were collected, and a well survey was conducted. Monitoring wells were installed and sampled from June to July 1992, along with several private wells. Additional monitoring wells were installed and sampled from December 1992, to January 1993. The final RI/FS report was completed in January 1994. Locations of groundwater samples from monitoring wells and private wells, surface soil, subsurface soil, surface water, and sediment samples are shown in Figures 3 through 6.

##### 5.1 Meteorology

The Site is located in the Piedmont physiographic province and the Charlotte Belt geologic province of South Carolina. Summers are long with warm weather generally lasting from May to September. Winters are mild and relatively short with freezing temperatures occurring about half of the days in winter. Average annual daily maximum and minimum temperatures are 74°F and 50°F, respectively. The average annual rainfall amount is 46.7 inches



## MONITOR/PRIVATE WELL LOCATIONS

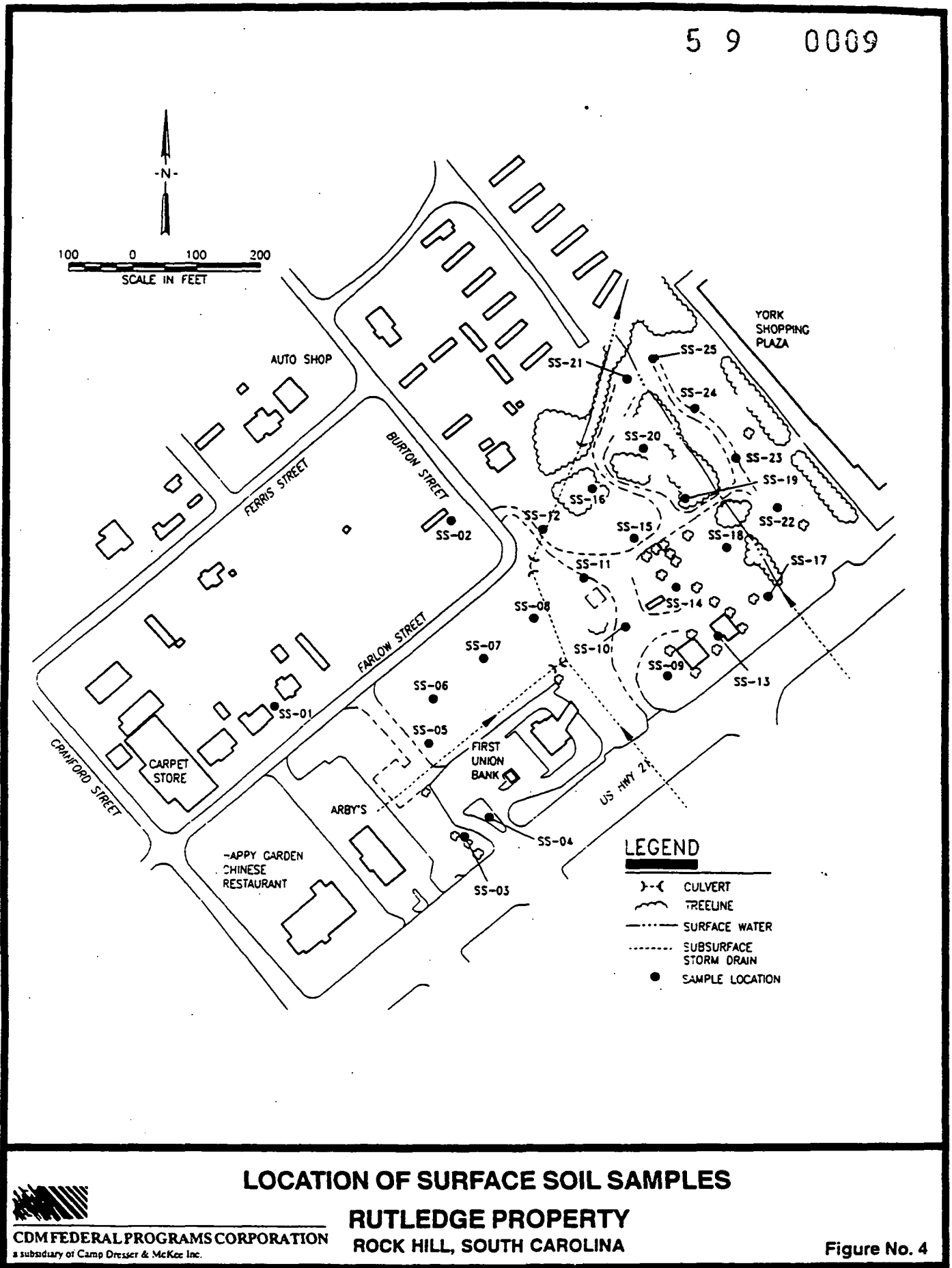
**RUTLEDGE PROPERTY**  
**ROCK HILL, SOUTH CAROLINA**



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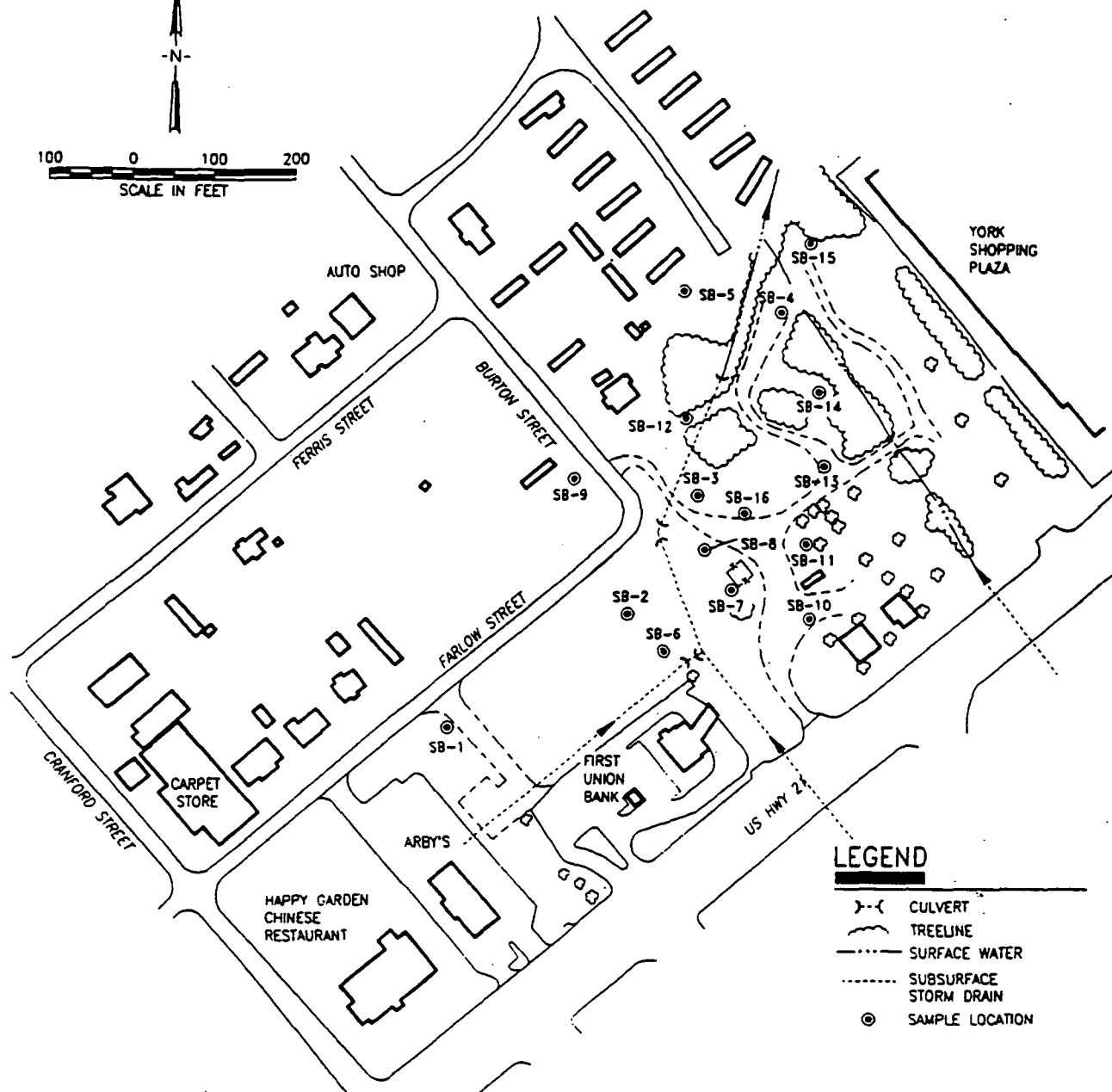
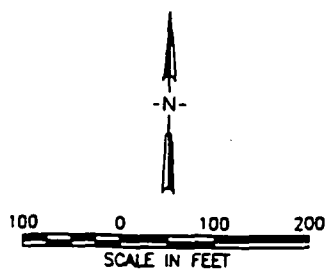
**Figure No. 3**





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**Figure No. 4**



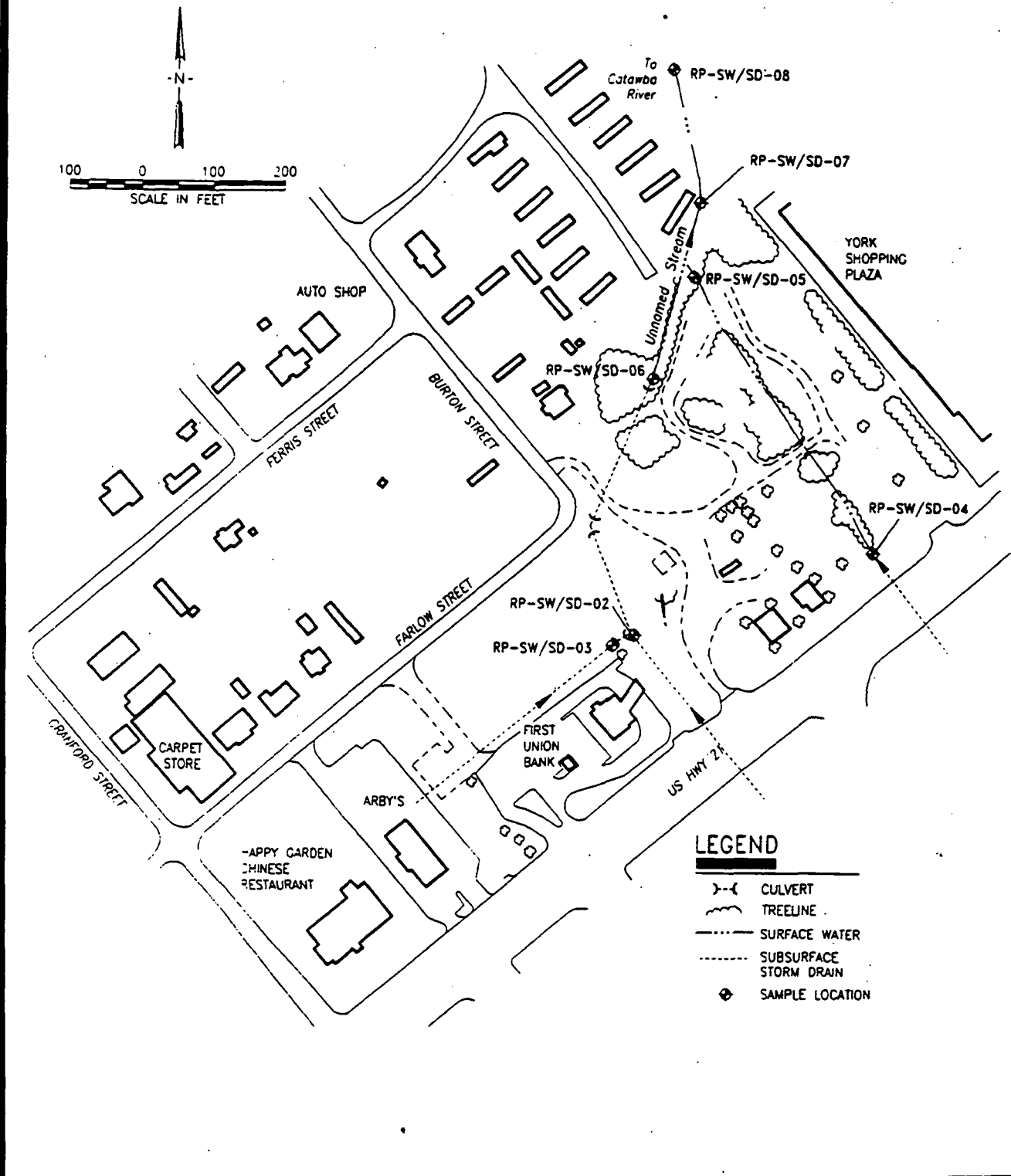
## LOCATION OF SUBSURFACE SOIL SAMPLES

**RUTLEDGE PROPERTY**  
ROCK HILL, SOUTH CAROLINA

Figure No. 5



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## SURFACE WATER/SEDIMENT SAMPLE LOCATIONS

**RUTLEDGE PROPERTY**  
**ROCK HILL, SOUTH CAROLINA**



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**Figure No. 6**

and the annual evaporation rate is 41 inches resulting in a yearly net rainfall of 5.7 inches. The two-year, 24-hour rainfall amount is 3.25 inches.

## 5.2 Geologic and Hydrogeologic Setting

### 5.2.1 Geology/Soils

The Site is located in the Piedmont physiographic province and the Charlotte Belt geologic province of South Carolina. The Piedmont is a broad plateau ranging from 400 to 1200 feet above sea level. Piedmont areas are characterized by low, rounded, gently sloping hills having relatively deeply incised dendritic drainage patterns. Piedmont sites typically have a thick layer of highly weathered residual soil and weathered rock (saprolite) overlying competent bedrock.

Residual materials at the Site generally consist of sandy, clayey silt, fine sand and silt. The contact between the saprolite and bedrock typically is gradational and is often characterized by a zone of fractured rock material. Saprolite is weathered decomposed in-place rock which is characterized by its retention of the original fabric or structure of the parent bedrock. The residual soil and saprolite thickness in the Piedmont is variable, but may be greater than eighty (80) feet.

The Piedmont province is characterized by metamorphic rocks which have been intruded by igneous rocks. The metamorphic rocks of the Charlotte Belt include schist, gneiss, amphibolite, and meta-gabbro. Igneous rocks range in composition from granite to gabbro. Geologic mapping of the Rock Hill area indicates that the Site is underlain by gabbro. Unconsolidated soils consist of a surficial layer of alluvium underlain by saprolite. At the Site, the alluvium consists of black-to-grey to green-to-blue sandy, clayey silt. The alluvium ranged in thickness from 5.5 to 9.0 feet. The underlying saprolite consists of green-to-tan-to-brown fine sand and silt ranging in thickness from 3.4 to 22 feet.

### 5.2.2 Hydrogeology

Information on the hydrogeology of the Site was obtained from the sixteen (16) monitoring wells installed during the RI and four (4) existing wells. Groundwater at the Site is first encountered in the unconsolidated soil zones overlying bedrock. The water table was encountered at depths ranging from approximately five (5) feet to approximately eight (8) feet below land surface. The direction of groundwater flow within both aquifers is toward Site surface water.

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The ability for groundwater to move horizontally through the underlying aquifer system was evaluated using the hydraulic conductivity values determined from the rising head tests made in the soil and rock units. The average horizontal hydraulic conductivity of the soil aquifer ranged from 0.14 to 2.62 feet per day and averaged 1.07 feet per day. The horizontal hydraulic conductivity in the rock wells ranged from 0.018 to 58.2 feet per day and averaged 1.7 feet per day. Average hydraulic conductivities were calculated using a geometric mean.

The ability for groundwater to move vertically through the soil unit was evaluated by measuring the hydraulic conductivity of four (4) Shelby tube samples collected during the subsurface investigation. These Shelby tube samples were then sent to a geotechnical laboratory and tested for vertical hydraulic conductivity. The vertical hydraulic conductivity of the soil unit ranged from  $1.7 \times 10^{-5}$  to 0.15 feet per day and averaged  $1.45 \times 10^{-2}$  feet per day. As previously mentioned, the average value was calculated using a geometric mean.

The hydraulic gradient in the soil unit, based on the January 27, 1993, water level data, varies from 0.021 to 0.1 feet per foot and averages 0.044 feet per foot. Using an average horizontal hydraulic conductivity of 1.07 feet per day, an average hydraulic gradient of 0.044 feet per foot, and an average effective porosity of 0.20 (typical for silty material), the average horizontal groundwater seepage velocity for the soil aquifer is 0.24 feet per day.

The hydraulic gradient in the rock unit, based on the January 27, 1993, water level data, varies from 0.008 to 0.055 feet per foot and averages 0.024 feet per foot. Using an average horizontal hydraulic conductivity of 1.7 feet per day, an average hydraulic gradient of 0.024 feet per foot, and an effective porosity of 0.05 (typical for highly weathered gabbro), the average seepage velocity for the upper rock unit is 0.82 feet per day.

### 5.3 Nature and Extent of Contamination

Environmental contamination at the Site can be summarized as follows:

Groundwater Contamination. Sixteen (16) groundwater samples from temporary wells were collected and analyzed for selected parameters, prior to the installation of permanent monitoring wells. Ten (10) permanent monitoring wells were installed during the second phase of field work and were sampled and analyzed for all target compound list/target analyte list (TCL/TAL) parameters, along with three (3) previously existing monitoring wells and four (4) private wells (July 1992). Six (6) additional wells were installed during the third phase of field work (December 1992 to January 1993). All sixteen (16) permanent

monitoring wells were then sampled and analyzed for all TCL/TAL parameters, along with the three (3) previously existing monitoring wells and the four (4) private wells (January 1993).

Four (4) contaminants of concern (COCs), trichloroethene (TCE), 1,2-dichloroethene, vinyl chloride, and manganese, were detected in the groundwater. These COCs were determined in the Baseline Risk Assessment which is described below in Section 6.0.

TCE was the most common volatile organic contaminant as it was detected in three (3) groundwater samples. 1,2-dichloroethene was also detected in two (2) groundwater samples. The highest volatile organic contaminant detected was TCE at 84,000 micrograms/liter ( $\mu\text{g/l}$ ), which is well above the maximum contaminant level (MCL) of 5  $\mu\text{g/l}$  for this contaminant. The highest detection level of 1,2-dichloroethene was 1200  $\mu\text{g/l}$ , which is also well above its MCL of 70  $\mu\text{g/l}$ . Vinyl chloride was detected at 26  $\mu\text{g/l}$ , which exceeds its MCL of 2  $\mu\text{g/l}$ , and the highest detection for manganese was 3600  $\mu\text{g/l}$ , which greatly exceeds the risk-based cleanup level of 200  $\mu\text{g/l}$ .

Due to the fact that very low levels of Site-related contamination were detected in the private wells (Figure 3), further evaluation of the construction characteristics of the private wells will be required in the remedial design. The primary private wells of concern are PW-03 and PW-04. Two off-site private wells, PW-01 and PW-02, may also be studied. If the screened depths of these private wells exceed the screened depths of the on-site monitoring wells, additional monitoring wells may be required. These additional monitoring wells will be used to fully demonstrate that there is no Site related aquifer contamination, at unacceptable risk levels, at the deeper screened depths.

Surface and Subsurface Soil Contamination. A total of sixty-five (65) soil samples were collected and analyzed for all TCL/TAL parameters. There were no contaminants of concern as determined in the Baseline Risk Assessment. A further discussion of the Baseline Risk Assessment is described below in Section 6.0.

No volatile organic contaminants were detected in the surface soil samples, however several volatile organic contaminants were detected in the subsurface soil samples. The highest of these was acetone, up to 2.2 milligrams/kilogram (mg/kg) estimated, which was also found in a background sample. Several semi-volatile organic contaminants were detected in the surface soil samples, but only one was detected in a single subsurface soil sample. All detected levels were below 1 mg/kg, however. A few pesticides and polychlorinated biphenyls (PCBs) were detected at very low levels, all were well below 1.0 mg/kg, in a few surface and/or subsurface soil samples.

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Several metals were detected in the surface and subsurface soil samples at levels greater than two (2) times background, however these levels were only found in a few samples. The remaining sample locations in which these same metals were detected were primarily below two (2) times background levels.

Manganese was detected in the surface soil samples and ranged from 110 mg/kg to 4500 mg/kg. However, background surface soil samples ranged from 370 mg/kg to 5900 mg/kg. The highest level detected for lead was 340 mg/kg (estimated) in a surface soil sample and 99 mg/kg (estimated) and 150 mg/kg (estimated, in a duplicate of the same sample) in a subsurface soil sample. Zinc was detected in the surface soil samples significantly above background at 530 mg/kg.

Due to a concern over the high variance of manganese levels in the surface soil background samples, additional sample(s) will be collected during the remedial design phase to confirm that this variance is consistent with the environmental setting.

Surface Water Contamination. Seven (7) surface water samples from the unnamed stream and drainage ditch, and from inside the 72-inch drain, were collected and analyzed for all TCL/TAL parameters. Surface water run-off from the Rock Hill Mall and Cherry Road flow through the 72-inch drain and the unnamed stream. There were no contaminants of concern as determined in the Baseline Risk Assessment. A further discussion of the Baseline Risk Assessment is described below in Section 6.0.

No semi-volatile organic contaminants, pesticides, or PCBs were detected in any of the samples. A few volatile organic contaminants were detected in all of the samples, though a specific contaminant may have been detected in just one sample. The highest level detected, Tetrachloroethene at 65 ug/l, was from the background sample collected from inside the 72-inch drain. This same contaminant was also detected further downstream at lower concentrations. Because these contaminants were detected in the "background" sample, additional surface water sample(s) will be collected during the remedial design phase to determine if this background sample is representative of true background conditions. Several metals were also detected, but were primarily found at less than two times background or at levels representative of naturally occurring levels for this area.

Sediment Contamination. Seven (7) sediment samples from the unnamed stream and drainage ditch, and from inside the 72-inch drain, in the same locations as the surface water samples, were collected and analyzed for all TCL/TAL parameters. There were no contaminants of concern as determined in the Baseline Risk Assessment. A further discussion of the Baseline Risk Assessment is described below in Section 6.0.

Three (3) volatile organic contaminants were detected in three (3) of the sediment samples. Tetrachloroethene was detected in the background sample at 0.120 mg/kg, which was the highest detected concentration, though it was also detected further downstream. Because these contaminants were detected in the background sample, additional sediment sample(s) will be collected during the remedial design to determine if this background sample is representative of true background conditions.

Semi-volatile organic contaminants were detected in all of the samples, with the highest levels found in sediment sample SD-03. Fluoranthene at 4.8 mg/kg was the highest contaminant detected. Most of the semi-volatile organic contaminants were also detected at significant levels in the background sample. Metals were detected in the samples. The maximum detected concentration was lead at an estimated value of 0.58 mg/kg. The remaining metals detected were primarily less than two times background.

#### 6.0 SUMMARY OF SITE RISKS

A Baseline Risk Assessment was conducted to evaluate the risks present at the Site to human health and the environment, under present day conditions and under assumed future use conditions. The purpose of a Baseline Risk Assessment is to provide a basis for taking action and to identify the contaminants and the exposure pathways that need to be addressed by the remedial action. It serves as an indication of the risks posed by the Site if no action were to be taken.

This section of the ROD contains a brief summary of the results of the Baseline Risk Assessment conducted for the Site. The Site land use is currently commercial. There is, however, the potential for part of the Site to become residential in a future use scenario, and that a future resident potentially could install a private well for potable use. This is based on the fact that there are nearby residential areas adjacent to the Site, and that some of these residents use groundwater as a potable source of water.

Carcinogenic risk and noncarcinogenic Hazard Index (HI) ratios were calculated for both the current land use scenario, with residents near the Site (Site visitor), as well as on-site workers, and the potential future land use scenario, which is residential. The Baseline Risk Assessment determined that the total cancer risk for the current Site visitor scenario is  $3.34 \times 10^{-6}$ , and that the total cancer risk for the current on-site worker scenario is  $2.05 \times 10^{-6}$ . These risk levels only slightly exceed the lower target level of  $1 \times 10^{-6}$ , but is still well within EPA's acceptable risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ . The Site, therefore, does not pose an unacceptable cancer risk under the current exposure scenario. The total HI for the



current Site visitor scenario is 0.31 and for the current on-site worker scenario is 0.26. These HIs are below any level of concern for noncarcinogens (1.0) and indicate that the Site does not pose an unacceptable non-carcinogenic risk under the current exposure scenario. Therefore, there is no unacceptable current risk at the Site.

The Baseline Risk Assessment also determined that the total cancer risk for the future Site residential scenario was  $2.63 \times 10^{-2}$ . This risk level is not within EPA's acceptable risk range ( $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ ). The HI for the future Site residential scenario was 400 for an adult and 950 for a child; these levels exceed the acceptable HI of 1.0. The carcinogenic and non-carcinogenic risks are attributable to the ingestion of groundwater. No substantial risk to wildlife or the environment was found to exist under present conditions or future conditions.

The Baseline Risk Assessment concluded that the surface soils, the surface water, and the sediments at the Site are not media of concern. During the FS, it was determined that the subsurface soil was not a media of concern. The Baseline Risk Assessment determined that the groundwater was the only media posing an unacceptable level of risk to human health or the environment. The actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Record of Decision, may present an imminent and substantial endangerment to public welfare or the environment.

#### 6.1 Contaminants of Concern

Data collected during the RI were evaluated in the Baseline Risk Assessment. Contaminants were not included in the Baseline Risk Assessment evaluation if any of the following criteria applied:

- \* If an inorganic compound or element, it was not detected at or above twice the background concentration.
- \* If an inorganic compound or element, it was detected at low concentrations, had very low toxicity, and was judged to be naturally occurring.
- \* The sampling data included analytical results flagged as "N" (presumptive evidence) or "R" (not usable).

The results of the Baseline Risk Assessment concluded that the only medium of concern was the groundwater, and that the contaminants of concern were TCE, 1,2-dichloroethene, vinyl chloride, and manganese. Levels of the 1,2-dichloroethene ranged from non-detect (the detection limit was normally 0.010 mg/l) to

1200  $\mu\text{g/l}$ . TCE ranged from non-detect to 84,000  $\mu\text{g/l}$ . Vinyl chloride levels ranged from non-detect to 26  $\mu\text{g/l}$ , and manganese levels ranged from non-detect to 3,600  $\mu\text{g/l}$ .

For each contaminant of concern, exposure point concentrations were determined in the Baseline Risk Assessment. The upper ninety-five percent (95%) confidence limit of the arithmetic mean of all detections was used, unless it exceeded the maximum detected concentration. If this occurred, then the maximum detected concentration was used. The exposure point concentrations calculated in the Baseline Risk Assessment for groundwater were 434  $\mu\text{g/l}$  for 1,2-dichloroethene, 84,000  $\mu\text{g/l}$  for TCE, 26  $\mu\text{g/l}$  for vinyl chloride, and 3600  $\mu\text{g/l}$  for manganese.

### 6.2 Exposure Assessment

The Site land use is currently commercial. There is, however, the potential for part of the Site to become residential in a future use scenario, and that a future resident potentially could install a private well for potable use. This is based on the fact that there are nearby residential areas adjacent to the Site, and that some of these residents use groundwater as a potable source of water. In addition, there are other potable wells within a half-mile radius of the Site. Municipal water, however, is available to the area. The Baseline Risk Assessment determined that the population that could potentially be exposed to Site contaminants would be potential future on-site residents. Based on this information, the Baseline Risk Assessment determined that the reasonable exposure pathways consist of ingestion of chemicals in contaminated groundwater and inhalation of chemicals volatilized during non-ingestion domestic water use, e.g. showering.

The following future use scenario exposure assumptions were used: for exposure to the non-carcinogens by an adult resident, it was assumed that the adult resident would ingest two (2) liters per day of groundwater for a twenty-four (24) year period. It was assumed that a child would be exposed for six (6) years, and would only consume 1 liter per day of water. For carcinogens, the time period used was seventy (70) years. An inhalation rate of 0.83 cubic meter/hour was assumed for a 15-minute shower duration.

### 6.3 Toxicity Assessment of Contaminants

The purpose of the toxicity assessment is to assign toxicity values (criteria) to each chemical evaluated in the Baseline Risk Assessment. The toxicity values are used in combination with the estimated doses to which a human could be exposed (as discussed in the Risk Characterization subsection of the Baseline Risk Assessment) to evaluate the potential human health risks associated with each contaminant. Human health criteria

developed by EPA (cancer slope factors and non-cancer reference doses) were either obtained from the Integrated Risk Information System (IRIS, 1993) or the 1992 Health Effects Assessment Summary Tables (HEAST; EPA, 1992). In some cases the Environmental Criteria Assessment Office (ECAO, 1992) was contacted to obtain criteria for chemicals which were not listed in IRIS or HEAST.

EPA has developed slope factors (SF) to estimate excess lifetime cancer risks associated with exposure to potentially carcinogenic contaminants of concern. Sfs, which are expressed as risk per milligram per kilogram of dose, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level.

The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Slope factors are derived from the results of human epidemiological studies or chronic animal bioassay data to which mathematical extrapolation from high to low dose, and from animal to human dose, has been applied, and statistics to account for uncertainty have been applied (e.g. to account for the use of animal data to predict effects on humans).

EPA has also developed reference doses (RfDs) to establish the potential for adverse human health effects from exposure to the contaminants of concern exhibiting noncarcinogenic effects. RfDs, which are expressed in units of mg/kg-day, are estimates of daily exposure levels for humans, including sensitive subpopulations, that are likely to be without risk of adverse effect. Estimated intakes of contaminants of concern from environmental media (e.g. the amount of chemicals of concern ingested from contaminated drinking water) can be compared to the RfD. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans).

Carcinogenic contaminants are classified according to EPA's weight-of-evidence system. This classification scheme is summarized below:

- Group A: Known human carcinogen.
- Group B1: Probable human carcinogen, based on limited human epidemiological evidence.
- Group B2: Probable human carcinogen, based on inadequate human epidemiological evidence but sufficient evidence of carcinogenicity in animals.

Group C: Possible human carcinogen, limited evidence of carcinogenicity in animals.

Group D: Not classifiable due to insufficient data.

Group E: Not a human carcinogen, based on adequate animal studies and/or human epidemiological evidence.

TCE is classified as a B2 carcinogen. The oral slope factor used for TCE was  $1.10 \times 10^{-2}$  and the inhalation slope factor was  $1.70 \times 10^{-2}$  (the reference used was Dollarhide, 1992). The oral slope factor used for vinyl chloride was 1.90 and the inhalation slope factor was  $3.00 \times 10^{-1}$  (HEAST, 1992). The reference dose used for 1,2-dichloroethene, oral only, was  $1.00 \times 10^{-2}$  (HEAST, 1992). The reference dose used for TCE, oral only, was  $6.00 \times 10^{-3}$  (Dollarhide, 1992). The reference dose for manganese, oral, was  $5.00 \times 10^{-3}$  (IRIS, 1993).

#### 6.4 Risk Characterization

The final step of the Baseline Risk Assessment, the generation of numerical estimates of risk, was accomplished by integrating the exposure and toxicity information.

For a carcinogen, risks are estimated as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk is calculated from the following equation:

$$\text{Risk} = \text{CDI} \times \text{SF}$$

where:

Risk = a unit-less probability (e.g.  $2 \times 10^{-5}$ ) of an individual developing cancer,

CDI = chronic daily intake averaged over seventy (70) years (mg/kg-day), and

SF = slope-factor, expressed as (mg/kg-day)<sup>-1</sup>

These risks are probabilities that are generally expressed in scientific notation (e.g.  $1 \times 10^{-6}$ ). An excess lifetime cancer risk of  $1 \times 10^{-6}$  indicates that, as a reasonable maximum estimate, an individual has a 1 in 1,000,000 chance of developing cancer as a result of Site-related exposure to a carcinogen over a seventy (70) year lifetime period under the specific exposure conditions at a site.

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., life-time) with a reference dose derived for a similar exposure period. The ratio of exposure to toxicity is called a hazard quotient (HQ). An HQ less than 1 indicates that a receptor's dose of a single contaminant is less than the RfD, and that the toxic noncarcinogenic effects from that chemical are unlikely. By adding the Hqs for all contaminants of concern that affect the same target organ (e.g. liver) within a medium or across all media to which a given population may reasonably be exposed, the Hazard Index (HI) is generated. An HI less than 1 indicates that, based on the sum of all Hqs from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely.

The HQ is calculated as follows:

$$\text{Non-cancer HQ} = \text{CDI/RfD}$$

where:

CDI = Chronic Daily Intake

RfD = reference dose; and

CDI and RfD are expressed in the same units and represent the same period (i.e., chronic, subchronic, or short-term).

It was determined in the Baseline Risk Assessment that there is no current unacceptable carcinogenic or non-carcinogenic risk at the Site.

Under the future use scenario, the lifetime carcinogenic risk associated with all the exposure pathways is estimated to be  $1.47 \times 10^{-2}$  for an adult and  $1.16 \times 10^{-2}$  for a child. The overall carcinogenic risk for a future resident is  $2.63 \times 10^{-2}$ . The estimated lifetime carcinogenic risk is due primarily to the potential ingestion and inhalation of contaminants in the groundwater.

Under the future use scenario, the lifetime noncarcinogenic risk, associated with all the exposure pathways is estimated to be HI = 400 for an adult resident, and 950 for a child resident. This noncarcinogenic risk is due to the potential ingestion of contaminants in the groundwater.

Because the land use adjacent to the Site is zoned for both residential and commercial use, the ecological communities surrounding the Site have been altered from their natural state.

No state or federally designated endangered or threatened species are found at the Site.

The actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

#### 7.0 DESCRIPTION OF GROUNDWATER REMEDIAL ALTERNATIVES

The FS considered a wide variety of general response actions and technologies for remediating groundwater. No other media at the Site require remedial action.

Based on the FS, Baseline Risk Assessment, and Applicable or Relevant and Appropriate Requirements (ARARs), the remedial action objectives (RAOs) listed below were established for the Site. Alternatives were developed with the goal of attaining these objectives:

- Reduce to acceptable levels the excess risk to humans and environmental receptors associated with the medium and contaminants of concern at the Site. This will be accomplished by reducing the concentrations of contaminants that result in excess risk to human health and the environment.
- Reduce the potential for ingesting contaminants in the groundwater or inhaling volatilized contaminants from the groundwater from the Site where:
  - Carcinogen concentrations are above Federal or State standards, or in the absence of standards, are above levels that would exceed an acceptable cancer risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ ;
  - Noncarcinogen concentrations are above Federal or State standards, or in the absence of standards, are above levels that would exceed an acceptable Hazard Index (HI) of 1.0.

Technologies considered potentially applicable to groundwater contamination were further evaluated based upon their effectiveness and implementability. Listed below are those alternatives which passed this final screening, and are proposed for groundwater remediation.

Alternative 1: No Action

Alternative 2: Limited Action, institutional controls

Alternative 3: Groundwater extraction, treatment, and surface water discharge

Alternative 4: Groundwater extraction, POTW discharge

Each of the four (4) alternatives is discussed below. Alternatives 1 and 2 will not meet the remediation goals presented in Section 9.1.3 of this ROD. Alternatives 3 and 4 will meet the remediation goals through treatment.

"O&M costs" refer to the costs of operating and maintaining the treatment described in the alternative. The treatment period for Alternatives 3 & 4 was assumed to be thirty (30) years.

Groundwater monitoring for Alternatives 1 & 2 was assumed for the purposes of projecting costs, to be for the five (5) year reviews only. Monitoring for Alternatives 3 & 4 was assumed, for the purpose of projecting costs, to be once a week for the influent and effluent for thirty (30) years and for the twenty (20) monitoring wells, once a quarter for the first five (5) years and semi-annually for the next twenty-five (25) years. O&M costs were calculated using a seven percent (7%) discount rate per year.

Certain sections of Federal and State environmental statutes (see Section 9) are applicable, or relevant and appropriate requirements (ARARs) for the Site, and must be met by the selected remedial alternative or waived with justification provided as to why that ARAR was waived. Site groundwater is classified by South Carolina as Class GB (SC Water Classifications and Standards, Regulation 61-68), and by EPA as Class IIA (Guidelines for Ground Water Use and Classification, EPA Ground Water Protection Strategy, US EPA 1986).

Alternatives 1 and 2 would not meet the relevant and appropriate ARARs identified in Section 9, concerning groundwater as a potable water source. The National Primary and Secondary Drinking Water Standards, promulgated under 40 C.F.R. Parts 141-143, and the State of South Carolina Primary Drinking Water Regulations, SC Reg. 61-58, would not be met because Alternatives 1 and 2 do not involve treatment of the contaminated groundwater, and contaminants in the Site groundwater violate the MCLs specified in these Federal and State regulations. These ARARs would be met by Alternatives 3 and 4.

In addition, the CERCLA preference for treatment to reduce the toxicity, mobility, or volume of the contaminants, wherever possible, would not be satisfied by Alternatives 1 or 2 since no treatment is involved. The remaining Alternatives, 3 and 4, would achieve these standards, and would also meet the CERCLA preference for treatment, since they are active treatment technologies.

