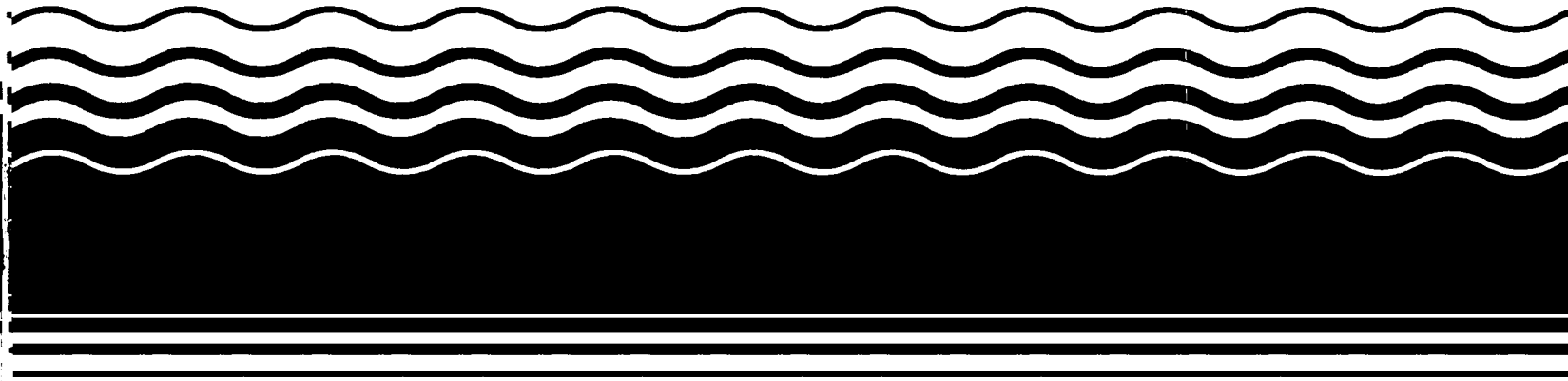
PB95-964013
EPA/ROD/R04-95/223
April 1995

EPA Superfund Record of Decision:

Palmetto Recycling, Inc. (O.U. 1), Columbia, SC 3/30/1995



RECORD OF DECISION

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

March 1995

PALMETTO RECYCLING SUPERFUND SITE

COLUMBIA, RICHLAND COUNTY
SOUTH CAROLINA

PREPARED BY:

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

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Palmetto Recycling Site
Columbia, Richland County, South Carolina

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Palmetto Recycling Superfund Site (the Site), located in Columbia, Richland 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 Contingency Plan (NCP), 40 C.F.R. Part 300 et seq. This decision is based on the administrative record file 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 surface soil contamination.

The major components of the selected remedy include:

SURFACE SOIL - SOURCE CONTROL

- Excavation of contaminated surface soil that exceeds the remediation level, with verification sampling;
- The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restriction (LDR) of 5 ppm for Pb using the TCLP test, then the soil will be transported to a RCRA

Subtitle C Facility where it will be pretreated in order to comply with the LDRs. If soil does not exceed the 5 ppm LDR, then the soil will be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment.

- The excavated area shall be backfilled with clean soil, properly recompacted, and the land regraded to the natural slope. A vegetative cover will be established to minimize undue surface water runoff and minimize erosion.

SITE MONITORING

- Groundwater monitoring will be conducted on an annual basis for at least five years to evaluate the site progress.

ADDITIONAL SAMPLING

Based on public health concerns generated during the public comment period, EPA will obtain additional confirmation samples from the adjacent residential yards and from the dirt road that borders the site to the east to confirm the absence of soil contamination through offsite migration.

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 and alternative treatment technology to the maximum extent practicable for this Site. However, because treatment of the contaminated soil was not found to be economical, the soil remediation component of this remedy does not satisfy the statutory preference for treatment as a principal element.

Since selection of this remedy will result in contaminated groundwater remaining on-site above health-based levels, but below Maximum Contaminant Levels, the Environmental Protection Agency (EPA) will conduct a review within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

30 MAR 95

Richard D. Green
Associate Director
Office of Superfund and Emergency Response

Date

SECTION PAGE

APPENDICES

DECISION SUMMARY
PALMETTO RECYCLING SUPERFUND SITE
COLUMBIA, RICHLAND COUNTY, SOUTH CAROLINA

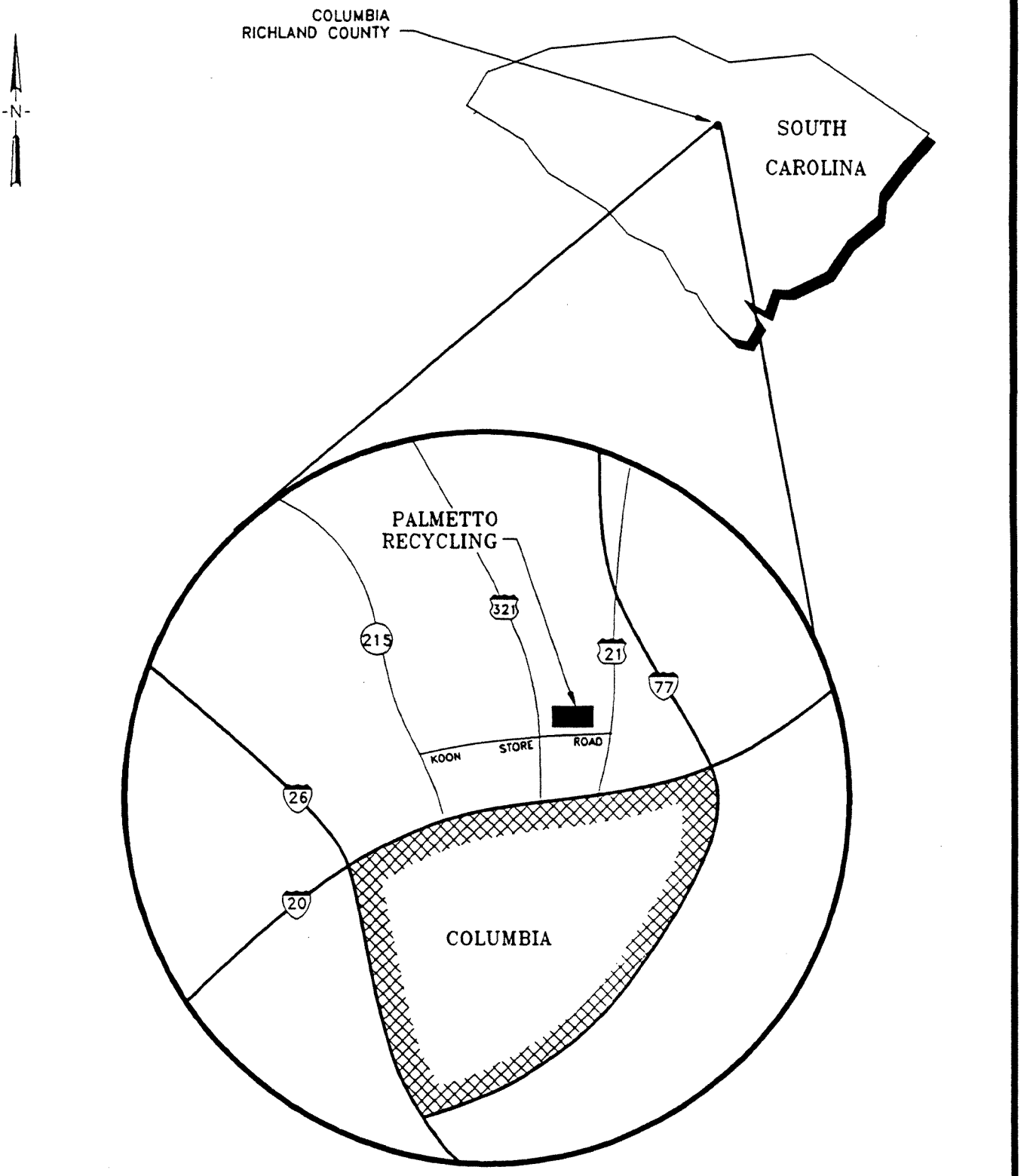
1.0 SITE LOCATION AND DESCRIPTION

The Palmetto Recycling Site is located about 8 miles north of Columbia, South Carolina, in rural Richland County. The site is positioned between U.S. Routes 321 and 21 on the north side of Koon Store Road (State Road S-40-61). As shown in Figure 1-1, a more precise placement of the property location is given by the coordinates defined by the Universal Transverse Mercator Grid System, which are north 34° 7′ 25" latitude and west 81° 00′ 43" longitude (USGS, 1990). It occupies approximately 1.5 acres and is bounded by Koon Store Road to the south, an unnamed dirt road (and farther removed, Dry Fork Creek) to the east, an unnamed tributary of Dry Fork Creek to the north, and a residential lot and home to the west (see Figure 1-2).