Alternative 3 would be subject to the following ARARs or criteria to be considered (TBCs) because of the on-site treatment plant aspect of the alternative: National Ambient Air Quality Standards (NAAQS), 40 C.F.R. Part 50; National Emissions Standards for Hazardous Air Pollutants (NESHAPs), 40 C.F.R. Part 61, TBC; South Carolina Ambient Air Quality Standards (S.C. Reg. R61-62). Alternatives 3 and 4 would both be subject to the South Carolina Well Standards and Regulations, (R61-71), since both alternatives involve the installation of extraction wells.

Other ARARs for Alternative 3 include the Clean Water Act Pretreatment Standards (40 C.F.R. Parts 122, 125, 129, 133, and 136), and the South Carolina NPDES Discharge Limitations for treated water (R61-9), if discharge is to a stream.

The treatment system related to Alternative 3, may produce a sludge, and possibly spent carbon, that may be subject to the identification (40 C.F.R. Part 261, SCHWMR 61-79.261), transportation (40 C.F.R. Part 262, SCHWMR 61-79.262), manifestation (40 C.F.R. Part 263, SCHWMR 61-79.263), and land disposal restriction (40 C.F.R. Part 268, SCHWMR 61-79.268) requirements of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) 42 U.S.C. §§ 6901 et seq., if the resulting sludge is determined to be a RCRA hazardous waste.

#### 7.1 Alternative 1: No Action

Under the no action alternative, the Site is left "as is" and no funds are expended for the cleanup or control of the contaminated groundwater. Monitoring of contaminants of concern and their degradation contaminants, not including their innocuous compounds, would be included as part of this alternative. However, the costs associated with the monitoring are not considered capital costs or O&M costs. Monitoring of the contaminants would involve the collection and analysis of groundwater samples from existing Site monitoring wells, at least every five (5) years, to allow tracking of contaminant concentrations and to monitor the speed, direction, and extent of contaminant migration. The exact number and location of wells to be sampled would be determined during remedial design. In addition, the need for any additional monitoring wells, which may be sampled for additional contaminants, would be determined during the remedial design/remedial action phases. These wells



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may be added if it is determined later that groundwater contamination has left the Site property or if further characterization of the Site is needed. Future risks to persons living on and near the Site will remain. Because hazardous contaminants would remain on-site, five (5) year reviews would be required under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c).

Alternative 1:	Capital Cost:	\$ 0.00
	Annual O&M Cost:	0.00
	Total Present Worth Cost:	\$ 0.00

The cost estimate for sampling the monitoring wells was approximately \$ 181,500.00.

7.2 Alternative 2: Limited Action, Institutional Controls

Under this alternative, institutional controls would be implemented to restrict the withdrawal and use of contaminated groundwater on-site. This alternative would also include monitoring of the contaminants, as described in Alternative 1.

The institutional controls that would apply to the Site are deed restrictions and well permit restrictions. Deed restrictions would prevent future use of the contaminated groundwater for purposes such as potable water supply or irrigation of edible garden vegetables. These restrictions would be written into the property deeds to inform future property owners of the possibility of contaminated groundwater beneath the property. Permit restrictions issued by the State of South Carolina would restrict all well drilling permits issued for new wells on properties that may draw water from the contaminated groundwater for potable use or for the irrigation of edible garden vegetables.

Alternative 2:	Capital Cost:	\$ 0.00
	Annual O&M Cost:	35,750.00
	Total Present Worth Cost:	\$ 181,456.00

7.3 Alternative 3: Groundwater Extraction, Treatment,  
Surface Water Discharge

Alternative 3 involves placing extraction wells throughout the contaminated groundwater, with overlapping cones of influence, to actively remediate the aquifer. It would involve installing extraction wells and removing contaminated water from the aquifer, both horizontally and vertically, and treating the extracted groundwater. The groundwater would be extracted until the performance standards are met. This will also prevent further migration of the contaminated groundwater. In addition, the contaminated groundwater near the monitoring wells that had the highest concentration of contaminants, MW-03, shall be

remediated as quickly as possible, to prevent the migration of the contaminated groundwater further into the bedrock, as well as, prevent migration of the contaminated groundwater to other parts of the Site. This may include installing several extraction wells in this particular area, including into the bedrock to the depth of the contamination. After extraction, the water would go to an on-site treatment system that may include neutralization, oxidation, sedimentation, filtration, and/or carbon adsorption. The "clean" water from the treatment system would then be discharged to the surface water. The groundwater would be treated to remove inorganic and organic contaminants. Modeling conducted during the RI, suggested that the pumping rate would be about fifteen (15) to twenty (20) gallons/minute using about 1 - 2 extraction wells for a period of about thirty (30) years. The actual number of wells and pumping rates shall be determined during the remedial design. However, in order to quickly remove the contaminated groundwater, additional extraction wells may need to be installed, especially near the monitoring wells where the highest contamination was detected (MW-03).

In addition to groundwater extraction and treatment, institutional controls, as those described in Alternative 2, would be implemented to limit current and future use of groundwater until the performance standards are continuously achieved. Groundwater monitoring will be conducted a minimum of once a year, during the time of the year when the highest contamination was detected during the RI (July or August). Monitoring wells and possibly extraction wells, shall be sampled and analyzed for all contaminants of concern and their degradation contaminants, not including their innocuous compounds, as determined during the remedial design. The amount and frequency of sampling and contaminants to be sampled for, shall be modified, if required by EPA. The influent and effluent of the treatment system will be sampled as determined during the remedial design/remedial action.

The cost below are approximate, and an average of the costs determined for one and two extraction well scenarios.

Alternative 3:	Capital Cost:	\$ 900,000.00
	Annual O&M Cost:	348,000.00
	Total Present Worth Cost:	\$ 4,800,000.00

#### 7.4 Alternative 4: Groundwater Extraction, POTW discharge

Alternative 4 involves placing extraction wells throughout the contaminated groundwater, with overlapping cones of influence, to actively remediate the aquifer as was described in Alternative 3. This alternative would involve installing extraction wells and removing contaminated water from the aquifer, both horizontally and vertically. The groundwater would be extracted until the

performance standards are met. This will also prevent further migration of the contaminated groundwater. In addition, the contaminated groundwater near the monitoring wells that had the highest concentration of contaminants, MW-03, shall be remediated as quickly as possible, to prevent the migration of the contaminated groundwater further into the bedrock, as well as, prevent migration of the contaminated groundwater to other parts of the Site. This may include installing several extraction wells in this particular area, including into the bedrock to the depth of the contamination. Modeling conducted during the RI suggested that the pumping rate would be about fifteen (15) to twenty (20) gallons/minute using about 1 - 2 extraction wells for a period of about thirty (30) years. The actual number of wells and pumping rates shall be determined during the remedial design. However, in order to quickly remove the contaminated groundwater, additional extraction wells may need to be installed, especially near the monitoring wells where the highest contamination was detected (MW-03). As opposed to Alternative 3, this alternative would discharge the contaminants, via sewer line, to the publicly owned treatment works (POTW). No pretreatment is anticipated before the contaminated groundwater is discharged to the sewer line. In addition to groundwater extraction, institutional controls, as described in Alternative 2, would be implemented to limit current and future use of groundwater until the performance standards are continuously achieved. Also, contaminant monitoring would be performed to monitor the effectiveness of the alternative in achieving the remediation goals, as described in Alternative 3.

The cost below are approximate, and an average of the costs determined during the FS, for one and two extraction well scenarios.

Alternative 4:	Capital Cost:	\$ 280,000.00
	Annual O&M Cost:	225,000.00
	Total Present Worth Cost:	\$ 2,300,000.00

#### 8.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES FOR GROUNDWATER

The four (4) alternatives for groundwater remediation were evaluated based upon the nine (9) criteria set forth in 40 C.F.R. § 300.430(e)(9) of the NCP. In the sections which follow, brief summaries of how the alternatives were judged against these nine (9) criteria are presented. In addition, the sections are prefaced by brief descriptions of the criteria.

## 8.1 Groundwater Remediation Alternatives

### 8.1.1 Threshold Criteria

Two (2) threshold criteria must be achieved by a remedial alternative before it can be selected.

1. Overall protection of human health and the environment addresses whether the alternative will adequately protect human health and the environment from the risks posed by the Site. Included is an assessment of how and whether the risks will be properly eliminated, reduced, or controlled through treatment, engineering controls, and/or institutional controls.

Alternative 1, No Action, will not provide overall protection of human health and the environment, since contaminated groundwater would be left on-site. Alternative 2, Limited Action (Institutional Controls), would achieve limited protection of human health from the contaminants by preventing exposure to affected groundwater through deed restrictions that prohibit future use of groundwater under the Site, but would not be protective of the environment, nor off-site residents if the groundwater contamination moved off-site. Alternatives 3 & 4, Groundwater Extraction will provide overall protection of human health and the environment through extraction of contaminated groundwater and either on-site or off-site treatment of the groundwater.

2. Compliance with applicable or relevant and appropriate requirements (ARARs) addresses whether an alternative will meet all of the requirements of Federal and State environmental laws and regulations, as well as other laws, and/or justifies a waiver from an ARAR. The specific ARARs which will govern the selected remedy are listed and described in Section 9.0, the Selected Remedy.

The evaluation of the ability of the proposed alternatives to comply with ARARs included a discussion of ARARs presented in Section 7.0. Alternative 1, No Action, and Alternative 2, Limited Action, Institutional Controls would not meet ARARs, since contaminated groundwater is left on-site. Alternatives 3 & 4, Groundwater Extraction, are expected to meet ARARs, since they are active treatment technologies.

### 8.1.2 Primary Balancing Criteria

Five (5) criteria were used to weigh the strengths and weaknesses of the alternatives, and were used to select one of the four (4) alternatives. Assuming satisfaction of the threshold criteria, these five (5) criteria are EPA's main considerations in selecting an alternative as the remedy.

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1. Long term effectiveness and permanence refers to the ability of the alternative to maintain reliable protection of human health and the environment over time, once the remediation goals have been met. Alternative 1, No Action, and Alternative 2, Limited Action, Institutional Controls, will not provide long term effectiveness, since the remediation goals will not be met. Alternatives 3 & 4, Groundwater Extraction, will achieve permanent reduction in contaminants through the extraction and treatment of the contaminated groundwater, and therefore, be effective in the long-term.

2. Reduction of toxicity, mobility, or volume through treatment addresses the anticipated performance of the treatment technologies that an alternative may employ. The 1986 amendments to CERCLA, the Superfund Amendments and Reauthorization Act (SARA), direct that, when possible, EPA should choose a treatment process that permanently reduces the level of toxicity of Site contaminants, eliminates or reduces their migration away from the Site, and/or reduces their volume on a Site.

Alternative 1, No Action, would not achieve a reduction in the toxicity, mobility, or volume of the contaminants since the alternative is considered complete at this time.

Alternative 2, Limited Action, Institutional Controls, is not a treatment technology and, therefore, does not satisfy the statutory preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce the toxicity, mobility, or volume of the contaminants.

Alternatives 3 and 4, Groundwater Extraction, use active treatment technologies to permanently reduce the toxicity, mobility, and volume of the contaminated groundwater.

3. Short-term effectiveness refers to the potential for adverse effects to human health or the environment posed by implementation of the remedy.

Alternatives 1 & 2, No Action and Limited Action, Institutional Controls, afford the greatest level of short-term protection because they present the least risk to remedial workers, the community, and the environment, since these alternatives do not involve a remedial action. The other Alternatives, 3 & 4, could release minimal volatile emissions during extraction well installation and/or treatment system construction. Standard construction management techniques would address any potential short-term fugitive emissions.

4. Implementability considers the technical and administrative feasibility of an alternative, including the availability of materials and services necessary for implementation. Alternatives 1 & 2, No Action and Limited Action, Institutional Controls, will be the easiest to implement since they do not involve the construction of a treatment system.

The construction technologies required to implement Alternatives 3 & 4, Groundwater Extraction, are well established and very reliable. The extraction and treatment systems would have additional operational requirements compared to Alternatives 1 and 2, because of the complexities of the continuous operation of a groundwater extraction system, the operation of a multi-component treatment system, and requisite discharge limits on the resulting treated effluent. The extraction and treatment system would be more difficult to operate and maintain than options proposed under Alternatives 1 & 2.

The technical implementability of all the evaluated alternatives is reasonable. Technologies required to implement the alternatives are readily available and proven at full-scale in similar field efforts. Discharge permits or at least the criteria, may need to be obtained for the implementation of Alternative 3, since it includes an on-site treatment system which may discharge to the unnamed stream.

5. Cost includes both the capital (investment) costs to implement an alternative, plus the long-term O&M expenditures applied over a projected period of operation. Alternative 1 has no costs since it is completed. Alternative 2 is lower in cost than Alternatives 3 and 4, since it involves only the costs of monitoring the groundwater, implementing deed and well restrictions. Alternative 4 is less than Alternative 3.

#### 8.1.3 Modifying Criteria

State acceptance and community acceptance are two (2) additional criteria that are considered in selecting a remedy, once public comment has been received on the Proposed Plan.

1. State acceptance: The State of South Carolina concurs with this remedy. A copy of South Carolina's letter of concurrence is attached (Appendix B) to this ROD.

2. Community acceptance was indicated by the verbal comments received at the Rutledge Property Site Proposed Plan public meeting, held on March 1, 1994. The public comment period opened on February 22, 1994, and closed on April 25, 1994 (after a thirty (30) day extension). Written comments received concerning the Site, and those comments expressed at the public meeting, are addressed in the Responsiveness Summary attached as Appendix A to this ROD.

## 9.0 THE SELECTED REMEDY

### 9.1 Groundwater Remediation

Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of the four (4) alternatives and public and state comments, EPA has selected a remedy that addresses groundwater contamination at this Site.

The selected remedy for the Site is:

Alternative 4, Groundwater Extraction, POTW discharge

Total present worth cost of the selected remedy is approximately:

\$ 2,300,000.00

This remedy consists of groundwater extraction of contaminated groundwater, followed by discharge to the POTW. The following subsections describe this remedy component in detail, provide the criteria (ARARs and TBC material) which shall apply, and establish the performance standards for implementation.

#### 9.1.1 Description

This remedy component consists of the design, construction and operation of a groundwater extraction system, and development and implementation of a Site monitoring plan to monitor the system's performance. The groundwater alternative specified below shall be continued until the performance standards listed in Section 9.1.3. are achieved, at a minimum, in all of the monitoring and extraction wells that are associated with the Site.

This alternative involves placing extraction wells throughout the entire area of contaminated groundwater, with overlapping cones of influence, to actively remediate the aquifer. It would involve installing extraction wells and removing contaminated water from the aquifer, both horizontally and vertically. The groundwater would be extracted until the performance standards are met continuously. This will also prevent further migration of the contaminated groundwater. In addition, the contaminated groundwater near the monitoring wells that had the highest concentration of contaminants, MW-03, shall be remediated as quickly as possible, to prevent the migration of the contaminated groundwater further into the bedrock, as well as, prevent migration of the contaminated groundwater to other parts of the Site. This may include installing several extraction wells in this particular area, including into the bedrock to the depth of the contamination. The actual number of wells, their depths, and their pumping rates shall be determined during the remedial design.

The contaminated groundwater would then be discharged, via sewer line, to the local POTW. No pretreatment is anticipated before the contaminated groundwater would be discharged to the sewer line.

In addition to the process described above, this alternative will include implementation of all of the institutional controls and contaminant monitoring requirements described below, thereby monitoring the effectiveness of the alternative and limiting future use of groundwater until clean-up goals are achieved.

Institutional controls that would apply to the Site, include deed restrictions and well permit restrictions. Deed restrictions would prevent the future use of the contaminated groundwater for purposes such as potable water supply or irrigation of edible garden vegetables. These restrictions will be written into the property deeds to inform future property owners of the possibility of contaminated groundwater beneath the property. Permit restrictions, issued by the State of South Carolina, would restrict all well drilling permits, issued for new wells on the Site property, that may draw water from the contaminated groundwater for potable water use or irrigation of edible vegetables.

Monitoring of contaminants of concern and their degradation contaminants, not including their innocuous compounds, would be included as part of this alternative, at a minimum. EPA may require additional contaminants, including all TCL/TAL parameters, to be analyzed. Monitoring of the contaminants would involve the collection and analysis at regular intervals, of groundwater samples from existing Site monitoring wells, and possibly extraction wells, to allow tracking of contaminant concentrations and to monitor the speed, direction, and extent of contaminant migration. The actual number and location of well samples, and contaminants to be analyzed for, will be determined during the remedial design/remedial action phases. Samples will be collected and analyzed for contaminants of concern and their degradation contaminants, at a minimum, however, once every year (at the time of the year in which the highest level of contamination was detected during the RI, July or August), unless a different frequency is required by EPA. In addition, the need for any additional monitoring wells, which may be sampled for additional contaminants, will be determined during the remedial design/remedial action phases. These wells may be added if it is determined later, that groundwater contamination has left the Site property, or that contamination is significantly above the clean-up criteria in the outer monitoring wells, as determined by EPA, or that further characterization of the Site is needed.



The vertical extent of groundwater contamination will be confirmed and/or updated during the remedial design. This may require that additional monitoring wells, screened at various depths, be installed. This will be determined by EPA during the remedial design/remedial action phases. The goal of this remedial action is to restore groundwater to its beneficial use as a drinking water source. Based on the information collected during the RI, and on a careful analysis of all remedial alternatives, EPA and the State of South Carolina believe that the selected groundwater remedy, Alternative 4, will achieve this goal.

If it is determined, on the basis of the preceding criteria and the system performance data (after all attempts have been made as determined by EPA), that certain portions of the aquifer cannot be restored to their beneficial use, all or some of the following measures involving long-term management may occur, for an indefinite period of time, as a modification of the existing system:

- \* engineering controls such as physical barriers as containment measures;
- \* chemical-specific ARARs will be waived for the cleanup of those portions of the aquifer based on the technical impracticability of achieving further contaminant reduction;
- \* institutional controls will be provided/maintained to restrict access to those portions of the aquifer that remain above remediation goals;
- \* continued monitoring of specified well locations; and
- \* periodic re-evaluation of remedial technologies for groundwater restoration.

The decision to invoke any or all of these measures may be made during a review of the remedial action, which will occur minimally at five (5) year intervals in accordance with Section 121(c) of CERCLA, 42 U.S.C. § 9621(c).

#### 9.1.2 Applicable or Relevant and Appropriate Requirements (ARARs)

Applicable Requirements. Groundwater remediation shall comply with all applicable portions of the following Federal and State of South Carolina regulations: SC Reg. 61-68, South Carolina Water Classifications and Standards. These regulations establish classifications for water use, and set numerical standards for protecting state waters.

SC Reg. 61-71, South Carolina Well Standards and Regulations, promulgated under the Safe Drinking Water Act, SC Code of Laws, 1976, as amended. Standards for well construction, location and abandonment, are established for remedial work at environmental or hazardous waste sites.

Relevant and Appropriate Requirements. The following regulations are relevant to groundwater remediation at the Site.

40 C.F.R. Parts 141-143, National Primary and Secondary Drinking Water Standards, promulgated under the authority of the Clean Water Act. These regulations establish acceptable maximum levels of numerous substances in public drinking water supplies, whether publicly owned or from other sources such as groundwater.

Maximum Contaminant Levels (MCLs) are specifically identified in 40 C.F.R. § 300.430(e)(2)(i)(B) of the NCP as remedial action objectives for groundwater that are current or potential sources of drinking water supply. Therefore, MCLs are relevant and appropriate as criteria for groundwater remediation at this Site.

SC Reg. 61-58, South Carolina Primary Drinking Water Regulations, promulgated pursuant to the Safe Drinking Water Act, SC Code of Laws, 1976, as amended. These regulations are similar to the federal regulations described above, and are relevant and appropriate as remediation criteria for the same reasons set forth above.

Criteria "To Be Considered" (TBC) and Other Guidance. TBC criteria were utilized and/or established in the Baseline Risk Assessment and in the FS. Groundwater cleanup standards were established based on these documents and both are thus considered TBC.

In the Baseline Risk Assessment, TBC material used included information concerning toxicity of, and exposure to, Site contaminants. Sources of such data included the Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST), and EPA guidance as specified in the Baseline Risk Assessment.

In the FS, groundwater concentrations protective of human health and the environment were calculated based on the Site-specific risk calculations from the Baseline Risk Assessment. Certain of these levels were established as remediation goals in cases where there is no MCL for a particular contaminant. A specific contaminant for which a health-based goal was established was manganese. The groundwater remediation goals are established as performance standards in the Section 9.1.3.

Other TBC material include the following:

Guidelines for Groundwater Use and Classification, EPA Groundwater Protection Strategy, U.S. EPA, 1986. This document outlines EPA's policy of considering a site's groundwater classification in evaluating possible remedial response actions. As described under Section 7.0, the groundwater at the Site is classified by EPA as Class IIB and by South Carolina as Class GB groundwater, indicating its potential as a source of drinking water.

Other requirements. As described above in Section 9.1.2, remedial design often includes the discovery and use of unforeseeable but necessary requirements. Therefore, during design of the groundwater component of the selected remedy, EPA may, through a formal ROD modification process such as an Explanation of Significant Differences or a ROD Amendment, elect to designate further ARARs which apply, or are relevant and appropriate, to groundwater remediation at this Site.

#### 9.1.3 Performance Standards

The standards outlined in this section comprise the performance standards defining successful implementation of the remedy. The groundwater remediation goals in Table 1 below shall be the performance standards for groundwater treatment.

#### 9.2 Monitor Site Groundwater

Monitoring of contaminants of concern and their degradation contaminants, not including their innocuous compounds, would be included as part of Alternative 4, as was described above. Monitoring of the contaminants would involve the collection and analysis at regular intervals, of groundwater samples from existing Site monitoring wells, to allow tracking of contaminant concentrations and to monitor the speed, direction, and extent of contaminant migration. The number and location of well samples will be determined during remedial design. Samples will be collected and analyzed for contaminants of concern and their degradation contaminants, not including their innocuous compounds, at a minimum, however, of once per year (during the time of the year in which the highest level of contamination was detected during the RI, July or August), unless a different frequency is approved by EPA. This annual sampling will begin after one of the following occurs; the signing of a consent decree, a unilateral administrative order is issued, or a Statement of Work is issued to an EPA Contractor. In addition, the need for any additional monitoring wells, which may be sampled for additional contaminants, will be determined during the remedial design/remedial action phases. These wells may be added if it is determined later that groundwater contamination has left the Site property, or that contamination is

TABLE 1

CONTAMINANT	Maximum Concentration Detected (ug/L)	Remediation Goal (ug/L)
<u>Volatile Organics</u>		
1,2 Dichloroethene	1200	70 <sup>(a)*</sup>
Vinyl Chloride	26	2 <sup>*</sup>
Trichloroethene	84000	5 <sup>*</sup>
<u>Inorganics</u>		
Manganese	3600	200

- \* Maximum Contaminant Level (MCL)
- (a) Groundwater samples were analyzed for 1,2 dichloroethene (total). The maximum contaminant level for 1,2 dichloroethene (cis) was used since it is more conservative than 1,2 dichloroethene (trans) at 100 ug/L.

significantly above the clean-up criteria in the outer monitoring wells, as determined by EPA, or if further characterization of the Site is needed. In addition, on a time frame to be determined by EPA, and as part of the verification sampling, when it is believed by EPA that the remedial action is complete, the monitoring wells and extraction wells shall be sampled for all TAL/TCL parameters over a period of time to be determined by EPA. The vertical extent of groundwater contamination will be confirmed and/or updated during the remedial design.

#### Other Requirements

Due to the fact that very low levels of Site-related contamination were detected in the private wells (Figure 3), further evaluation of the construction characteristics of the private wells will be required in the remedial design. The primary private wells of concern are PW-03 and PW-04. Two off-site private wells, PW-01 and PW-02, may also be studied. If the screened depths of these private wells exceed the screened depths of the on-site monitoring wells, additional monitoring wells may be required. These additional monitoring wells will be used to fully demonstrate that there is no Site related aquifer contamination, at levels of concern, at the deeper screened depths.

Due to a concern over the high variance of manganese levels in the surface soil background samples, additional sample(s) will be collected during the remedial design to confirm that this variance is consistent with the environmental setting.

Because organic contaminants were detected at elevated levels in the background surface water and sediment samples, additional surface water and sediment samples, from upstream, will be collected during the remedial design to determine if this background sample is representative of true background conditions.

#### 10.0 STATUTORY DETERMINATIONS

The selected remedy for this Site meets the statutory requirements set forth at Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1). This section states that the remedy must protect human health and the environment; meet ARARs (unless waived); be cost-effective; use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and finally, wherever feasible, employ treatment to reduce the toxicity, mobility or volume of the contaminants. The following sections discuss how the remedy fulfills these requirements.

Protection of human health and the environment: The groundwater remediation alternative will extract the contaminated groundwater and discharge it to the local POTW, thereby reducing and eventually removing the future risks to human health which could result from ingestion and inhalation of the groundwater. This remedy would also reduce the potential risk to the environment.

Compliance with ARARs: The selected remedy will meet ARARs, which are listed in Sections 9.1.2 of this ROD.

Cost effectiveness: Among the groundwater alternatives that are protective of human health and the environment and comply with all ARARs, the selected alternative is the most cost-effective choice because it uses a treatment technology to remediate the contamination in basically the shortest time frame, at a cost less than the other treatment alternative.

Utilization of permanent solutions, and alternative treatment technologies or resource recovery technologies to the maximum extent practicable: The selected remedy represents the use of treatment for a permanent solution. Among the alternatives that are protective of human health and the environment and comply with all ARARs, EPA and the State of South Carolina have determined that the selected remedy achieves the best balance of trade-offs in terms of long-term effectiveness and permanence, reduction of toxicity/mobility/volume, short-term effectiveness, implementability, and cost. The selected groundwater action is more readily implementable than the other treatment alternative considered and the selected groundwater remediation alternative will fulfill the preference for treatment as a principal element.

**APPENDIX A**

**RESPONSIVENESS SUMMARY**

**RUTLEDGE PROPERTY SUPERFUND SITE**

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**RUTLEDGE PROPERTY SUPERFUND SITE**

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**1. Overview**

The U. S. Environmental Protection Agency (EPA) held a public comment period from February 22, 1994 to March 24, 1994, for interested parties to comment on the remedial investigation/feasibility study (RI/FS) results and the Proposed Plan for the Rutledge Property Superfund Site located in Rock Hill, South Carolina. Upon receipt of a request, the comment period was extended an additional thirty (30) days. The comment period closed on April 25, 1994.

EPA held a public meeting at 7:00 p.m. on March 1, 1994, at the Rock Hill City Hall in South Carolina, to present the results of the RI/FS and the Baseline Risk Assessment, to present EPA's Proposed Plan, and to receive comments from the public.

EPA proposed a remedy consisting of extraction of contaminated groundwater with discharge to the POTW.

The Responsiveness Summary provides a summary of citizens' comments and concerns identified and received during the public comment period, and EPA's response to those comments and concerns. These sections and attachments follow:

- Background of Community Involvement
- Summary of Comments Received During the Public Comment Period and EPA's Responses;
- Attachment A: Proposed Plan for Rutledge Property Superfund Site;
- Attachment B: Public Notices of Public Comment Period & Extension of Public Comment Period;
- Attachment C: Written Public Comments Received During the Public Comment Period;
- Attachment D: Official Transcript of the Proposed Plan Public Meeting.



## **2. Background of Community Involvement**

EPA's community relations program for the Site began in January 1992, when EPA conducted community interviews in order to develop a community relations plan for the Site. At that time, residents living adjacent to the Site voiced some concerns about Cranford Park's water system that needed to be upgraded. Since that time this issue has been resolved by the municipal water company. Allegations from the single resident in the Dearwood Trailer Park that contaminated well water was being furnished to his trailer, were made. One resident was concerned about his child playing on the Site property, and some concerns were raised about the use of government money.

Throughout EPA's involvement, the community has been kept aware and informed of Site activities and findings. Discussions have taken place during visits to the area by EPA's remedial project manager (RPM). Local officials were briefed during the community interviews, and updated as needed. EPA has responded to inquiries from the community and other interested parties.

## **3. Summary of Comments Received During the Public Comment Period and Agency Responses**

The Public Comment Period was opened on February 22, 1994, and ended on March 24, 1993. Upon request, a thirty (30) day extension was granted, which extended the comment period to April 25, 1994. Public notice announcements were published in local newspapers and copies of the announcements are included as Attachment B.

On March 1, 1994, EPA held a public meeting to present the Proposed Plan to the community and to receive comments. All comments received at this public meeting and during the public comment period are summarized below.

### **Summary and Response to Local Community Concerns**

The following issues and concerns were expressed at the Proposed Plan Public Meeting, and during the public comment period.

**COMMENT:** A written comment stated that during the Remedial Design phase, an Intermediate Design (60%) submittal would not be necessary, and would not be an efficient use of funds.

**RESPONSE:** EPA, in general, agrees with this concept, however, this will not be determined in the Record of Decision (ROD). The purpose of the ROD is to document the chosen remedial action alternative. A determination will be made during the RD phase regarding the necessity for an intermediate design submittal.

COMMENT: Another written comment stated that the letter from the POTW stating they would accept untreated groundwater, was not in the Administrative Record.

RESPONSE: EPA checked both Administrative Records, one at EPA, and one at the information repository in Rock Hill, and both contained this letter.

COMMENT: A written comment stated that EPA's cleanup goal for 1,2-dichloroethene (1,2-DCE) is 70 ug/l. The commentator stated that "1,2-DCE should be split into two standards to reflect the MCLs of the cis- and trans- isomers of 1,2-DCE. The trans-isomer has a higher MCL of 100 ug/l. The lower standard for the cis-isomer would apply whenever analytical results are reported as total 1,2-dichloroethene."

RESPONSE: During the RI, as is usually done, only total 1,2-dichloroethene was analyzed for, and not the individual isomers. In doing so, it was tacitly assumed that all 1,2-DCE was in the cis-isomer form, for risk assessment purposes. By doing so, and by using the MCL for cis-1,2-DCE of 70 ug/l, EPA has taken an environmentally conservative approach. Therefore, EPA has chosen the slightly lower MCL of 70 ug/l as the cleanup standard for total 1,2-DCE versus 100 ug/l.

COMMENT: Another written comment said "The RI recommended additional study of the ecological communities that could be impacted by this site, even though the RI Report states that the site does not pose a threat to any state or federally listed species of concern. The RI's surface soil results show that further migration of site contaminants to receiving waters is not anticipated. The EPA's ecological screening did not identify any sensitive ecological communities immediately downstream of the site. An ecological study is therefore likely to be unproductive, and the money for it would be better spent on cleanup."

RESPONSE: This comment makes the erroneous assumption that money spent on a study of ecological concerns will be money that is unwisely spent. This is not the case. Any further study of ecological communities or impacts attributable to the Site, will be conducted, if required by EPA, in order to determine if unacceptable levels of risk to biological receptors have been fully identified. These potentially unacceptable levels of risk would not necessarily be limited to threats to endangered or threatened species, or to sensitive ecological communities. The extent of potential threats to all biological receptors, endangered or not, in all habitats, whether or not they are "sensitive ecological communities," may be required to be fully delineated.

COMMENT: A written comment and one brought up at the public meeting concerned the fact that contaminants similar to site-related contaminants were detected in private wells PW-03 and PW-04. The written commentator felt the monitoring well network was extensive and sufficient to determine that the contaminants were not site related. The commentator at the public meeting was not sure that this was true, and that possible further characterization was needed, since the deepest monitoring wells at the site may not have been as deep as the private wells.

RESPONSE: EPA stated in the public meeting that during the remedial design, the depth of PW-04 would be determined. Also during the remedial design, the level of the water table in the well will be measured. This will be compared with the water levels of the monitoring wells on-site, to determine if the groundwater would flow from the Site to the private well or from the direction of the private well toward the Site. If after this, it is determined by EPA that a potential migration pathway from the Site to PW-04 may exist, additional monitoring well(s) may be installed.

COMMENT: A written comment stated that the depth of the extraction wells was not stated in the proposed plan, and that the wells should not be placed in the bedrock (at least no more than a few feet), because it would be difficult and technically impracticable to extract groundwater from bedrock fractures for remediation purposes.

RESPONSE: The exact depth and number of extraction wells will be determined during the remedial design. At this time EPA does not believe it is technically impracticable to extract groundwater from bedrock fractures for remediation purposes, especially in the vicinity of bedrock wells with known contamination.

COMMENT: At the public meeting a concern was expressed about sending untreated groundwater to the POTW. It was felt that the underground pipes to and from the treatment plant may leak causing contaminants to get back into the groundwater which in turn would get to private wells. The commentator was also concerned that treated water from the treatment plant would not really be clean and, as the plant discharged treated effluent to the stream, contaminants from the site might get into the surface water which would flow downstream to the point where the intake pipe for the City of Rock Hill drinking water is, and they would then be exposed to contamination. One commentator felt that onsite treatment should be done to bring the water to "an acceptable level for an acceptable dumping, wherever that site may be."

RESPONSE: EPA believes that sending the extracted groundwater to the POTW is an acceptable alternative. The personnel at the POTW was contacted several times, both before and after the public meeting, and is aware of the concentrations of contaminants detected in the groundwater and has signed a letter saying they

will accept the untreated groundwater, and have reconfirmed this verbally since the public meeting. In addition, three (3) of the four (4) contaminants of concern are volatile organics which will be effectively removed due to the aeration process at the treatment plant, and therefore, will not likely be in water discharged from the treatment plant. Also, when the extraction system is in place, it will pull in water from all directions, so that the average concentration of the water that would be sent to the POTW should be significantly lower than the highest concentration detected in the one well. Also, as was stated by EPA at the public meeting, and as was confirmed in a phone conversation with city personnel after the public meeting, the groundwater infiltrates into the pipes versus water going from the pipes into the groundwater. In addition, the volume of water that will be sent to the POTW from the Site, approximately 28,000 gallons/day is very small in comparison to the overall flow from other sources that goes to the treatment plant (approximately 5 million gallons/day). Lastly, the water from the sewage plant (where the extracted groundwater is to be sent) discharges into the Catawba River, far downstream of the drinking water intake.

COMMENT: Another concern expressed at the public meeting and from an attendee in a letter to EPA, was that not all the soil contamination had been removed and therefore, contaminants would keep leaching into the groundwater.

RESPONSE: As was stated at the public meeting, there have been two (2) removals at the Site, in which soil samples were collected and analyzed before the removal and prior to the excavations being backfilled with clean soil. These results were used initially to determine the area of where the removals needed to take place and was used to show that the removals adequately removed the contaminated soil. In addition sixty-five (65) soil samples were collected during the RI. The Baseline Risk Assessment determined that there was not an unacceptable current or future risk from the soil.

COMMENT: Another comment was that the Site should be posted with signs and fenced off.

RESPONSE: The Baseline Risk Assessment determined that there was no unacceptable current or future risk from the soil, therefore EPA does not believe a fence is required at this Site. During a remedial action, it is common to have a sign indicating the activities currently underway at the Site. This type of sign will probably be placed at the Site during the remedial action.

**Attachment A**

**Proposed Plan for Rutledge Property Superfund Site**

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## SUPERFUND PROPOSED PLAN FACT SHEET

RUTLEDGE PROPERTY (ROCK HILL  
CHEMICAL COMPANY) SUPERFUND SITE

Rock Hill, York County, South Carolina

February 1994

*This fact sheet is one in a series designed to inform residents and local officials of the ongoing cleanup efforts at the Site. A number of terms specific to the Superfund process (printed in bold print) are defined in a glossary at the end of this publication.*

## INTRODUCTION

The United States Environmental Protection Agency (EPA) is proposing a cleanup plan, referred to as the "preferred alternative", to address **groundwater contamination** at the Rutledge Property Superfund Site (the Site) located in Rock Hill, South Carolina. This document is being issued by EPA, the lead Agency for Site activities, and the South Carolina Department of Environmental Health and Control (SCDHEC), the support Agency. SCDHEC has reviewed this preferred alternative and concurs with EPA's recommendation.

This Proposed Plan summarizes the cleanup methods and technologies evaluated in the Site's **Feasibility Study (FS)**. In accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)**, known as "Superfund", as amended by the **Superfund Amendments and Reauthorization Act of 1986 (SARA)**, EPA is publishing the Proposed Plan for the following reasons:

- 1) To provide an opportunity for the public's review and comment on all of the

PROPOSED PLAN PUBLIC MEETING  
for the  
RUTLEDGE PROPERTY SUPERFUND SITE  
Tuesday, March 1, 1994 - 7:00 P.M.  
SULLIVAN MIDDLE SCHOOL - CAFETERIA  
1825 Edin Terrace, Rock Hill, South Carolina

You are encourage to attend the public meeting to learn more about the cleanup alternatives developed for the Rutledge Property Superfund Site, as well as the alternative proposed by EPA. The public meeting will also provide an opportunity for interested individuals to submit comments to EPA on the Feasibility Study and the Proposed Plan. Representatives from EPA and the SCDHEC will be available to answer questions. Please plan to attend.

cleanup options, known as remedial alternatives, under consideration for the Site.