Important physical features of the site include a 6-ft x 30-ft concrete walkway, an office building, a 135-ft by 170-ft asphalt pad with two concrete pads, a frame work shed, a concrete tank saddle, and an unnamed tributary that flows to Dry Fork Creek (see Figure 1-2). A previously, open excavation which was filled with water associated with abandoned truck scales was sampled during the RI field effort and found to be uncontaminated. The water was pumped to the unnamed tributary and the pit was backfilled with clean soil and graded to prevent ponding. A sparse cover of crushed rock was applied for soil erosion control. The waste materials in the suspected dumping areas have been removed. In addition, five groundwater monitor wells, installed by a contractor for the Palmetto Recycling, Inc. during a 1981 hydrogeological study, are located onsite. Dry Fork Creek, located east of the site, flows toward the south into the North Branch of Crane Creek. Dry Fork Creek receives drainage from an unnamed tributary located north of the site.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The property was purchased in 1979 by Palmetto Recycling, Inc. for the purpose of operating a battery recycling company. From 1979 to 1983, the facility was involved in the reclamation of lead from batteries. It is unknown what activities occurred onsite prior to 1979. A collection sump received wastewater contaminated with sulfuric acid from various plant operations. The sump consisted of a below-grade fiberglass tank in an unlined pit. Specific neutralization process details are unknown, but at some point, Palmetto Recycling started discharging wastewater of unknown composition to the local sewer system. In addition, a former employee reported that during operations, liquid wastes were dumped north of the site, outside the fenced area (Tanner, 1992).



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SITE LOCATION MAP

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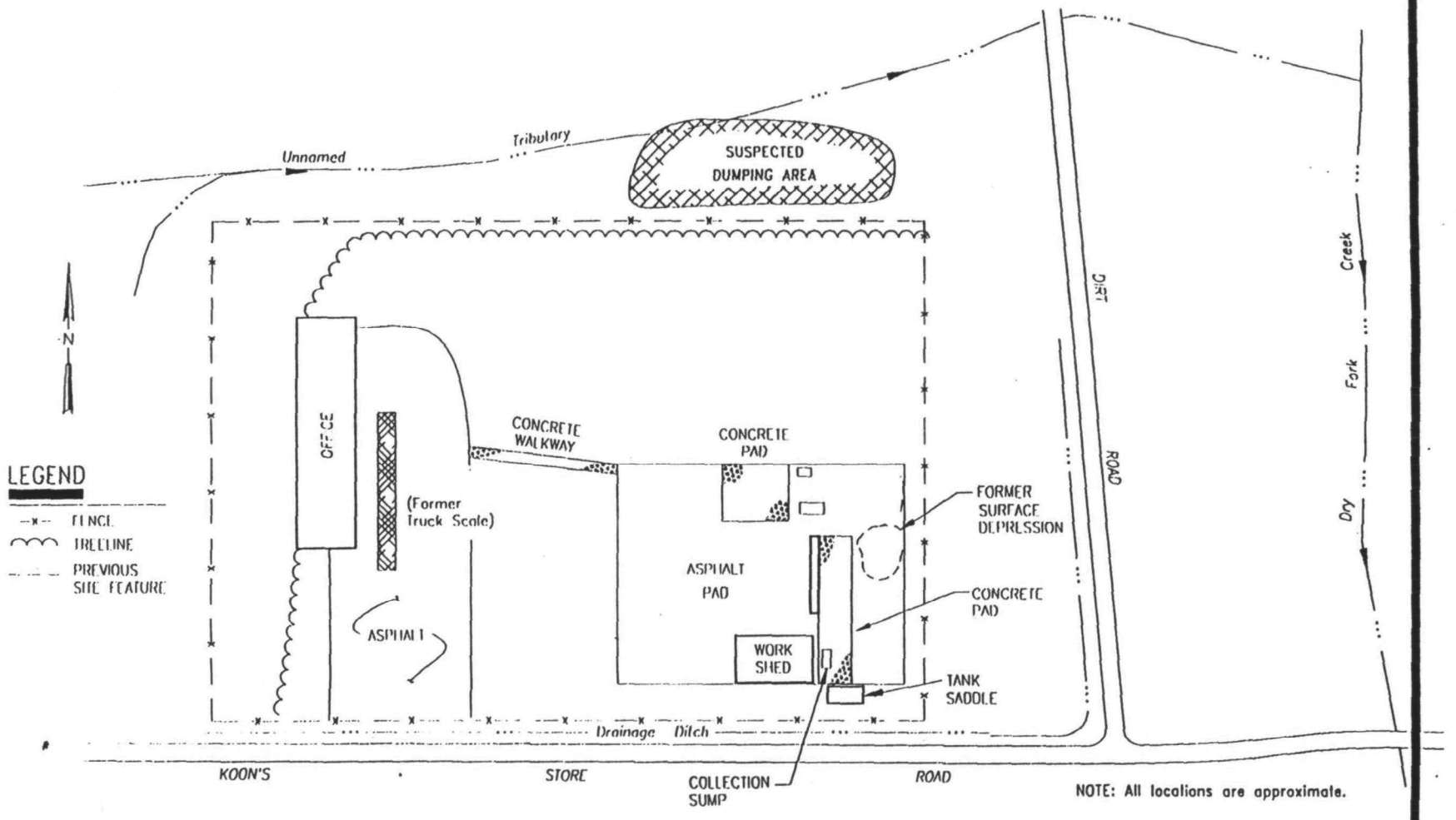
PALMETTO RECYCLING
COLUMBIA, SOUTH CAROLINA

FIGURE NO. 1



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CURRENT SITE FEATURES MAP

PALMETTO RECYCLING

RICHLAND COUNTY, SOUTH CAROLINA

FIGURE NO. 2

After discharging wastewater for an unknown period of time, Palmetto Recycling attempted to obtain a discharge permit. In 1981, the South Carolina Department of Health and Environmental Control (SCDHEC) denied applications by Palmetto Recycling, Inc. to operate a hazardous waste facility and to transport hazardous wastes. After this attempt, some waste liquids were sent offsite to an acid recycler and some were disposed of onsite. It is not known if these wastes were neutralized before shipment or onsite disposal. The quantities are also unknown. Plastic battery cases and lead plates were eventually sold to other companies as reusable materials (EPA, 1992).

A study conducted by the SCDHEC identified elevated concentrations of lead and iron in the groundwater samples collected next to the sump. High levels of lead, barium, and chromium were found in sediment from the unnamed stream that runs north of the site. The investigation also revealed the presence of elevated concentrations of lead in on-site soils. SCDHEC noted the presence of a five-foot deep, unlined acid pit containing 1,800 gallons of acid waste at the site, as well as 100 drums of caustic waste and an unstablized pile of battery casings.

On February 11, 1983, Palmetto Recycling filed for bankruptcy and Ryan Hovis was appointed trustee. In 1984, workers removing equipment from the site destroyed a section of the roof covering the on-site collection sump that collected wastewater containing lead oxide and sulfuric acid from the wash process. As a result of this incident, sump water percolated through soils adjacent to the pit area. To address immediate health and environmental risks posed by the Site, three removal actions have occurred at the site. On April 25, 1984, 10,800 gallons of contaminated water were collected by Bryson Industries Services and taken to Alternate Energy Resources. On April 1984, SCDHEC informed the bankruptcy trustee that additional measures would be necessary to bring the site under control. Later in 1984, approximately 100 drums containing liquid caustic waste were removed from the site. On October 2, 1985, SCDHEC authorized Future Fuel Development, Inc., to remove site soils contaminated with lead and chromium. A total of 365 tons of soils were removed from various areas on-site and placed in off-site landfills during 1985 and 1986.

In 1986, EPA conducted a preliminary assessment of the site. EPA proposed the site for inclusion on the National Priorities List (NPL) in January 1987. The Palmetto Recycling site was formally added to the NPL in July 1987.

In 1992, EPA negotiated with parties it had identified as Potentially Responsible Parties (PRPs) for the site to conduct the RI/FS. An agreement was not reached between EPA and the parties.

Therefore, EPA conducted RI Field activities at the Site from April 1993 through June 1993 and from March 1994 through July 1994.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

An information repository, which includes the Administrative Record, was established at the Northeast Regional Library in 1994, and is available to the public at both the information repository maintained at the Northeast Regional Library, 7490 Parklane Road, Columbia, South Carolina and at the EPA, Region IV Library, 345 Courtland Street, Atlanta, Georgia, 30365. The notice of availability of these documents was published in "THE STATE" on November 21, 1994.

A public comment period for the proposed plan was held from November 22, 1994 to January 23, 1995. A notice of an extension of the public comment period was published in "THE STATE" on December 18, 1994. In addition, a notice of the extension was mailed to all parties on the Site mailing list. A public meeting was held on December 6, 1994, where representatives from EPA answered questions regarding the Site and the remedial alternatives under consideration, which were discussed in the proposed plan.

EPA received oral comments during the December 6, 1994, public meeting, and written comments during the 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

The purpose of the remedial alternative selected in this ROD is to reduce current and potential future risks at this Site. There is an unacceptable current risk present at the Site. The soil remedial action will remove current and potential future risks posed by the contaminated surface soil. 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 eighty-six (86) soil samples, twelve (12) groundwater samples, three (3) surface water samples, and six (6) sediment samples were collected during the RI. The main portion of the RI was conducted from April 1993 to June 1993, March 1994, June 1994 and July 1994.