- 2) To initiate a thirty (30) day public comment period from Friday, February 18, 1994, to Monday, March 21, 1994 to receive comments on this Proposed Plan and the RI/FS reports.

EPA, in consultation with SCDHEC, will select a remedy for the Site only after the public comment period has ended and all information submitted to EPA during that time has been reviewed and considered.

As outlined in Section 117(a) of CERCLA, EPA encourages public participation by publishing Proposed Plans for Superfund Sites, and by providing an opportunity for the public to comment on the proposed remedial actions. As a result of such comments, EPA may modify, or change, its preferred alternative before issuing a **Record of Decision (ROD)** for the Site. This process is explained in more detail in the Public Participation Section of this document which begins on page 16.

#### Scope and Role of this Action

Based on the previous soil removals, and the data present to date, EPA's plan for remediation will address the principal threat remaining at the Site, *contaminated groundwater*.

EPA's preferred alternative for cleanup of the Site's groundwater is Alternative 4-B, Groundwater Pumping by two (2) Extraction Wells and Discharge to the City of Rock Hill Publically Owned Treatment Works (POTW). This alternative achieves the best balance of compliance with the criteria EPA uses to evaluate remedial alternatives. The preferred alternative, as well as the others considered, are summarized in this fact sheet and presented in its entirety in the FS.

This fact sheet also summarizes information that is explained in greater detail in the **Remedial Investigation/Feasibility Study (RI/FS)** Report, dated December 1993, and the **Baseline Risk Assessment (BRA)**, dated July 1993. These documents, and all other records utilized by EPA to make the preferred alternative proposal, are contained in the **Administrative Record** for this Site. EPA and SCDHEC encourage the public to review this information, especially during the public comment period, and has established an **Information Repository** near the site. Review of this material will further explain Site characteristics, the Superfund process, and EPA's logic behind this Proposed Plan. The Administrative Record is available for public review, during normal working hours, at the following locations:

York County Library  
138 East Black Street  
Rock Hill, South Carolina 29731  
(803)324-3055

Records Center  
U.S. Environmental Protection Agency  
345 Courtland Street, NE  
Atlanta, GA 30365  
(404)347-0506

***This Proposed Plan:***

- 1) Includes a brief history of the Site, the principal findings of the Remedial Investigation (RI), and a summary of the Baseline Risk Assessment;
- 2) Presents the cleanup alternatives considered by EPA, and presented in the Feasibility Study (FS);
- 3) Outlines the criteria used by EPA to recommend a preferred alternative for use at the Site;
- 4) Provides a summary of the analysis of alternatives;
- 5) Presents EPA's rationale for its preliminary selection of a preferred alternative;
- 6) Explains the opportunities for the public to comment on the remedial alternatives, and, hence, the cleanup method for the Rutledge Property Superfund Site.

**SITE BACKGROUND**

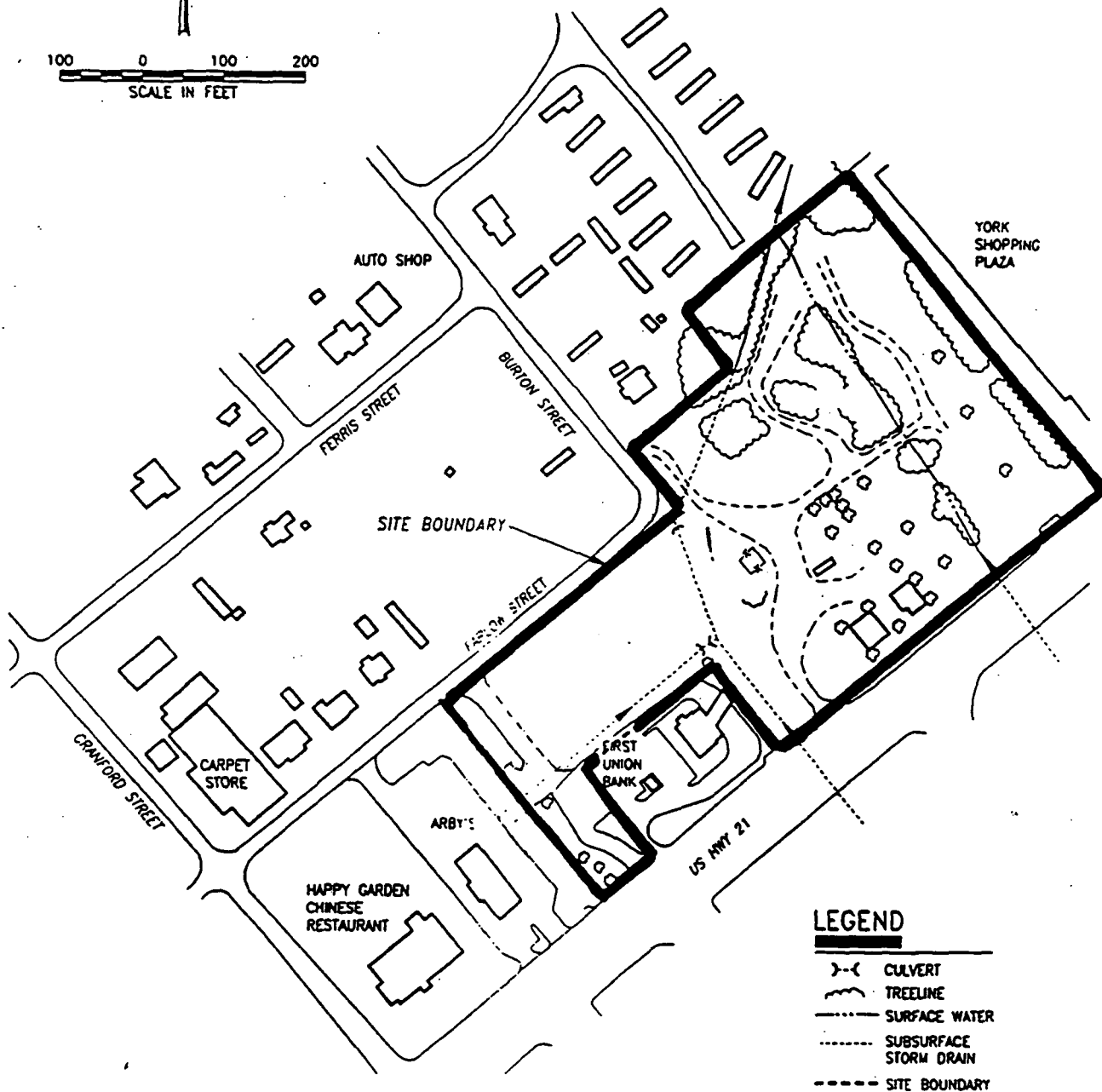
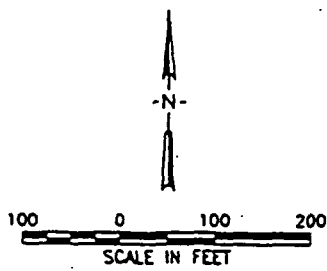
The Rutledge Property Site (the Site) is located between Cherry Road (U.S. Highway 21) and Farlow Street, just east of Cranford Street in Rock Hill, York County, South Carolina. The 4.5 acre Rutledge Property is the location where Rock Hill Chemical Company (RHCC) operated a solvent reclamation facility from 1960 to 1964 (Fig. 1).

Waste management practices during the company's existence were poor. Paint sludges, textile dye products, used solvents, and other solid wastes generated during the reclamation process were stored in piles placed directly on the ground. In some cases, waste products were buried at the Site. On several occasions, tanks that were used to hold liquid wastes before reclamation had leaked onto the ground, creating a potential source of contamination.

The Rock Hill Chemical Company ceased operations in the summer of 1964. The following October, a fire at the facility caused drums of oil and chemicals to explode, releasing their contents into the environment. In 1985, soil was removed from the western portion of the Site, now occupied by First Union National Bank of South Carolina (FUNBSC). An additional soil removal took place between 1987 and 1989, which included the removal of five (5) storage tanks.

The Rutledge Property Site was proposed for the National Priorities List (NPL) in June of 1988 and was listed final on the NPL in February 1990. In March 1992, EPA initiated the RI/FS to address all potential source areas and associated contamination at the site.





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a subsidiary of Camp Dresser & McKee Inc.

# **SITE PLAN MAP** **RUTLEDGE PROPERTY** **ROCK HILL, SOUTH CAROLINA**

Figure No. 1

## RESULTS OF THE REMEDIAL INVESTIGATION

The RI investigated the nature and extent of contamination on and near the Site, and defined the potential risks to human health and the environment posed by the Site. A total of forty one (41) groundwater, sixty five (65) soil, seven (7) surface water, and seven (7) sediment samples were collected during the RI. More detailed information on the sampling locations, procedures, and results can be found in the RI/FS report, as well as the Baseline Risk Assessment.

### Soil Contamination

Soil analyses indicate that volatile organic, semi-volatile organic, pesticide/PCB and inorganic chemicals are present above background levels. However, as concluded by the Baseline Risk Assessment and the RI, the levels of these contaminants are low enough not to pose a threat to human health or the environment. Due to a concern over the high variance of manganese levels in the surface soil background samples, additional sample(s) will be taken during the Remedial Design to confirm that this variance is consistent with the environmental setting.

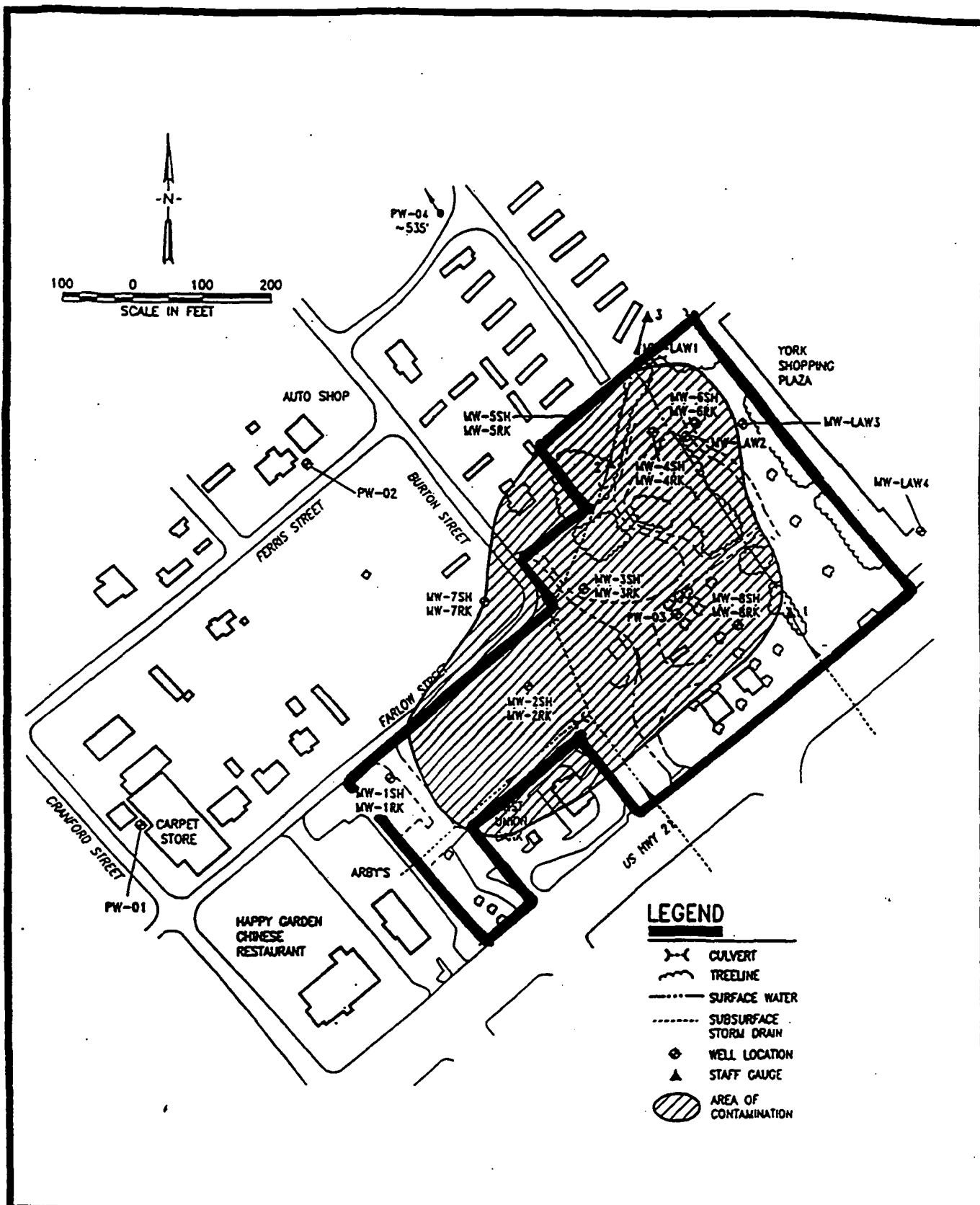
### Surface Water & Sediment Contamination

Surface water analyses indicate that volatile organic and inorganic chemicals are present in the on-site drainage and the Unnamed Stream. Sediment analyses indicate that volatile organic, semi-volatile organic, pesticide/PCB, and inorganic chemicals are also present in the on-site drainage and the Unnamed Stream. As with soil, the levels of these contaminants are low enough not to pose a threat to human health or the environment. Because the volatile organic, tetrachloroethene, was detected at elevated levels in the background surface water and sediment samples, additional surface water and sediment sample(s) will be collected to ensure that the background location used has not be impacted by Site characteristics.

### Groundwater Contamination

Groundwater analyses indicate that volatile organic, pesticides, PCBs, and inorganic chemicals are present above background levels. In contrast to the surface water, sediment, and soils analyses, the Baseline Risk Assessment concluded that three (3) volatile organics (trichloroethene, vinyl chloride, 1,2 dichloroethene) and one (1) inorganic (manganese) pose a risk to human health and the environment. All three (3) of the volatile organics exceeded the **Maximum Contaminant Levels (MCLs)** promulgated under the Safe Drinking Water Act. The approximate areal extent of groundwater contamination is illustrated in Figure 2. The levels of volatile contamination indicate the likelihood of **Dense Non-Aqueous Phase Liquids (DNAPLs)** within the groundwater media.

Due to the fact that Site-related contamination was detected at very low levels at PW-04 (Fig. 2), further evaluation of the construction characteristics of this well will be required in the Remedial Design. If the screening depth of this well exceeds the screening depths of the on-Site wells, additional wells may be required to fully demonstrate that there is no aquifer contamination at that screening depth that may be of concern.



# **APPROXIMATE AREAL EXTENT OF CONTAMINATION ABOVE REMEDIATION LEVELS IN GROUNDWATER**

**RUTLEDGE PROPERTY  
ROCK HILL, SOUTH CAROLINA**



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Figure No. 2

## SUMMARY OF SITE RISKS

The Baseline Risk Assessment (BRA) describes the risks to human health and the environment which would result were the contamination not remediated.

The BRA proceeds in a series of steps: Initially, Contaminants of Potential Concerns (COPCs) are identified. This list of COPCs includes all chemicals present that may pose a potential risk to human health or the environment. The Exposure Assessment considers the present population potentially exposed to Site-related hazards, including on-site workers, and visitors. In addition, potential future use scenarios, such as a future residential scenario, are developed to determine "pathways" through which persons could potentially be exposed to the contaminants.

The pathways of exposure can be evaluated by making assumptions such as the length and number of times persons may be exposed and how much of the chemical is ingested. Thus, a calculation can be made using known health effects and reasonable exposure assumptions for each contaminant.

Both **carcinogens**, substances known or suspected to cause cancer, and non-carcinogens, substances which do not cause cancer, but are hazardous and cause damage to human health through other effects, are considered in the Risk Assessment.

For carcinogens, the result is expressed as the excess cancer risk posed by Site contaminants. EPA has established a range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$  as acceptable limits for lifetime excess carcinogenic risks. Excess risk in this range means persons exposed to Site contaminants under the exposure scenarios evaluated stand a 1 in 10,000 to 1 in 1,000,000 chance of developing cancer as a result of that exposure. For each pathway, the cancer risk from each individual contaminant is added together because, in a "worst-case" scenario, a person could be exposed through several, or all, of the possible pathways. Non-carcinogenic risk is expressed as a **Hazard Index (HI)**. The HI is the ratio of the amount of chemical taken in, divided by the reference dose, which is an intake amount below which no adverse effects are known to occur. As for cancer risk, for each pathway, the HI for the individual contaminants are added together.

Carcinogenic risk and non-carcinogenic risk were calculated for the potential on-site future residential use scenario. The future residential use scenario has a carcinogenic risk of  $2 \times 10^{-2}$ . This level of risk results from exposure to contaminated groundwater via ingestion as drinking water. This value is not within the acceptable risk limit. For the non-carcinogenic risk, the future use HI is 950 which is also well above the EPA benchmark of 1.0. Likewise, the HI is the result of ingestion of contaminated groundwater. The most serious pathway and use at the Site is:

**FUTURE RESIDENTIAL USE:** Adult or child -- Ingestion of groundwater  
(carcinogenic and non-carcinogenic)

More detailed information on the Site risks is presented in the Baseline Risk Assessment.

Actual or threatened releases of hazardous substances from this Site, if not addressed by the preferred alternative, or one of the active measures considered, may present a current or potential threat to public health, welfare, or the environment.

## **REMEDIAL OBJECTIVES AND ALTERNATIVES**

### **Remedial Action Objectives**

Based on the RI and the BRA, EPA has established the following remedial action objectives for the Rutledge Property Superfund Site:

- Prevent ingestion of groundwater containing any carcinogen concentrations above federal or state limits, or if there is no established limit, above levels which would allow a remaining excess cancer risk greater than the  $10^{-4}$  to  $10^{-6}$  range.
- Prevent ingestion of groundwater containing any non-carcinogen concentrations above federal or state limits, or if there is no established limit, above levels which would allow an unacceptable remaining non-carcinogenic threat (HI greater than 1).
- Restore the groundwater system to potential productive use, by remediating to the standards described above, and by preventing the migration of the groundwater contamination beyond the existing limits of the contaminant plume.

### **Establishment of Remediation Levels**

EPA has established specific remediation levels (goals), or clean-up standards, for the groundwater contaminants present within the plume at the Rutledge Property Site. Such standards are established under several federal environmental laws including the Safe Drinking Water Act (for water systems and potable water sources such as groundwater). The State of South Carolina has similar statutes. Most of the contaminants present at the Site are regulated under these federal and state standards. In cases where there is no state or federal standard, groundwater remediation levels were developed in the Feasibility Study (FS) based on human health (BRA calculations). There are no soil remediation levels. Table 1 summarizes remediation levels for the groundwater at the Site.

**TABLE 1**

GROUNDWATER REMEDIATION LEVELS		
CONTAMINANT	Maximum Concentration Detected (ug/L)	Remediation Goal (ug/L)
<u>Volatile Organics</u>		
1,2 Dichloroethene	1200	70 <sup>(a)</sup>
Vinyl Chloride	26	2 <sup>*</sup>
Trichloroethene	84000	5 <sup>*</sup>
<u>Inorganics</u>		
Manganese	3600	200 <sup>(b)</sup>

\* Maximum Contaminant Level (MCL)

- (a) Groundwater samples were analyzed for 1,2 dichloroethene (total). The maximum contaminant level for 1,2 dichloroethene (cis) was used since it is more conservative than 1,2 dichloroethene (trans) at 100 ug/L.
- (b) The average background concentration was 185.5 ug/L. This value was rounded up to 200 ug/L for the remediation level based on potential MCL listings.

#### Development of Remedial Alternatives

In the FS, remedial alternatives were constructed and evaluated for groundwater contamination. To formulate the alternatives for cleanup, all of the possible technologies, processes, and methods which could be utilized in a cleanup effort were evaluated, and those which could not be used at the Site were screened out. The screening criteria employed are primarily site-specific factors that make some of the technologies or processes ineffective, difficult to implement, or infeasible. Such factors include soil type, geology/hydrogeology, site location, and the volume of the contaminated media. Technologies and processes considered to be potentially useful were then grouped together into remedial alternatives to address groundwater contamination. The resulting alternatives were then evaluated and compared to one another in detail.

## SUMMARY OF REMEDIAL ALTERNATIVES

Six (6) alternatives to address groundwater contamination were developed and compared in the FS. The first two (2) alternatives are "No Action" and "Limited Action". The next two (2) alternatives provide groundwater extraction with treatment on-site, the difference being the number of extraction wells used to extract the groundwater. The final two (2) alternatives provide groundwater extraction with one (1) or two (2) wells and direct discharge to the Publically Owned Treatment Works (POTW).

All of the alternatives considered were subject to the following assumptions and requirements:

- Area of groundwater contamination is 239,000 ft<sup>2</sup>
- Depth of contamination is 54 ft
- Volume of contaminated water is approximately 7,338,000 gal
- Present Worth (PW) cost assumes an annual 7% discount (interest) rate

For each alternative, remedial action objectives will be considered satisfied when the remediation goal standards are not exceeded in any of the monitoring wells. At the start of the design phase, EPA or the Potentially Responsible Party (PRP) will initiate periodic groundwater monitoring at the Site.

The cost given for each alternative is the Total Present Worth (PW) of capital costs plus Operation and Maintenance (O&M) costs. More detailed descriptions of the strengths and weaknesses of each alternative in terms of EPA's nine (9) standard criteria, can be found in the FS.

### Alternative 1 - No Action

CERCLA requires that EPA evaluate a "No Action" alternative to serve as a basis against which other alternatives can be compared. Under this alternative, no actions are taken, nor are funds expended, for control or remediation of the contaminated groundwater. Because contaminants would be left on-Site under this alternative, a review is required every five (5) years in accordance with the requirements of CERCLA. This alternative would also require monitoring and the costs associated with laboratory analysis and report writing.

Under this alternative, Site conditions would remain unchanged. Therefore, contaminated groundwater would continue to present an unacceptable health risk now and in the future.

Total Present Worth (PW) Cost: \$170,000  
Estimated Capital Cost: none  
Estimated Annual O&M Cost: none  
Implementation Timeframe (months): 0

### **Alternative 2 - Limited Action**

Under this alternative, limited action (institutional controls) would be implemented to restrict the withdrawal and use of groundwater from the contaminated plume. The institutional controls would consist of deed restrictions to control future use of land and groundwater, and long-term monitoring as presented in Alternative 1.

Deed restrictions would also be utilized to prevent future use of the aquifer for such purposes as potable and industrial water supplies, irrigation, and washing. Permit restrictions issued by the State of South Carolina would restrict all well drilling permits issued for public wells on properties that may draw water from the contaminated groundwater plume. These restrictions could be written into the property deeds to inform future property owners of the possibility of contaminated groundwater beneath their property.

A second component of this alternative would be monitoring of Site groundwater conditions. Groundwater samples from the wells would be collected and analyzed periodically to evaluate contaminant concentrations and to monitor the extent and direction of contaminant direction.

Total Present Worth (PW) Cost: \$170,000  
 Estimated Capital Cost: none  
 Estimated Annual O&M Cost: \$ 35,750  
 Implementation Timeframe (months): 0

### **Alternative 3A - Groundwater Pumping by 1 Extraction Well and On-Site Treatment With Discharge to Surface Water**

Under this alternative, one (1) extraction well would be used to contain the contaminated groundwater plume. The extraction well would be located on the northeast corner of the property, near the downgradient edge of the plume. The contaminated groundwater would flow into the well and would then get pumped to the surface. The water would then go through an on-Site treatment system composed of neutralization, oxidation, sedimentation, filtration, and carbon adsorption. As the contaminated water passes through this treatment "train", the volatile organics 1,2 dichloroethene, trichlorethene, and vinyl chloride, as well as the inorganic manganese, will be reduced to their respective remediation levels. The "clean" water would then be discharged to the surface water in accordance with National Pollutant Discharge Elimination System (NPDES) requirements. Deed restrictions and long-term groundwater monitoring as described in Alternative 2 would also be enforced.

Total Present Worth (PW) Cost: \$4,115,000  
 Estimated Capital Cost: \$ 872,000  
 Estimated Annual O&M Cost: \$ 348,000  
 Implementation Timeframe (months): 24



### **Alternative 3B - Groundwater Pumping by 2 Extraction Wells and On-Site Treatment With Discharge to Surface Water**

This alternative is identical to Alternative 3A except for the fact that two (2) extraction wells would be used to contain the contaminated groundwater plume instead of one (1). As in Alternative 3A, one (1) well would be located on the downgradient edge of the plume. An additional extraction well would be centrally located in the source area (Figure 2, MW-03). The advantage of adding an additional well in this location would be that the contaminants are removed from the aquifer more quickly than if only one extraction well is used to remove the contaminated groundwater. The treatment train, surface water discharge, deed restrictions, and long-term groundwater monitoring would be enforced as indicated in Alternative 3A.

Total Present Worth (PW) Cost: \$4,159,000  
Estimated Capital Cost: \$ 915,000  
Estimated Annual O&M Cost: \$ 348,000  
Implementation Timeframe (months): 24

### **Alternative 4A - Groundwater Pumping by 1 Extraction Well and Direct Discharge to POTW**

Under this alternative, the groundwater contaminant plume would be contained by one (1) extraction well located on the downgradient edge of the plume. As opposed to Alternatives 3A and 3B, the contaminated groundwater would then be discharged, via sewer line, to the local POTW. No pretreatment would be required prior to discharging the contaminated groundwater to the sewer line. Again, deed restrictions, and long-term groundwater monitoring would be enforced as in Alternatives 3A and 3B.

Total Present Worth (PW) Cost: \$1,969,000  
Estimated Capital Cost: \$ 249,000  
Estimated Annual O&M Cost: \$ 225,000  
Implementation Timeframe (months): 12

### **Alternative 4B - Groundwater Pumping by 2 Extraction Wells and Direct Discharge to POTW**

Likewise, this alternative is identical to Alternative 4A, except for the fact that two (2) extraction wells would be used to contain the contaminated groundwater plume instead of one (1). Similarly, one (1) well would be located on the edge of the plume, while the other located in the source area (Figure 2, MW-03). Discharge to sewer line (without pretreatment), deed restrictions, and long-term groundwater monitoring would be enforced as in Alternatives 3A, 3B, and 4A.

Total Present Worth (PW) Cost: \$2,031,000  
Estimated Capital Cost: \$ 312,000  
Estimated Annual O&M Cost: \$ 225,000  
Implementation Timeframe (months): 12

Please refer to Table 2 below for a brief summary of the remedial alternatives, and their respective costs.

Table 2

REMEDIAL ALTERNATIVES COST	
DESCRIPTION	COST
1 No Action	\$170,000
2 Limited Action	\$170,000
3A Groundwater Extraction & Treatment * On-Site * One (1) Extraction Well	\$4,115,000
3B Groundwater Extraction & Treatment * On-Site * Two (2) Extraction Wells	\$4,159,000
4A Groundwater Extraction & Disch. to POTW * One (1) Extraction Well	\$1,969,000
4B Groundwater Extraction & Disch. to POTW * Two (2) Extraction Wells	\$2,031,000

#### Evaluation of Remedial Alternatives

In selecting its preferred alternative, EPA used the following criteria to evaluate the alternatives developed in the FS. Seven (7) of the criteria were used to evaluate all of the alternatives, based on environmental protection, cost, and engineering feasibility issues. The preferred alternative, along with the other proposed alternatives, will be further evaluated against the final two (2) modifying criteria, state and community acceptance, after the public comment period has ended and all comments from the community and state have been received.

**THRESHOLD CRITERIA:** The first two (2) statutory requirements must be met by the alternative.

1. *Overall Protection of Human Health and the Environment* addresses the degree to which an alternative meets the requirement that it be protective of human health and the environment. This includes an assessment of how public health and environmental risks are eliminated, reduced, or controlled.

**THRESHOLD CRITERIA:** The first two (2) statutory requirements must be met by the alternative.

1. *Overall Protection of Human Health and the Environment* addresses the degree to which an alternative meets the requirement that it be protective of human health and the environment. This includes an assessment of how public health and environmental risks are eliminated, reduced, or controlled.

2. *Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)* addresses whether or not an alternative complies with all state and federal environmental and public health laws and requirements that apply, or are relevant and appropriate, to the conditions and remediation options at a specific site.

**PRIMARY BALANCING CRITERIA:** These five (5) considerations are used to develop the decision as to which alternative should be selected.

3. *Long-Term Effectiveness and Permanence* refers to the ability of an alternative to maintain reliable protection of human health and the environment, over time, once the remediation levels are achieved.

4. *Reduction of Toxicity, Mobility, and Volume (T/M/V)* addresses the statutory preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce the toxicity, mobility, and volume of the hazardous substance.

5. *Short-Term Effectiveness* addresses the impacts of the alternative on human health and the environment during the construction and implementation phase, until remedial action objectives have been met.

6. *Implementability* refers to the technical and administrative feasibility of implementing an alternative, including the availability of various services and materials required for its implementation.

7. *Cost* consists of the capital (initial) costs of implementing an alternative, plus the costs to operate and maintain (O&M) the alternative over the long term. Under this criteria, the cost effectiveness of the alternative can be evaluated.

**MODIFYING CRITERIA:** These two (2) considerations indicate the acceptability of the alternative to the public, local, or state officials.

8. *State Acceptance* addresses whether, based on its review of the RI/FS and the Proposed Plan, the State concurs with, opposes, or has no comments on the selected preferred alternative, or remedy.

9. *Community Acceptance* addresses whether the public agrees with EPA's selection of the preferred alternative. Community acceptance of this Proposed Plan will be evaluated based on comments received during the upcoming public meeting and during the public comment period.

## **EPA'S PREFERRED ALTERNATIVE**

After conducting a detailed analysis of all of the alternatives, EPA has selected the following alternative for remediation of the Site:

**Alternative 4-B**  
**Groundwater: Extraction (2 wells) &**  
**Direct Discharge to POTW**  
**Total PW Cost: \$2,031,000**

### **Rationale for the Preferred Alternative**

EPA has selected Alternative 4-B as the best alternative for use at the Rutledge Property Site.

Of the six (6) alternatives reviewed by EPA, both Alternative 1 and Alternative 2 fail to meet the threshold criteria of protecting human health and the environment, and compliance with ARARs. Therefore, these two (2) alternatives were eliminated.

Of the remaining four (4) alternatives that meet the two aforementioned threshold criteria, they all meet the five (5) primary balancing criteria of long-term effectiveness, reduction of T/M/V, short-term effectiveness implementability, and cost, but to varying degrees. The major differences being in short-term effectiveness, implementability, and cost.

Alternatives 4-A and 4-B do not require a treatment system to be built on-Site. Rather, the contaminated groundwater would be pumped directly, via sewer line, to the local POTW and treated by the POTW. Therefore, Alternatives 4-A and 4-B short-term effectiveness is increased since it will be faster to implement due to the fact that the system does not require a complex treatment system to be designed and built on-Site. Additionally, the ease of implementability for Alternatives 4-A and 4-B are far greater than Alternatives 3-A and 3-B. As a result, the cost of Alternative 4-A and 4-B is less than Alternatives 3-A and 3-B.

Between Alternatives 4-A and 4-B, the difference is merely the number of extraction wells to be utilized. EPA feels that, by using multiple extraction wells, the groundwater contamination will be removed from the contaminated media more rapidly, resulting in a more expeditious remediation.

Therefore, based on these comparisons, EPA believes that based on the information currently available, Alternative 4-B provides the best balance of compliance among the other alternatives with respect to the evaluation criteria for the remediation of the contaminated groundwater at the Rutledge Property Site. Employing this alternative will protect human health and the environment, meet ARARs, be effective in the long-term, reduce contaminant toxicity, mobility, and volume, be easy to implement, and will be very cost-effective.

## **PUBLIC PARTICIPATION**

EPA will hold a public meeting on Tuesday, March 1, 1994, to discuss the Preferred Alternative and other alternatives evaluated in the FS. Officials from EPA and SCDHEC will present a summary of the RI/FS, the remedial alternatives, and how the preferred alternative was selected. The public is encouraged to attend this meeting.

EPA is also conducting a 30-day public comment period from Friday, February 18, 1994, to Monday, March 21, 1994, in order to receive public input and comments on the preferred alternative for remediation of the Rutledge Property Superfund Site. Comments on the preferred alternative, the other alternatives, or other issues related to the Site remediation, are welcomed, as they are an important part of the decision-making process. Please send all comments to:

Mr. Samford T. Myers  
North Superfund Remedial Branch  
U.S. Environmental Protection Agency  
Region IV, 345 Courtland Street, N.E.  
Atlanta, Georgia 30365

EPA will review, and consider, all comments received during the public comment period and the public meeting before reaching a final decision on the most appropriate remedial alternative for the remediation of the Site. EPA's final decision will be issued in the **Record of Decision (ROD)**, a legal document which formally sets forth the remedy. A **Responsiveness Summary**, which contains all of the public comments received and EPA's response to them, is part of the ROD. A ROD is expected to be completed for the Rutledge Property in the spring of 1994.

For more information on community relations, the Superfund process, or this Site in particular, please contact:

Ms. Cynthia Peurifoy  
Public Relations Coordinator  
U.S. Environmental Protection Agency  
Region IV, 345 Courtland Street, N.E.  
Atlanta, Georgia 30365  
(404)347-7791 or (800)435-9233

## **FUTURE ACTIVITIES**

Upon signature of the ROD at EPA Region IV in Atlanta, EPA will evaluate the situation with regard to the **Potentially Responsible Parties (PRPs)** at this site. EPA will then try to negotiate with the PRP(s) to secure performance and funding of the remedy under EPA's oversight. If EPA cannot reach an agreement with the PRPs, then EPA will proceed with **Remedial Design/Remedial Action** using CERCLA trust funds.

## GLOSSARY

**Administrative Record** - A file which is maintained and contains all information used by the EPA to make its decision on the selection of a response action under CERCLA. This file is required to be available for public review and a copy is to be established at or near the site, usually at the information repository. A duplicate file is maintained in a central location such as a regional EPA and/or state office.

**Applicable or Relevant and Appropriate Requirements (ARARs)** - Requirements which must be met by a response action selected by EPA as a site remedy. "Applicable" requirements are those mandated under one or more Federal or State laws. "Relevant and appropriate" requirements are those which, while not necessarily required, EPA judges to be appropriate for use in that particular case.

**Aquifer** - An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

**Baseline Risk Assessment** - An assessment which provides an evaluation of the potential risk to human health and the environment in the absence of remedial action.

**Carcinogens** - Substances that cause or are suspected to cause cancer.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** - A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The Acts create a trust fund, known as Superfund to investigate and clean up abandoned or uncontrolled hazardous waste sites.

**Dense Non-Aqueous Phase Liquids (DNAPL)** - Dense non-aqueous liquids (DNAPLs) are chemical compounds that are heavier than water in their pure form. DNAPL migration is gravity driven and relatively unaffected by groundwater flow and often moves in a manner that is independent of groundwater flow. DNAPL contaminants (especially chlorinated organic solvents) migrate vertically through fractures in rock or clay formations and thus, can contaminate deep aquifer systems.

**Feasibility Study** - See Remedial Investigation/Feasibility Study.

**Groundwater** - Underground water that fills pores in soils or openings in rocks. This water can be used for drinking, irrigation, and other purposes.

**Hazard Index** - A term used in the Baseline Risk Assessment which estimates the exposure effects to non-carcinogenic contaminants at a hazardous waste site. A HI less than 1.0 indicates that a significant hazard is likely, a HI greater than 1.0 indicates that there may be a potential hazard at the site.

**Information Repository** - Materials on Superfund and a specific site located conveniently for local residents.

**Maximum Contaminant Levels (MCLs)** - The maximum permissible level of a contaminant in water that is consumed as drinking water. These levels are determined by EPA and are applicable to all public water supplies.

**National Priorities List (NPL)** - EPA's list of uncontrolled or abandoned hazardous wastes sites eligible for long-term clean up under the Superfund Remedial Program.

**Plume** - A three dimensional zone within the groundwater that contains contaminants and generally moves in the direction of, and with, groundwater flow.

**Potentially Responsible Parties (PRP's)** - This may be an individual, a company or a group of companies who may have contributed to the hazardous conditions at a site. These parties may be held liable for costs of the remedial activities by the EPA through CERCLA Laws.

**Public Comment Period** - Time provided for the public to review and comment on a proposed EPA action or rulemaking after it is published as a Proposed Plan.

**Record of Decision (ROD)** - A public document that explains which cleanup alternative will be used at a National Priorities List site and the reasons for choosing the cleanup alternative over other possibilities.

**Remedial Design/Remedial Action (RD/RA)** - The remedial design (RD) is a plan formulated by either the PRP or EPA or both to provide the appropriate measures to remediate a hazardous waste site. This plan may be modified many times through negotiations between EPA and the PRP. The remedial action (RA) is the implementation of the remedial design.

**Remedial Investigation/Feasibility Study (RI/FS)** - Two distinct but related studies, normally conducted together, intended to define the nature and extent of contamination at a site and to evaluate appropriate, site-specific remedies.

**Superfund Amendments and Reauthorization Act (SARA)** - Modifications to CERCLA enacted on October 17, 1986.

**USE THIS SPACE TO WRITE YOUR COMMENTS**

**Your input on the Proposed Plan for the Rutledge Property Superfund Site is important in helping EPA select a final remedy for the site. You may use the space below to write your comments, then fold and mail. A response to your comment will be included in the Responsiveness Summary.**

[illegible]

**REQUEST TO BE PLACED ON THE  
RUTLEDGE PROPERTY SUPERFUND SITE MAILING LIST**

**If you would like your name and address placed on the mailing list for the Rutledge Property Superfund Site, please complete this form and return to: Cynthia Peurifoy, Community Relations Coordinator, EPA-Region IV, North Superfund Remedial Branch, 345 Courtland Street, Atlanta, Georgia 30365, or call 1-800-435-9233.**

**NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**AFFILIATION:** \_\_\_\_\_





United States  
Environmental Protection  
Agency

North Superfund Remedial Branch

Region 4  
345 Courtland Street, NE  
Atlanta, Georgia 30365

Official Business  
Penalty for Private Use  
\$300

Cynthia Peurifoy  
Community Relations Coordinator

**Attachment B**

**Public Notices of Public Comment Period and Extension  
of Public Comment Period**

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## **U.S. ENVIRONMENTAL PROTECTION AGENCY INVITES PUBLIC COMMENT ON THE PROPOSED CLEANUP PLAN FOR THE RUTLEDGE PROPERTY SUPERFUND SITE, ROCK HILL, YORK COUNTY, SOUTH CAROLINA**

The U.S. Environmental Protection Agency is inviting public comment on the Proposed Plan for cleanup of the Rutledge Property/Rock Hill Chemical Company Superfund Site. The Remedial Investigation/Feasibility Study for the site have been completed. The Remedial Investigation determined the nature and extent of contamination at the site. The Feasibility Study evaluated alternatives for addressing groundwater contamination at the site, the principal threat posed by the site.

Six alternatives were considered in proposing this action. The figures in parentheses are the estimated present worth costs for each alternative. The following alternatives were considered:

- Alternative 1: No Action (\$170,000)
- Alternative 2: Limited Action (\$170,000)
- Alternative 3A: Groundwater Extraction & Treatment, On Site Treatment and Discharge, One Extraction Well (\$4,115,000)
- Alternative 3B: Groundwater Extraction & Treatment, On-Site Treatment and Discharge, Two Extraction Wells (\$4,159,000)
- Alternative 4A: Groundwater Extraction & POTW Discharge, One Extraction Well (\$1,969,000)
- Alternative 4B: Groundwater Extraction & POTW Discharge, Two Extraction Wells (\$2,031,000)

EPA is proposing implementation of Alternative 4B. EPA believes that employing this alternative will protect human health and the environment, meet applicable or relevant and appropriate requirements, be effective in the long-term, reduce contaminant toxicity, mobility and volume, be easy to implement, and will be cost effective.

The scope of the proposed action includes containment of the contaminated groundwater plume by two extraction wells to be located on the down gradient edge of the plume. The contaminated groundwater would then be discharged, via sewer line, to a local publicly owned treatment works (POTW). No pretreatment would be required before the contaminated groundwater is discharged to the sewer line. Deed restrictions, and long-term groundwater monitoring would be enforced. It is estimated that it will take one year to implement this remedy.

The Agency is holding a 30-day comment period, which begins on Tuesday, February 22, 1994, and ends on Thursday, March 24, 1994. Written comments, which must be postmarked no later than March 24, 1994, should be sent to:

Mr. Sandy Myers, Remedial Project Manager  
North Superfund Remedial Branch  
U.S. Environmental Protection Agency, Region IV  
345 Courtland Street, N.E., Atlanta, GA 30365

EPA has scheduled a public meeting to present the proposed plan and to discuss the status of the Remedial Investigation/Feasibility Study. The meeting also provides the public an opportunity to submit oral and written comments on the proposed cleanup plan and the other alternatives considered. This meeting will be:

Date: Tuesday, March 1, 1994  
Time: 7:00 p.m.  
Place: SULLIVAN MIDDLE SCHOOL  
1825 Eden Terrace, Rock Hill, South Carolina

Copies of the proposed plan, as well as the administrative record for the site, are available for review at the site information repository, which is in the York County Library, 138 East Black Street, Rock Hill, SC, 803/324-3055. These documents are also available for review at the EPA Records Center, 345 Courtland Street, N.E., Atlanta, GA 30365, 404-347-0506.

For additional information, or to be added to EPA's mailing list for the site, contact Cynthia B. Peurifoy, Community Relations Coordinator, at 1-800-435-9233, or 404/347-7791.



**THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Announces an Extension of the Public Comment Period for the  
Proposed Plan, Rutledge Property Superfund Site,  
Rock Hill, York County, South Carolina**

The U. S. Environmental Protection Agency (EPA) is extending the period of time for accepting public comments on the Agency's proposed cleanup plan, and the other alternatives considered for the Rutledge Property Superfund Site to Monday, April 25, 1994. Written comments, which must be postmarked on or before April 25, 1994, should be sent to:

Sheri Panabaker, Remedial Project Manager  
U.S. EPA, Region IV, North Superfund Remedial Branch  
345 Courtland Street, N.E., Atlanta, Georgia 30365

EPA will not make a final cleanup decision for the site until it has reviewed and considered all public comments it receives. Based on public comments or new information, the EPA may decide on another alternative, rather than the plan that has been proposed. Therefore, it is important to comment on the proposed plan and the other alternatives evaluated in the feasibility study. Comments can also be made on any documents contained in the Administrative Record for the site. The administrative record contains all documents, reports, and other material the EPA relied upon in reaching a decision on the selection of the proposed plan. The Administrative Records, which includes the feasibility study and EPA's proposed plan are available for public review at the Rutledge Site Information Repository located at:

York County Library, 138 East Black Street,  
Rock Hill, South Carolina 29731, (803)324-3055

These documents are also available for review at the EPA Records Center in Atlanta, GA. For more information, to request a copy of the proposed plan or to be added to the site's mailing list, please contact:

Cynthia Peurifoy, Community Relations Coordinator  
U.S. EPA, Region IV, North Superfund Remedial Branch  
345 Courtland Street, N.E., Atlanta, Georgia 30365



**THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**Announces an *Extension of the Public Comment Period* for the**  
**Proposed Plan, Rutledge Property Superfund Site,**  
**Rock Hill, York County, South Carolina**

The U. S. Environmental Protection Agency (EPA) is extending the period of time for accepting public comments on the Agency's proposed cleanup plan, and the other alternatives considered for the Rutledge Property Superfund Site to Monday, April 25, 1994. Written comments, which must be postmarked on or before April 25, 1994, should be sent to:

**Sheri Panabaker, Remedial Project Manager**  
**U.S. EPA, Region IV, North Superfund Remedial Branch**  
**345 Courtland Street, N.E., Atlanta, Georgia 30365**

EPA will not make a final cleanup decision for the site until it has reviewed and considered all public comments it receives. Based on public comments or new information, the EPA may decide on another alternative, rather than the plan that has been proposed. Therefore, it is important to comment on the proposed plan and the other alternatives evaluated in the feasibility study. Comments can also be made on any documents contained in the Administrative Record for the site. The administrative record contains all documents, reports, and other material the EPA relied upon in reaching a decision on the selection of the proposed plan. The Administrative Records, which includes the feasibility study and EPA's proposed plan are available for public review at the Rutledge Site Information Repository located at:

**York County Library, 138 East Black Street,**  
**Rock Hill, South Carolina 29731, (803)324-3055**

These documents are also available for review at the EPA Records Center in Atlanta, GA. For more information, to request a copy of the proposed plan or to be added to the site's mailing list, please contact:

**Cynthia Peurifoy, Community Relations Coordinator**  
**U.S. EPA, Region IV, North Superfund Remedial Branch**  
**345 Courtland Street, N.E., Atlanta, Georgia 30365**

**Attachment C**

**Written Public Comments Received  
During the Public Comment Period**

April 21, 1994

Mr. Samford T. Myers  
North Superfund Remedial Branch  
U S Environmental Protection Agency  
Region IV  
345 Courtland Street, NE  
Atlanta, Georgia 30365

Subject: Rutledge Property (Rock Hill Chemical Company) Superfund Site  
Rock Hill, South Carolina

Dear Mr. Myers:

RMT, Inc. reviewed the United States Environmental Protection Agency (EPA) Administrative Record located at the York County Public Library for the Rutledge Property Superfund Site on behalf of the following companies: BASF Inmont Corporation, Burlington Industries, Inc., Chase Packaging Corporation, CTS Corporation, Engraph, Inc., FMC Corporation, Homelite Division of Textron, Inc., Rexham, Inc., W.R. Grace and Company, and Celanese. The comments included below are being submitted by these companies in response to EPA's *Superfund Proposed Plan Fact Sheet for the Rutledge Property (Rock Hill Chemical Company) Superfund Site*, dated February 1994.

The EPA's Remedial Investigation and Feasibility Study (RI/FS) is summarized in the paragraphs below to provide context for the comments that follow. By way of background, EPA's contractor conducted a geophysical survey to identify buried objects, then collected 22 surface soil samples evenly spaced across the site to identify potential hot spots. Afterwards, the contractor collected 40 subsurface soil samples from 16 locations and installed five pairs of ground water monitoring wells on-site (each pair consisted of a shallow well screened at the top of the surficial aquifer and a deep well screened at the top of bedrock or several feet into the bedrock). EPA sampled the ten new wells, three existing monitoring wells, one out-of-service commercial well, and three off-site private wells. EPA then installed and sampled three more well pairs to fill data gaps in the monitoring well network. EPA also sampled surface water and sediment in on-site drainage areas and conducted an ecological screening.

EPA concluded from the investigation results that ground water contamination at the site presents an unacceptable risk for a future residential land use scenario. The contaminants in ground water that pose an alleged health risk are trichloroethene (TCE, max. concentration = 84,000 ug/l), 1,2-dichloroethene (1,2-DCE, max. concentration = 1,200 ug/l), vinyl chloride (VC, max. concentration = 26 ug/l), and manganese (max. concentration = 3,600 ug/l). EPA's risk calculations resulted in an estimated excess cancer risk of approximately  $5 \times 10^{-2}$ . EPA believes that manganese concentrations present an unacceptable health risk based on a calculated hazard index of 25.

The baseline risk assessment showed that soils on-site are within acceptable risk limits. No risk-based remedial goal options have been identified for surface soils. EPA determined that the hazard index for manganese in soil, which it calculated as 5.75, was high but acceptable. Likewise, EPA concluded that risks posed by volatile organic compound (VOC) and metals concentrations in the drainage areas were acceptable.



RMT, INC. — GREENVILLE, SC  
100 VERDAE BOULEVARD - 29607-3825  
P.O. Box 16778 - 29606-6778  
803/281-0030 - 803/281-0288 FAX



The Feasibility Study (FS) contains EPA's preferred cleanup goals for ground water, which include the promulgated Maximum Contaminant Levels (MCLs) for TCE, 1,2-DCE, and VC. For manganese, EPA set a cleanup goal of 200 ug/l based on an average background concentration of 185 ug/l. In the FS, EPA presented six possible remediation alternatives, including no action and limited action (deed restrictions, long-term ground water monitoring). The four alternatives requiring action consisted of ground water extraction and either 1) treatment on-site with discharge to surface waters or 2) no treatment with discharge to the City of Rock Hill Publicly Owned Treatment Works (POTW).

EPA's *Superfund Proposed Plan Fact Sheet* for the Rutledge Property Superfund Site states EPA's preference for Alternative 4-B, which includes extraction of ground water via two recovery wells, discharge to the POTW, deed restrictions, and long-term ground water monitoring. While the RI does not provide evidence that any remedy is necessary, Alternative 4-B appears to be a practical remedy for the Rutledge site if one is required. However, while reviewing the Administrative Record, we noted several issues that may impact the scope and cost of the remedy and which deserve comment. These issues include the following:

- The Record of Decision (ROD) should acknowledge that the Remedial Design for Alternative 4-B can be simplified and shortened by eliminating the Intermediate Design (60%) submittal. An intermediate submittal is unnecessary for such a straightforward design. EPA will be able to judge the technical aspects of the design basis from the Preliminary Design (30%) submittal. Since Alternative 4-B has no treatment component, the only engineering review required for the design will be the extraction wells and the connecting pipeline to the sewer system. These elements can easily be reviewed and revised in conjunction with the Prefinal/Final Design reports.
- We did not find in the Administrative Record reference to an agreement between EPA and the City of Rock Hill that the POTW would accept the extracted ground water. Evidence of such an agreement should be reflected in the Record. If this has not already been done, the POTW should be contacted to determine effluent acceptability and to obtain such an agreement prior to issuing the Record of Decision.
- EPA's ground water cleanup goal for 1,2-dichloroethene is 70 ug/l. The Performance Standard for 1,2-DCE should be split into two standards to reflect the MCLs of the *cis*- and *trans*- isomers of 1,2-DCE. The *trans*- isomer has a higher MCL of 100 ug/l. The lower standard for the *cis*- isomer would apply whenever analytical results are reported as "total 1,2-dichloroethene."
- The RI recommended additional study of the ecological communities that could be impacted by this site, even though the RI report states that the site does not pose a threat to any state or federally listed species of concern. The RI's surface soil results show that further migration of site contaminants to receiving waters is not anticipated. The EPA's ecological screening did not identify any sensitive ecological communities



Mr. Samford T. Myers  
US EPA Region IV  
April 21, 1994  
Page 3

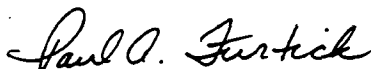
immediately downstream of the site. An ecological study is therefore likely to be unproductive, and the money for it would be better spent on cleanup.

- The RI Report recommended logging the depths of private wells PW-03 and PW-04 to evaluate whether further characterization is needed, since chemicals detected in PW-03 and PW-04 are similar to those detected on-site. The monitoring well network constructed by EPA during the RI is extensive and appears to be sufficient to make a determination now that these constituents are not site related. Further ground water investigation is unwarranted and will delay cleanup activities and divert funds that are best spent on cleanup.
- The VOCs detected during the RI were found in both top-of-rock and shallow wells. The *Superfund Proposed Plan Fact Sheet* does not specify whether the extraction wells will be constructed into rock. Extraction of ground water from bedrock fractures for remediation purposes is difficult and, in most cases of Piedmont lithology, technically impracticable. At most, the two extraction wells proposed in Alternative 4-B should be constructed into the first few feet of bedrock, where the rock is highly weathered and fractured. The screen should be set to withdraw from both the saprolite and the weathered rock. Any attempt to construct wells that are screened in competent bedrock is expected to result in a relatively useless extraction well, since the odds of intercepting a producing fracture that is connected to the small plume found by EPA's investigation are minute.

Please place these comments in the Administrative Record and consider them in the preparation of the Record of Decision for the Rutledge Property Superfund Site.

Sincerely,

RMT, Inc.



Paul A. Furtick  
Project Manager

cc: Rock Hill Chemical Company Site Generator PRPs



April 25, 1994  
823 Standard St.

Rock Hill, S. C.  
29730

Ms. Sheri Panabaker  
Remedial Project Manager  
U.S.EPA, Region IV  
North Superfund Remedial Branch  
345 Courtland St.  
N.E. Atlanta, Georgia 30365

Dear Ms. Panabaker,

I received your handout advising me about an Extension of the Public Comment Period for the Proposed Plan, Rutledge Property Superfund Site, Rock Hill, S.C. I participated in your meeting on March 1, 1994 concerning the above. The input I added as well as other citizens, I hope will be reviewed and consideration given our concerns.

In your notification of an extension, you indicated that the EPA may decide on another alternative rather than the plan that had been proposed. If this alternative plan is different from those discussed on March 1, I would like to be made aware of the plan chosen so that I and other citizens may make further comments. At the meeting the alternative plan being considered was Alternative Plan 4B - Groundwater Pumping by 2 Extraction Wells and Direct Discharge to POTW. MY concern with this method that was tentatively selected, or any other method is that an additional process such as pre-treatment on site of the ground water be done before any other authority, whether it be city or private, administers the final treatment as required by the EPA Superfund Act.

You should also be concerned with the surrounding soil within the borders of the affected area to eliminate further problems down the road as you continue monitoring the superfund site. This problem I understand existed over a thirty year period. If you temporarily clean the underground water and not pay attention to the soil which contributed to the problem, it would simply reoccur.

Other concerns that I have would be that more testing be done opposite the site on Cherry Rd. and on any bordering property that may be affected, and to insure the safety of citizens in the area, the entire site should be fenced off and signs need to be posted informing the public of any possible danger.

In closing I would like to thank you for sending me notification, and please keep me informed.

Sincerely,

*Tony Danna*

**Attachment D**

**Official Transcript of the Proposed Plan Public Meeting**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IV PROPOSED PLAN MEETING FOR THE  
RUTLEDGE PROPERTY (ROCK HILL CHEMICAL COMPANY)  
SUPERFUND SITE  
ROCK HILL, SOUTH CAROLINA  
MARCH 1, 1994

REPORTER: KATHY STANFORD, CVR-CM

*Dallas Reporting*

VERBATIM COURT REPORTING  
P. O. Box 2711 CRS  
ROCK HILL, S. C. 29730  
(803) 328-9640

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P R O C E E D I N G S  
\* \* \* \* \*  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IV PROPOSED PLAN MEETING FOR THE  
RUTLEDGE PROPERTY (ROCK HILL CHEMICAL COMPANY)  
SUPERFUND SITE  
MARCH 1, 1994  
7:10 P.M.  
\* \* \* \* \*

SANDY MYERS: GOOD EVENING AND WELCOME TO THE  
PUBLIC MEETING, PROPOSED PLAN MEETING FOR THE RUTLEDGE  
PROPERTY SITE. I APPRECIATE YOUR INTEREST IN COMING  
TONIGHT AMID THE SEMI-MONSOON OUTSIDE. I REALLY DO  
APPRECIATE IT. MY NAME IS SANDY MYERS, AND I'M THE  
REMEDIAL PROJECT MANAGER WITH THE ENVIRONMENTAL  
PROTECTION AGENCY REGION 4, BASED IN ATLANTA. WITH ME  
TONIGHT ARE FELLOW EPA EMPLOYEES CYNTHIA PEURIFOY, SHE  
IS THE COMMUNITY RELATIONS COORDINATOR; BERNIE HAYES,  
WHO IS ANOTHER RPM OR REMEDIAL PROJECT MANAGER; AND MARK  
DAVIS, WHO IS THE ATTORNEY FROM THE OFFICE OF REGIONAL  
COUNSEL. ALSO WITH US TONIGHT FROM SOUTH CAROLINA  
DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL CHUCK  
GORMAN, BILLY BRITTON, AND RICHARD HAYNES. THE AGENDA  
FOR TONIGHT'S MEETING CONSISTS OF BASICALLY SIX  
SEGMENTS. I'M OBVIOUSLY DOING THE WELCOME AND  
INTRODUCTIONS. CYNTHIA IS GOING TO BRIEFLY DISCUSS THE  
COMMUNITY RELATIONS PROGRAM. I'M GOING TO DISCUSS THE  
SITE HISTORY. BERNIE HAYES IS GOING TO DISCUSS THE  
BASELINE RISK ASSESSMENT PROCESS. I'M GOING TO COME

1 BACK WITH THE REMEDIAL INVESTIGATION AND THE FEASIBILITY  
2 STUDY, AND THEN WE'LL OPEN UP TO QUESTIONS AND ANSWERS.  
3 WE'RE GOING TO DO OUR BEST TO LIMIT THIS MEETING TONIGHT  
4 TO APPROXIMATELY 45 TO 50 MINUTES SO THAT WE CAN ALL BE  
5 OUT. I WOULD LIKE TO NOW INTRODUCE CYNTHIA PEURIFOY.  
6 SHE IS GOING TO EXPLAIN THE SUPERFUND PROCESS IN GENERAL  
7 AND DISCUSS HOW AND WHY THE PUBLIC PLAYS SUCH AN  
8 ESSENTIAL ROLE IN THE ULTIMATE DECISION MAKING PROCESS.

9 CYNTHIA PEURIFOY: GOOD EVENING. I WANT TO THANK  
10 YOU FOR COMING OUT TONIGHT. AGAIN, MY NAME IS CYNTHIA  
11 PEURIFOY, AND I AM THE COMMUNITY RELATIONS COORDINATOR  
12 FOR THE SOUTH CAROLINA SECTION OF EPA'S REMEDIAL  
13 PROGRAM. I WANTED TO FIRST OF ALL SET THE STAGE FOR  
14 TONIGHT'S MEETING. THIS IS A PUBLIC HEARING, AND WE DO  
15 NEED YOU TO COOPERATE WITH US TONIGHT BY WHEN YOU DO  
16 HAVE A COMMENT OR A QUESTION, BY STANDING UP,  
17 IDENTIFYING YOURSELF FOR OUR COURT REPORTER HERE AND  
18 MAKING SURE THAT SHE IS ABLE TO HEAR WHAT YOU SAY.  
19 THAT'S VERY IMPORTANT FOR US BECAUSE WE'RE HERE TO GET  
20 YOUR COMMENTS AND YOUR CONCERNS ABOUT THE PROPOSED PLAN.  
21 THE TRANSCRIPT THAT SHE IS GOING TO PRODUCE IS GOING TO  
22 BE USED TO PREPARE WHAT WE CALL A RESPONSIVENESS SUMMARY  
23 WHERE WE WILL SIT DOWN AND WE WILL RESPOND TO EVERY  
24 CONCERN THAT WE HEAR HERE TONIGHT AND THROUGHOUT THIS  
25 PUBLIC COMMENT PERIOD. SO PLEASE COOPERATE WITH HER AND

1 US BY MAKING SURE THAT WE CAN HEAR WHAT YOU HAVE TO SAY.  
2 WE ARE IN A PUBLIC COMMENT PERIOD WHICH ENDS ON MARCH  
3 24TH. HOWEVER, THERE IS A PROVISION THAT THAT COMMENT  
4 PERIOD CAN BE EXTENDED FOR AN ADDITIONAL 30 DAYS. IF  
5 YOU FIND THAT YOU NEED MORE TIME TO REVIEW THE DOCUMENTS  
6 OR WHATEVER OR TO PREPARE YOUR COMMENTS, PLEASE GET IN  
7 TOUCH WITH EITHER SANDY OR I AND WE WILL WORK WITH YOU  
8 TO EXTEND THAT COMMENT PERIOD IF IT'S NEEDED. I WANTED  
9 TO DRAW YOUR ATTENTION TO WHAT WE CALL THE SITE  
10 INFORMATION REPOSITORY. IT IS AT THE YORK COUNTY  
11 LIBRARY ON BLACK STREET. AND IN THAT LIBRARY, WE HAVE  
12 PREPARED WHAT WE CALL OUR ADMINISTRATIVE RECORD, WHICH  
13 IS A RECORD OF ALL THE DOCUMENTS THAT WERE COMPILED AND  
14 USED BY SANDY AND THE OTHER PEOPLE WITHIN THE EPA AND  
15 THE STATE TO PROPOSE THIS CLEANUP PLAN. THE REMEDIAL  
16 INVESTIGATION AND FEASIBILITY STUDY REPORTS ARE THERE;  
17 THE RISK ASSESSMENT IS THERE; EVERYTHING THAT YOU WILL  
18 SEE REFERENCED IN THE PROPOSED PLAN FACT SHEET IS THERE  
19 AND YOU CAN GO BY AND REVIEW IT. I WANTED TO TALK A  
20 LITTLE BIT ABOUT THE SUPERFUND PROCESS. AND I'M GOING  
21 TO PUT THIS UP, AND I HOPE YOU CAN SEE IT, JUST TO LET  
22 YOU KNOW THAT ON THIS PARTICULAR SITE WE HAVE BEEN  
23 THROUGH SEVERAL STEPS OF THE SUPERFUND PROCESS. AND AS  
24 YOU'LL SEE NUMBER 3, 4, AND 5 HAVE BEEN CIRCLED BECAUSE  
25 THAT'S REALLY WHERE WE ARE NOW. WE'RE MOVING OUT OF THE



1 FEASIBILITY STUDY. WE'RE IN THE PROPOSED PLAN. WE'RE  
2 IN THE PUBLIC COMMENT PERIOD. A LOT HAS GONE ON THE  
3 SITE. THE INVESTIGATION HAS BEEN COMPLETED. THE  
4 FEASIBILITY STUDY HAS BEEN COMPLETED. THE PROPOSED PLAN  
5 HAS BEEN SUBMITTED TO THE PUBLIC. WHEN WE COMPLETE THIS  
6 PUBLIC COMMENT PERIOD WE WILL BE DOING THE  
7 RESPONSIVENESS SUMMARY AS I SAID EARLIER, AND THEN WE  
8 WILL BE PREPARING A RECORD OF DECISION. ONCE THAT IS  
9 DONE, WE WILL GO FORWARD WITH NEGOTIATIONS WITH  
10 POTENTIALLY RESPONSIBLE PARTIES. WE'LL MOVE INTO THE  
11 REMEDIAL DESIGN AND INTO THE CLEANUP. LET ME SAY A FEW  
12 THINGS ABOUT THE COMMUNITY RELATIONS PROGRAM ITSELF. WE  
13 HAVE A MAILING LIST FOR THE SITE. IF YOU'RE NOT ON THE  
14 MAILING LIST, PLEASE SEE ME OR SIGN IN THAT SHEET BACK  
15 THERE AND WE'LL GET YOU ON THE MAILING LIST. WE DO  
16 PREPARE FACT SHEETS FROM TIME TO TIME. IF YOU HAVE THE  
17 FACT SHEET THAT I SENT OUT RECENTLY YOU WILL SEE AN 800  
18 NUMBER IN THAT FACT SHEET. WE ARE ALWAYS AVAILABLE AT  
19 THAT NUMBER TO ANSWER ANY QUESTIONS OR CONCERNS YOU  
20 MIGHT HAVE AND TO GET ANY FEEDBACK THAT YOU MIGHT HAVE  
21 ON ANYTHING THAT YOU FEEL THAT WE NEED TO COVER ANY  
22 INFORMATION THAT YOU DON'T HAVE THAT YOU'D LIKE TO HAVE.  
23 ONE PROVISION OF THE SUPERFUND PROGRAM IS THAT  
24 COMMUNITIES WHERE THERE ARE SUPERFUND SITES HAVE THE  
25 ABILITY TO APPLY FOR A TECHNICAL ASSISTANCE GRANT. THAT

1 IS A GRANT THAT WILL PROVIDE YOU THE ABILITY TO HIRE A  
2 TECHNICAL ADVISOR TO ADVISE YOU ON THE DOCUMENTS AND  
3 FINDINGS THAT EPA PUTS FORTH. SO IF ANYBODY HERE IS  
4 INTERESTED IN LOOKING INTO THE TAG PROCESS, PLEASE FEEL  
5 FREE TO SEE ME OR CALL ME ABOUT THAT. AND FINALLY, GIVE  
6 ME YOUR FEEDBACK. LET ME KNOW HOW THIS MEETING IS, HOW  
7 INFORMATIVE YOU THINK WE ARE. ARE WE OVER YOUR HEADS?  
8 ARE WE NOT GETTING THE POINT ACROSS? WHATEVER. DO WE  
9 NEED TO HAVE MORE MEETINGS? THAT IS MY ROLE TO MAKE  
10 SURE THAT THE COMMUNITY IS INFORMED AND INVOLVED IN THE  
11 PROCESS SO PLEASE HELP ME TO DO THAT FOR YOU, AND LET ME  
12 KNOW WHAT YOU WOULD LIKE TO HAVE. THANK YOU.

13 SANDY MYERS: THANKS, CYNTHIA. I WOULD NOW LIKE TO  
14 JUST GIVE A VERY BRIEF SITE HISTORY. THIS SITE,  
15 HOPEFULLY YOU ALL CAN READ THIS, THIS SITE IS LOCATED ON  
16 CHERRY ROAD AT THE CORNER OF CRANFORD STREET AND FARLOW  
17 STREET. I HAVE ANOTHER SITE MAP THAT'S MORE OF A  
18 CLOSEUP AND MIGHT BE OF SOME HELP. BETWEEN 1960 AND  
19 1964, ROCK HILL CHEMICAL COMPANY OPERATED A SOLVENT  
20 RECLAMATION FACILITY AT THAT SITE. CLASSIC WASTE  
21 PRODUCTS SUCH AS PAINT SLUDGES, TEXTILE DYE PRODUCTS,  
22 USED SOLVENTS, AND OTHER SOLID WASTES WERE GENERATED  
23 DURING THE RECLAMATION PROCESS AND WERE STORED AND  
24 DISPOSED OF AT THE SITE. THE COMPANY CEASED OPERATIONS  
25 IN THE SUMMER OF 1964. THE FOLLOWING OCTOBER A FIRE AT

1 THE FACILITY CAUSED DRUMS OF OIL AND CHEMICALS TO  
2 EXPLODE RELEASING THEIR CONTENTS INTO THE ENVIRONMENT.  
3 TWO REMOVALS HAVE TAKEN PLACE AT THE SITE SINCE THEN.  
4 IN 1985 A SOILS REMOVAL WAS DONE RIGHT IN THIS AREA HERE  
5 BEHIND THE BANK. AND THEN BETWEEN 1987 AND '89 ANOTHER  
6 SMALL SOILS REMOVALS AND A DRUM REMOVAL WAS DONE IN THIS  
7 AREA HERE. THE SITE WAS LISTED ON THE NATIONAL  
8 PRIORITIES LIST IN FEBRUARY OF 1990. THIS IS SIMPLY A  
9 LIST OF CONTAMINATED SITES ACROSS THE UNITED STATES. IN  
10 MARCH OF 1992, EPA INITIATED THE R.I.F.S., OR THE  
11 REMEDIAL INVESTIGATION FEASIBILITY STUDY. AND THIS IS  
12 SIMPLY WE GO OUT AND WE FIGURE OUT THE EXTENT OF  
13 CONTAMINATION, THE TYPE OF CONTAMINATION, AND WE ALSO  
14 COME UP WITH A FEW ALTERNATIVES TO CLEAN THE PROBLEM UP.  
15 I THINK IT'S VERY IMPORTANT TO NOTE RIGHT NOW IN THE  
16 BEGINNING OF THIS TALK THAT THE RESULT OF THIS REMEDIAL  
17 INVESTIGATION INDICATES THAT WE'VE ONLY GOT A  
18 GROUNDWATER PROBLEM AT THE SITE, THEREFORE, GROUNDWATER  
19 IS GOING TO BE THE ONLY MEDIA THAT WE REMEDIATE. I WILL  
20 DISCUSS IN MORE DETAIL THE R.I.F.S. IN A FEW MOMENTS.  
21 FIRST, I'D LIKE TO INTRODUCE BERNIE HAYES. HE'S GOING  
22 TO DISCUSS THE BASELINE RISK ASSESSMENT AND HOW IT  
23 RELATES NOT ONLY TO SUPERFUND, BUT TO THE SITE IN  
24 GENERAL.

25 BERNIE HAYES: THANK YOU, SANDY. YOU'LL HEAR A LOT

1 OF TERMS TOSSED AROUND HERE TONIGHT. ONE OF THEM IS  
2 RISK ASSESSMENT SO I WANT TO TALK A LITTLE BIT ABOUT  
3 WHAT EXACTLY THE RISK ASSESSMENT PROCESS CONSISTS OF.  
4 I'LL TRY TO GO THROUGH THIS FAIRLY QUICKLY BECAUSE IT  
5 CAN BE A LITTLE DRY. WHAT IS RISK ASSESSMENT? RISK  
6 ASSESSMENT IS SIMPLY AN ATTEMPT BY TOXICOLOGISTS AND  
7 HEALTH SCIENTISTS TO QUANTIFY THE POTENTIAL IMPACT TO  
8 PUBLIC HEALTH RESULTING FROM CONTAMINATION AT THIS SITE  
9 OR ANY OTHER SITE. IN OTHER WORDS, RISK ASSESSMENT IS  
10 JUST LOOKING AT THE CONTAMINATION THAT EXISTS AT THE  
11 SITE, LOOKING AT THE VARIOUS WAYS IN WHICH PEOPLE MIGHT  
12 BE EXPOSED TO THAT CONTAMINATION, AND THEN TRYING TO  
13 QUANTIFY OR PUT A NUMBER TO THE EFFECTS THAT MIGHT  
14 RESULT FROM THAT CONTAMINATION. THE OTHER TERM YOU  
15 MIGHT HEAR AND SEE IN THE REPOSITORY IS BASELINE RISK  
16 ASSESSMENT. BASELINE RISK ASSESSMENT IS THE ESTIMATE OF  
17 RISK TO THE PUBLIC HEALTH THAT WOULD RESULT IF THE SITE  
18 WERE LEFT UNREMEDiated. WE NOT ONLY LOOK AT THE CURRENT  
19 RISK ASSOCIATED WITH THE SITE UNDER CURRENT LAND USE AND  
20 CURRENT EXPOSURE SCENARIOS, BUT WE ALSO LOOK AT WHAT  
21 RISK WOULD RESULT IF WE JUST WALKED AWAY FROM THE SITE  
22 IN THE FUTURE AND LEFT IT UNREMEDiated. WE LOOK AT THE  
23 RISK TO PUBLIC HEALTH UNDER FUTURE EXPOSURE SCENARIOS OF  
24 VARIOUS TYPES. IT SAYS THAT WE TRY TO QUANTIFY THE  
25 LEVELS OF RISK. AND HOW DO WE QUANTIFY THOSE LEVELS OF

1 RISK? WE ESTIMATE EXPOSURE LEVELS BY IDENTIFYING  
2 COMPLETE EXPOSURE PATHWAYS LEADING FROM A SOURCE OF  
3 CONTAMINATION AND SUPERFUND THE SITE TO A POINT OF HUMAN  
4 OR PUBLIC EXPOSURE. IN OTHER WORDS, THERE HAS TO BE A  
5 RELEASE OF CONTAMINANTS FROM THE SITE. THERE HAS TO BE  
6 A WAY FOR THOSE CONTAMINANTS TO GET FROM THE SOURCE TO A  
7 POINT OF EXPOSURE, AND THEN EXPOSURE TO THE PUBLIC HAS  
8 TO TAKE PLACE. THIS IS AN EXAMPLE OF A COUPLE OF THE  
9 TYPES OF EXPOSURE PATHWAYS WE LOOK AT IN A SUPERFUND  
10 RISK ASSESSMENT. WE HAVE A SITE OR A SOURCE OF  
11 CONTAMINATION SHOWN BY THESE DRUMS LYING ON THE GROUND  
12 HERE. AND THERE ARE TWO PATHWAYS, COMPLETE EXPOSURE  
13 PATHWAYS, ILLUSTRATED. ONE WOULD BE IF CONTAMINANTS  
14 WERE RELEASED INTO THE AIR THROUGH VOLATILIZATION OR  
15 SOME OTHER PROCESS. THE WIND WOULD THEN BLOW THEM TO A  
16 POINT WHERE PEOPLE ROUTINELY WERE FOUND, AND PEOPLE  
17 WOULD BREATHE IN THOSE CONTAMINANTS WITH THE AIR. THE  
18 OTHER ONE AND THE ONE THAT IS MORE GERMANE TO THIS SITE  
19 AS SANDY HAS ALREADY MENTIONED IS THE GROUNDWATER  
20 PATHWAY WHERE CONTAMINANTS FROM THE SITE COULD BE  
21 RELEASED INTO THE GROUNDWATER, FLOWS WITH THE  
22 GROUNDWATER TOWARDS THE WELL, IT'S DRAWN INTO THE WELL,  
23 AND SOMEBODY USING THAT WELL DRINKS IT OR IS EXPOSED TO  
24 IT THROUGH SHOWERING OR WASHING OR ANY OTHER PATHWAY.  
25 WE LOOK AT A LOT OF DIFFERENT PATHWAYS, NOT JUST THOSE