5.1 Meteorology

Richland County is hot and generally humid in the summer because of moist air from the Atlantic Ocean. Winter is moderately cold but short, because cold waves from the north are impeded by the mountains to the northwest of the county. During the summer, the average daily temperature is 80° fahrenheit (F) and in the winter it is 48°F. The day-to-day weather is controlled by the movement of pressure systems across the country, although during the summer there are relatively few complete exchanges of air masses, and tropical maritime air masses persist for extended periods. During most of the year, prevailing winds in the area are generally out of the southwest. In the late summer and fall, prevailing winds are out of the northeast.

Precipitation is evenly distributed throughout the year. Average annual rainfall is approximately 47 inches, most of which falls between April and September. The average relative humidity in mid-afternoon is about 55 percent. Humidity is higher at night and the average at dawn is about 90 percent. 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 (USDA, 1978).

5.2 Geologic and Hydrogeologic Setting

5.2.1 Geology/Soils

The site is situated in the Piedmont Physiographic Province and the Carolina Slate Belt Geologic Province of South Carolina. The Carolina Slate Belt is part of an extensive group of metamorphosed, volcanic, and sedimentary rocks occurring along the southeast edge of the Piedmont Province from Georgia to Virginia. In the vicinity of the site, these rocks consist of meta-argillite, phyllite, volcanic tuff, and volcanic flows of the Asbill Pond Formation. Most of these rocks are mantled by residual soil that is developed through in-situ weathering of fractured or jointed metamorphic rocks (Pooser and Johnson, 1961).

The site area is underlain by unconsolidated residual soil derived directly from the in-situ weathering of meta-argillite/phyllite/ tuff rocks of the Carolina Slate Belt. The strike of bedding in

the vicinity of the site is approximately north-south and dip is toward the west. The original sediments comprising the meta-argillite were muds and silts. Tuffaceous material and limestone are important constituents in some meta-argillite beds. The phyllite is derived from the same type of sedimentary rocks as the meta-argillite and is considered to be the higher rank metamorphic equivalent of meta-argillite. The volcanic rocks are classified as lithic tuffs and rhyolitic/andesitic flows. Basaltic dikes and aplitic intrusives are also fairly common.

5.2.2 Site-Specific Geology

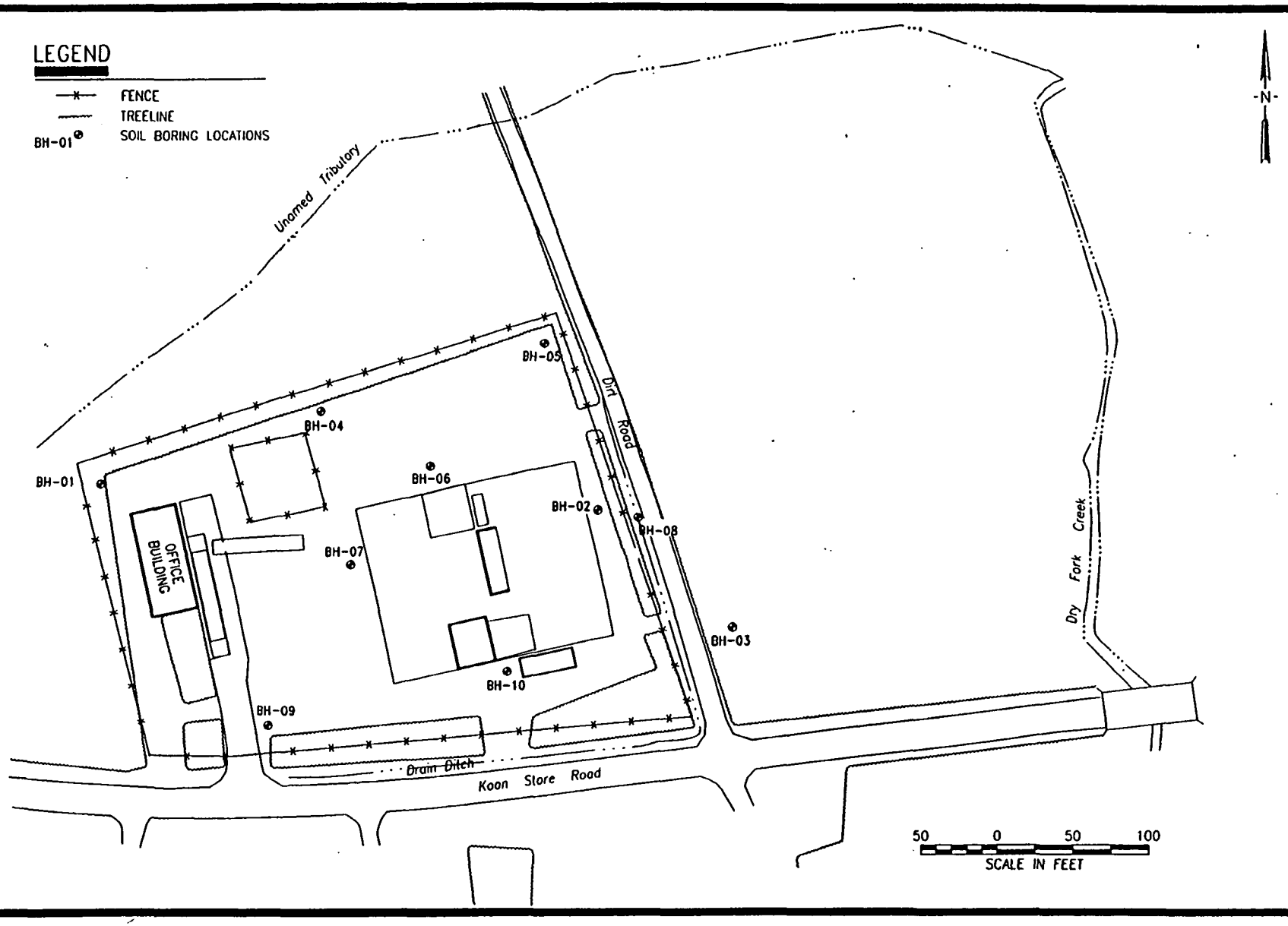
The initial assessment of geologic conditions at the facility was conducted by SCDHEC (Knox, 1983). The assessment included the interpretation of geophysical data and the drilling of soil borings near an acid sump on the eastern side of the work shed. These data indicated that the lithology at the site was primarily weathered argillite to a depth of 60 feet. Sandy clay topsoil was also observed in the vicinity of the soil borings.

Site specific characterization of the geologic strata underlying the facility was developed during this RI with subsurface data collected from ten soil borings. The location of each boring is shown on Figure 3. Methods used to obtain soil samples from the soil borings included split-spoon sampling and rock coring. Lithologic evaluation of split-spoon and core samples was conducted with field descriptions and geotechnical tests and was limited to the upper 84 feet of materials underlying the site.

Lithologic evaluation of split-spoon samples showed soils and saprolite were composed of varying combinations of gravel, sand, silt, and clay (see Figure 4). The dominant lithologies were clay and silt, the primary constituents of argillite. However, due to the interlayered nature of these sediments, zones of silty sand, gravel, and clay can predominate locally. Sands were typically fine-grained. Soil colors included red, yellow, gray, brown, and green.

Petrologic evaluation of the core samples showed the rocks underlying the unconsolidated soil and saprolite material was primarily argillite. The argillite was generally gray-green to tan and was highly fractured and slightly contorted. Secondary mineralization along fractures was also common. Fractures typically occurred at angles greater than 45 degrees. Other rocks identified in core samples include graywacke and volcanic tuff.

The lithologies which occur at the site include a soil layer comprised of unconsolidated to semi-consolidated soils and saprolite overlying a complex of sedimentary and/or volcanic rocks.



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LOCATIONS OF SOIL BORINGS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 3