1        THAT WERE IN THAT ILLUSTRATION.    AND I APOLOGIZE FOR THE  
2        CRUDITY OF THIS DRAWING HERE; IT LOOKS A LITTLE SIT LIKE  
3        ELVIS I THOUGHT.    THE PRINCIPAL ROUTES OF HUMAN EXPOSURE  
4        THAT WE LOOK AT ARE:    INHALATION, BREATHING IN  
5        CONTAMINANTS; INGESTION, WHICH MEANS ANYTHING TAKEN IN  
6        BY MOUTH; AND DERMAL ABSORPTION, WHICH IS THE ONE THAT  
7        NOT MANY PEOPLE MIGHT BE FAMILIAR WITH.    DERMAL  
8        ABSORPTION JUST MEANS THINGS THAT ARE ABSORBED THROUGH  
9        THE SKIN, DIRECTLY THROUGH SKIN ON ANY PART OF THE BODY.  
10       THE FIRST ONE IS INHALATION.    THIS IS PRETTY BASIC  
11       STUFF.    INHALATION EXPOSURE OCCURS THROUGH THE BREATHING  
12       OF VAPORS.    AN EXAMPLE OF THAT MIGHT BE AT THE GAS  
13       STATION WHERE YOU'RE PUMPING GAS AND YOU SMELL THE  
14       FUMES, THE ACTUAL GASEOUS SUBSTANCE THAT YOU BREATHE IN.  
15       THE SECOND FORM OF INHALATION EXPOSURE OCCURS THROUGH  
16       THE BREATHING IN OF CONTAMINATED DUST OR AIRBORNE  
17       PARTICLES; SOIL THAT DRYs OUT, GETS BROKEN UP, AND IS  
18       CARRIED IN THE WIND AND BREATHED IN IN THAT FASHION.  
19       THE SECOND ONE, INGESTION, CAN HAPPEN IN A LOT OF WAYS  
20       THAT WE MIGHT NOT THINK ABOUT.    INGESTION CAN OCCUR  
21       THROUGH EATING CONTAMINATED FOOD OR DRINKING  
22       CONTAMINATED WATER WHICH ARE THE ROUTES OF EXPOSURE MOST  
23       COMMONLY - - - YOU MIGHT MOST COMMONLY THINK OF.    WE  
24       ALSO CAN HAVE INCIDENTAL OR ACCIDENTAL INGESTION OF  
25       SOIL.    PEOPLE ON THE SITE WHO GET SOIL ON THEIR HANDS OR

1 ON THEIR BODY SOMEHOW AND ACCIDENTLY GET IT IN THEIR  
2 MOUTH. THE SAME THING IS TRUE WITH INCIDENTAL OR  
3 ACCIDENTAL INGESTION OF CONTAMINATED WATER WHILE  
4 SWIMMING OR BOATING OR WADING. AGAIN, ANY TIME YOU'RE  
5 IN CONTACT WITH WATER DURING RECREATIONAL ACTIVITIES  
6 THERE'S A CHANCE THAT YOU MIGHT ACTUALLY GET SOME OF IT  
7 IN YOUR MOUTH. AND WE LOOKED AT ALL OF THESE EXPOSURE  
8 PATHWAYS AS PART OF THIS RISK ASSESSMENT, AND I'LL TALK  
9 ABOUT THE RESULTS OF SOME OF THESE EXPOSURE PATHWAYS IN  
10 A SECOND. DERMAL ABSORPTION OCCURS WHEN CONTAMINANTS  
11 ARE ABSORBED DIRECTLY THROUGH THE SKIN. SKIN IS A GOOD  
12 BARRIER AGAINST WATER. IT'S A GOOD BARRIER AGAINST  
13 BACTERIA; CERTAIN OTHER TYPES OF WHAT WE CALL INORGANIC  
14 CONTAMINANTS, IN OTHER WORDS, METALS OR THINGS THAT  
15 AREN'T ORGANIC IN NATURE, AND JUST SOILS AND DIRT AND  
16 THINGS LIKE THAT. SKIN IS NOT A VERY EFFECTIVE BARRIER.  
17 IT'S A MUCH LESS EFFECTIVE BARRIER AGAINST CERTAIN TYPES  
18 OF ORGANIC CONTAMINANTS. A LOT OF TIMES WHEN YOU SEE  
19 HOUSEHOLD CLEANERS OR HOUSEHOLD CHEMICALS THAT SAY IF  
20 YOU GET IT ON YOUR SKIN WASH IT OFF, HOUSEHOLD  
21 PESTICIDES, EVEN GASOLINE. SOME OF THE COMPONENTS OF  
22 GASOLINE ARE A GOOD EXAMPLE. IF YOU GET IT ON YOUR  
23 SKIN, IT CAN BE ABSORBED DIRECTLY THROUGH THE SKIN. SO  
24 WHILE SKIN IS AS A HUMAN ORGANISM IS A PRETTY GOOD  
25 BARRIER FOR CERTAIN TYPES OF CONTAMINANTS AND CERTAIN

1 TYPES OF HEALTH THREATS, IT'S NOT A GOOD ONE FOR OTHERS.  
2 TAKING INTO ACCOUNT DERMAL ABSORPTION, INHALATION, AND  
3 INGESTION, WE LOOKED AT FOUR EXPOSURE PATHWAYS AT THE  
4 RUTLEDGE PROPERTY SITE. THE FIRST IS JUST AN ON SITE  
5 WORKER. ASSUMING THAT THERE MIGHT ACTUALLY BE - - - THE  
6 SITE MIGHT ACTUALLY BE USED FOR INDUSTRIAL OR COMMERCIAL  
7 PURPOSES IN THE FUTURE. THE SECOND IS A SITE VISITOR.  
8 ANOTHER WAY TO LOOK AT THE SITE VISITOR MIGHT BE SITE  
9 TRESPASSER OR CHILDREN PLAYING ON THE SITE OR ANYONE  
10 JUST WALKING THROUGH THE SITE. AND THEN THOSE TWO NOT  
11 NOTED THERE ARE CURRENT EXPOSURE CONDITIONS THAT MIGHT  
12 EXIST NOW, BUT WE ALSO LOOKED AT FUTURE EXPOSURE  
13 CONDITIONS. WE LOOKED AT BOTH AN ADULT AND A CHILD WHO  
14 MIGHT LIVE ON THE SITE IN THE FUTURE. AND AS I SAID, WE  
15 LOOKED AT INHALATION, INGESTION, AND DERMAL EXPOSURE FOR  
16 THE TWO CURRENT AND THE TWO FUTURE EXPOSURE SCENARIOS.  
17 FOR THE ON SITE WORKER, WE JUST LOOKED AT TWO PATHWAYS.  
18 WE LOOKED AT INCIDENTAL INGESTION OF SURFACE SOILS, IN  
19 OTHER WORDS THE SOILS THAT ARE ON THE SURFACE THAT ARE  
20 CONTAMINATED, ACCIDENTAL INGESTION OF THOSE SOILS  
21 THROUGH HAND TO MOUTH CONTACT WHILE SOMEONE MIGHT BE  
22 WORKING THERE WHETHER IT BE SMOKING, EATING THEIR LUNCH,  
23 WHATEVER WAY THAT THAT MIGHT HAPPEN. AND THEN IF THOSE  
24 CONTAMINATED SOILS GET ON THEIR HANDS OR THEIR SKIN OR  
25 THEIR FACE AND ABSORPTION FROM THE SOIL DIRECTLY THROUGH



1 THE SKIN. FOR THE SITE VISITOR, WE ADDED - - - WE  
2 LOOKED AT THOSE TWO PATHWAYS, BUT WE ADDED SOME OTHERS.  
3 IN ADDITION TO THE INCIDENTAL INGESTION OF SOILS AND  
4 DERMAL ABSORPTION OF CONTAMINANTS FROM SOILS, WE ALSO  
5 ADDED INCIDENTAL INGESTION OF CONTAMINATED SEDIMENTS,  
6 SEDIMENTS BEING THE MUD AND SOIL PARTICLES THAT LIE AT  
7 THE BOTTOM OF THE STREAMS AND DRAINAGE PATHWAYS THAT ARE  
8 ON THE SITE, AND ALSO THE INCIDENTAL INGESTION OF  
9 SURFACE WATER, CONTAMINATED SURFACE WATER, AND THEN  
10 DERMAL ABSORPTION FROM THOSE TWO SOURCES AS WELL.  
11 AGAIN, THIS SITE VISITOR BEING SOMEONE WHO MIGHT JUST  
12 WANDER ONTO THE SITE AND WADE OR PLAY AS A CHILD MIGHT  
13 IN THE STREAMS THAT ARE OUT THERE. FOR THE ADULT  
14 RESIDENT WE LOOKED AT THOSE CONTAMINANT PATHWAYS AND  
15 THEN ADDED A FEW MORE. SO IN ADDITION TO THE ONES FOR  
16 THE SITE VISITOR, INGESTION OF SURFACE SOILS, SURFACE  
17 WATER, SEDIMENTS, WE ADDED GROUNDWATER. IN OTHER WORDS,  
18 PRESUMING THAT SOMEBODY MIGHT BUILD A HOUSE THERE, DRILL  
19 A WELL INTO THE CONTAMINATED GROUNDWATER PLUME, AND  
20 DRINK THE WATER FROM THAT WELL. IN ADDITION, WE ADDED  
21 INHALATION OF VOLATILE CONTAMINANTS RELEASED WHILE  
22 SHOWERING WHICH IS ALSO A GROUNDWATER PATHWAY. IF THE  
23 WATER SUPPLY FOR A HOUSE BUILT ON THAT SITE WERE A WELL  
24 DRILLED INTO THE CONTAMINATED GROUNDWATER, THAT WELL  
25 WERE USED FOR SHOWERING, CERTAIN OF THE CONTAMINANTS

1        THAT EXIST AT THE SITE WOULD BE RELEASED INTO THE AIR.  
2        SOMEONE TAKING A SHOWER WOULD BREATHE THEM IN AND THEY  
3        WOULD BE EXPOSED THROUGH INHALATION IN THAT MATTER. SO  
4        WE ADDED IN ADDITION TO ALL THOSE OTHERS, THE  
5        VOLATILIZATION OF CONTAMINANTS WHILE SHOWERING. FOR THE  
6        CHILD RESIDENT, THESE PATHWAYS ARE EXACTLY THE SAME.  
7        THE ONLY REASON I HAVE THIS SLIDE HERE IS TO EXPLAIN A  
8        LITTLE BIT OF THE DIFFERENCE OF HOW WE LOOK AT CHILD  
9        EXPOSURE VERSUS ADULT EXPOSURE. THESE ARE THE SAME  
10       EXPOSURE SCENARIOS, THE SAME EXPOSURE PATHWAYS, BUT FOR  
11       ADULTS AND CHILDREN WE USE DIFFERENT EXPOSURE  
12       FREQUENCIES, WE USE - - - IN OTHER WORDS, THEY'RE  
13       EXPOSED AT A DIFFERENT RATE. THEY'RE EXPOSED FOR A  
14       DIFFERENT LENGTH OF TIME. WE EXTRAPOLATE THE EXPOSURE  
15       ONLY OVER A CERTAIN FEW YEARS OF CHILDHOOD AS OPPOSED TO  
16       AN ENTIRE LIFETIME, AND THEN ADD THAT ONTO THE ADULT  
17       EXPOSURE. AND PROBABLY THE MOST IMPORTANT THING IS THAT  
18       WE ALSO LOOK AT THE BODY WEIGHT OF A CHILD AS OPPOSED TO  
19       AN ADULT. THE SEVERITY OF EXPOSURE IS DEPENDENT TO SOME  
20       EXTENT ON BODY WEIGHT. SOMEONE WHO IS HEAVIER, HAS A  
21       GREATER MASS LIKE MYSELF, CAN BE EXPOSED TO A GREATER  
22       LEVEL OF TOXIC CONTAMINANTS AND NOT EXPERIENCE ANY  
23       ADVERSE EFFECTS. A CHILD WHO IS LIGHTER OR A LIGHTER  
24       PERSON CAN ONLY EXPERIENCE PROPORTIONALLY LIGHTER OR  
25       PROPORTIONALLY LESS EXPOSURE FOR THE SAME EFFECT. SO

1 FOR CHILDREN, WE LOOK AT THAT LOWER BODY WEIGHT IN  
2 EVALUATING THE CONTAMINANT EFFECTS. THIS IS A LIST OF  
3 THE CONTAMINANTS THAT WERE FOUND AT THE SITE. AND  
4 THERE'S A BIG LAUNDRY LIST OF THEM. THE IMPORTANT THING  
5 IS NOT SO MUCH THE NUMBERS BECAUSE THE NUMBERS ARE ALL  
6 OVER THE PLACE. THE IMPORTANT THING IS TO NOTE THAT WE  
7 LOOKED AT A LARGE NUMBER OF CONTAMINANTS, ESSENTIALLY  
8 ALL THE CONTAMINANTS THAT WERE FOUND ABOVE BACKGROUND  
9 LEVELS OUT THERE. AND JUST FROM A QUALITATIVE SENSE,  
10 I'LL SAY THAT FOR THE MOST PART, THESE LEVELS OF  
11 CONTAMINATION ARE NOT PARTICULARLY HIGH OR THAT - - - IN  
12 OTHER WORDS, THEY'RE NOT SIGNIFICANT IN TERMS OF RISK.  
13 AS SANDY HAS ALREADY MENTIONED, THE ONLY ONES THAT ARE  
14 SIGNIFICANT IN TERMS OF RISK ARE SOME OF THE GROUNDWATER  
15 NUMBERS FOR JUST A FEW OF THE CONTAMINANTS, AND I'LL GO  
16 INTO THAT IN A LITTLE MORE DETAIL IN A MINUTE. BUT FOR  
17 MOST OF THE CONTAMINANTS AND FOR MOST OF THE MEDIA,  
18 SURFACE SOIL, SURFACE WATER, AND SEDIMENTS, THE  
19 CONTAMINANT LEVELS ARE NOT SIGNIFICANT IN TERMS OF RISK.  
20 WHENEVER WE LOOK AT A BASELINE RISK ASSESSMENT, WE HAVE  
21 TO LOOK AT THE TOXICITY OF THE CONTAMINANTS INVOLVED.  
22 DIFFERENT CONTAMINANTS HAVE DIFFERENT TOXIC EFFECTS.  
23 HOW TOXIC ARE THE CONTAMINANTS THAT WE FOUND THERE AND  
24 IN WHAT WAY ARE THEY TOXIC? WE GENERALLY LOOK AT TOXINS  
25 AND SPLIT THEM UP INTO TWO CATEGORIES: CARCINOGENS

1       VERSUS NON-CARCINOGENS.  CARCINOGENS ARE CONTAMINANTS  
2       WHICH ARE KNOWN TO CAUSE OR ARE SUSPECTED OF CAUSING THE  
3       DEVELOPMENT OF CANCER.  MANY CONTAMINANTS INCLUDING SOME  
4       OF THE ONES FOUND HERE ARE NOT CONSIDERED TO BE  
5       CARCINOGENIC, BUT HAVE OTHER ADVERSE HEALTH IMPACTS; FOR  
6       INSTANCE, TOXIC EFFECTS ALL SPECIFIC ORGANS SUCH AS THE  
7       KIDNEYS OR THE LIVER.  THERE ARE SOME CONTAMINANTS WHICH  
8       HAVE BOTH CARCINOGENIC AND NON-CARCINOGENIC EFFECTS.  WE  
9       TRY TO CONTROL EXPOSURE TO THOSE BASED ON WHICH OF THOSE  
10      TWO IS THE MOST SEVERE OR THE MOST LIKELY.  FOR NON-  
11      CARCINOGENS, WE DEAL WITH THE EXPOSURE TO CARCINOGENS  
12      AND NON-CARCINOGENS DIFFERENTLY.  FOR NON-CARCINOGENS,  
13      IT'S ASSUMED THAT AT CERTAIN LOW LEVELS OF EXPOSURE,  
14      THERE ARE NO ADVERSE IMPACTS.  IN OTHER WORDS, YOU CAN  
15      BE EXPOSED TO A CERTAIN AMOUNT OF A NON-CARCINOGEN UP TO  
16      A CERTAIN THRESHOLD LEVEL AND BELOW THAT THERE ARE NO  
17      IMPACTS.  YOUR BODY CAN HANDLE THAT EXPOSURE.  ABOVE  
18      THAT THRESHOLD LEVEL, THEN ADVERSE IMPACTS RESULT.  AT  
19      SUPERFUND SITES, WE'RE REQUIRED TO REDUCE NON-CARCINOGEN  
20      RISK TO A LEVEL SUCH THAT THE HAZARD INDEX RESULTING  
21      FROM EXPOSURE TO THOSE CONTAMINANTS IS LESS THAN ONE.  
22      SOME CONFUSING TERMS THERE, BUT THE HAZARD INDEX IS  
23      DEFINED AS THE RATIO OF THE LEVEL OF ACTUAL EXPOSURE  
24      COMPARED TO THE SAFE LEVEL OF INTAKE FOR THAT GIVEN  
25      CONTAMINANT.  IN OTHER WORDS, IF YOU JUST PUT THE

1 EXPOSURE LEVEL DIVIDED BY THE SAFE LEVEL, IF THAT'S  
2 GREATER THAN ONE, OBVIOUSLY YOU'RE OVER THE SAFE LEVEL  
3 OF EXPOSURE AND THAT'S A PROBLEM. THIS SAFE INTAKE LEVEL  
4 IS KNOWN AS THE REFERENCE DOSE, AND THAT REFERENCE DOSE  
5 IS DEPENDENT LIKE THINGS LIKE BODY WEIGHT, IT'S  
6 DEPENDENT ON AGE. WHEN WE DO A RISK ASSESSMENT, WE USE  
7 THE MOST - - - ESSENTIALLY A WORSE CASE EVALUATION OF  
8 REFERENCE. IN OTHER WORDS, WE USE THE MOST STRINGENT OF  
9 THE VARIOUS REFERENCE DOSES THAT MIGHT EXIST FOR A GIVEN  
10 CONTAMINANT. CARCINOGENS ARE DIFFERENT. WHEN WE DO  
11 TOXICITY ASSESSMENT FOR CARCINOGENS, WE ASSUME THAT ANY  
12 CONTAMINATION TO A CARCINOGEN, NO MATTER HOW SMALL,  
13 RESULTS IN A PROPORTIONAL LEVEL OF RISK. IN OTHER  
14 WORDS, THERE IS NO ZERO RISK LEVEL OF EXPOSURE AS THERE  
15 ARE FOR NON-CARCINOGENS. AT SUPERFUND SITES, WE'RE  
16 REQUIRED TO REDUCE THE RISK ASSOCIATED WITH EXPOSURE TO  
17 CARCINOGENS TO LESS THAN ONE TIMES TEN TO THE MINUS  
18 FOUR. IN OTHER WORDS, IN TERMS OF ODDS, ONE IN TEN  
19 THOUSAND. FOR THE RUTLEDGE SITE THIS MEANS THAT UNDER  
20 EVEN THE MOST WORSE CASE AND STRINGENT EXPOSURE  
21 SCENARIOS WHICH INCLUDES THE FUTURE EXPOSURE SCENARIO OF  
22 PEOPLE LIVING ON THE SITE FOR THEIR ENTIRE LIVES, THAT  
23 MEANS THOSE RESIDENTS SHOULD NOT HAVE A GREATER THAN ONE  
24 IN TEN THOUSAND CHANCES OF CONTRACTING CANCER DUE TO  
25 EXPOSURE TO SITE CONTAMINANTS. THAT'S AN IMPORTANT

1 POINT, EXPOSURE TO SITE CONTAMINANTS. THIS ONE IN TEN  
2 THOUSAND IS THE EXCESS RISK ASSOCIATED WITH THE SITE,  
3 THE RISK ABOVE AND BEYOND THE RISK THAT WE ALL FACE  
4 LIVING IN A MODERN ENVIRONMENT OF CONTRACTING CANCER.  
5 THE RISK IS FAIRLY HIGH AS WE ALL KNOW. A VERY MANY  
6 PEOPLE CONTRACT CANCER AND DIE FROM CANCER. AND IT'S  
7 NOT CLEARLY UNDERSTOOD WHAT ALL THE CAUSES ARE OR WHAT  
8 ALL THE REASONS WHY PEOPLE CONTRACT CANCER. BUT WHAT WE  
9 TRY TO DO IN CONTROLLING CARCINOGENIC RISK FROM A  
10 SUPERFUND SITE IS MAKE SURE THAT THE ADDITIONAL RISK  
11 THAT ANYONE EXPERIENCES AS A RESULT OF SITE  
12 CONTAMINATION IS ONE IN TEN THOUSAND. ACTUALLY, YOUR  
13 RISK OF CONTRACTING CANCER IF YOU LIVED TO A RIPE OLD  
14 AGE IS PRETTY MUCH ONE IN FOUR OR ONE IN THREE. SO THE  
15 EXCESS RISK THAT WE TRY TO CONTROL SITE EXPOSURE TO IS  
16 MUCH, MUCH LESS THAN THE ENVIRONMENTAL RISK THAT WE ALL  
17 EXPERIENCE FROM LIVING IN A MODERN WORLD. SO WE'RE NOT  
18 SAYING THAT BY CONTROLLING THE RUTLEDGE PROPERTY  
19 EXPOSURE THAT WE'RE GOING TO REDUCE EVERYBODY'S  
20 INDIVIDUAL RISK OF CANCER TO ONE IN TEN THOUSAND; WE'RE  
21 JUST GOING TO REDUCE THE RISK ASSOCIATED WITH THIS SITE  
22 TO ONE IN TEN THOUSAND OR LESS. WITH THAT IN MIND, I'M  
23 GOING TO JUMP RIGHT TO THE RESULTS OF THE RISK  
24 ASSESSMENT. HERE'S A BREAKDOWN OF THE SITE RISKS, THE  
25 FOUR EXPOSURE SCENARIOS, THE HAZARD INDEX, WHICH IS NON-

1 CARCINOGENIC RISK, AND CARCINOGENIC RISK. FOR THE ON  
2 SITE WORKER AND THE SITE VISITOR YOU CAN SEE THAT THE  
3 HAZARD INDEX IS MUCH, MUCH LESS THAN ONE AND THAT THE  
4 CARCINOGENIC RISK IS VERY LOW. NOW, CONVERTING THOSE  
5 NUMBERS TO ODDS, THIS IS ABOUT ONE IN A HALF A MILLION  
6 AND THIS IS ABOUT ONE IN FIVE MILLION. FOR THE FUTURE  
7 EXPOSURE SCENARIOS FOR THE ADULT RESIDENT AND THE CHILD  
8 RESIDENT, THE HAZARD INDEX IS MUCH GREATER THAN ONE  
9 WHICH MEANS THERE IS AN UNACCEPTABLE LEVEL OF RISK, AND  
10 THE CARCINOGENIC RISK IS MUCH GREATER THAN ONE TIMES TEN  
11 TO THE MINUS FOUR WHICH AGAIN MEANS THERE IS AN  
12 UNACCEPTABLE CARCINOGENIC RISK. RATHER THAN COMPARED TO  
13 THE ONE IN TEN THOUSAND, THIS IS ABOUT ONE IN SEVENTY  
14 AND THIS IS ABOUT ONE IN A HUNDRED. SO ONCE WE HAVE  
15 DETERMINED THAT THERE IS AN UNACCEPTABLE LEVEL OF RISK  
16 ASSOCIATED WITH THE SITE, WE TRIED TO LOOK AT WHERE IS  
17 THAT RISK COMING FROM. AND REMEMBER FROM THAT PREVIOUS  
18 SLIDE THE CURRENT RISK LEVELS ARE ACCEPTABLE; IT'S ONLY  
19 THE FUTURE EXPOSURE SCENARIOS, THE IDEA THAT SOMEONE  
20 WOULD COME THERE, BUILD A HOUSE ON THE SITE, SINK A WELL  
21 INTO THE CONTAMINATED GROUNDWATER, AND USE THAT AS A  
22 POTABLE WATER SUPPLY FOR DRINKING, COOKING, BATHING.  
23 BUT EVEN UNDER THOSE EXPOSURE SCENARIOS, WE LOOK AT  
24 WHERE THE RISK IS COMING FROM. AND AS SANDY HAS ALREADY  
25 MENTIONED, IT'S ALL COMING FROM GROUNDWATER PATHWAYS,

1 DRINKING, AND SHOWERING. THE HAZARD INDEX ASSOCIATED  
2 WITH THAT PATHWAY IS 400. THE RISK IS ABOUT ONE IN  
3 SEVENTY AGAIN. ALL THE OTHER PATHWAYS, THE CONTACT WITH  
4 SOIL, THE ACCIDENTAL INGESTION OF SOIL, THE PLAYING IN  
5 THE CREEKS, ALL THAT ADDS UP TO A HAZARD INDEX OF .32;  
6 AGAIN MUCH LESS THAN ONE, AND A CARCINOGENIC RISK OF  
7 ABOUT THREE TIMES TEN TO THE MINUS FIVE WHICH IS ABOUT  
8 ONE IN THIRTY-THREE THOUSAND. SO IF WE COULD CONTROL  
9 THE GROUNDWATER PATHWAY AND EXPOSURE TO CONTAMINATED  
10 GROUNDWATER, WE CAN ESSENTIALLY ELIMINATE ALL OF THE  
11 UNACCEPTABLE RISK ASSOCIATED WITH THIS SITE STILL  
12 KEEPING IN MIND THAT THAT UNACCEPTABLE RISK IS STILL  
13 BASED ONLY ON FUTURE EXPOSURE SCENARIOS, EXPOSURE  
14 SCENARIOS WHICH DON'T EXIST NOW. THAT WAS FOR THE  
15 ADULT. THIS IS THE SAME THING FOR THE CHILD. IT'S THE  
16 SAME STORY, IT'S JUST THAT THE RISK NUMBERS ARE A LITTLE  
17 HIGHER. THE HAZARD INDEX 948 RATHER THAN 400 JUST  
18 REFLECTS AGAIN THE SMALLER BODY WEIGHT OF THE CHILD, THE  
19 GREATER FREQUENCY THAT A CHILD MIGHT PLAY IN A CREEK AS  
20 OPPOSED TO AN ADULT. HOPEFULLY, MOST ADULTS WOULDN'T GO  
21 OUT AND PLAY IN THE CREEK EVEN IF THEY KNEW IT WAS - - -  
22 WHETHER THEY KNEW IT WAS CONTAMINATED OR NOT. ALL THE  
23 OTHER PATHWAYS - - - WELL, FOR THE CHILD RESIDENT,  
24 THERE'S STILL SOME UNACCEPTABLE RISK ASSOCIATED WITH  
25 SOME OF THE OTHER PATHWAYS, BUT THIS AGAIN IS A FUTURE



1 EXPOSURE SCENARIO AND IS NOT OCCURRING NOW. AND THE  
2 CARCINOGENIC RISK IS VERY LOW AGAIN, ABOUT ONE IN  
3 TWENTY-THREE THOUSAND. AND THEN THE FINAL QUESTION ONCE  
4 WE IDENTIFY THAT THERE IS SOME RISK AT THE SITE, WHAT  
5 CONTAMINANTS ARE CAUSING THE RISK. REMEMBER THAT BIG  
6 LAUNDRY LIST OF CONTAMINANTS THAT WE HAD? I DON'T KNOW  
7 EXACTLY HOW MANY, 25 OR 30, WHAT CONTAMINANTS ARE  
8 CONTRIBUTING TO THE EXCESS RISK AT THE SITE? FOR THE  
9 ADULT RESIDENT, 99.8 PERCENT OF THE NON-CARCINOGENIC  
10 RISK COMES FROM THREE CONTAMINANTS IN THE GROUNDWATER:  
11 MANGANESE, TRICHLOROETHENE - - - EXCUSE ME, THREE  
12 CONTAMINANTS, AND 1,2 DICHLOROETHENE. ONE HUNDRED OF  
13 THE CARCINOGENIC RISK COMES FROM TWO CONTAMINANTS:  
14 TRICHLOROETHENE, WHICH IS ONE OF THE SAME FOR THE NON-  
15 CARCINOGENIC RISK, AND VINYL CHLORIDE. FOR THE CHILD  
16 RESIDENTS, THE SAME CONTAMINANTS CONTRIBUTE ALMOST  
17 EXACTLY THE SAME LEVELS OF RISK. I MIGHT POINT OUT THAT  
18 1,2 DICHLOROETHENE AND VINYL CHLORIDE ARE LIKELY TO BE  
19 BREAKDOWN OR DEGRADATION PRODUCTS OF THE  
20 TRICHLOROETHENE. SO PROBABLY THERE'S A TRICHLOROETHENE  
21 PROBLEM THERE OR A DISPOSAL THERE AT ONE TIME. OVER THE  
22 YEARS, NATURAL DEGRADATION PRODUCTS TEND TO BREAK THAT  
23 DOWN INTO LESS COMPLEX MOLECULES, AND THOSE DEGRADATION  
24 PRODUCTS TEND TO BE 1,2 DICHLOROETHENE AND VINYL  
25 CHLORIDE. SO YOU'RE SEEING NOT ONLY THE ORIGINAL SOURCE

1 OF THE PROBLEM IN THE TRICHLOROETHENE, BUT ALSO IN THE  
2 BREAKDOWN PRODUCTS OF THAT OVER TIME. SO FINALLY,  
3 CONCLUSIONS ASSOCIATED WITH THE RUTLEDGE BASELINE RISK  
4 ASSESSMENT, THERE IS NO UNACCEPTABLE RISK UNDER CURRENT  
5 EXPOSURE CONDITIONS FOR THE SITE VISITOR OR THE ON SITE  
6 WORKER. ALL THE UNACCEPTABLE RISK ASSOCIATED IS  
7 ASSOCIATED WITH POTENTIAL FUTURE EXPOSURE SCENARIOS. IN  
8 OTHER WORDS, PEOPLE LIVING ON THE SITE, AND EVEN THOSE  
9 RISKS ARE ASSOCIATED ALMOST EXCLUSIVELY WITH EXPOSURE TO  
10 CONTAMINATED DRINKING WATER, CONTAMINATED GROUNDWATER.  
11 AND THE RISK LEVELS ARE PRIMARILY ASSOCIATED WITH  
12 EXPOSURE TO MANGANESE, TRICHLOROETHENE, VINYL CHLORIDE,  
13 AND 1,2 DICHLOROETHENE. SO I'LL LET SANDY GO BACK OVER  
14 OUR PROPOSED PLAN FOR THE SITE, AND I'LL BE AROUND FOR  
15 QUESTIONS REGARDING THE RISK ASSESSMENT LATER ON. THANK  
16 YOU.

17 SANDY MYERS: THANK YOU, BERNIE. AT THIS POINT,  
18 I'D LIKE TO BRIEFLY DISCUSS WHAT WE DID AT THE REMEDIAL  
19 INVESTIGATION. HOW DID WE GO OUT AND STUDY THE SITE,  
20 HOW DID WE COME UP WITH WHICH PATHWAYS WE THINK CREATE  
21 THE MOST RISK. ESSENTIALLY, WE TOOK SEVEN SURFACE WATER  
22 SAMPLES, SEVEN SEDIMENT SAMPLES, A TOTAL OF SIXTY-FIVE  
23 SOIL SAMPLES, AND FORTY-ONE GROUNDWATER SAMPLES. I'M  
24 GOING TO THROW UP A FEW CHARTS HERE TO SHOW YOU WHERE  
25 THESE SAMPLES WERE TAKEN. IT'S A LITTLE DIFFICULT TO

1       SEE; I APOLOGIZE. BUT THIS IS THE SITE MAP, AND THESE  
2       ARE THE LOCATIONS OF THE SURFACE WATER AND SEDIMENT  
3       SAMPLES RIGHT HERE, HERE, THERE, THERE, AND HERE. THOSE  
4       ARE THE SEVEN SPOTS. FOR THE 65 SOIL SAMPLES I'M NOT  
5       GOING TO BE ABLE TO POINT EVERY ONE OUT TO YOU, BUT  
6       THESE DOTS INDICATE WHERE WE TOOK SURFACE SOIL SAMPLES.  
7       AS YOU CAN SEE, THEY'RE SCATTERED ALL OVER THE SITE.  
8       AND THESE ROUND DOTS INDICATE WHERE WE TOOK SUBSURFACE  
9       SOIL SAMPLES. THE POINT OF THESE FIGURES IS SIMPLY TO  
10      SHOW YOU THAT WE SPREAD THESE SAMPLES OUT ALL OVER THE  
11      SITE WHERE WE FEEL THE WASTE DISPOSAL PRACTICES  
12      OCCURRED, AND WE FEEL LIKE WE SAMPLED THESE MEDIA PRETTY  
13      WELL. FOR THE GROUNDWATER, WE SAMPLED IN THESE  
14      LOCATIONS. AND AS YOU CAN SEE, YOU HAVE A SHALLOW WELL  
15      AND A DEEP WELL OR A ROCK WELL SO YOU'VE GOT TWO WELLS  
16      AT EACH ONE OF THESE LOCATIONS. WHEN WE SAMPLED THE  
17      GROUNDWATER, WE CAME UP WITH LIKE BERNIE SAID, A LAUNDRY  
18      LIST OF CONTAMINANTS. AND YOU RUN THOSE NUMBERS THROUGH  
19      THE RISK ASSESSMENT, AND YOU DISCOVER WHERE THE PROBLEM  
20      IS. AND IN DOING SO, YOU END UP WITH AN AREA OF  
21      CONTAMINATED GROUNDWATER CALLED THE PLUME. THIS FIGURE  
22      HERE INDICATES THE GROUNDWATER CONTAMINANT PLUME IN  
23      RELATION TO THE SITE BOUNDARY. AS YOU CAN SEE, THE  
24      CONTAMINATED GROUNDWATER PLUME IS BASICALLY WITHIN THE  
25      SITE BOUNDARY. THIS PLUME IS A COMBINATION OF ALL FOUR

1 CONTAMINANTS THAT WE'RE LOOKING AT: THE  
2 TRICHLOROETHENE, THE 1,2 DICHLOROETHENE, MANGANESE, AND  
3 VINYL CHLORIDE. ALL THOSE CONTAMINANTS ADDED TOGETHER  
4 GIVE US THIS ONE PLUME. SO THIS TELLS US WHERE WE THINK  
5 THE PLUME IS. WE FEEL VERY CONFIDENT THAT WE'VE DEFINED  
6 THE PLUME IN THIS AREA. AND FROM THIS POINT, WE HAVE AN  
7 IDEA OF WHAT WE'RE DEALING WITH. WE THEN EXAMINED THE  
8 CONTAMINANTS THAT WE'RE TALKING ABOUT IN PARTICULAR.  
9 THIS CHART HERE SHOWS THE THREE VOLATILE ORGANICS AND  
10 THE ONE INORGANIC, MANGANESE. IT ALSO SHOWS THE HIGHEST  
11 LEVEL THAT WAS DETECTED ON SITE, AND IT SHOWS THE  
12 REMEDIATION LEVELS THAT WE'RE GOING TO CLEAN THIS UP TO.  
13 NOW, THESE THREE VOLATILE ORGANICS, THE CLEANUP LEVEL IS  
14 SIMPLE. IT'S WHAT'S CALLED THE M.C.L. OR THE MAXIMUM  
15 CONTAMINANT LEVEL. AND FOR THOSE OF YOU THAT RECEIVED A  
16 PROPOSED PLAN, IN THE BACK IT GIVES A DEFINITION OF  
17 MAXIMUM CONTAMINANT LEVEL. BUT SIMPLY, IT'S A  
18 PERMISSIBLE LEVEL THAT THE AGENCY ACCEPTS. THAT'S  
19 ESSENTIALLY THE BOTTOM LINE. THESE LEVELS ARE WHAT  
20 WE'RE GOING TO CLEAN UP TO FOR THESE THREE VOLATILIZE.  
21 NOW FOR MANGANESE, WE'RE GOING TO CLEAN UP ABOUT 200.  
22 THE UNITS ON THIS ARE MICROGRAMS PER LITER. THERE IS NO  
23 M.C.L. FOR MANGANESE. HOW WE'VE COME UP WITH THIS  
24 NUMBER IS IT'S APPROXIMATELY THE BACKGROUND  
25 CONCENTRATION OF MANGANESE. YOU TAKE A SAMPLE FROM OFF

1 SITE AND YOU COMPARE THAT TO WHAT YOU'VE GOT ON SITE.  
2 WE HAD HIGH LEVELS OF MANGANESE ON SITE AT ABOUT 3,600.  
3 WE NEED TO CLEAN UP TO BACKGROUND, WHICH IS ESSENTIALLY  
4 200 MICROGRAMS PER LITER. SO THESE - - -

5 TONY JANNETTA: CAN WE ASK QUESTIONS AS YOU GO  
6 ALONG OR DO YOU WANT TO WAIT UNTIL A CERTAIN TIME.

7 SANDY MYERS: NO, ABSOLUTELY. YOU CAN ASK  
8 QUESTIONS NOW.

9 TONY JANNETTA: FROM THE BEGINNING THAT AUGHT TO BE  
10 MADE KNOWN BECAUSE WE HAD QUESTIONS FROM THE PREVIOUS  
11 SPEAKER. AT THE END, HALF OF US WILL FORGET HALF OF THE  
12 PROGRAM. I DO HAVE SOME QUESTIONS ON THE AREA OF THE  
13 CONTAMINATED SOURCE THAT WAS TESTED. MY NAME IS TONY  
14 JANNETTA, AND THE QUESTIONS I HAVE WITH RESPECT TO THE  
15 AREA THAT WAS TESTED AND THE THREE, FOUR, OR FIVE  
16 COMPOUNDS THAT WERE DETECTED TO HAVE CARCINOGENS IN THE  
17 WATER, YOU'RE SAYING THE SOIL DOES NOT - - - WE'RE NOT  
18 WORRIED ABOUT THE SOIL AS OF NOW. WE'RE WORRIED ABOUT  
19 THE WATER, UNDERGROUND WATER STREAMS. WAS THE  
20 NEIGHBORHOOD ADEQUATELY TESTED IN ADDITION TO THE SITE  
21 AREA AS TO HOW FAR THE PLUME WAS ON THE STRATOSPHERE OF  
22 THE WATER?