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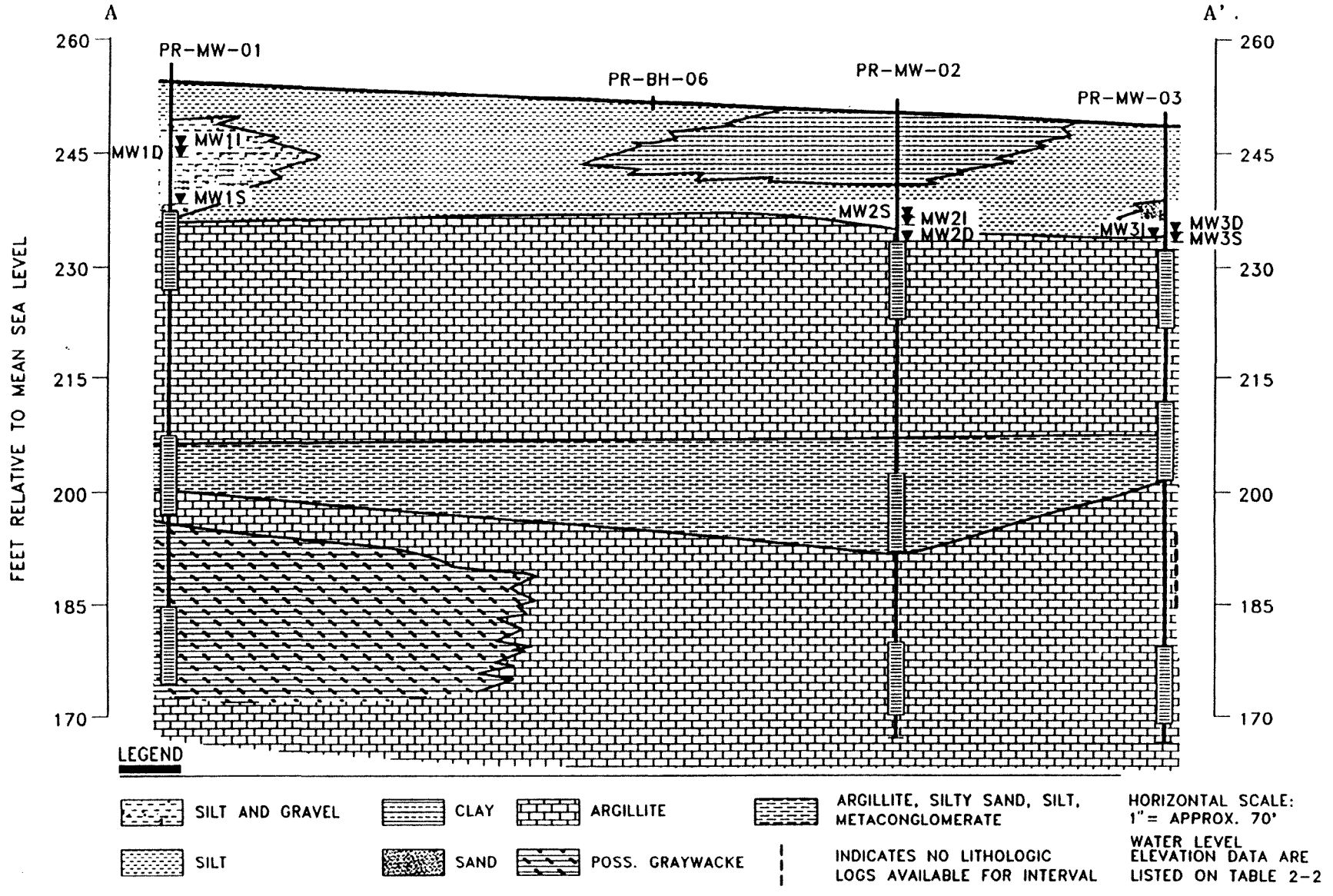

CDM FPC ARCS IV

GEOLOGIC CROSS SECTION A–A'

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 4

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The soil/saprolite layer consists primarily of residual materials derived from the in-situ chemical weathering of the underlying rock. Locally within stream basins near the site, residual soil and/or rock have been chemically and mechanically weathered to form alluvial deposits. Alluvial deposits generally overlie saprolite along these surface water features.

5.2.3 Hydrogeology

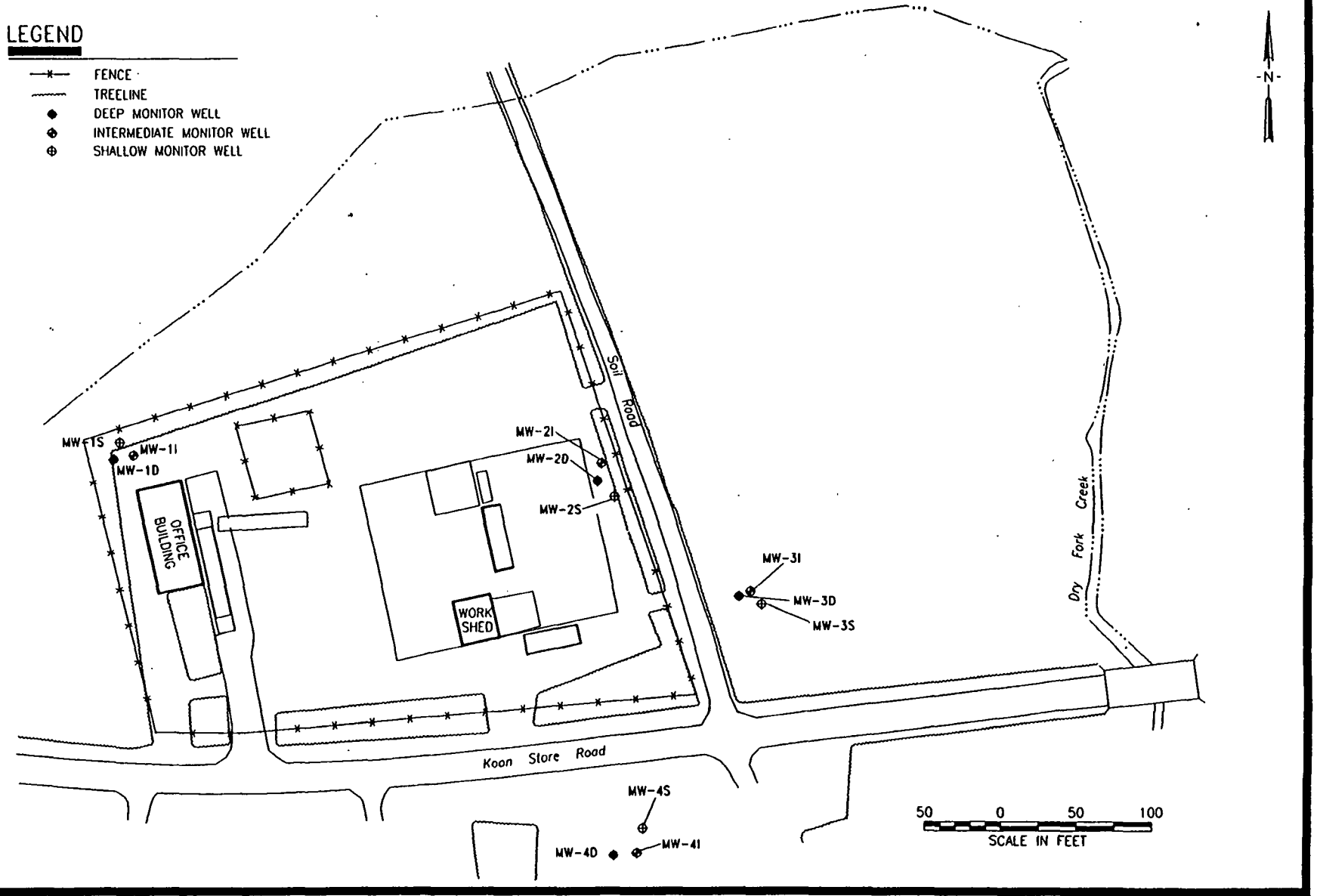
The initial assessment of hydrogeological conditions at the site was conducted by SCDHEC. Groundwater data collected during this assessment consisted of water table measurements collected from five groundwater monitoring wells. Results of the measurements indicated the depth to groundwater was 5 to 11 feet below ground surface and the hydraulic gradient was 0.0265. Estimated water table contours constructed with these data indicated the direction of groundwater movement was southeast toward Dry Fork Creek.

Twelve groundwater monitoring wells were installed during this RI to evaluate the hydraulic characteristics of the aquifer system at the site. These were installed in clusters and each cluster was composed of one shallow, one intermediate, and one deep well. One cluster was installed at four different locations. The location of each monitoring well is shown on Figure 5.

The shallow wells were completed in the shallow water-bearing zone, the intermediate wells were completed in the intermediate water-bearing zone, and the deep wells were completed in the deep water-bearing zone. These water-bearing zones are considered to be situated within a single water table aquifer. The aquifer is comprised of a layer of saprolite overlying a unit of fractured bedrock. The saprolite contains the shallow and intermediate water-bearing zones; the deep water-bearing zone is located in the fractured bedrock.

The horizontal movement of groundwater through the aquifer system was evaluated using hydraulic conductivity values determined from slug tests in each well. The results of these in-situ hydraulic conductivity tests indicate that the average horizontal hydraulic conductivities of the soil and rock were 0.053 and 0.48 feet per day (ft/day), respectively.

The vertical movement of groundwater through the aquifer system and hydraulic head differences at well clusters were evaluated by measuring the hydraulic conductivity of samples collected in Shelby tubes and sent to a laboratory during the subsurface investigation. The results of the vertical hydraulic conductivity tests indicate that values ranged from 0.001 to 0.167 ft/day and averaged 0.004 ft/day. Comparison of the hydraulic conductivity values shows that



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LOCATIONS OF GROUNDWATER MONITORING WELLS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 5

CDM FEDERAL PROGRAMS CORPORATION
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the horizontal hydraulic conductivity value for the shallow water bearing zone exceeds the average vertical hydraulic conductivity by one order of magnitude, suggesting anisotropic conditions.

Groundwater is present in two distinct hydrostratigraphic units at the facility. The uppermost unit consists of unconsolidated sediments including clay and silt. These sediments are underlain by a more indurated unit of argillite, a rock composed mainly of clay minerals. Water in the upper unit is transmitted through effective pore space in the unconsolidated sediments. Fractures and joints serve as transmission pathways for groundwater present in the rock unit. There are at least two water-bearing zones in the rock unit.

Based on lithological, hydrogeological, and hydraulic data collected from the site, the shallow, intermediate, and deep water bearing zones are part of the same aquifer. The aquifer includes the upper 100 feet of bedrock and the overlying sediments comprising the overburden. The upper 100 feet of bedrock was included because fractures are generally concentrated in this interval. The system is unconfined and exists under water-table conditions. Under these conditions, the water table is in equilibrium with atmospheric pressure and is not confined above by a lithologic unit of lower permeability.