23 SANDY MYERS: WE FEEL LIKE - - - I WANT TO SHOW YOU  
24 A MAP THAT HAS THE WELLS. WHAT WE'VE DONE AS YOU CAN  
25 SEE UP HERE IN THE CORNER, THIS PRIVATE WELL WHICH IS

1        APPROXIMATELY 500 FEET IN THAT DIRECTION, WE SAMPLED  
2        THAT WELL. WE SAMPLED THIS PRIVATE WELL HERE. WE  
3        SAMPLED A PRIVATE WELL THAT'S ON SITE; IT'S KIND OF HARD  
4        TO SEE. AND WE SAMPLED THIS OTHER PRIVATE WELL HERE.

5                JERRY COLLINS: ARE THERE ANY OTHER PROPERTIES IN  
6        THAT VICINITY IN THE PERIMETER WHERE THE PLUME IS THAT  
7        ARE ON WELL WATER OR CITY WATER? MY NAME IS JERRY  
8        COLLINS. MY QUESTION IS YOU'VE CHECKED THE WELLS AND  
9        THE OUTER LOCATIONS MORE OR LESS IT SEEMS LIKE. THE  
10       BIGGEST QUESTION, ARE THERE WELLS IN THE VICINITY JUST  
11       OUTSIDE THAT PLUME OR IS EVERYONE THERE IN THAT AREA,  
12       ARE THEY ON CITY WATER AND SEWAGE?

13               SANDY MYERS: THESE FOLKS RIGHT HERE ARE ON CITY  
14        WATER. WE'VE BEEN INDICATED THEY'RE ON CITY WATER.  
15        THIS ARROW HERE, BY THE WAY, INDICATES THE DIRECTION OF  
16        GROUNDWATER FLOW. WHAT THAT'S TELLING YOU IS THAT'S  
17        - - - THIS IS THE DIRECTION THAT THE CONTAMINANTS ARE  
18        MOVING ESSENTIALLY. WE SAMPLED THESE WELLS OUT HERE,  
19        AND WE CAME UP WITH VERY LOW HITS OR VERY LOW  
20        CONCENTRATIONS AT THIS ONE WELL. THE LEVELS OF THE  
21        CONTAMINANT THAT WE FOUND HERE ARE ALREADY BELOW THE  
22        FEDERAL M.C.L. OF FIVE MICROGRAMS PER LITER. SO THERE  
23        WAS A TRACE HIT THERE, YES, BUT THE LEVEL THAT WE FOUND  
24        THERE IS SO LOW THAT TO THIS POINT IT'S NOT FIGURED IN  
25        INTO THE SCOPE OF THIS GROUNDWATER PLUME.

1 TONY JANNETTA: THAT'S MOSTLY CONTAINED TO THE  
2 SITE? MOSTLY THE PROBLEM IS CONTAINED TO THE SITE?

3 SANDY MYERS: YES, SIR. AT THIS POINT WE FEEL THAT  
4 THE PLUME IS ESSENTIALLY THE SHADED AREA HERE. NOW, THE  
5 VERY FIRST SLIDE THAT I SHOWED YOU ALL TONIGHT, THIS WAS  
6 THE FIRST SLIDE, THIS SHOWS OTHER WELLS IN THE AREA.  
7 NOW, WE WENT IN AND ASKED THESE RESIDENTS IF THEY WERE  
8 USING THESE WELLS, AND WE TOOK WHAT'S CALLED A WELL  
9 SURVEY. WE DID NOT SAMPLE THESE WELLS BECAUSE WE FELT  
10 THAT THEY'RE APPROXIMATELY, IF YOU CAN SEE THE SCALE,  
11 THEY'RE ANYWHERE FROM A QUARTER TO A HALF A MILE AWAY.  
12 SO GIVEN A FEW CONSIDERATIONS LIKE THE GROUNDWATER  
13 HYDROLOGY AND HOW THE SITE - - - THE SITE CONCEPTUAL  
14 MODEL, WHAT WE DID WAS SAMPLE THESE WELLS INSTEAD. THIS  
15 WELL HERE IS SLIGHTLY DOWNGRADE FROM THE SITE, AND IT'S  
16 ROUGHLY 500 FEET FROM THE SITE SO WE CHOSE TO SAMPLE  
17 THAT WELL.

18 TONY JANNETTA: THE DEPTH WHEN YOU FIRST TRACED  
19 CONTAMINANTS IN THE WELL WOULD BE WHAT FROM THE MINIMUM  
20 TO THE DEEPEST POINT?

21 SANDY MYERS: THAT'S A GOOD QUESTION. THE DEPTH OF  
22 THESE WELLS, OBVIOUSLY WE'VE GOT SHALLOW AND ROCK WELLS  
23 AND ACROSS THE SITE THOSE DEPTHS ARE GOING TO VARY. I  
24 BELIEVE OUR DEEPEST WELL IS ABOUT 58 FEET OR 56 FEET,  
25 SOMEWHERE IN THAT NEIGHBORHOOD. AND OUR SHALLOW WELL

1 MIGHT BE 25 FEET. BUT AGAIN, THE DEPTH OF THESE WELLS  
2 VARY, BUT THAT GIVES YOU A BROAD RANGE.

3 TONY JANNETTA: DOES THAT CORRELATE WITH THE  
4 HOMEOWNERS' WELLS AND HOW DEEP THEY WERE?

5 SANDY MYERS: THAT'S AN EXCELLENT QUESTION AND THAT  
6 IS SOMETHING THAT WRITTEN IN THIS PROPOSED PLAN WE ARE  
7 GOING TO INVESTIGATE THAT AT THE REMEDIAL DESIGN PHASE.  
8 WHAT WE'RE GOING TO DO IS GO BACK IN PARTICULAR AND LOOK  
9 AT THESE PRIVATE WELLS. IN PARTICULAR PRIVATE WELL 4,  
10 WE'RE GOING TO GO BACK AND CHECK THE DEPTH OF THAT WELL.  
11 AND IF THAT WELL IS SCREENED OR IF IT'S MUCH DEEPER THAN  
12 THE WELLS THAT WE HAVE ON SITE, LET'S SAY IT'S AT 150  
13 FEET OR 100 FEET, THEN WE'RE GOING TO HAVE TO GO BACK  
14 AND PUT A DEEPER WELL TO MAKE SURE THAT THE CONTAMINANTS  
15 AREN'T GOING UNDERNEATH THIS.

16 TONY JANNETTA: WHY HASN'T THIS BEEN DONE TO BEGIN  
17 WITH? SEEMS LIKE IT'S ASS-BACKWARDS. I MEAN WE'RE  
18 SPENDING EPA MONEY; WE'RE SPENDING TAXPAYERS' MONEY.  
19 LOOKS LIKE TO ME TO GET AN ANALYSIS AND YOU'RE DIGGING  
20 WELLS, YOU WOULD SURVEY THE WHOLE SITE AND IF THERE ARE  
21 DEEPER WELLS, YOU WOULD GO DEEPER IF YOU FOUND TRACES AT  
22 ALL IN THE RESIDENTIAL WELLS. SO YOU'RE REALLY  
23 REDUPLICATING WHAT YOU'RE GOING TO HAVE TO DO IF THAT  
24 HAPPENS. AND YOU'RE SAYING GROUNDWATER IS THE ONLY  
25 CONTAMINATED SOURCE. HOW ABOUT THE CITY'S



1 INFRASTRUCTURE ON CHERRY ROAD, WATER AND SEWER. HAS  
2 ANYTHING BEEN TESTED ACROSS THE ROAD TO SEE IF THERE'S  
3 ANY CONTAMINANTS ON THE CITY SIDE PERTAINING TO THE  
4 CITY'S INFRASTRUCTURE, PERTAINING TO WATER AND SEWER?  
5 THERE'S BEEN SITUATIONS WHERE YOU COULD HAVE  
6 CONTAMINANTS INFILTRATING CITY SYSTEMS IN THE GROUND.  
7 SO IF YOU'VE GOT A LOW WATER TABLE, WHICH IT VARIES FROM  
8 TIME TO TIME, YOU MAY HAVE A BREAK IN THE CITY SYSTEM  
9 WHERE YOU'VE GOT CONTAMINANTS FROM THE SITE GOING BACK  
10 IN THE CITY SYSTEM. SO HAS THAT BEEN LOOKED AT?

11 SANDY MYERS: I'D LIKE TO ADDRESS YOUR FIRST  
12 QUESTION FIRST. YOU SAID THAT IT SOUNDS LIKE WE'RE  
13 GOING BACKWARDS HERE. WE'RE SAYING THAT WE'RE GOING TO  
14 COME BACK AND LOOK AT THIS WELL, WE MIGHT HAVE TO END UP  
15 PUTTING ANOTHER DEEP WELL. THAT IS TRUE, BUT TO THIS  
16 POINT IF WE DO GO BACK AND DO THAT, IT'S NOT GOING TO  
17 CHANGE OUR REMEDIAL ALTERNATIVE WHICH IS ESSENTIALLY  
18 GOING TO BE GROUNDWATER TREATMENT.

19 TONY JANNETTA: OKAY, QUESTION. GROUNDWATER  
20 TREATMENT. YOU'VE ALREADY - - - I WOULD ASSUME THAT  
21 YOU'VE ALREADY DONE A BASIC TREATMENT OF THE GROUNDWATER  
22 THAT EXISTS FROM SITE.

23 SANDY MYERS: NO, SIR. WE HAVE NOT.

24 TONY JANNETTA: YOU HAVE NOT DONE THAT YET?

25 SANDY MYERS: NO, SIR.

1           TONY JANNETTA: YOU DON'T KNOW WHAT CHEMICALS OR  
2           ANYTHING WILL NEUTRALIZE OR BRING INTO COMPATIBILITY  
3           BEFORE YOU EVEN START DUMPING IT IN THE CITY SYSTEM OR  
4           WHATEVER SYSTEM, METHOD YOU PLAN TO USE. NO METHOD HAS  
5           BEEN USED WHEN YOU EXTRACTED THIS WATER OUT TO BRING IT  
6           DOWN TO AN ACCEPTABLE LEVEL FOR AN ACCEPTABLE DUMPING,  
7           WHEREVER THAT SITE MAY BE. HAS ANYTHING BEEN TRIED TO  
8           NEUTRALIZE WHAT'S IN THE WATER SYSTEM NOW?

9           SANDY MYERS: NO, SIR. WE'RE SIMPLY IN THE  
10          INVESTIGATION PHASE OF THE SUPERFUND PROCESS RIGHT NOW.  
11          WE'RE LOOKING AT DIFFERENT ALTERNATIVES THAT WE CAN USE  
12          TO REMEDIATE THE SITE. WE HAVE NOT EXTRACTED THE  
13          GROUNDWATER FROM THE SITE.

14          TONY JANNETTA: IS THERE TECHNOLOGY ON THOSE  
15          COMPOUNDS THAT YOU RELATED TO THAT WILL BRING IT TO AN  
16          ACCEPTABLE LEVEL BEFORE YOU EVEN CONSIDER DUMPING IT  
17          INTO THE CITY SYSTEM?

18          BERNIE HAYES: AS SANDY WAS SAYING, WE ARE RIGHT  
19          NOW JUST TRYING TO DEFINE THE EXTENT OF THE  
20          CONTAMINATION AND TO TRY AND TALK ABOUT TREATMENT  
21          ALTERNATIVES OR TECHNOLOGIES THAT MIGHT ADDRESS IT. WE  
22          HAVE A GOOD IDEA OF WHAT'S IN THE GROUNDWATER. WE  
23          TESTED THE GROUNDWATER FOR HUNDREDS OF CONTAMINANTS AND  
24          FOUND THE ONES THAT WE HAVE DESCRIBED ALREADY. WE KNOW  
25          THAT THERE ARE TECHNOLOGIES THAT CAN DEAL WITH TAKING

1       THOSE CONTAMINANTS OUT OF THAT GROUNDWATER SO THAT THE  
2       WATER IS REMEDIATED TO A POINT WHERE IT'S NOT A PROBLEM  
3       NO MATTER HOW YOU GET RID OF IT. BUT WE'RE SKIPPING WAY  
4       AHEAD HERE AS FAR AS THE PROPOSED PLAN GOES. OBVIOUSLY  
5       A LOT OF YOU HAVE ALREADY READ IT, BUT THE IDEA OF  
6       PUTTING AN END TO THE TREATMENT SYSTEM THAT ALREADY  
7       EXISTS AND THAT WILL BE EFFECTIVE FOR REMOVING THOSE  
8       CONTAMINANTS IS A VERY COST EFFECTIVE WAY OF DOING IT  
9       RATHER THAN BUILDING A WHOLE OTHER TREATMENT SYSTEM TO  
10      DEAL WITH IT SPECIFICALLY.

11           TONY JANNETTA: THE POINT ON THAT WOULD BE IF  
12      YOU'RE GOING TO TAKE RAW UNDERGROUND WATER, WE DON'T  
13      KNOW HOW LONG, HOW BIG THIS PLUME IS. DO WE KNOW THAT?

14           SANDY MYERS: IT'S AN ESTIMATION, LIKE I SAID  
15      BEFORE. YES.

16           TONY JANNETTA: YOU WOULD KNOW WHERE THE BEGINNING  
17      AND ENDING POINT WOULD BE ONCE YOU START PUMPING?

18           BERNIE HAYES: THAT'S REALLY A VERY DIFFICULT THING  
19      TO DO. I MEAN THERE'S NOT - - - IT'S VERY DIFFICULT TO  
20      ESTIMATE HOW LONG IT WILL TAKE TO PUMP A GIVEN VOLUME OF  
21      CONTAMINATION OUT OF THE GROUND.

22           TONY JANNETTA: YOU'RE ASKING THE CITY OF ROCK HILL  
23      TO COME IN AND PUT ADDITIONAL CHEMICALS IN THEIR WATER  
24      TO TREAT THIS UNDERGROUND WATER WITH THE BULK OF THE  
25      CITY'S WATER, WITH THE CITY'S WATER ADDITIONAL

1 CHEMICALS. I'M SAYING THAT THIS IS A CONSIDERATION ARE  
2 WE - - - WHERE WE MAY BE GOING ON CONSIDERING THIS  
3 OPTION, I'M SAYING IT WOULD BE BETTER TO TREAT IT BEFORE  
4 YOU DUMP IT INTO THE CITY MAIN, CITY SEWER ON SITE TO  
5 GET SOME OUT OF THE WAY. THEN THE CITY CAN TAKE IT FROM  
6 THAT POINT IF THAT WAS AN OPTION.

7 BERNIE HAYES: THAT'S EXACTLY THE KIND OF COMMENT  
8 WE LIKE TO HEAR.

9 TONY JANNETTA: YOU'RE PUTTING THE CITY AT RISK BY  
10 JUST RUNNING IT THROUGH THE CITY SYSTEM BECAUSE IT'S  
11 PUTTING ADDITIONAL CHEMICALS IN THE CITY'S WATER  
12 TREATMENT FILTER PLANT.

13 BERNIE HAYES: THAT'S A GOOD POINT, AND THOSE ARE  
14 EXACTLY THE KIND OF COMMENTS THAT WE ARE HAVING THE  
15 MEETING TO HEAR BECAUSE JUST AS THE DOCUMENT SAYS, THIS  
16 IS A PROPOSED PLAN. WE HAVE NOT MADE FINAL DECISION  
17 ABOUT WHAT WE'RE GOING TO DO WITH THIS GROUNDWATER OR  
18 HOW WE'RE GOING TO REMEDIATE THE SITE. SO THESE ARE  
19 EXACTLY THE KIND OF THINGS THAT WE NEED TO HEAR IS THE  
20 PUBLIC'S REACTION OR THE PEOPLE'S REACTION TO THESE  
21 VARIOUS TREATMENT OPTIONS AND THE PROBLEMS THAT THEY MAY  
22 FORESEE WITH IT. I THINK WE NEED TO COME BACK TO THE  
23 QUESTION OF TALKING ABOUT THE TREATMENT OPTIONS. AND  
24 SANDY I'M SURE WILL COVER THAT AS PART OF THE  
25 PRESENTATION. AND I KNOW IT'S DIFFICULT TO REMEMBER

1 YOUR QUESTIONS AS THINGS GO ALONG AND IF THERE'S ONE  
2 THAT YOU DON'T THINK YOU CAN HOLD ON TO UNTIL THE END,  
3 THEN CERTAINLY WE'LL TAKE IT. BUT LET'S GO AHEAD AND  
4 GET THROUGH THE PRESENTATION AND MAYBE SOME OF THOSE  
5 QUESTIONS WILL BE ANSWERED BY THE PRESENTATION ITSELF  
6 AND THAT WAY WE WON'T HAVE TO BE HERE SO LONG. SO LET'S  
7 GET THIS ONE THEN - - -

8 JERRY COLLINS: MAY I ASK ONE QUESTION BEFORE WE GO  
9 INTO TALKING ABOUT TREATMENT? YOU HAD MENTIONED THAT  
10 THE PROPERTY THAT WAS A QUARTER MILE OR HALF MILE AWAY  
11 FROM THE SITE THAT YOU HAD ASKED WHETHER THEY WERE USING  
12 THE WELLS OR NOT. YOU DID NOT STATE WHETHER OR NOT THEY  
13 WERE USING THE WELLS.

14 SANDY MYERS: THOSE PROPERTIES, THEY DID HAVE  
15 DRINKING WELLS.

16 JERRY COLLINS: WERE THEY USING THEM?

17 SANDY MYERS: THE MAJORITY OF THEM, YES. I'M NOT  
18 POSITIVE IF ALL OF THEM WERE, BUT I KNOW - - -

19 JERRY COLLINS: BUT YOU DID NOT TEST ANY OF THOSE  
20 WELLS?

21 SANDY MYERS: NO. WE DID NOT TEST THESE WELLS.

22 JERRY COLLINS: IT SOUNDS TO ME LIKE YOU'RE  
23 INCONCLUSIVE ON YOUR COLLECTION.

24 SANDY MYERS: WHAT WE DID INSTEAD WAS WE PLACED  
25 WELLS IN BETWEEN THE SITE SOURCE AREA WHICH WE BELIEVE

1 IS RIGHT IN HERE IN THAT LOCATION. FOR INSTANCE, WE  
2 HAVE A MONITORING WELL 6 WHICH IS A SHALLOW AND A DEEP  
3 WELL WHICH IS DIRECTLY BETWEEN THAT AREA, THE SOURCE  
4 AREA, AND THE RESIDENTIAL WELLS. THAT WELL IS CLEAN.

5 JERRY COLLINS: THERE IS NO CONTAMINATION AT THAT  
6 LEVEL?

7 SANDY MYERS: THERE IS NOT. SO THAT IS SORT OF AN  
8 INDICATION THAT THE CONTAMINANT PLUME HAS NOT EXCEEDED  
9 THE SITE BOUNDARY ON THIS SIDE OF THE PROPERTY.

10 JERRY COLLINS: ALSO, FROM WHAT I'VE READ IN THE  
11 NEWSPAPER THAT THE FIRST UNION BANK PROPERTY WHEN IT WAS  
12 CONSTRUCTED, THEY HAD EXTRACTED I THINK THREE FEET DEEP  
13 OF SOIL BEFORE THEY BUILT THE FOUNDATION. THE PROPERTY,  
14 THAT FIRST UNION BANK, IS NOT INCLUDED IN THAT PERIMETER  
15 THAT USED TO BE PART OF THE ACTUAL PROPERTY OF THE  
16 CHEMICAL COMPANY. IS THAT CORRECT? YOU HAVE A BOUNDARY  
17 GOING AROUND THE BANK. IT'S NOT INCLUDED IN THAT  
18 PERIMETER, IS IT?

19 SANDY MYERS: THAT'S CORRECT.

20 JERRY COLLINS: WHY IS THAT NOT IN THERE, BUT THAT  
21 WAS PART OF THE ORIGINAL?

22 SANDY MYERS: I THINK THAT MARK MIGHT COULD HELP US  
23 MORE WITH THIS QUESTION. BUT I THINK IT'S SIMPLY THE  
24 FACT THAT THE BANK OWNS THIS PROPERTY. AND JUST FOR A  
25 SITE BOUNDARY MAP, WE DID NOT INCLUDE THAT PART OF THE

1 PROPERTY IN THIS BOUNDARY. HOWEVER, THE PLUME, AS YOU  
2 CAN SEE, DOES GO OVER THAT PART OF THE SITE AND IT WILL  
3 BE REMEDIATED.

4 JERRY COLLINS: BUT AS FAR AS THE CONTAMINATED SOIL  
5 THAT WAS OWNED - - - THE PROPERTY THAT WAS ORIGINALLY  
6 OWNED BY THE COMPANY, THE CHEMICAL COMPANY, WAS THAT  
7 AREA WHERE THE BANK SITS WAS INCLUDED IN THAT BUT THAT'S  
8 NOT SHOWN?

9 SANDY MYERS: THAT'S CORRECT.

10 JERRY COLLINS: ACTUALLY THE ENTIRE AREA THAT WAS  
11 PART OF THE CHEMICAL COMPANY?

12 SANDY MYERS: YOU'RE CORRECT.

13 JERRY COLLINS: AND YOU ALSO HAVE NOT STATED ABOUT  
14 THAT FROM WHAT I READ IN THE PAPER THAT I BELIEVE IT WAS  
15 THREE FEET OF SOIL WAS EXTRACTED IN '84 OR '86,  
16 SOMETHING LIKE THAT, WAS BEFORE THEY BUILT THE  
17 FOUNDATION TO THE BANK, AND THAT'S WHEN THEY FOUND THAT  
18 THERE WAS CONTAMINATION LEVELS.

19 SANDY MYERS: RIGHT. EARLY ON IN THE TALK I HAD  
20 MENTIONED THAT THERE WERE TWO REMOVALS THAT TOOK PLACE.

21 JERRY COLLINS: YOU STATED BEHIND THE BANK. YOU  
22 DIDN'T SAY ABOUT THE PROPERTY WHERE THE BANK IS LOCATED.  
23 THEY SAY IN THE PAPERS FROM WHAT I'VE READ THAT ACTUALLY  
24 THEY HAD REMOVED SOIL FROM THE PROPERTY WHERE THE BANK  
25 WAS BUILT ON THAT FOUNDATION AREA. AND YOU ALSO HAVEN'T

1 DONE ANY SOIL TESTS IN THE AREA PROBABLY BECAUSE IT'S  
2 PAVED, I GUESS. ALL THAT AREA IS PROBABLY PAVED MORE  
3 THAN LIKELY.

4 BERNIE HAYES: AGAIN, THAT'S SOMETHING, THAT'S  
5 EXACTLY THE KIND OF THING THAT WE NEED TO HEAR IS  
6 INFORMATION THAT WE MAY NOT HAVE BEEN FULLY AWARE OF OR  
7 THINGS THAT WE NEED TO CHECK UP ON TO SEE IF THERE IS A  
8 NEED TO SAMPLE UNDER THE FILL THAT THE BANK WAS PLACED  
9 ON TO THE EXTENT THAT SOIL WAS REMOVED FROM UNDER THERE  
10 SO THAT'S SOMETHING WE WILL - - -

11 JERRY COLLINS: ALSO, WHY HASN'T IT BEEN BROUGHT UP  
12 AS AN OPTION TO REMOVE THE SOIL IN THIS AREA BECAUSE  
13 WHEN YOU REMOVE THE WATER FROM THIS PLUME, YOU'RE GOING  
14 TO EVENTUALLY GET - - - THE SAME BUILD UP IN WATER IS  
15 JUST GOING TO BE A CONSTANT FILTRATION PROCESS. WHY NOT  
16 REMOVE THE SOIL? THAT'S WHERE THE PROBLEM IS. THE  
17 WATER IS THE RESULT OF IT. THE PROBLEM IS THE SOIL  
18 WHERE THE CHEMICALS AREA. WHY NOT REMOVE THAT?

19 BERNIE HAYES: A GOOD POINT. AND AGAIN, IT'S  
20 SOMETHING THAT I THINK MAY BE COVERED AS PART OF THE  
21 FURTHER PRESENTATION SO LET'S GO AHEAD AND GET THAT OVER  
22 WITH, AND THEN WE'LL COME BACK AND TALK ABOUT SOME OF  
23 THESE THINGS BECAUSE THOSE ARE VERY GOOD POINTS. I MEAN  
24 THOSE ARE EXACTLY THE KIND OF THINGS WE'RE HERE TO TALK  
25 ABOUT AND WE WANT TO GET INPUT IN AS TO WHAT FOLKS THINK



1 ABOUT THE REMEDY OF THE PROPOSAL.

2 SANDY MYERS: VERY QUICKLY, THESE ARE THE VARIOUS  
3 ALTERNATIVES THAT WE LOOKED AT. ESSENTIALLY, WE HAVE  
4 TWO TYPES OF ALTERNATIVES. WE'VE GOT ALTERNATIVE 3A AND  
5 3B WHICH ARE GROUNDWATER EXTRACTION AND TREATMENT ON  
6 SITE, AND 4A AND 4B WHICH ARE EXTRACTION WITH TREATMENT  
7 AT THE P.O.T.W., SENDING THE CONTAMINATED WATER TO THE  
8 P.O.T.W., THE DIFFERENCE BETWEEN EACH JUST BEING THE  
9 NUMBER OF EXTRACTION LEVELS. THESE ARE THE ALTERNATIVES  
10 THAT WE LOOKED AT AND EPA PROPOSED ALTERNATIVE 4B, WHICH  
11 IS GROUNDWATER EXTRACTION USING APPROXIMATELY TWO WELLS  
12 IN DIRECT DISCHARGE TO THE P.O.T.W. THE REASON THAT WE  
13 CHOSE THIS ALTERNATIVE IS WE'VE GOT SIX REASONS: NUMBER  
14 1, IT PROTECTS HUMAN HEALTH AND THE ENVIRONMENT; NUMBER  
15 2, IT MEETS APPLICABLE OR RELEVANT AND APPROPRIATE  
16 REQUIREMENTS WHICH ARE SIMPLY TYPES OF RULES AND  
17 REGULATIONS. THEY MEET THOSE REGULATIONS. THIS  
18 ALTERNATIVE IS EFFECTIVE BOTH IN THE SHORT AND THE LONG  
19 TERM. IT REDUCES CONTAMINANT TOXICITY, MOBILITY, AND  
20 VOLUME. IT'S EASY TO IMPLEMENT, AND IT'S COST  
21 EFFECTIVE. NOW COMING BACK TO THIS CHART HERE, YOU SEE  
22 THE DIFFERENCE FROM TREATING IT ON SITE AND SENDING IT  
23 DOWN THE P.O.T.W. AS FAR AS THE COST GOES. IN CHOOSING  
24 THESE ALTERNATIVES, I FELT PERSONALLY THAT IF THE  
25 P.O.T.W. CAN ACCEPT THIS GROUNDWATER, THEN THERE WAS NO

1        NEED TO BUILD A TREATMENT PLANT ON SITE TO TREAT THE  
2        WATER IF THEY WILL TREAT IT FOR US DOWN THE ROAD.

3                JERRY COLLINS:    MAY I ASK A QUESTION WHILE WE'RE ON  
4        THAT POINT RIGHT THERE?    FIRST OFF, I'M PRETTY SURE  
5        EVERYBODY IS AWARE OF THE FACT THAT THE WASTE TREATMENT  
6        FACILITY ON DAVE LYLE GOT TO A POINT WHERE THEY COULD  
7        NOT HANDLE THE CAPACITY OF THE WASTE.    THEY HAD BEEN  
8        SHIPPING IT TO, I BELIEVE, I MAY NOT HAVE MY FACTS  
9        STRAIGHT, MAYBE LANCASTER OR CHESTER; AND THAT FACILITY  
10       CLOSED DOWN.    AND THIS IS ALSO THE SAME PROBLEM WHERE,  
11       IT WAS NATIONAL NEWS, WHERE THEY WERE USING FECAL MATTER  
12       THAT CAME OUT OF THE DAVE LYLE TREATMENT FACILITY AND  
13       PUTTING IT ON - - - SPREADING IT ON PASTURES AND LETTING  
14       IT SIT STAGNANT FOR SO MANY YEARS BEFORE IT'S USABLE.  
15       WELL NOW, YOU'RE GOING TO DUMP ALL THIS CHEMICAL IN THE  
16       D.O.T. FACILITIES AND WHO'S TO SAY THAT MATTER IS NOT  
17       GOING TO BE SCOOPED UP AND THEN SPREAD ON PASTURES  
18       AGAIN, FIELDS AGAIN.    AND THE WORSE PART ABOUT IT IS  
19       WHEN THEY EXTRACTED THIS WASTE AND SPREAD IT ON THE  
20       FIELDS, THEY DIDN'T FIND OUT UNTIL LATER ON THAT THERE  
21       WERE AIR POCKETS IN THE WASTE TREATMENT FACILITY AND THE  
22       ACTUAL WASTE, THE FECAL HAD NOT DECOMPOSED THOROUGHLY  
23       AND THERE WERE HUMAN SANITARY THINGS FOUND, BUT THEY  
24       ALSO FOUND RAW FECAL MATTER ON THE FIELDS.

25                SANDY MYERS:    RIGHT.    I AM NOT FAMILIAR WITH THAT

1 SITE AND THAT PROJECT.

2 JERRY COLLINS: ARE YOU NOT FAMILIAR WITH THAT  
3 HEADLINE NEWS STORY THAT WAS NATIONAL? ROCK HILL HIT  
4 NATIONAL NEWS FOR THAT.

5 SANDY MYERS: OFF THE TOP OF MY HEAD, NO; I'M SORRY  
6 I'M NOT.

7 JERRY COLLINS: NOBODY SAW THAT STORY?

8 SANDY MYERS: NO. I'M NOT SAYING NO ONE SAW THE  
9 STORY. I'M JUST SAYING I'M NOT FAMILIAR WITH THAT  
10 STORY.

11 JERRY COLLINS: RIGHT, BUT THIS WAS NOT STUDIED  
12 THAT MAYBE THE FACT THAT IF THEY'RE GOING TO PUMP THIS  
13 TO THE D.O.T. CENTER THAT - - -

14 SANDY MYERS: WE'RE TALKING ABOUT EXTRACTING THIS  
15 GROUNDWATER AND SENDING IT VIA THE SEWER LINE TO THE  
16 P.O.T.W. WHERE THEY TREAT WATER.

17 JERRY COLLINS: THIS IS AT DAVE LYLE. THIS IS THE  
18 FACILITY ON DAVE LYLE IS WHERE IT WOULD GO THOUGH.  
19 THAT'S THE SAME FACILITY WHERE THEY SCOOPED THIS WASTE  
20 OUT AND IT WAS SPREAD ON PASTURES AS FERTILIZER.

21 BERNIE HAYES: THAT'S A VERY COMMON PRACTICE.

22 GLEN PELLETT: MY NAME IS GLEN PELLETT. THE  
23 MATERIAL THAT WAS REMOVED AND SENT TO SEVERAL FARMS IN  
24 CHESTER AND YORK COUNTY WAS ACTUALLY MATERIAL THAT WAS  
25 PLACED IN OLD LAGOONS PRE-1984 THAT HAD BASICALLY BEEN

1 ABANDONED IN PLACE. THAT'S NOT FROM THE CURRENT  
2 MANCHESTER PLANT. THAT SLUDGE IS TREATED TOTALLY  
3 SEPARATELY. SO WHAT YOU'RE SPEAKING TO IS NOT THE  
4 SLUDGE THAT'S GOING TO BE GENERATED FROM ANY OF THE  
5 WATER THAT WOULD BE DISCHARGED TO THE P.O.T.W. ANOTHER  
6 QUESTION I HAD, WE WERE TALKING ABOUT MAXIMUM  
7 CONCENTRATIONS OF 84,000 MICROGRAMS PER LITER. DO YOU  
8 HAVE A GUESS AS TO WHAT THE AVERAGE CONCENTRATION MIGHT  
9 BE? IT'S GOT TO BE SIGNIFICANTLY LOWER THAN THAT.

10 BERNIE HAYES: I'M SURE IT WOULD BE. AGAIN, IT'S  
11 DIFFICULT TO DO THAT UNTIL WE DO SOME PUMP TESTS, UNTIL  
12 WE TRY TO DO SOME DETERMINATION OF WHAT THE AVERAGE  
13 INFLUENT MIGHT BE. I THINK JUST TO TRY AND WRAP ALL  
14 THIS UP, NORMAL SEWAGE TREATMENT PLANTS, P.O.T.W.'S,  
15 WHATEVER YOU CALL THEM, ARE VERY EFFECTIVE AT REMOVING  
16 CERTAIN TYPES OF CONTAMINANTS, PARTICULARLY VOLATILE  
17 ORGANICS, WHICH THREE OUT OF FOUR CONTAMINANTS WE HAVE  
18 HERE ARE VOLATILE ORGANICS. THEY TEND TO COME OUT IN  
19 WHAT'S CALLED THE ACTIVATED SLUDGE WHERE THEY BUBBLE A  
20 LOT OF OXYGEN AND A LOT OF AIR THROUGH THIS SEWAGE IN  
21 ORDER TO PROVIDE OXYGEN FOR THE BACTERIA THAT LIVE IN  
22 THERE AND THAT BREAK DOWN THE CONTAMINANTS THAT ARE  
23 NORMALLY IN THE SLUDGE. AT THE SAME TIME, THAT BUBBLING  
24 ACTION, ALL THAT AERATION THAT GOES ON IN THE ACTIVATED  
25 SLUDGE HAS THE BENEFICIAL EFFECT OF REMOVING VOLATILE

1 CONTAMINANTS. SO IT'S UNLIKELY THAT ANY OF THESE  
2 VOLATILES IN THEIR CURRENT FORM ARE GOING TO END UP IN  
3 THE SLUDGE OR IN THE WATER THAT'S GOING OUT OF THE  
4 PLANT. THE SECOND THING TO KEEP IN MIND IS THAT IN  
5 ORDER TO CONTROL THE MIGRATION OF THIS PLUME, AGAIN  
6 WE'RE GETTING AHEAD OF OURSELVES HERE, WE'RE PROBABLY  
7 NOT GOING TO HAVE TO PUMP A WHOLE LOT OF WATER. I MEAN  
8 THIS IS NOT WHAT YOU'D CALL A VERY PRODUCTIVE AQUIFER.  
9 IT'S NOT THE KIND OF THING THAT IN ORDER TO CREATE DRAW-  
10 DOWN IN THE EXTRACTION WELLS YOU HAVE TO PUMP THOUSANDS  
11 AND THOUSANDS OF GALLONS OF WATER. SO THE AMOUNT OF  
12 FLOW THAT WILL BE GENERATED BY CREATING A CONTAINMENT OR  
13 REMEDIATION GROUNDWATER EXTRACTION SYSTEM FOR THIS PLUME  
14 WILL BE VERY LITTLE IN COMPARISON TO THE OVERALL FLOW  
15 THAT'S GOING INTO SUCH TREATMENT PLANT. SO WHETHER OR  
16 NOT THIS SYSTEM WHEN IT'S IN PLACE WHETHER IT'S RUNNING  
17 OR NOT RUNNING IT WILL BE VERY DIFFICULT FOR THE PLANT  
18 EVEN TO KNOW IT IN TERMS OF THE VOLUME THAT THEY'D BE  
19 RECEIVING. NOW, IF IN FACT THE PLANT HAS A CAPACITY  
20 PROBLEM, THAT'S SOMETHING WE NEED TO CHECK ON. AND I'M  
21 GLAD TO HEAR THOSE KINDS OF THINGS BROUGHT OUT SO THAT  
22 WE CAN GO BACK AND MAKE SURE THAT WE'RE NOT GETTING  
23 OURSELVES INTO SOME KIND OF PROBLEM. SO THESE ARE  
24 EXACTLY THE KIND OF THINGS WE WANT TO HEAR. IF THERE IS  
25 A COMPLIANCE PROBLEM WITH THIS PLANT WE NEED TO KNOW, WE

1 NEED TO FIND OUT, ALTHOUGH I THINK THAT WE'VE ALREADY  
2 DETERMINED THAT IT'S IN COMPLIANCE. IF THERE WAS A  
3 SLUDGE PROBLEM, A SLUDGE DISPOSAL PROBLEM, THAT'S  
4 ANOTHER THING THAT WE NEED TO FIND OUT ABOUT. SO THESE  
5 ARE THE THINGS WE CAN GO BACK AND CHECK ON TO MAKE SURE  
6 THAT WE'RE NOT GETTING OURSELVES INTO A BIGGER PROBLEM  
7 THEN WE ALREADY HAVE BY IMPLEMENTING THIS PREFERRED  
8 DISPOSAL OPTION. DID YOU HAVE ANY MORE?

9 SANDY MYERS: ACTUALLY, THIS WAS OUR PREFERRED  
10 ALTERNATIVE. THIS WAS ESSENTIALLY THE END OF MY TALK.

11 BERNIE HAYES: OKAY. WELL, LET'S TAKE QUESTIONS  
12 NOW.

13 LARRY CRUMP: IF YOU'RE GOING TO PUMP THE WATER  
14 OUT, HOW ARE YOU GOING TO STOP THE WATER IN THERE  
15 BECOMING CONTAMINATED SINCE THE CONTAMINATION IS IN THE  
16 SOIL? BY THE WAY, WOULD YOU TAKE YOUR CHILD AND BRING  
17 HIM TO FOOTBALL OR SOFTBALL IN THAT FIELD TODAY? CAN ME  
18 AND MY SON GO ACROSS THE STREET AND PASS THE FOOTBALL TO  
19 SOME OF MY FAMILY?

20 BERNIE HAYES: TO ANSWER YOUR QUESTION, I WOULD SAY  
21 YES. THE SITE VISITOR SCENARIO THAT WE EXAMINED - - -

22 LARRY CRUMP: WE'RE NOT VISITORS. WE'RE THERE  
23 EVERY DAY.

24 BERNIE HAYES: WELL, A VERY FREQUENT EXPOSURE - - -  
25 IT'S NOT JUST THE TYPE OF EXPOSURE OF SOMEONE WALKING

1 ACROSS THE SITE ONCE A YEAR OR SOMETHING LIKE THAT. FOR  
2 FREQUENCY OF EXPOSURE AND THAT SITE VISITOR THING IS  
3 GENERALLY I THINK TWO TIMES A WEEK, SEVEN MONTHS OUT OF  
4 THE YEAR. SO UNLESS YOU'RE OVER THERE PLAYING ON THAT  
5 PROPERTY OR VISITING THAT PROPERTY MORE THAN TWO OR  
6 THREE TIMES A WEEK, THEN THE ANSWER IS YES, THEN THE  
7 RISK ASSOCIATED WITH EXPOSURE TO THE SURFACE SOIL FROM  
8 AN INCIDENTAL BASIS IS VERY LOW.

9 LARRY CRUMP: P.C.P. IS SOMETHING THAT REALLY  
10 WORRIES ME. I HAVE A TEN YEAR OLD SON I HAVE A HARD  
11 TIME KEEPING AN EYE ON TWENTY-FOUR HOURS AROUND THE  
12 CLOCK.

13 BERNIE HAYES: I UNDERSTAND THAT. AND AT A LOT OF  
14 SITES THAT'S A PROBLEM. AND I THINK THE RISK ASSESSMENT  
15 WOULD INDICATE - - - THE RESULTS OF THE RISK ASSESSMENT  
16 TELL US THAT EVEN UNDER VERY FREQUENT EXPOSURE FROM A  
17 SITE VISITOR CHILD PLAYING, SITE TRESPASSER, WHATEVER  
18 YOU WANT TO CALL IT BASIS, THE RISK ASSOCIATED WITH THAT  
19 KIND OF EXPOSURE IS VERY LOW. I'M NOT SAYING I WOULD  
20 LET YOUR SON GO OVER THERE AND PLAY FOOTBALL BECAUSE  
21 IT'S SOMEBODY ELSE'S PROPERTY AND HE COULD GET HURT. I  
22 MEAN THINGS BESIDES ANY CONTAMINATION THAT HE MIGHT  
23 EXPERIENCE OR ANY EXPOSURE HE MIGHT EXPERIENCE. I'M NOT  
24 SAYING YOU SHOULD LET HIM GO OVER THERE AND PLAY  
25 FOOTBALL. I'M SAYING IF HE GOES OVER THERE AND PLAYS ON

1 THE SITE ONCE IN A WHILE, THE LEVEL OF CONTAMINATION  
2 THAT EXISTS OVER THERE IS NOT GOING TO BE A SUBJECT OF  
3 RISK TO HIS HEALTH.

4 BILL RUTLEDGE: WE'VE HAD THE PROPERTY POSTED FOR  
5 SEVERAL YEARS WITH MANY SIGNS THAT HAVE BEEN TORN DOWN.

6 LARRY CRUMP: A FENCE WOULD BE MORE APPROPRIATE.  
7 I'M LARRY CRUMP. AND I'M SURE MR. RUTLEDGE HAS PUT  
8 SIGNS UP BEFORE BECAUSE I'VE SEEN THEM UP BEFORE.  
9 SOMETIMES IT'S PEOPLE. THERE ARE STILL PEOPLE THAT'S  
10 ILLITERATE. THERE ARE STILL PEOPLE THAT DON'T PAY NO  
11 ATTENTION TO THE SIGNS. THEY MAY BE WALKING AROUND  
12 LOOKING AT THE GROUND NOT SEEING A SIGN. BUT A FENCE, A  
13 FENCE MAY KEEP PEOPLE FROM GOING ACROSS IT. IT MAY KEEP  
14 MY SON OUT OF IT TOO.

15 JANE DAVENPORT: HAS THE CITY OF ROCK HILL BEEN  
16 ADVISED OF THE PROPOSED PUMPING OF THE CHEMICAL  
17 CONTAMINATIONS AND HAVE THEY AGREED TO PARTICIPATE?

18 SANDY MYERS: YES, MA'AM, THEY HAVE.

19 JANE DAVENPORT: HAS THERE BEEN ENGINEERING COST  
20 ESTIMATES DONE ON WHAT THE COST WILL BE TO DO THIS?

21 SANDY MYERS: THOSE COST ESTIMATES WERE LISTED HERE  
22 ON THIS CHART. WE'RE PROPOSING ALTERNATIVE 4B WHICH IS  
23 ROUGHLY TWO MILLION DOLLARS.

24 JANE DAVENPORT: WHO DID THE ESTIMATE?

25 SANDY MYERS: IT WAS A PRIVATE CONTRACTOR THE EPA



1 HIRED, CDM, INC., BASED OUT OF ATLANTA.

2 JANE DAVENPORT: IS THERE A COPY OF THAT REPORT OR  
3 THAT ESTIMATE AVAILABLE?

4 SANDY MYERS: YES, MA'AM. THAT IS IN WHAT'S CALLED  
5 THE REMEDIAL INVESTIGATION FEASIBILITY STUDY. THAT'S IN  
6 THE FEASIBILITY STUDY PORTION OF THAT DOCUMENT.

7 TONY JANNETTA: AGAIN, IT SEEMS LIKE THE DIRECTION  
8 OF SOLVING THE PROBLEM, WHICH I AGREE THE PROBLEM NEEDS  
9 TO BE SOLVED AND IT'S NOT GOING TO GO AWAY, SO ONE OF  
10 THE ALTERNATIVES IS GOING TO BE SUGGESTED AND IT SOUNDS  
11 LIKE IT'S GOING TO BE DUMPING IT INTO THE CITY'S SEWAGE  
12 SYSTEM FOR THE CITY TO TREAT IT AT ITS OWN FACILITIES.  
13 MY SUGGESTION WOULD BE EPA AND THE CITY MAKE SURE THAT  
14 THE INFRASTRUCTURE THAT YOU'RE DUMPING THE CONTAMINATED  
15 WATER IN IS PROPERLY SECURED AND TIGHT AND IS NOT ANY  
16 KIND OF INFILTRATION FROM GROUNDWATER INTO THE SYSTEMS  
17 THAT YOU'RE DUMPING THE WATER IN. AND MY QUESTION WOULD  
18 BE WILL THE EPA INVESTIGATE THE CITY'S LATERAL LINES  
19 CONCERNING THE SEWER IF THERE'S GOING TO BE A SEWER DROP  
20 OR WILL THE CITY PROVIDE THE NECESSARY VIDEO INSPECTIONS  
21 OF THE LINE TO MAKE CERTAIN THAT THOSE LINES ARE NOT  
22 LEACHING WATER, WHICH IF YOU DUMP WATER IN IT WOULD  
23 LEACH BACK OUT INTO THE GROUNDWATER GROUND AGAIN AND YOU  
24 HAVE TO REDUPLICATE THE PROCESS SOMEWHERE DOWN THE LINE.  
25 SO YOU'RE GOING TO HAVE TO MAKE CERTAIN IF THE CITY'S

1 GOING TO USE THEIR SYSTEMS, THEIR LINES ARE PROPERLY  
2 INTACT BECAUSE I DON'T KNOW WHAT THE DISTANCE WOULD BE  
3 FROM THERE TO THE TREATMENT PLANT. AND RIGHT NOW, WE  
4 HAVE A TREATMENT PLANT OUT HERE ON CHERRY ROAD AND DO  
5 YOU KNOW THE DEPTH OF THAT? THAT COULD BE A PROBLEM.

6 SANDY MYERS: I HEAR YOUR CONCERN. IT'S ON THE  
7 RECORD.

8 TONY JANNETTA: AND ALL THOSE CONCERNS AUGHT TO BE  
9 ADDRESSED BY THE EPA AND THE CITY BEFORE THEY ACCEPT  
10 THIS MONUMENTAL CONTRACT BECAUSE I STILL SAY ON SITE  
11 CLEANING OF THE CONTAMINATION THEN DUMPING IT INTO THE  
12 SYSTEM WOULD PROVIDE A SAFER ENVIRONMENTAL SITUATION.  
13 MY QUESTION WOULD BE IS THE CITY STILL TREATING THEIR  
14 TREATED WATER, ARE THEY TREATING THEIR WATER WITH  
15 CHEMICALS THAT YOU HAVE ALLUDED TO THAT ARE IN THE  
16 GROUNDWATER NOW? ARE THEY TREATING THE CITY'S WATER  
17 WITH CHEMICALS THE WAY IT WOULD DEVIATE OUR DRINKING  
18 WATER? IF THAT WERE THE CASE, THEY WOULD HAVE THE  
19 FACILITIES TO DO IT AND THE KNOWLEDGE TO DO IT.

20 SANDY MYERS: RIGHT. LET ME SAY THIS TREATMENT  
21 FACILITY IS VERY WELL AWARE OF WHAT TYPE CONTAMINANTS  
22 WE'VE GOT AT THIS SITE, AND THEY'RE ALSO VERY WELL AWARE  
23 THAT THEY CAN TREAT THESE CONTAMINANTS. THESE  
24 CONTAMINANTS ARE NOT VERY DIFFICULT TO TREAT. AS BERNIE  
25 MENTIONED BEFORE, THE TREATMENT SYSTEMS THAT THEY

1 ALREADY HAVE IN PLACE, SUCH AS ACTIVATED SLUDGE, THAT  
2 ALONE CAN TAKE CARE OF THESE CONTAMINANTS.

3 TONY JANNETTA: YOU'RE LOOKING AT SOME OLD LATERAL  
4 LINES THAT YOU MAY BE DUMPING INTO THAT MAY HAVE A  
5 PROBLEM.

6 SANDY MYERS: RIGHT. THAT'S A DIFFERENT ISSUE THAN  
7 WHETHER THE TREATMENT PLANT CAN TREAT THE WATER. AND I  
8 AGREE WITH YOU, THAT'S SOMETHING I'LL HAVE TO LOOK INTO.

9 BERNIE HAYES: JUST ONE CLARIFICATION THERE.  
10 CERTAINLY SEWER LINES ARE NOT PRESSURE LINES SO YOU CAN  
11 HAVE WATER LEAK INTO THEM OR WATER LEAK OUT OF THEM. IN  
12 THIS PART OF THE COUNTRY, WATER LEAKING OUT OF SEWER  
13 LINES IS USUALLY NOT THE PROBLEM; USUALLY IT'S WATER  
14 LEAKING INTO THE SEWER LINES. SO IT'S SOMETHING WE  
15 PROBABLY COULD TAKE A LOOK AT DURING THE DESIGN PHASE TO  
16 MAKE SURE THAT WE'RE NOT GOING TO CREATE ANY WHAT YOU  
17 CALL EX-FILTRATION PROBLEMS FROM SEWER LINES. BUT IN  
18 THIS PART OF THE COUNTRY, YOU USUALLY HAVE MUCH MORE OF  
19 A PROBLEM WITH LEAKING INTO THE SEWER LINES. SO WHILE  
20 YOU'RE RIGHT IF WE TREATED IT ON SITE IT WOULD  
21 COMPLETELY ELIMINATE THAT PROBLEM, IT'S PROBABLY NOT A  
22 SERIOUS PROBLEM, BUT IT'S SOMETHING WE CAN LOOK AT  
23 DURING THE DESIGN.

24 TONY JANNETTA: YOU HAVE VIDEO CAMERAS THAT GO DOWN  
25 THE LINE AND CHECK IT IN ITS ENTIRETY.

1           BERNIE HAYES: THOSE DO EXIST, BUT WHETHER OR NOT  
2 IT'S SOMETHING THAT'S NECESSARY TO BE DONE IS SOMETHING  
3 WE'LL JUST HAVE TO LOOK AT.

4           JERRY COLLINS: MY NAME IS JERRY COLLINS. THE ONLY  
5 LAST QUESTION I HAVE IS THAT I'M CONCERNED WITH JUST  
6 DUMPING THE CHEMICAL AT THE D.O.T. BECAUSE NATIONAL  
7 STATUS HAS JUST RELEASED THAT IT'S EITHER LIKE 900  
8 TREATMENT FACILITIES IN SOUTH CAROLINA ARE NOT UP TO PAR  
9 FOR FRESH DRINKING WATER. SO RIGHT NOW, WE DON'T KNOW  
10 WHETHER WE'RE GETTING ADEQUATE TREATMENT OF THE WATER AS  
11 IT IS. I'M CONCERNED WITH WHAT I'M DRINKING NOW. I HAD  
12 MEN WITH ROCK HILL, THE CITY, AND TEST MY WATER IN THE  
13 HOUSE I JUST BOUGHT BECAUSE IT'S BEEN TASTING FUNNY EVER  
14 SINCE I BOUGHT THE HOUSE. SO MY CONCERN IS THE WATER  
15 I'M DRINKING NOW WITH THE NATIONAL AVERAGES THEY SAY  
16 THAT ALL THE STATES, NORTH CAROLINA AND SOUTH CAROLINA  
17 INCLUDED, THE WATER TREATMENT IS NOT UP TO PAR AND IT'S  
18 NOT MEETING STANDARDS. SO YOU'RE GOING TO DUMP THIS  
19 CHEMICAL IN ON TOP OF IT AND I'M GOING TO DRINK THAT FOR  
20 30 YEARS. IN 30 YEARS YOU'RE GOING TO TREAT, RUN THIS  
21 SYSTEM, 30 YEARS IS HOW LONG IT WOULD TAKE BEFORE I  
22 FOUND OUT WHETHER I HAVE CANCER OR NOT PROBABLY. THAT'S  
23 MY BIGGEST CONCERN THAT YOU'RE GOING TO DUMP THIS IN ON  
24 TOP OF WHAT ALREADY THEY'RE TRYING TO TREAT NOW WHICH I  
25 DON'T THINK MY BELIEF IS INADEQUATE ANYWAY.

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1 SANDY MYERS: YOU'VE ALLUDED TO A HANDFUL OF  
2 ISSUES.

3 JERRY COLLINS: BUT ALL I'M SAYING IS I THINK IT  
4 SHOULD BE TREATED ON SITE AND THEN DUMPED. THAT'S THE  
5 BOTTOM LINE.

6 BERNIE HAYES: JUST ONE QUICK RESPONSE TO THAT. I  
7 DON'T WANT Y'ALL TO GET THE IMPRESSION THAT WE'RE JUST  
8 TRYING TO SAY THAT NONE OF YOUR CONCERNS ARE YOU SHOULD  
9 BE CONCERNED ABOUT THEM, BECAUSE THAT'S NOT TRUE. BUT  
10 WE NEED TO BE CAREFUL THAT WE KEEP SEWAGE TREATMENT AND  
11 WATER TREATMENT SEPARATE. THIS WATER IS GOING TO A  
12 SEWAGE TREATMENT PLANT AND NOT A DRINKING WATER PLANT.

13 JERRY COLLINS: WHERE DOES THE LIQUID THAT IS BEING  
14 RUN OFF FROM THAT WASTE TREATMENT, WHERE IS IT GOING?

15 BERNIE HAYES: WELL, IT'S GOING TO GO BACK, YOU'RE  
16 RIGHT, INTO A RIVER OR CREEK SOMEWHERE AND DEPENDING ON  
17 WHAT WATER SOURCE IS USED FOR - - -

18 JERRY COLLINS: WELL, I UNDERSTAND THAT. THAT  
19 LIQUID WAS BEING CLEANED AND THAT IS YOUR DRINKING  
20 WATER. THAT IS INCORRECT?

21 BERNIE HAYES: NO. IN A LOT OF CASES, IT IS. BUT  
22 IT DEPENDS ON WHERE YOU ARE IN RELATION TO THE DISCHARGE  
23 FROM THIS PLANT. I DON'T KNOW WHERE THE WATER SUPPLIED  
24 FOR THE CITY AROUND HERE IS. IS IT SURFACE WATER OR  
25 GROUNDWATER?

1 AUDIENCE: RIVER.

2 JANE DAVENPORT: WOULD A STUDY NOT BE DONE TO MAKE  
3 SURE THAT IT DOESN'T GET BACK IN OUR DRINKING WATER? I  
4 WOULD THINK THAT WOULD BE PART OF THE PROCESS.

5 SANDY MYERS: I THINK A STUDY OF THAT NATURE IS  
6 VIRTUALLY IMPOSSIBLE. I THINK THAT IF YOU'RE GOING TO  
7 TAKE WATER IN A SEWAGE TREATMENT PLANT THAT THEY  
8 DISCHARGE INTO A CREEK AND THEN SOMEHOW OR ANOTHER TRACK  
9 THAT WATER DOWN TO A DRINKING WATER PLANT THROUGH THE  
10 PLANT DOWN THE LINES TO YOUR TAP, THAT'S VERY DIFFICULT.

11 BERNIE HAYES: AND LET'S KEEP THIS IN PROSPECTIVE.  
12 OKAY? IF YOU HAVE A DRINKING WATER PLANT THAT'S DRAWING  
13 FROM A RIVER IN THIS AREA, IT'S NOT AS IF THE EFFLUENT  
14 FROM THE SITE IS GOING TO GO DIRECTLY INTO THAT RIVER.  
15 OR EVEN IF YOU ASSUME IT'S GOING TO BE TREATED, THAT  
16 THAT'S THE ONLY THING THAT'S GOING INTO THAT RIVER AND  
17 IT'S THE ONLY THING THAT THAT WATER TREATMENT PLANT HAS  
18 TO DEAL WITH. YOU COULDN'T GO DOWN TO THE RIVER AND  
19 DRINK RIGHT OUT OF IT. THAT WATER TREATMENT PLANT IS  
20 RESPONSIBLE FOR TREATING THAT WATER AND REMOVING  
21 WHATEVER IS IN THERE TO MAKE THAT WATER SAFE, UNDER THE  
22 SAFE DRINKING WATER ACT, NO MATTER WHAT'S IN THERE, NO  
23 MATTER WHERE IT'S COMING FROM. SO YOU DO HAVE THIS  
24 ROUTE, THIS POTENTIAL ROUTE OF CONTAMINANTS FROM THIS  
25 SITE SOMEHOW GETTING THROUGH THE SEWER SYSTEM AND INTO

1 THE RIVER AND BACK INTO THE DRINKING WATER PLANT, BUT  
2 WHAT YOU HAVE IS UNLESS THEY'RE UPSTREAM FROM ONE  
3 ANOTHER, WHICH IS WHAT I THINK THIS GENTLEMAN HAS  
4 ALLUDED TO, BUT EVEN IF THAT WERE THE CASE, YOU'VE GOT A  
5 SEWAGE TREATMENT PLANT THAT'S DESIGNED TO REMOVE THE  
6 CONTAMINANT BEFORE IT GOES INTO THE RIVER AND YOU'VE GOT  
7 A WATER TREATMENT PLANT DESIGNED TO REMOVE THE  
8 CONTAMINANTS AS THEY COME OUT OF THE RIVER. AND BOTH OF  
9 THOSE PLANTS ARE REGULATED BY THE STATE OF SOUTH  
10 CAROLINA AND OVER YOU ALL BY EPA TO MAKE SURE THAT THEY  
11 ARE FUNCTIONING PROPERLY. AND I'M NOT GOING TO SAY THAT  
12 THEY ALWAYS FUNCTION PROPERLY, BUT - - -

13 JERRY COLLINS: IN THE NATURAL STATUS OF RELEASE  
14 THEY SAID THAT THE MAJORITY OF THEM WERE NOT UP TO PAR.  
15 HOW DO WE FIND THAT OUT IS MY NEXT QUESTION?

16 BERNIE HAYES: WELL, THAT'S PART OF - - -

17 JERRY COLLINS: WE MAY NOT DRINK THE WATER OUT OF  
18 THAT WELL, OUT OF THAT PLUME, BUT WE'RE STILL DRINKING  
19 TREATED WATER. DOESN'T MATTER WHAT'S BEEN DUMPED IN IT;  
20 WE'RE DRINKING IT, AND WE DON'T KNOW WHAT WE'RE  
21 DRINKING.

22 BERNIE HAYES: WELL, YOU CAN FIND THAT OUT. THE  
23 MONITORING AND COMPLIANCE RECORDS FOR A PUBLIC WATER  
24 SUPPLY ARE A MATTER OF - - -

25 JERRY COLLINS: WELL, I'VE HAD THE WATER TESTED,

1 BUT I'M NOT SATISFIED STILL. I'VE HAD THEM COME OUT AND  
2 TEST IT TWICE, AND MY WATER STILL TASTES FUNNY.

3 BERNIE HAYES: THE OTHER THING YOU CAN DO IS ASK  
4 THE PUBLIC WATER SUPPLY FOR THEIR RECORDS OF THEIR  
5 TESTING AND THAT'S A MATTER OF PUBLIC RECORD. IF YOU  
6 HAVE A PROBLEM WITH THEM, I IMAGINE DHEC COULD HELP YOU  
7 WITH IT, THE STATE COULD HELP YOU WITH GETTING THOSE  
8 RECORDS. THEY'RE REQUIRED TO TEST THE WATER FOR A WIDE  
9 RANGE OF CONTAMINANTS ON A REGULAR BASIS - - -

10 JERRY COLLINS: BUT THEY POLICE THEMSELVES; NOBODY  
11 POLICES THEM.

12 BERNIE HAYES: NO. THE STATE POLICES THEM AND TO  
13 SOME EXTENT THE EPA POLICES THEM.

14 JANE DAVENPORT: I HAVE A QUESTION. THAT GENTLEMAN  
15 SAID SOMETHING ABOUT IF THE SOIL IS NOT REMOVED THAT THE  
16 CONTAMINANTS ARE CONTAINED IN THE SOIL AND IF THE SOIL  
17 ON THE SITE IS NOT REMOVED, WON'T THE WATER BE  
18 CONTAMINATED AGAIN? AND I DIDN'T HEAR A RESPONSE TO  
19 THAT.

20 SANDY MYERS: OKAY. I MIGHT ASK YOU TO CLARIFY,  
21 BUT I THINK I CAN ANSWER YOUR QUESTION. THERE IS  
22 CONTAMINATION PRESENT IN THE SUBSURFACE AND SURFACE  
23 SOILS; BUT THE CONTAMINATION THAT'S PRESENT, THEY'RE NOT  
24 AT LEVELS THAT POSE AN UNACCEPTABLE RISK.

25 JERRY COLLINS: BUT I WAS THE ONE THAT ASKED THAT



1 QUESTION. MY QUESTION WAS IS THAT THE WATER IS BEING  
2 CONTAMINATED FROM THE CHEMICALS IN THE SURFACE SOIL. IS  
3 THAT CORRECT?

4 SANDY MYERS: NOT NECESSARILY, NO.

5 JERRY COLLINS: HOW IS THE WATER BEING  
6 CONTAMINATED?

7 SANDY MYERS: THE CONTAMINANTS CAN BE INTRODUCED AT  
8 THE SURFACE SOILS, AND THEY CAN LEACH DOWN TO THE  
9 GROUNDWATER OVER A PERIOD OF 30 YEARS.

10 JERRY COLLINS: RIGHT, BUT THE WATER IS BEING  
11 CONTAMINATED FROM THE SOIL THAT'S ON THE PROPERTY.  
12 RIGHT?

13 SANDY MYERS: NOT NECESSARILY, NO. I MEAN THE  
14 CONTAMINANTS CAN BE DOWN IN THE GROUNDWATER.

15 TONY JANNETTA: WAS IT DUMPED IN THE WELL OR DID IT  
16 GO THROUGH THE SOIL?

17 SANDY MYERS: IT WENT THROUGH THE SOIL.

18 JERRY COLLINS: BUT THE CHEMICALS ARE STILL IN THE  
19 SOIL. CORRECT?

20 SANDY MYERS: YES. THERE ARE CHEMICALS IN THE  
21 SOIL.

22 JERRY COLLINS: ALL RIGHT, BUT WHAT YOU'RE  
23 BASICALLY GOING TO BE DOING THOUGH IS THE CONSTANTLY  
24 FILTRATION SYSTEM WHERE THE WATER GOES DOWN THROUGH THE  
25 SOIL GETS DOWN TO WHERE THE PLUME IS AND YOU PUMP IT OUT

1 AND IT'S JUST A CONSTANT - - - YOU'RE LETTING THE DIRT  
2 BASICALLY FILTER OUT THE CHEMICAL. EVENTUALLY YOU'RE  
3 HOPING THERE WILL BE NO MORE CHEMICAL LEFT TO GET DOWN  
4 TO THAT WATER LEVEL. RIGHT?

5 SANDY MYERS: NO. THAT'S NOT THE WAY THAT I SEE  
6 THIS.

7 JANE DAVENPORT: THE WATER CANNOT BE CONTAMINATED  
8 AGAIN ONCE THIS IS DONE?

9 SANDY MYERS: I WOULD NEVER MAKE THAT STATEMENT. I  
10 CAN'T WALK INTO THAT ONE. BUT I CAN SAY - - -

11 LARRY CRUMP: I'M LARRY CRUMP. WHY DO YOU KEEP  
12 BEATING AROUND THE BUSH AROUND NOT TAKING THE SOIL OUT  
13 OF THERE? THERE'S WHERE THE CONTAMINATION IS COMING  
14 FROM.

15 BERNIE HAYES: I THINK THE ANSWER TO THAT IS THE  
16 VAST MAJORITY OF CONTAMINATED SOIL HAS ALREADY BEEN  
17 REMOVED. I THINK IT'S A VALID COMMENT AND A VALID  
18 CONCERN ON YOUR ALL'S PART THAT WE MAKE SURE THAT THAT'S  
19 BEEN SUFFICIENTLY DONE. AND THAT'S SOMETHING WE CAN  
20 TAKE BACK MAKE SOME DECISION ABOUT. I'M NOT GOING TO  
21 SIT HERE AND PROMISE YOU THAT WE'RE GOING TO LOOK AT  
22 WHAT SOIL IS LEFT THERE AND TAKE MORE OF IT OUT, BUT  
23 THAT'S PART OF THE PUBLIC PARTICIPATION PROCESS IS TO  
24 LISTEN TO THESE COMMENTS, GO BACK, LOOK AT THE DATA  
25 AGAIN, TRY TO MAKE A DECISION ABOUT WHETHER OR NOT

1 ADEQUATE SOIL REMOVAL HAS BEEN DONE. AND YOU KNOW WHEN  
2 WE MAKE A DECISION ABOUT WHAT TO DO AT THE SITE, LET  
3 Y'ALL KNOW THEN AGAIN WHAT THE DECISION IS. BUT THE  
4 BOTTOM LINE, THE BASIC ANSWER TO YOUR QUESTION RIGHT NOW  
5 IS THE VAST MAJORITY OF CONTAMINATED SOIL HAS ALREADY  
6 BEEN REMOVED FROM THE SITE. LIKE SANDY SAYS, WE CAN'T  
7 SIT HERE AND PROMISE YOU THAT EVERY LAST PARTICLE HAS  
8 BEEN REMOVED TO THE POINT WHERE NO FURTHER LEACHING INTO  
9 GROUNDWATER WILL TAKE PLACE, BUT - - -

10 JERRY COLLINS: WHY ARE THE LEVELS SO HIGH STILL  
11 THEN IF THE SOIL HAS BEEN REMOVED, AND THIS WAS A LONG  
12 TIME AGO THAT THE SOIL WAS REMOVED? WHY ARE THE LEVELS  
13 SO HIGH THEN IN THE WATER? IF IT'S THAT HIGH, 17,000  
14 MILLIPARTS OR WHATEVER.

15 BERNIE HAYES: GROUNDWATER TAKES A VERY LONG TIME  
16 TO CLEAN ITSELF UP, IF YOU WILL. I MEAN THAT'S NOT EVEN  
17 THE RIGHT TERM TO USE.

18 JERRY COLLINS: IT'S NOT JUST GOING TO SIT THERE;  
19 IT'S GOT TO GO SOMEWHERE, THAT WATER.

20 BERNIE HAYES: IT CAN SIT THERE FOR A VERY LONG  
21 TIME.

22 JERRY COLLINS: IT'S GOT TO GO SOMEWHERE. IT'S  
23 GOING TO BUILD UP TO THE POINT THAT WATER HAS TO GO  
24 SOMEWHERE, EITHER INTO A WELL SYSTEM OR MOVE ON TO OTHER  
25 GROUNDS OR CREEKS OR SOMETHING.

1 SANDY MYERS: ONE POINT I'D LIKE TO MAKE IS THAT  
2 THE PHYSICAL CHARACTERISTICS OF THE CHEMICALS THAT WE'RE  
3 TALKING ABOUT, ESPECIALLY THE THREE VOLATILES, THEIR  
4 DENSITY IS HEAVY THAN WATER. WHAT THAT MEANS IS  
5 ESSENTIALLY THEY SINK. SO THESE CONTAMINANTS, THEY HAVE  
6 THE ABILITY TO SINK THROUGH THE SURFACE SOILS, THROUGH  
7 THE SEDIMENT - - - I MEAN THROUGH THE SUBSURFACE SOILS  
8 DOWN IN THROUGH THE GROUNDWATER. THEY HAVE THE ABILITY  
9 TO SINK LIKE THAT. THEY DON'T NECESSARILY JUST FLOW OFF  
10 THE SITE SOMEWHERE. THAT'S HOW YOU CAN REACH SUCH HIGH  
11 CONCENTRATIONS AFTER A 30 YEAR PERIOD.

12 JERRY COLLINS: WELL, I'M SURE THEY'RE BELOW THAT  
13 WATER LEVEL, AND THEY'LL PROBABLY STAY THERE AND KEEP ON  
14 SINKING DOWN INTO THE EARTH HOPEFULLY AND CLEAN  
15 THEMSELVES UP.

16 SANDY MYERS: THAT'S A GOOD POINT.

17 BERNIE HAYES: YOU'RE HITTING THE NAIL RIGHT ON THE  
18 HEAD WITH HOW DIFFICULT THIS REMEDIATION OF GROUNDWATER  
19 CONTAMINATION IN THIS FASHION CAN BE.

20 JERRY COLLINS: BUT IN NONE OF THESE STUDIES ANYONE  
21 HAS SAID ABOUT FURTHER REMOVAL OF DIRT. ALL YOU'RE  
22 TALKING ABOUT IS PUMPING WATER OUT. YOU'RE NOT TALKING  
23 ABOUT CLEANING UP THE SOIL THAT'S THERE, REMOVING IT.

24 SANDY MYERS: THAT'S CORRECT. AND THE REASON WE'RE  
25 SAYING THAT IS BECAUSE THE LEVELS OF CONTAMINATION THAT

1 WE HAVE IN THE SOILS DO NOT POSE AN UNACCEPTABLE RISK.

2 GLEN PELLETT: MY NAME IS GLEN PELLETT AGAIN. ONE  
3 THING WE MAY BE MISSING IS THAT IT WASN'T THE SOIL THAT  
4 CONTAMINATED THE GROUNDWATER; IT WAS WASTE THAT WAS  
5 PLACED IN AND ON THAT SOIL, AND I BELIEVE ALL THE WASTE  
6 HAS BEEN REMOVED. IS THAT CORRECT?

7 SANDY MYERS: WELL, THE ABOVE GROUND STORAGE TANKS  
8 HAVE BEEN REMOVED. YES. AND SOME OF THE OBVIOUS SOIL  
9 - - - IN THE PAST REMOVALS, SOME OF THE SOILS, WE HAD  
10 THE REMOVALS WHERE THEY TOOK OUT THE SOILS.

11 GLEN PELLETT: SO THAT WAS SORT OF THE SOURCE OF  
12 THE CONCENTRATION.

13 JERRY COLLINS: EVERY TIME YOU CHANGE YOUR OIL AND  
14 DUMP IT IN YOUR BACKYARD AND FIVE YEARS FROM NOW DIG A  
15 WELL AND DRINK THAT WATER. DIG THE DIRT UP FIRST THOUGH  
16 AND PUT SOME FRESH DIRT DOWN, BUT THEN DRINK THAT WATER.  
17 YOU'RE NOT GOING TO GET IT OUT. IT'S IN THAT DIRT AND  
18 THAT'S SEEPING DOWN, IT'S CONTINUALLY SEEPING, BLEEDING  
19 DOWN AS A FILTERING SYSTEM BASICALLY, THE SOIL IS. YOU  
20 CAN ONLY GET SO MUCH DIRT OUT. YOU CAN'T DIG DOWN 54  
21 FEET AND TAKE OUT ALL THAT SOIL DOWN TO THE WATER LEVEL.

22 TONY JANNETTA: I'D LIKE TO ASK A QUESTION IN  
23 REFERENCE TO ONCE THIS IS DONE WHETHER YOU DUMP IT AND  
24 TREAT THE WATER AND YOU REMOVE THE AREA OF THE PLUME AND  
25 YOU FEEL COMFORTABLE THAT YOU'VE REMOVED THAT MUCH WATER

1 AND IT'S SUFFICIENT AND EVERYTHING TESTS OUT OKAY AT A  
2 CERTAIN POINT IN TIME, WHAT WILL THE EPA AND THE STATE  
3 DO TO MAKE CERTAIN THAT THE PROBLEM DOES NOT EXIST IN  
4 THE FUTURE. WILL THEY STILL REMAIN - - - WILL THERE BE  
5 TESTING AFTERWARDS?

6 SANDY MYERS: YES. THERE WILL BE LONG TERM  
7 MONITORING. WE WILL MAKE SURE THAT THE PROBLEM DOESN'T  
8 POP UP AGAIN. THAT'S THE WHOLE PURPOSE OF OUR  
9 MONITORING PROGRAM. YES.

10 TONY JANNETTA: THROUGHOUT THE SITE? THROUGHOUT  
11 THE NEIGHBORHOOD?

12 SANDY MYERS: YES, THROUGH THE WELLS THAT WE WILL  
13 HAVE ON THE SITE. AT THIS POINT, WE DON'T KNOW EXACTLY  
14 WHERE THE WELLS ARE GOING TO BE. WE DECIDE THAT IN THE  
15 DESIGN PHASE. WE'LL DECIDE WHERE THE ACTUAL WELLS WILL  
16 BE PLACED, BUT THERE WILL BE COMPLIANCE WELLS PLACED,  
17 AND WE'LL MONITOR THOSE WELLS.

18 TONY JANNETTA: SINCE WE KNOW THOSE CHEMICALS ARE  
19 DEEPER THAN THE WATER STRATUM, WILL THERE BE DEEPER  
20 WELLS?

21 SANDY MYERS: SINCE - - -

22 LARRY CRUMP: HOW DID THAT BANK GET BUILT THERE ON  
23 THAT SOIL IF THE KIND OF CONTAMINATION EXISTED?

24 JERRY COLLINS: THEY TRIED TO CLEAN IT UP. THEY  
25 DUG UP THREE FEET.

1 LARRY CRUMP: THEY DIDN'T DIG DEEP ENOUGH, MY  
2 FRIEND.

3 JERRY COLLINS: I KNOW THAT.

4 LARRY CRUMP: THEY STILL BUILT.

5 JERRY COLLINS: AND THEY'RE NOT INCLUDING THIS  
6 BANK, THAT PROPERTY, IN THIS CLEANUP. IF THE PLUME DOES  
7 GO UNDERNEATH THE PROPERTY OF THAT BANK, THE SOIL THREE  
8 FEET UNDER WHERE THEY EXTRACTED THAT SOIL, IT'S STILL  
9 CONTAMINATED AND HOPEFULLY IT WILL BE CLEANED UP ON ITS  
10 OWN WHEN IT FILTRATES OUT. BUT IT'S GOT CONCRETE  
11 COVERING THAT SOIL OVER THAT WHERE THE SITE IS AND I  
12 DON'T SEE HOW THE RAINWATER, THE WATER TABLE, WHATEVER,  
13 CAN FILTER THAT OUT. THAT'S TRAPPED UNDER THAT  
14 CONCRETE.

15 SANDY MYERS: WE'LL HAVE TO LOOK INTO THAT.

16 MARK DAVIS: LET ME CLARIFY THAT. THE BANK REMOVED  
17 THAT SOIL WHICH WAS CONTAMINATED, AND THEY DID THAT  
18 REMOVAL WITH OVERSIGHT FROM EPA AND THE STATE OF SOUTH  
19 CAROLINA.