The hydraulic gradient in the soil portion of the aquifer, based on the June 2, 1993 water level data, varied from 0.010 to 0.053 feet per foot (ft/ft) and averaged 0.033 ft/ft. Using an average horizontal hydraulic conductivity of 0.053 ft/day, an average hydraulic gradient of 0.033 ft/ft, and an average effective porosity of 0.2 which is typical for silty materials (Dawson and Istok, 1991), the average horizontal groundwater seepage velocity for the soil portion of the aquifer is 0.009 ft/day.

The hydraulic gradient in the rock portion of the aquifer, based on the June 2, 1993 water levels, varied from 0.037 to 0.041 ft/ft and averaged 0.039 ft/ft. Using an average horizontal hydraulic conductivity of 0.48 ft/day, an average hydraulic gradient of 0.039 ft/ft, and an average effective porosity of 0.1 which is typical for fractured rock (Dawson and Istok, 1991), the average horizontal groundwater seepage velocity for the rock portion of the aquifer is 0.187 ft/day.

In 14 years (the time since the beginning of operations at the Palmetto Recycling facility), average contaminant migration would thus be expected to be on the order of 50 feet in the soil portion of the aquifer and 1000 feet in the rock portion of the aquifer. The travel distances are based on the assumptions that contaminants move as groundwater moves and that contaminants are somehow introduced into each of these aquifer zones at the beginning of

site operations. Actual contaminant movement, however, is expected to be much less due to the contaminant retardation properties of the aquifer system and the tendency for contaminants to move vertically through the unsaturated zone before entering the aquifer.

Hydraulic gradients in the shallow and deep water-bearing zones show that the general direction of groundwater movement is toward local surface waters. The actual direction of groundwater movement in the deep water-bearing zone at any given location may vary from the direction shown on the potentiometric surface maps due to the anisotropic and heterogenous nature of the fractured argillite. Groundwater movement in this unit is controlled by the geometry, orientation, and interconnection of secondary porosity features such as joints, fractures, faults, and bedding planes.

5.2.4 Ecological Screening

An endangered and threatened species and critical habitat screening was conducted to identify listed species that are found in the Palmetto Recycling Site vicinity. State and federal agencies were contacted concerning information available on the wildlife and natural resources in and around the site. The U.S. Fish and Wildlife Service and the South Carolina Wildlife & Marine Resources Department provided information concerning the known state and federally listed species of concern in Richland County, South Carolina.

The South Carolina Wildlife & Marine Resources Department provided a detailed list with accompanying maps of all known species in the Richland County area. The list is based on reported sightings within the appropriate geographic area and not based on a systematic ecological survey of the entire county or of the site.

There are several federally listed endangered species whose distribution may include Richland County. Several state threatened species or species of concern may also live near the site. Two animal species whose status is undetermined, the redlip shiner (Notropis chiliticus) and the blacknose dace (Rhinichthys atratulus), are located along the surface water pathway approximately 6 stream miles from the Palmetto Recycling property. Due to the low levels of contamination identified along North Branch Crane Creek and the distance to the location of these species from the site in stream miles, it is very unlikely that these species of concern are being affected by the site contaminants.

Based on the information collected from state and federal agencies, the Palmetto Recycling Site does not pose a threat to any state or

federally listed species. The site, however, may affect the habitats and migratory paths of some species because of its rural location and its close proximity to the North Branch Crane Creek, but information gathered reveals no listed species are near the site.

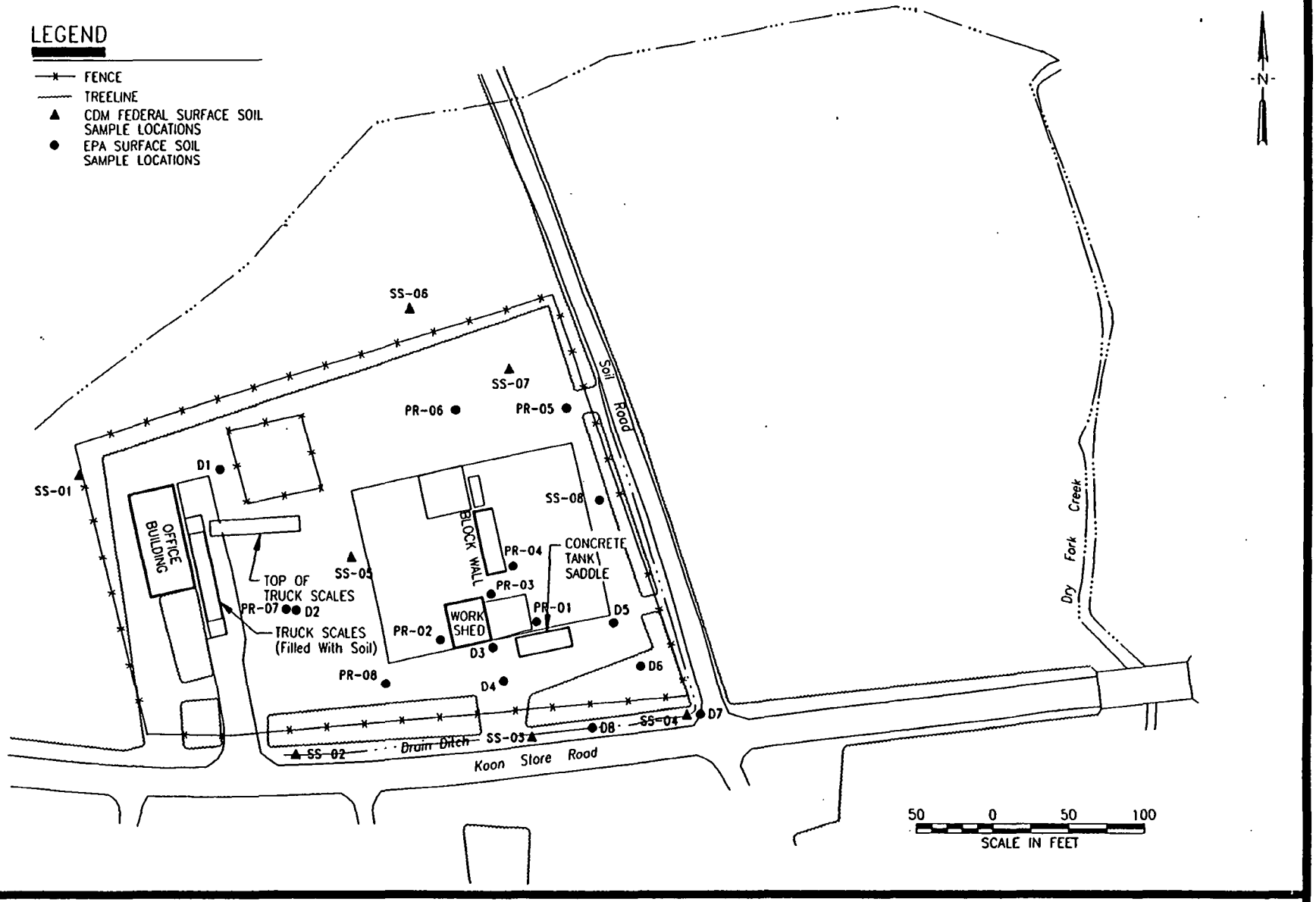
5.3 Nature and Extent of Contamination

Environmental contamination at the Site can be summarized as follows:

Surface Soil Sampling - Surface soil samples were collected from 24 locations as part of the RI field investigation - 7 by CDM Federal and 17 by EPA (see Figure 6). Twenty-three of these samples were collected to confirm or deny impacts reported by the previous investigations. One surface soil sample was collected from an offsite location to establish background conditions for the site. All 7 samples collected by CDM Federal were sent to a Contract Laboratory Program (CLP) laboratory for full Target Analyte List (TAL) parameter analyses. In addition, 1 sample (the background sample) collected by CDM Federal was also analyzed for full Target Compound List (TCL) parameters. All 17 samples collected by EPA were sent to the EPA Environmental Services Division (ESD) laboratory for lead analysis. In addition, 9 of the 17 EPA samples were also analyzed for all other TAL parameters except cyanide, and one of the samples was also analyzed for all TCL parameters. Table 1 summarizes the rationale for the selection of surface soil sampling locations.

One contaminant of concern, lead was detected above the background concentration of 15.1 ppm in 78% of the non-background surface soil samples. Levels of the lead ranged from 6.3 ppm to 6400 ppm. One volatile organic 1,2-Dichloroethane was detected at a level of 0.0076 ppm (7 ppm is the screening level). Because 1,2-dichloroethane was detected at a very low concentration, volatile organics do not appear to significantly impact the surface soil at the site.

Subsurface Soil Sampling - A total of 62 subsurface soil samples were collected from 10 locations during the RI field effort (see Figure 7). Samples were collected from borings completed in and adjacent to known contaminant source areas and potential onsite source areas to refine estimated pre-RI source area boundaries. Twelve of these were obtained from a soil boring drilled in an offsite location to establish background conditions. All subsurface soil samples were sent to a CLP laboratory and analyzed for TAL parameters. In addition, approximately 25% of the samples were subjected to TCL analysis. Table 2 summarizes the rationale for the selection of soil boring sampling locations.



CDM FPC ARCS IV

SURFACE SOIL SAMPLE LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 6

CDM FEDERAL PROGRAMS CORPORATION
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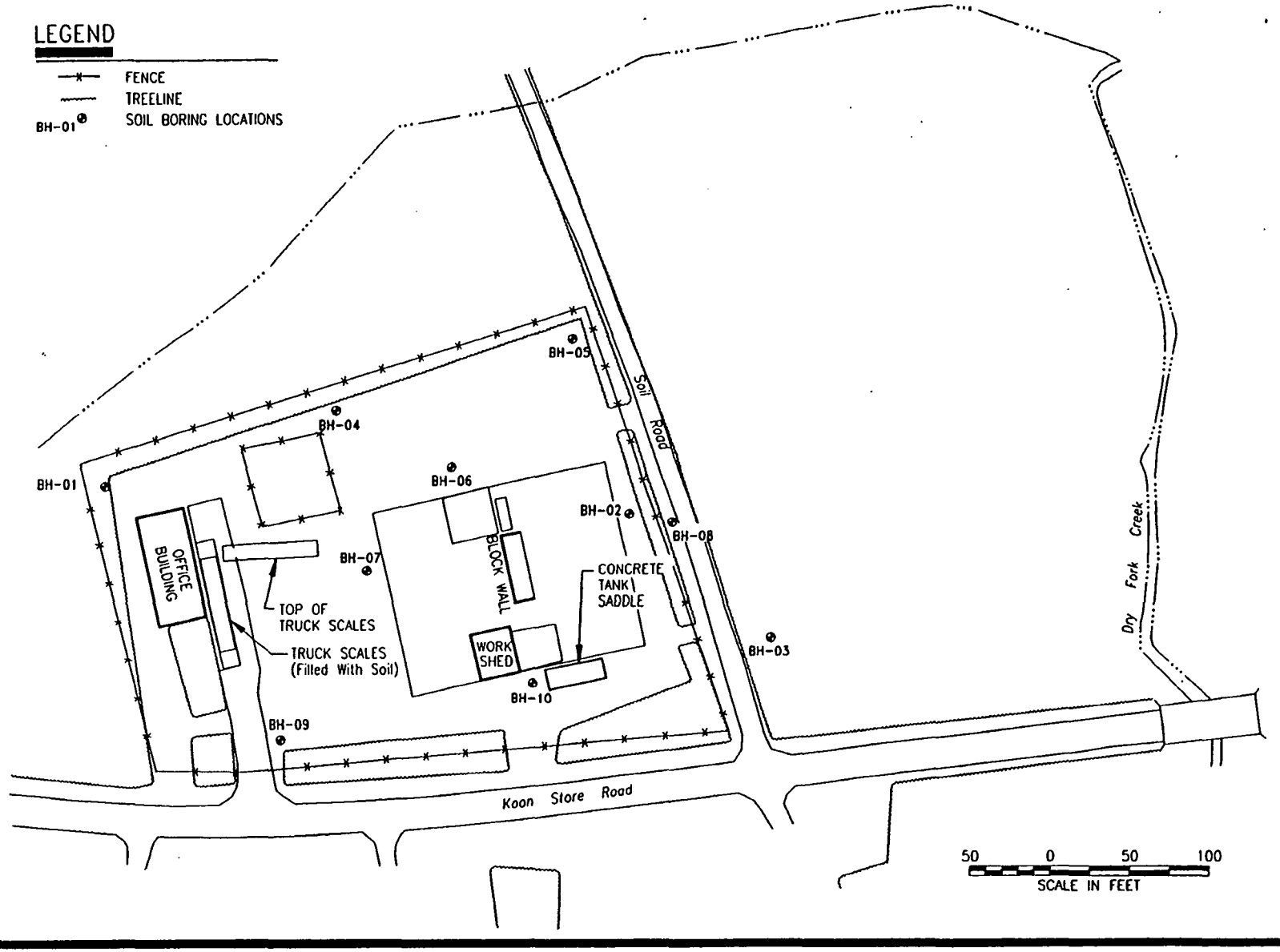
TABLE 1

RATIONALE FOR SURFACE SOIL SAMPLE LOCATIONS
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Sample ID	Description/Rationale
SS-01	Offsite near northwestern corner of Facility/characterize background conditions
SS-02	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation
SS-03	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation
SS-04	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation
SS-05	West of work area/previous storage or disposal area where impacts have been reported by previous investigation
SS-06	North of facility in proximity to drainage feature discharging to Dry Fork Creek/former employee reported waste dumping in this area
SS-07	Northeastern portion of facility/previous truck trailer parking area
SS-08	East of the lagoon and waste stockpile area where processing operations formerly existed
D1	Northwestern portion of site to assess any impacts from past operations
D2	West of work area/previous storage or disposal area where impacts have been reported by previous investigation
D3	South of work area/previous storage or disposal area to assess impacts from past operations
D4	South of work area/previous storage or disposal area to assess impacts from past operations
D5	South of work area/previous storage or disposal area to assess impacts from past operations
D6	South of work area/previous storage or disposal area to assess impacts from past operations
D7	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation. Also to confirm results of SS-04.
D8	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation.
PR-01	Under asphalt of previous work area to assess impacts from past operations
PR-02	Under asphalt of previous work area to assess impacts from past operations
PR-03	Under asphalt of previous work area to assess impacts from past operations
PR-04	Under asphalt of previous work area to assess impacts from past operations
PR-05	Northeastern portion of facility/previous truck trailer parking area
PR-06	Northeastern portion of facility/previous truck trailer parking area
PR-07	West of work area/previous storage or disposal area where impacts have been reported by previous investigation
PR-08	South of work area/previous storage or disposal area to assess impacts from past operations



CDM FPC ARCS IV

SUBSURFACE SOIL SAMPLE LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 7

CDM FEDERAL PROGRAMS CORPORATION
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TABLE 2

RATIONALE FOR SOIL BORING SAMPLE LOCATIONS
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Boring ID	Description/Rationale
BH-01	Near northwestern corner of property/characterize background conditions and describe geology
BH-02	Inside property boundary on east side of site/confirm or deny impacts near existing waste pile
BH-03	Outside of property boundary east of site/confirm or deny impacts downgradient to site
BH-04	Inside property boundary northeast of former office building/confirm or deny presence of impacts northeast of former office building
BH-05	Northeastern corner of facility/confirm or deny presence of impacts south of suspected dumping area
BH-06	Inside property boundary in northeastern quadrant of site/confirm or deny presence of impacts northwest of waste pile and south of suspected dumping area
BH-07	Inside property boundary in central portion of site/confirm or deny presence of impacts west of asphalt pad and former work area; north-northwest of drum storage area
BH-08	Outside property boundary due east of asphalt pad and former work area/confirm or deny presence of impacts adjacent to waste pile and lagoon area
BH-09	Inside property boundary southeast of former office building/confirm or deny presence of impacts west of asphalt pad and former work area
BH-10	Inside property boundary immediately south of asphalt pad and former work area/confirm or deny presence of impacts documented by a previous assessment