20 JERRY COLLINS: RIGHT, BUT THEY ONLY TOOK OUT ABOUT  
21 THREE FEET OF SOIL.

22 MARK DAVIS: THEY TOOK OUT THE HOT SPOTS, THE AREAS  
23 THAT HAD THE CONTAMINATED SOIL. THEY REMOVED ALL THAT  
24 SOIL.

25 JERRY COLLINS: THREE FEET OF IT. THEY ONLY TOOK

1 OUT THREE FEET.

2 MARK DAVIS: THAT'S RIGHT. THAT'S ALL THEY TOOK  
3 OUT.

4 JERRY COLLINS: FROM THE TIME THAT THAT LIQUID, THE  
5 CHEMICALS, WERE LEAKING FROM 1964, WHO'S TO SAY IT  
6 DIDN'T GO FOUR FEET, FIVE FEET, IN THAT SITE IN THAT  
7 AREA?

8 TONY JANNETTA: THEY WERE NOT TESTING WELLS AT THAT  
9 POINT IN TIME.

10 MARK DAVIS: THEY WEREN'T ANY TESTS OF WELLS, BUT  
11 THERE WAS SOIL TESTING.

12 JERRY COLLINS: THEY DIDN'T DO ANY SOIL TESTING ON  
13 THAT SITE WHERE THAT BANK IS.

14 MARK DAVIS: BACK WHEN THEY DID THE REMOVAL, YES,  
15 THEY DID.

16 JERRY COLLINS: BACK IN THE REMOVAL. WHAT ABOUT  
17 NOW?

18 MARK DAVIS: RIGHT. THEY HAD GOTTEN A CLEAN BILL  
19 OF HEALTH FROM THE STATE OF SOUTH CAROLINA STATING THAT  
20 THAT SOIL THAT WAS LEFT AFTER THE EXCAVATION WAS CLEAN

21 - - -

22 JERRY COLLINS: BACK THEN. WHAT ABOUT NOW? NO ONE  
23 DID ANY TESTS ON THAT PROPERTY NOW. THEY'RE NOT EVEN

24 - - -

25 BERNIE HAYES: IF IT WAS CLEAN THEN IT'S CERTAINLY



1 NOT GOING TO GET ANY WORSE OVER TIME. IT'S ONLY GOING  
2 TO GET BETTER.

3 LARRY CRUMP: HOW DO YOU KNOW IT'S CLEAN NOW?

4 TONY JANNETTA: WHY DON'T YOU BUILD A DIAGONAL WELL  
5 AND GO UP UNDER THE BANK AND SEE IF THERE'S ANYTHING  
6 - - -

7 MARK DAVIS: WE KNOW THERE'S GROUNDWATER  
8 CONTAMINATION UNDER THAT BANK PROPERTY. THAT'S GOING TO  
9 BE EXTRACTED ALONG WITH THE REST OF THE GROUNDWATER  
10 DURING THE REMEDIATION.

11 JERRY COLLINS: YOU DIDN'T EVEN TELL US IN THE  
12 BEGINNING THAT THAT PROPERTY THAT THAT BANK IS SITTING  
13 ON WAS ORIGINALLY OWNED BY THAT CHEMICAL COMPANY.  
14 YOU'VE GOT A BARRIER DRAWN AROUND THAT PROPERTY.

15 MARK DAVIS: THAT PROPERTY WASN'T OWNED - - - THE  
16 CHEMICAL COMPANY DIDN'T OWN ANY OF THAT PROPERTY. THE  
17 CHEMICAL COMPANY OPERATED ITS FACILITY ON THAT AREA, BUT  
18 THAT PART WHERE THE BANK IS WAS NOT THE PHYSICAL  
19 LOCATION OF THE CHEMICAL COMPANY. ACTUALLY, THE TWO HOT  
20 SPOTS THAT THE REMOVAL WAS DONE THAT SANDY MENTIONED  
21 EARLIER, THAT IS THE LOCATION OF THE CHEMICAL COMPANY'S  
22 OPERATIONS. FOR SOME UNKNOWN REASON, THE OPERATOR OF  
23 THAT CHEMICAL COMPANY TOOK ITS CHEMICALS AND TRANSFERRED  
24 OVER TO THE AREA WHERE THE BANK IS.

25 JERRY COLLINS: YOU'RE SAYING THAT THEY NEVER OWNED

1 THE PROPERTY WHERE THE BANK IS SITTING?

2 MARK DAVIS: THE CHEMICAL COMPANY NEVER OWNED ANY  
3 OF THAT PROPERTY.

4 JERRY COLLINS: IT'S JUST OUT OF THE WAY OF THE  
5 BOUNDARY THAT'S DRAWN OUT AROUND IT, IT LOOKS LIKE IT  
6 WOULD BE A FULL BLOCK OR WHATEVER.

7 MARK DAVIS: THE REASON THAT WAS DRAWN OUT IS  
8 BECAUSE IT WAS NOT PART OF THE CHEMICAL COMPANY'S  
9 OPERATIONS, NUMBER ONE.

10 JERRY COLLINS: OPERATIONS, BUT THEY NEVER OWNED  
11 THAT PROPERTY?

12 MARK DAVIS: RIGHT. THEY DIDN'T OWN THAT PROPERTY,  
13 BUT THEY OPERATED ON THAT PROPERTY.

14 JANE DAVENPORT: THEY DUMPED ON IT.

15 MARK DAVIS: THEY DUMPED ON IT. THEY WERE LIKE A  
16 MIDNIGHT DUMPER, WHAT YOU WOULD CALL A MIDNIGHT DUMPER  
17 ON THE PROPERTY WHERE THE BANK WAS LOCATED.

18 JERRY COLLINS: WHAT IT SAID IN THE PAPERS THAT  
19 THIS WAS NOT JUST WHERE THEY WERE STORING THE CHEMICALS.  
20 THEY WERE TRYING TO CLEAN IT UP. THIS IS A COMPANY THAT  
21 CLEANED CHEMICALS, CLEANED UP THE WASTE, THAT THEY WERE  
22 ACTUALLY DUMPING IT ON SITE. SINCE 1964, THERE'S NO  
23 TELLING HOW MUCH IS IN THAT SOIL DOWN THERE.

24 MARK DAVIS: WE HAVE DONE SOIL SAMPLING THROUGHOUT  
25 THAT WHOLE AREA.

1 JERRY COLLINS: ESPECIALLY WHERE THE BANK'S AT,  
2 YOU'RE SAYING THAT'S WHERE THEY WERE DUMPING IT AT.

3 MARK DAVIS: THAT'S WHERE THEY DID DUMPING. THAT'S  
4 WHERE THE BANK EXCAVATION - - -

5 JERRY COLLINS: IT'S KIND OF ODD THAT THREE FEET OF  
6 SOIL WAS REMOVED THEN BOOM, THE BUILDING WAS BUILT ON  
7 TOP OF THAT. THAT'S A HOT SPOT.

8 TONY JANNETTA: YOU'RE NOT BEING CONCLUSIVE AFTER  
9 GOING THROUGH ALL THIS AND PUMP ALL THIS SOMEWHERE, AND  
10 THERE'S ANOTHER PROBLEM SOMEWHERE ELSE. YOU WANT TO BE  
11 CONCLUSIVE IN THE OTHER AREAS BEFORE YOU SINK IN TWO  
12 MILLION DOLLARS TO DO SOMETHING WHEN YOU MIGHT HAVE TO  
13 REDO IT AGAIN.

14 SANDY MYERS: CERTAINLY. ABSOLUTELY.

15 TONY JANNETTA: YOU WANT TO BE SURE ABOUT IT.

16 SANDY MYERS: WE SURE DO.

17 BERNIE HAYES: LIKE I SAID, THIS IS GOOD  
18 DISCUSSION. IT'S IMPORTANT THAT WE GET THESE THINGS ON  
19 THE TABLE SO THAT WE CAN - - - I MEAN WE CAN'T ANSWER  
20 YOUR QUESTIONS ABOUT WHETHER OR NOT SUFFICIENT SOIL  
21 REMOVAL WAS DONE UNDER THE BANK. OBVIOUSLY WE FROM OUR  
22 INVESTIGATIONS FEEL THAT THERE WAS. BUT THE FACT THAT  
23 IT'S SUCH A MAJOR POINT OF CONCERN FOR SEVERAL PEOPLE  
24 HERE MEANS THAT WE NEED TO GO BACK AND TAKE A LOOK AT

25 - - -

1 JERRY COLLINS: YOU DIDN'T CHECK IT OUT. YOU JUST  
2 LOOKED AT OLD REPORTS SAYING THAT THEY WERE CONCLUSIVE  
3 BACK IN 1985. YOU DIDN'T DO ANY STUDIES, RESEARCH SOIL  
4 SAMPLES NOW.

5 BERNIE HAYES: THAT MAY BE A VALID CRITICISM, AND  
6 WE CAN GO BACK AND TAKE A LOOK AND DETERMINE WHETHER OR  
7 NOT WE IN FACT NEED TO DO MORE WORK THERE.

8 TONY JANNETTA: YOU'VE GOT PROPERTY IN THE AREA  
9 THAT MAY BE REDEVELOPED, MY BUSINESS, ALL OF OUR HOMES.  
10 LET'S JUST SAY FOR BUSINESS PRACTICE. AND THEY'RE GOING  
11 TO HAVE TO GO THROUGH THE SAME PROCEDURE KNOWING THAT  
12 THAT'S A CONTAMINATED AREA, THAT'S GOING TO BE RIGHT UP  
13 FRONT. THEY'RE GOING TO HAVE TO HAVE ALL KINDS OF  
14 ANALYSIS DONE BEFORE THEY CAN GET PERMITS AND EVERYTHING  
15 TO MAKE SURE THAT THEIR PROPERTY IS SAFE. AND YOU'VE  
16 GOT SOME UNDEVELOPED LAND AROUND THERE THAT'S GOING TO  
17 BE DEVELOPED ONE OF THESE DAYS, AND THIS MAY COME BACK  
18 TO HAUNT THEM AND Y'ALL.

19 JERRY COLLINS: WHAT IF THIS PROPERTY IS EVER SOLD  
20 WHERE THE BANK SITS? THE FRESH CITY WATER COMING UP  
21 THROUGH THAT PROPERTY, THAT'S WHERE THE PLUME AREA IS.  
22 I CERTAINLY WOULDN'T EVER WANT TO WORK THERE AND GO IN  
23 TO USE THE BATHROOM AND DRINK WATER OR SOMETHING LIKE  
24 THAT. I CERTAINLY WOULDN'T WANT TO WORK THERE.

25 MARK DAVIS: LET ME CLARIFY SOMETHING. SIMPLY

1 BECAUSE THE MAP THAT SANDY HAS DRAWN CARVED OUT THE BANK  
2 DOESN'T MEAN THAT THAT GROUNDWATER THAT IS LOCATED  
3 UNDERNEATH THE BANK IS NOT GOING TO BE CLEANED UP. THAT  
4 IS ALL GOING TO BE PART OF THE OVERALL CLEANUP. WE'RE  
5 TALKING ABOUT ONE OBSTACLE - - -

6 JERRY COLLINS: WATER EXTRACTION ONLY. THE SOIL IS  
7 NOT GOING TO BE CLEANED UP.

8 MARK DAVIS: THE SOIL RECEIVED A CLEAN BILL OF  
9 HEALTH.

10 JERRY COLLINS: BACK IN '85, THREE FEET OF IT.

11 BERNIE HAYES: AGAIN, LET'S TRY TO PULL BACK FROM  
12 THIS A LITTLE BIT AND TRY TO KEEP IT IN PROSPECTIVE. WE  
13 SAMPLED THE SOILS.

14 JERRY COLLINS: THAT PROPERTY WILL GO REAL CHEAP.

15 BERNIE HAYES: THE ONLY - - -

16 LARRY CRUMP: DID Y'ALL DO A SAMPLE UP AROUND BY  
17 THE BANK? HOW COME Y'ALL DIDN'T DRILL A WELL UP THERE  
18 BY THE BANK, NEAR ITS PROPERTY?

19 BERNIE HAYES: AGAIN, LET'S KEEP THIS IN  
20 PROSPECTIVE. MORE WELLS WOULD ONLY TELL US - - -

21 LARRY CRUMP: THE BANK IS IN PROSPECTIVE HERE. AS  
22 I'M ASKING QUESTIONS I WOULD LIKE TO HAVE ANSWERS FOR  
23 AND I DON'T WANT TO BE BEAT AROUND THE BUSH ABOUT IT.

24 BERNIE HAYES: SOME OF THE THINGS THAT Y'ALL ARE  
25 BRING UP ARE THINGS WE CAN'T ANSWER RIGHT NOW. YOUR

1        OPINION IS AND THE COMMENTS THAT YOU'RE EXPRESSING HERE  
2        ARE THAT WE DIDN'T DO ENOUGH TO INVESTIGATE CERTAIN  
3        ASPECTS OF THIS SITE. THAT MAY BE. ALL WE CAN TELL YOU  
4        IS WE'LL GO BACK, WE'LL LOOK AT THE DATA THAT WE HAVE,  
5        WE'LL HAVE OTHER PEOPLE LOOK AT THE DATA THAT WE HAVE  
6        AND SEE IF IN FACT THAT IS THE CASE. BUT FOR US TO SIT  
7        HERE AND TELL YOU THAT BECAUSE OF YOUR CONCERNS ABOUT  
8        THE EXTENT AND THE INVESTIGATION THAT WAS DONE OR THE  
9        LACK OF IT THAT WE'RE GOING TO GO OUT AND DO MORE WORK,  
10       IT WOULDN'T BE A GOOD IDEA FOR US SPENDING YOUR MONEY TO  
11       MAKE A BLANKET COMMITMENT TO THAT RIGHT HERE TONIGHT  
12       WITHOUT GOING BACK AND LOOKING AT THE SITUATION AND  
13       LOOKING AT THE DATA THAT WE HAVE. SO AGAIN, I'LL TELL  
14       YOU THESE ARE VALID COMMENTS. THERE'S REASON FOR US TO  
15       GO BACK AND LOOK AT WHAT WE'VE DONE AND DETERMINE  
16       WHETHER OR NOT IN FACT AS YOU ALL HAVE EXPRESSED WE  
17       MAYBE SHOULD HAVE DONE MORE. BUT IT WOULD BE  
18       IRRESPONSIBLE FOR US TO COMMIT TO YOU OR TO TELL YOU  
19       THAT IN FACT THAT'S WHAT WE'RE GOING TO DO SIMPLY ON THE  
20       BASIS OF YOUR COMMENTS TONIGHT AND MAKE A SNAP DECISION  
21       HERE IN THIS ROOM TO SPEND ANOTHER SEVERAL HUNDRED  
22       THOUSANDS DOLLARS OF TAXPAYER MONEY. SO IN A SENSE,  
23       WE'RE TRYING TO ANSWER YOUR QUESTIONS, BUT IN ANOTHER  
24       SENSE WHEN YOU SAY WE HAVEN'T DONE ENOUGH AND WE NEED TO  
25       DO MORE, WE CAN'T ANSWER THAT TONIGHT OTHER THAN TO SAY

1 THOSE ARE THE KIND OF COMMENTS WE WANT TO HEAR AND WE'LL  
2 GO BACK AND WE'LL LOOK AT THE DATA WE HAVE AND TRY TO  
3 MAKE A DECISION WHETHER THAT IN FACT IS THE CASE. AND  
4 THAT'S WHAT WE'LL DO.

5 LARRY CRUMP: HOW WILL WE KNOW WHAT THAT DECISION  
6 WILL BE?

7 BERNIE HAYES: WELL, THERE WILL BE OTHER PUBLIC  
8 MEETINGS AND OTHER OPPORTUNITIES FOR PUBLIC  
9 PARTICIPATION.

10 LARRY CRUMP: THIS IS NOT THE FINAL ONE?

11 BERNIE HAYES: NO, BY NO MEANS.

12 JERRY COLLINS: HAS ANYONE IN THE EPA WHEN THEY HAD  
13 THE MEETINGS IN THE MINUTES AND RECORDS, HAS ANYONE IN  
14 THE EPA EVER RECOMMENDED REMOVING OF THAT SOIL. NOWHERE  
15 IN HERE DOES IT SAY ANYTHING ABOUT REMOVING THE SOIL.  
16 AND IT SAYS OPTIONS THAT THEY SAID WERE UNSATISFACTORY  
17 ABOUT LIKE LEAVING IT DORMANT, NOT DOING ANYTHING WITH  
18 IT. THAT'S UNSATISFACTORY. THE FIRST TWO CHOICES WERE  
19 UNSATISFACTORY. WAS REMOVAL OF THE SOIL EVER BROUGHT UP  
20 BY SOMEONE ON THE EPA COMMITTEE OR WHOEVER, BY AN  
21 OUTSIDER? IS THERE ANY PUBLIC RECORDS OF ANYBODY  
22 SUGGESTING THAT THE SOIL BE REMOVED?

23 BERNIE HAYES: SANDY, CAN YOU - - -

24 SANDY MYERS: AGAIN, WE'D HAVE TO GO BACK AND LOOK  
25 THROUGH THE RECORDS TO SEE.

1 JERRY COLLINS: TO MY UNDERSTANDING I GUESS I CAN  
2 SEE THAT IT WOULD BE VERY EXPENSIVE TO REMOVE THAT SOIL  
3 AND THEN YOU HAVE TO TAKE THAT SOIL TO ANOTHER FACILITY  
4 AND BURY IT.

5 TONY JANNETTA: DO YOU BURY IT OR DO YOU INCINERATE  
6 IT?

7 SANDY MYERS: THAT'S A QUESTION THAT WOULD BE  
8 ANSWERED IN THE FEASIBILITY STUDY WHERE WE GO IN AND  
9 LOOK AT DIFFERENT ALTERNATIVES.

10 TONY JANNETTA: ISN'T THERE TECHNOLOGY THAT IF  
11 YOU'VE GOT CONTAMINATED SOIL, WE DON'T KNOW IT, YOU  
12 CAN'T OBLIGATE WHAT METHOD WOULD BE USED?

13 SANDY MYERS: YES. THERE ARE ALTERNATIVES TO CLEAN  
14 UP CONTAMINATED SOIL.

15 TONY JANNETTA: WE HAD A SCHOOL HERE THAT HAD  
16 BURIED TANKS, AND THE SOIL WAS DUG UP AND INCINERATED  
17 AND BROUGHT IT BACK TO LIFE WHERE YOU COULD REUSE IT  
18 AGAIN. SO I'M SURE TECHNOLOGY IS THERE.

19 SANDY MYERS: YES. THERE ARE OPTIONS. THERE ARE  
20 TECHNOLOGIES AVAILABLE TO CLEAN UP CONTAMINATED SOIL.

21 TONY JANNETTA: IT SOUNDS LIKE TO ME YOU'RE LEAVING  
22 SOMETHING UNDONE.

23 JERRY COLLINS: IT SOUNDS TO ME LIKE THERE'S A  
24 LITTLE BIT OF LET'S GET THIS SMOOTHED OVER, LET'S GET IT  
25 OUT OF THE WAY HERE. LET'S LET THESE PEOPLE THINK THAT



1 EVERYTHING'S BEING TAKEN CARE OF.

2 SANDY MYERS: I CERTAINLY RESPECT YOUR OPINION.

3 JERRY COLLINS: THE SOIL IS A PRIMARY CONCERN,  
4 ISSUE. SURE YOU WANT THAT WATER CLEANED UP, BUT WHAT'S  
5 CAUSING THAT WATER. IT'S THE CHEMICAL THAT IS STILL  
6 LEFT IN THAT SOIL.

7 TONY JANNETTA: IT'S A SPONGE, THE SOIL.

8 JERRY COLLINS: YOU CAN THINK OF IT - - -

9 BILL RUTLEDGE: I'M BILL RUTLEDGE, AND I'D JUST  
10 LIKE TO SAY A COUPLE OF THINGS, MAYBE IT WILL HELP.  
11 SOME OF THESE FOLKS HAVE A BETTER UNDERSTANDING. PART  
12 OF THEIR CONCERN I THINK IS CAUSED BY LACK OF KNOWLEDGE  
13 AND UNDERSTANDING AT JUST WHAT HAS BEEN DONE AND WHAT'S  
14 PLANNED FOR THE FUTURE. A LOT OF TESTING OF SOIL  
15 FOLLOWED THE REMOVAL OF THE LIQUIDS ON SITE, AND SOIL  
16 HAS BEEN REMOVED. AND WHAT HAS BEEN DONE IS EXACTLY  
17 WHAT THE GENTLEMAN SAID WHY WOULDN'T IT BE DONE, AND  
18 THAT IS TESTING AND REMOVAL OF SOME SOIL, EXTENSIVE  
19 TESTING OF THE SITE BEHIND THE BANK BUILDING THAT YOU  
20 HAVE CUT OUT THERE. THERE'S TWO SEPARATE SITES FOR THE  
21 BANK, IF I MIGHT JUST ADDRESS THAT IN A POSITIVE WAY,  
22 WAS NEVER OWNED OR CONTROLLED IN ANY WAY BY THE CHEMICAL  
23 COMPANY. THE FRONT SITE THAT'S ON THE HIGHWAY, THE SITE  
24 BEHIND IT WAS A LOW - - - AND IT WAS USED AS A FILL OF  
25 CONSTRUCTION MATERIAL ABOUT FOUR OR FIVE DRUMS OF STILL

1 BOTTOMS, WHICH WAS PAINTS OR DYES, GOT OVER THERE AND  
2 THEY PROBABLY HAD TEN OR FIFTEEN GALLONS OF DRIED - - -  
3 IF YOU'VE EVER HAD AN OLD PAINT CAN AND IT DRIED OUT,  
4 YOU KNOW WHAT I'M TAKING ABOUT, WHAT'S LEFT AFTER ALL  
5 THE SOLVENTS AND LIQUIDS HAVE DISSIPATED. AND THAT'S  
6 EXACTLY WHAT WAS BEHIND WHAT IS NOW THE VACANT BANK  
7 BUILDING. IT WASN'T BURIED THERE AS A DUMP. I DON'T  
8 LIKE THAT MIDNIGHT DUMPING. I SAY THAT IN HUMOR BECAUSE  
9 I KNOW WHAT YOU'RE TALKING ABOUT. IT WAS JUST ONE OF  
10 THOSE THINGS. I WAS IN THE CONSTRUCTION BUSINESS. WE  
11 WERE DUMPING ASPHALT BACK THERE. WE WERE DUMPING ROCKS.  
12 WE WERE DUMPING SAND, DIRT, AND WHATNOT, AND THAT'S ALL  
13 THAT GOT BACK THERE. THAT WAS NOT FOUND WHEN THEY DUG  
14 THE FOUNDATIONS. LAW ENGINEERING WENT BACK IN THERE TO  
15 DO SOME SITE STUDIES WITH DRILLING EQUIPMENT. THESE  
16 DRUMS WERE FOUND, SOME OF THEM, AND THEY WERE IN  
17 DIFFERENT LOCATIONS. THEY WEREN'T CONCENTRATED. SO THE  
18 BANK DECIDED JUST TO GO IN THERE AND STRIP THE WHOLE  
19 SITE. THEY STRIPPED THAT WHOLE SITE, TOOK THE DIRT OUT,  
20 HAULED PART OF IT TO THE FILL DOWNSTATE AND PART OF IT  
21 TO THE COUNTY LANDFILL. AND THEY HAULED IN RED CLAY ON  
22 THAT SITE. THEY DID EXTENSIVE SOIL TESTING TO DETERMINE  
23 AT WHAT LEVEL THEY QUIT EXCAVATING. AND EPA AND DHEC  
24 WERE ON SITE. IT WAS MONITORED. I THOUGHT THEY DID AN  
25 AWFUL LOT MYSELF, AND ALSO ON THE SITE NEXT DOOR WE DID

1 THE SAME THING. WE EXCAVATED AND HAULED OUT. SO THERE  
2 HAS TO BE SOME BOUNDARY SOMEWHERE. SO A LOT OF TIME,  
3 MONEY, AND EFFORT HAS BEEN PUT FORTH TO GET IT TO THE  
4 POINT THAT IT IS. THERE'S NO WAY ANY SOIL, IF YOU JUST  
5 GO ON ANY SOIL ALMOST YOU FIND IN ANYWHERE, THERE ARE  
6 SOME LEVELS OF CONTAMINATION. SOME OF THEM ARE METALS.  
7 WE FIND SILVER, MANGANESE, IRON IN SOILS. AND SOME OF  
8 THEM ARE AT A - - - YOU HAVE TO SAY THERE'S AN  
9 ACCEPTABLE LEVEL. YOU CAN'T GUARANTEE ANYTHING AND  
10 EVERYTHING. WHEN WE WALK OUT OF HERE TONIGHT, THE ROADS  
11 HAVE BEEN PROVIDED FOR OUR SAFETY, THE STOP SIGNS, THE  
12 HIGHWAY PATROL; BUT IT DOESN'T GUARANTEE ME SAFE PASSAGE  
13 HOME. I MAY BE KILLED BEFORE I GET THERE. SO YOU CAN'T  
14 JUST - - - YOU CAN'T GO TO CHINA TO GET RID OF THE  
15 CONTAMINATED SOIL.

16 JERRY COLLINS: YOU'RE MR. RUTLEDGE?

17 BILL RUTLEDGE: YOU NEED TO ADDRESS THEM IF YOU  
18 HAVE A QUESTION.

19 JERRY COLLINS: IS THIS MR. RUTLEDGE HERE?

20 BILL RUTLEDGE: I AM BILL RUTLEDGE.

21 JERRY COLLINS: DO YOU OWN THIS PROPERTY?

22 BILL RUTLEDGE: THE CORPORATION OWNS THE PROPERTY.  
23 I DON'T.

24 JERRY COLLINS: DO YOU OWN THE CORPORATION?

25 SANDY MYERS: LET'S NOT GET INTO A DEBATE - - -

1 JERRY COLLINS: WHAT I'M GETTING AT, IT SOUNDS VERY  
2 CONVINCING, BUT I BELIEVE THIS MAN OWNS THIS PROPERTY.  
3 AND THAT FROM WHAT I'VE READ IS MR. RUTLEDGE AND THE TEN  
4 OTHER COMPANIES THAT ARE RESPONSIBLE FOR DELIVERING THE  
5 CHEMICALS EVEN THOUGH THEY DIDN'T DUMP THE CHEMICALS ON  
6 SITE, THEY'RE RESPONSIBLE FOR THE CLEANUP COSTS BECAUSE  
7 THEY HAVE CONTRIBUTED TO - - - LIKE ONE OF THEM IS  
8 CELANESE, I BELIEVE. CELANESE HERE IN ROCK HILL WAS  
9 PART OF ONE OF THOSE TEN COMPANIES THAT DELIVERED  
10 CHEMICALS TO THEM. SO HIS STORY SOUNDS VERY GOOD, BUT  
11 FROM WHAT I UNDERSTAND HE OWNS THIS PROPERTY OR HAS  
12 SOMETHING TO DO WITH IT STILL AND HE IS ALSO HAVING TO  
13 PAY FOR THIS CLEANUP. SO DON'T JUST BE FOOLED.

14 SANDY MYERS: ARE THERE ANY OTHER QUESTIONS OR  
15 CONCERNS?

16 TONY JANNETTA: THE DIFFERENCE IN PRICE BETWEEN AN  
17 ON SITE CLEANING AND USING THE CITY'S FACILITIES, WHAT  
18 WAS THAT DETERMINATION?

19 SANDY MYERS: IT'S ROUGHLY HALF. TREATING ON SITE  
20 WAS ABOUT IN THE NEIGHBORHOOD OF FOUR MILLION DOLLARS  
21 AND DIRECT DISCHARGE WAS ABOUT TWO MILLION DOLLARS.

22 TONY JANNETTA: YOU KNOW, THE CITY HAS A NEW POLICY  
23 NOW. BACK THEN WHEN THEY DID IT, WHEN THE CHEMICAL  
24 COMPANIES WERE AROUND, THEY DID IT THEIR WAY. THE  
25 CITIES DID NOT HAVE THE REGULATIONS THAT THEY HAVE NOW.

1 THE REGULATIONS ARE CHANGING AS OF TODAY, DAY TO DAY.  
2 CHEMICAL COMPANIES NOW HAVE TO TREAT THEIR WASTE TO AN  
3 ACCEPTABLE CITY STANDARDS, STATE STANDARDS, BEFORE IT'S  
4 DUMPED INTO THE CITY'S SEWER SYSTEM. THIS IS WHERE I GO  
5 BACK IF YOU TREAT IT ON SITE TO AN ACCEPTABLE LEVEL  
6 PRIOR TO DUMPING IT IN THE CITY SEWER SYSTEM THAT'S NOW  
7 BEING USED THAT IS NOW BEING ADDRESSED TO OTHER  
8 COMPANIES THAT ARE ESTABLISHING HERE IN ROCK HILL, THAT  
9 WOULD PROVIDE OUR SAFEGUARD IN ADDITION TO THE CITY'S  
10 TREATMENT SYSTEM.

11 SANDY MYERS: I APPRECIATE YOUR COMMENT. ARE THERE  
12 ANY OTHER QUESTIONS?

13 JERRY COLLINS: I HAVE JUST ONE QUESTION RELATED TO  
14 WHAT I SAID ABOUT THE TEN COMPANIES THAT ARE GOING TO BE  
15 RESPONSIBLE FOR CLEANING UP. HOW COME THIS HAS NOT BEEN  
16 BROUGHT UP AS FAR AS WHO IS PAYING FOR THIS? IT'S NOT  
17 THE CITY OF ROCK HILL THAT'S GOING TO PAY FOR THIS?

18 MARK DAVIS: NO. IT IS NOT. THE PARTIES  
19 RESPONSIBLE FOR THE CONTAMINATION WILL PAY FOR ALL THE  
20 COSTS, ALL THE PAST COSTS, ALL THE FUTURE COSTS.

21 JERRY COLLINS: HE WILL?

22 MARK DAVIS: ALL THE PARTIES RESPONSIBLE.

23 JERRY COLLINS: WHO ARE THOSE PARTIES?

24 MARK DAVIS: I THINK YOU MENTIONED TEN OF THOSE  
25 - - - TEN COMPANIES THAT YOU KNEW OF.

1 JERRY COLLINS: IS BILL RUTLEDGE ONE OF THESE  
2 PARTIES?

3 MARK DAVIS: WE HAVE NOT FILED A LAWSUIT AS OF YET  
4 SO I CAN'T NAME WHO. WE'RE GOING TO GO AFTER EVERYBODY  
5 WHO WE CAN WHO WE CAN RECOVER MONEY FROM.

6 JERRY COLLINS: DID THE COMPANY, I WANT TO SAY  
7 BILL RUTLEDGE'S COMPANY, DID THEY ILLEGALLY DUMP THIS  
8 CHEMICAL ON THE LOCATION WHERE THE BANK IS AT?

9 MARK DAVIS: NO.

10 JERRY COLLINS: THEY DO NOT OWN THAT PROPERTY SO  
11 THEY WERE DUMPING IT, SOMEBODY WAS DUMPING IT ILLEGALLY  
12 IF THEY DIDN'T OWN IT.

13 MARK DAVIS: YOU HAVE TO UNDERSTAND WHEN THIS  
14 COMPANY WENT OUT OF BUSINESS BACK IN 1964, SUPERFUND LAW  
15 WAS NOT ENACTED UNTIL 1980. AND AT THE TIME THEY DID  
16 THE DUMPING, THERE WAS NO SUCH THING AS ILLEGAL DUMPING;  
17 THEY JUST DID WHAT WAS COMMON BUSINESS PRACTICE AT THE  
18 TIME SO THERE WAS NO ILLEGAL DUMPING THAT WAS GOING ON.  
19 THERE ARE COMPANIES AND THERE ARE PARTIES OUT THERE WHO  
20 ARE RESPONSIBLE FOR THE CONTAMINATION OF IT.

21 JERRY COLLINS: IS THIS GENTLEMAN ONE OF THEM?

22 MARK DAVIS: HE IS THE CURRENT OWNER OF THE  
23 PROPERTY UNDER THE SUPERFUND LAW - - -

24 LARRY CRUMP: YOU KNOW IT DOESN'T REALLY MATTER IF  
25 MR. RUTLEDGE IS RESPONSIBLE FOR THIS OR NOT. WE'RE NOT

1 HERE TONIGHT OVER WHO IS TO ARGUE WHO IS RESPONSIBLE.  
2 WE'RE TRYING TO CLEAN IT UP. THIRTY YEARS AGO HE HAD NO  
3 KNOWLEDGE OF WHAT COULD BECOME OF CHEMICALS BEING DUMPED  
4 IN THE GROUND. THIS IS 1994. LET'S KEEP THE SUBJECT IN  
5 1994.

6 JERRY COLLINS: WHY IS THIS MAN HERE? WHY IS THIS  
7 MAN HERE?

8 LARRY CRUMP: BECAUSE HE CARES EVIDENTLY. I HAVE  
9 THE GREATEST RESPECT AND ADMIRATION FOR HIM BEING HERE  
10 TONIGHT.

11 JERRY COLLINS: HE'S JUST PAINTING A PRETTY PICTURE  
12 FOR EVERYBODY.

13 LARRY CRUMP: WELL, I DON'T THINK HE'S THAT WAY.

14 BERNIE HAYES: WELL GENTLEMEN, THANKS. THOSE  
15 COMMENTS ARE WELL TAKEN ON BOTH SIDES SO LET'S NOT FALL  
16 INTO A DEBATING SOCIETY HERE.

17 SANDY MYERS: WE CERTAINLY DON'T WANT TO HAVE A  
18 DEBATE BETWEEN THE DIFFERENT - - - IF THERE ARE NO OTHER  
19 QUESTIONS, THEN THIS MEETING IS ADJOURNED. I APPRECIATE  
20 YOUR ATTENDANCE AND YOUR INTEREST.

WHEREUPON, THE MEETING WAS ADJOURNED AT 8:50 P.M.

KATHY STANFORD, CVR-CM  
COURT REPORTER

(RECORDED TAPES RETAINED FOR FIFTEEN DAYS FROM DATE OF  
CERTIFICATION UNLESS OTHERWISE REQUESTED)

DALLAS REPORTING  
Certified Court Reporters  
Rock Hill, South Carolina  
(803) 328-9640

**APPENDIX B**

**STATE OF SOUTH CAROLINA CONCURRENCE LETTER  
RUTLEDGE PROPERTY SUPERFUND SITE**





Commissioner: Douglas E. Bryant

Board: Richard E. Jabbour, DDS, Chairman  
Robert J. Stripling, Jr., Vice Chairman  
Sandra J. Molander, Secretary

William E. Applegate, III,  
John H. Burriss  
Tony Graham, Jr., MD  
John B. Pate, MD

*Promoting Health, Protecting the Environment*

June 14, 1994

John H. Hankinson, Jr.  
Regional Administrator  
U.S. EPA, Region IV  
345 Courtland Street  
Atlanta, GA 30365

RE: Rutledge Property - Record of Decision

Dear Mr. Hankinson:

The Department has reviewed the revised Record of Decision (ROD) dated June 2, 1994 for the Rutledge Property site and concurs with the ROD. In concurring with this ROD, the South Carolina Department of Health and Environmental Control (SCDHEC) does not waive any right or authority it may have under federal or state law. SCDHEC reserves any right and authority it may have to require corrective action in accordance with the South Carolina Hazardous Waste Management Act and the South Carolina Pollution Control Act. These rights include, but are not limited to, the right to ensure that all necessary permits are obtained, all clean-up goals and criteria are met, and to take a separate action in the event clean-up goals and criteria are not met. Nothing in the concurrence shall preclude SCDHEC from exercising any administrative, legal and equitable remedies available to require additional response actions in the event that: (1)(a) previously unknown or undetected conditions arise at the site, or (b) SCDHEC receives additional information not previously available concerning the premises upon which SCDHEC relied in concurring with the selected remedial alternative; and (2) the implementation of the remedial alternative selected in the ROD is no longer protective of public health and the environment.

The State concurs with the selected groundwater remediation alternative of extraction and direct discharge to the local POTW. The State also concurs with the additional investigative work to be completed during the Remedial Design phase. This includes: determining the relationship between the contamination detected in the private wells and the contamination detected in the on-site monitoring wells, collecting additional background surface soil samples to confirm that the variance in manganese is consistent with the environmental setting, and collecting additional surface water and sediment samples to determine if the selected background sample is representative of true background conditions.

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Mr. John H. Hankinson, Jr.  
Rutledge Property - ROD  
June 14, 1994

State concurrence on this remedial alternative is based on the alternative meeting all applicable clean-up criteria. Concurrence is also contingent upon the results of the additional investigative work to be completed during the Remedial Design phase. Depending on the results of the investigative work, an Explanation of Significant Differences (ESD) and/or ROD Amendment may be required. An ESD and/or ROD Amendment would require State concurrence.

Sincerely,



R. Lewis Shaw, P.E.  
Deputy Commissioner  
Environmental Quality Control

c: Hartsill Truesdale  
Keith Lindler  
Gary Stewart  
Richard Haynes  
Billy Britton  
Al Williams, Catawba EQC