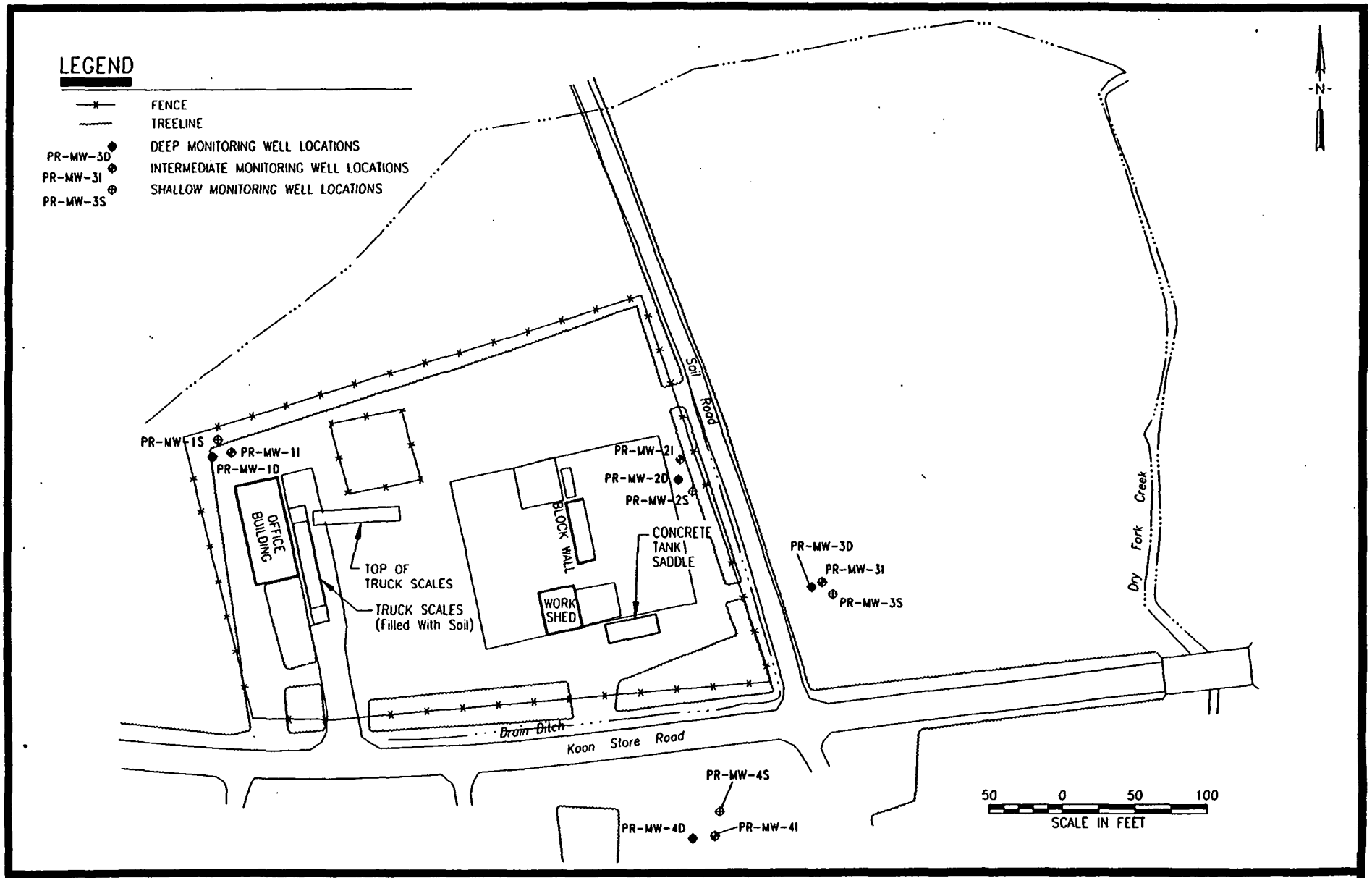
Subsurface soil analyses indicate that two volatile organics (toluene and acetone) and inorganic chemicals are present at levels above background concentrations. Because acetone is normally a laboratory contaminant and the concentration of toluene was very low, volatile organics do not appear to have significantly impacted subsurface soil at the site. Seventeen inorganics were detected above background concentrations. The most frequently detected constituents above background concentrations and those inorganics thought to be of significance are arsenic, chromium, lead, and vanadium. It appears that metals are concentrated in the southeastern portion of the site. The maximum vertical extent of inorganic constituents detected above background concentrations (lead and arsenic) was at approximately 60 feet. Chromium and vanadium were detected as deep as 35 feet. The thickest interval which showed impact was estimated from 10 to 63 feet. Vertical distribution of the metal constituents in each borehole was sporadic and did not follow any trends.

Groundwater Contamination - A total of 12 new monitor wells (4 shallow, 4 intermediate, and 4 deep) were installed as part of the field effort (see Figure 8). Groundwater samples were collected from each of the new wells and shipped to a CLP laboratory and analyzed for full TCL/TAL parameters. Table 3 summarizes the rationale for the selection of monitor well locations.

Three contaminants of concern, chloroform, arsenic, and chromium were detected above the background concentration in the groundwater. Chloroform was detected in only one sample at 6 ppb, which was below the Maximum Contaminant Level (MCL) of 100 ppb. Levels of the arsenic were detected in two samples and ranged from 19 ppb to 38 ppb, which were below the MCL of 50 ppb. Levels of chromium were detected in six samples and ranged from 3 ppb to 25 ppb, with two samples being detected above the background concentration of 5 ppb, and all samples being detected below the MCL of 100 ppb.

Surface Water and Sediment Sampling - A total of 3 surface water and 6 sediment samples were collected from onsite and offsite locations during the RI to evaluate surface water contaminant migration pathways and the extent of surface water contamination (see Figure 9). All surface water and sediment samples were sent to a CLP laboratory and analyzed for TAL parameters. In addition, 2 of the samples were subjected to TCL analysis.

There were no contaminants of potential concern identified for surface water and therefore this medium was dropped from the risk analysis. However, dieldrin was detected in the truck scale excavation pit surface water sample. The concentration measured was very low and therefore, while some potential impact is



CDM FPC ARCS IV

MONITOR WELL LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 8

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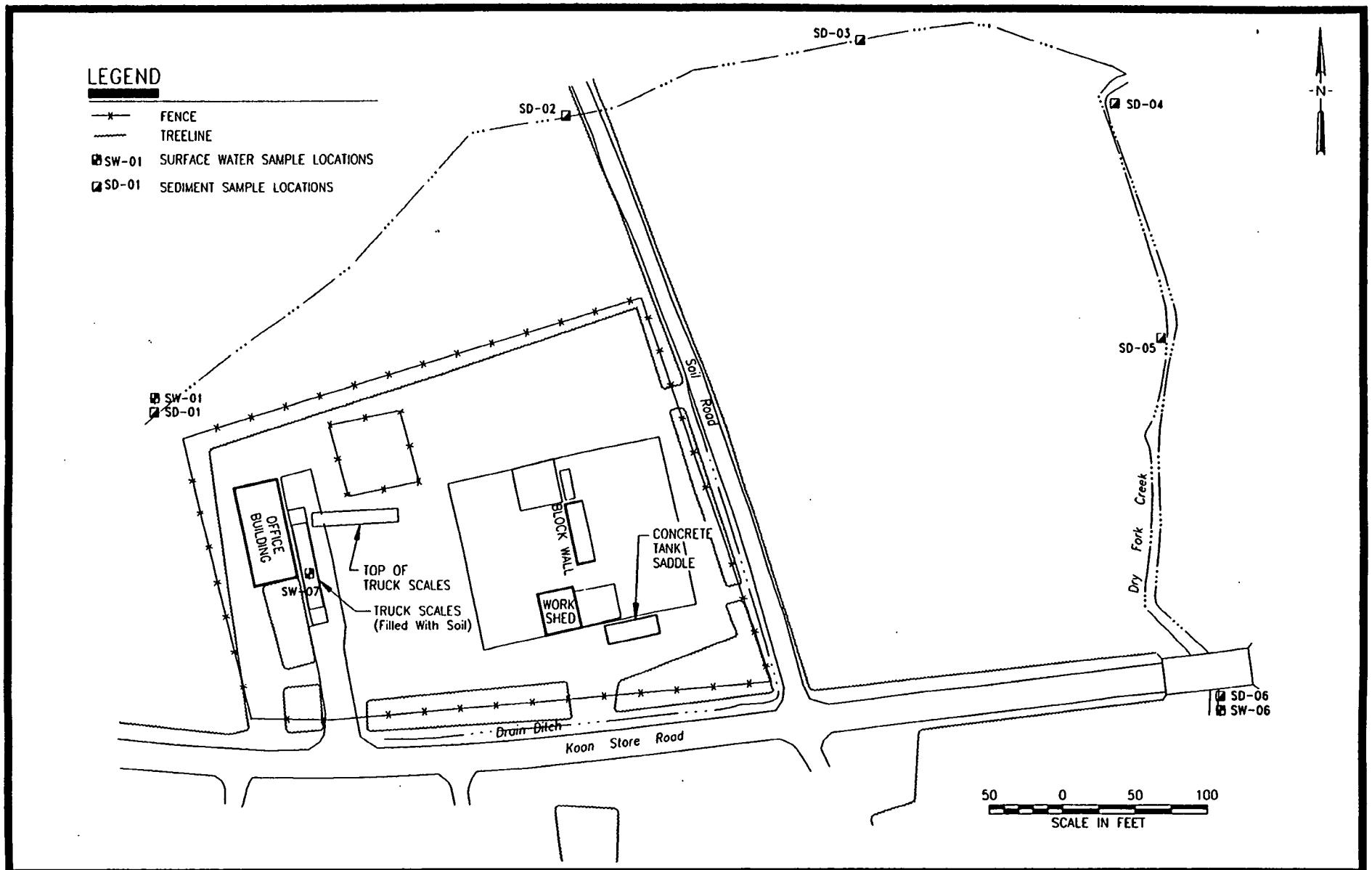
A843/27JAN94/100



CDM FPC ARCS IV

SURFACE WATER/SEDIMENT SAMPLE LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 9

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A836/27JAN94/10C

TABLE 3

RATIONALE FOR THE SELECTION OF MONITOR WELL LOCATIONS
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Well ID	Description/Rationale
MW-01S MW-01I MW-01D	Northwestern corner of facility/characterize background conditions.
MW-02S MW-02I MW-02D	Inside property boundary on east side of site/confirm or deny impacts in area adjacent to waste pile and lagoon.
MW-03S MW-03I MW-03D	Southeast of Main Recycling facility outside of property boundary/ confirm or deny impacts in area downgradient of Main Recycling facility.
MW-04S MW-04I MW-04D	South-southeast of Main Recycling facility outside property boundary/ confirm or deny impacts in area downgradient of Main Recycling facility.

MW - Monitor well
S - Shallow
I - Intermediate
D - Deep

indicated by the presence of this one pesticide, it appears that contami-nation has not significantly impacted surface water. None of the inorganics that were detected in the truck scale excavation pit were at significant concentrations compared to Federal Ambient Water Quality Standards. Six inorganics were detected in the one stream surface water sample collected downgradient of the site. However, none of these inorganics were detected above background concentrations. Sediment analyses indicate that inorganic chemicals are present at levels above background. It appears that the constituents which were detected above background are concentrated in the portions of the stream system situated between the background location and downgradient location, suggesting that the downstream extent of impacts has been successfully estimated. Nickel and vanadium appear to be the most widespread constituents detected above background. Consequently, the contaminants have not significantly impacted the sediment at the site.

The areal extent of constituents in soil, surface water, sediment, and groundwater was estimated. Future migration patterns of constituents at land surface and in the soil and rock units of the underlying crystalline rock aquifer system were evaluated.

Ecological Screening - An endangered and threatened species and critical habitat screening was performed to identify listed species within the site area. The screening was performed by contacting local, state and federal agencies concerning wildlife and natural resources identified in Richland County. The data from these agencies were collected, reviewed and summarized as part of the field effort.

The Ecological Assessment concluded that contaminants of concern identified in the surface water and sediment of waterbodies located in the Palmetto Recycling site area show a slight potential for risk to aquatic organisms. The potential risks to terrestrial receptors are expected to be low due to the limited size and quality of the terrestrial habitat provided by the site.

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 media that need to be addressed by the remedial action. It serves as an indication of the potential 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. Currently, there is no one living on the Site. However, approximately 300 persons reside within a one-mile radius of the Site. There are potable water supply wells within one mile of the Site, however, there is also municipal water available. Future land use of the area including the site will likely remain residential, with the potential for future resident use of groundwater as a potable water source.

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 data included analytical results flagged as "N" (presumptive evidence) or "R" (not usable).

The results of the Baseline Risk Assessment concluded that the only media of concern was surface soil, and that the only contaminant of concern was Lead. Levels of Lead ranged from 6.3 ppm to 6400 ppm.

For the contaminant of potential concern, an exposure point concentration was determined in the Baseline Risk Assessment. The upper ninety-five percent (95%) confidence limit of the arithmetic means 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 concentration calculated in the Baseline Risk Assessment was 1,968 ppm.

6.2 Exposure Assessment

The Site is located in a residential area that is expected to remain as such, though currently there is no on-site resident. Currently, there are no workers on-site. There is a possibility of trespassers gaining access to the site through broken areas of the perimeter fence. This population could be exposed to surface soil and sediments on the site. Therefore, it was assumed that a hypothetical youth trespasser (age 7-16 years) would be potentially exposed to the media through dermal contact with and the incidental ingestion of contaminants in surficial soils and sediment. A trespasser would not be exposed to groundwater in any event. Surface water exposure was not evaluated because all contaminant levels are below background levels.

The area surrounding the site is classified as residential, so it is appropriate to assume that future on-site land use could also be residential. As a result, hypothetical future residents are assumed to be exposed to sediment, surface soil, and groundwater. the future child (1-6) and adult exposure pathways are incidental ingestion and dermal contact with surface soil and sediment, ingestion of groundwater, and non-ingestion exposure to groundwater (e.g., inhalation of volatiles from showering, washing clothes, and dishwashing).

For exposure to site groundwater by a resident, it was assumed that the resident would ingest two (2) liters per day of groundwater for 350 days a year for a thirty (30) year period. It was assumed that a child would be exposed for the same time period, but would only consume 1 liter per day of water.

For exposure to site soil by a resident, it was assumed that the adult resident would incidentally ingest one hundred (100) milligrams of soil per day for 350 days per year for a thirty (30) year period. It was assumed that the child resident would ingest two hundred (200) milligrams of soil per day for 350 days per year for a six (6) year period.

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 preferentially 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.

Slope factors (SF) have been developed by EPA for estimating 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).

Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects from exposure to the chemicals 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 a chemical of concern ingested from contaminated

drinking water) can be compared to the RfD. RfDs are derived from human epidemiological studies or from animal bioassay data to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans).

Chemicals are classified regarding their carcinogenic potential 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.

Chloroform, 1,2-Dichloroethane, Beryllium and lead are classified as B2 carcinogens. Arsenic and Chromium are classified as A carcinogens.

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 life-time as a result of exposure to the carcinogen. Excess life-time cancer risk is calculated from the following equation:

Risk = CDI x CSF

where:

Risk = a unitless probability (e.g. 2×10^{-5}) of an individual developing cancer,

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

CSF = compound and route-specific carcinogenic slope factor, expressed as $(mg/kg\text{-}day)^{-1}$

These risks are probabilities that are generally expressed in scientific notation (e.g. 1×10^{-6}). An excess lifetime cancer risk of 1×10^{-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 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 the estimated exposure dose to the reference dose is called the 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 chemical(s) 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:

Non-cancer HQ = CDI/RfD

where:

CDI = Chronic Daily Intake (average over the exposure period) (mg/kg-day)

RfD = reference dose (mg/kg-day); and

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

Carcinogenic risk and noncarcinogenic Hazard Index (HI) ratios were calculated for both the current land use scenario, with residents near the Site, and the anticipated future land use scenario, which is residential use. The Baseline Risk Assessment determined that the total cancer risk (using Reasonable Maximum Exposure) for the

current residential scenario exceeded an individual risk of 1E-6 in sediment. The cancer risk estimates associated with exposure to sediment are 3E-6 for arsenic and 2E-6 for beryllium. This risk level is within the EPA acceptable risk range (1E-4 to 1E-6). However, EPA may decide that a baseline risk level less than 1E-4 (i.e a risk between 1E-4 and 1E-6) is unacceptable to site specific conditions and that remedial action is warranted. However, for the site, EPA believes that remediation of sediment would not be required for protection of human health. The total Hazard Index for the **current** resident is 0.02. This hazard index is well below any level of concern for noncarcinogens (1.0) and indicates the Site does not pose an unacceptable non-carcinogenic risk under the current exposure scenario evaluated in the Baseline Risk Assessment. Therefore there is no unacceptable current non-carcinogenic risk at the Palmetto Recycling Site.

The Baseline Risk Assessment also determined that the total cancer risk for the **future** Site residential scenario was 6E-4. The contributing exposure pathways were groundwater ingestion and inhalation (6E-4), surface soil dust inhalation (3E-6), and surface soil ingestion (2E-5) and dermal contact (2E-6). The contaminants arsenic and chloroform exceeded a risk of 1E-6 in groundwater. The cancer risk estimates associated with exposure to groundwater ingestion and inhalation totals are 5E-4 for arsenic and 3E-5 for chloroform. However, the contaminants arsenic and chloroform in the groundwater at the site were below federal and/or state MCL's. Therefore, it has been determined that groundwater does not warrant remediation. The cancer risk estimates associated with exposure to surface soil dust inhalation, surface soil ingestion, and dermal contact totals are 6E-6 for arsenic and 2E-5 for beryllium. This risk level is within the EPA acceptable risk range (1E-4 to 1E-6). However, EPA may decide that a baseline risk level less than 1E-4 (i.e a risk between 1E-4 and 1E-6) is unacceptable to site specific conditions and that remedial action is warranted. However, for the site, EPA believes that remediation of surface soil for the contaminants arsenic and beryllium, would not be required for protection of human health. Lead is being considered separately because it does not have toxicity values. The Hazard Index for the **future** Site residential scenario was 2.0 for a child and 5.0 for an adult exposed to groundwater; both of these levels exceed the acceptable hazard index of 1.0. However, the contaminants arsenic and chloroform in the groundwater at the site were below federal and/or state MCL's. Therefore, it has been determined that groundwater does not warrant remediation. The non-carcinogenic risk is attributable to the ingestion of the arsenic and chromium present in the groundwater. The Hazard Index for the **future** Site residential scenario was 0.1 for a child and 0.01 for an adult exposed to surface soils; both of these Hazard Indices are below EPA's level of concern (HI of 1.0) for noncarcinogenic toxicity.

In addition, Lead was also identified as a contaminant of concern. Currently there is not an EPA slope factor or reference dose for lead. EPA believes that the available studies in animals do not provide sufficient quantitative information for their calculation (ATSDR, 1990). Although lead is currently classified as a B2 carcinogen, the EPA considers the noncarcinogenic neurotoxic effects in children to be the critical toxic effect in terms of health based environmental cleanup. The neurotoxic effects of chronic low-level lead exposure in children may occur at blood levels as low as 10 ug/dl.

In the absence of lead health criteria, two approaches were considered. The first was to predict mean lead blood levels in children using the Lead Uptake/Biokinetic Model (version 0.99d, U.S. EPA 1994). The second approach compares on-site mean level concentration with applicable or relevant and appropriate requirements (ARARs).

The results of the model predicted that 10.61% of the exposed population would have a blood lead concentration above the cutoff of 10 ug/dl. EPA generally requires further action if greater than 5% of the exposed population is predicted to have blood lead levels higher than the cutoff point.

Mean concentrations were calculated for the groundwater and soil media and were compared to the relevant applicable or relevant and appropriate requirements (ARARs). The groundwater concentration of 10 ppb, calculated as the mean concentration, was approximately 33 percent lower than the current action level of 15 ppb published by the Office of Drinking Water of EPA. Therefore, it has been determined that groundwater does not warrant remediation. The mean lead concentration of the soil at the site was 528 ppm which is 32 percent greater than the current screening level of 400 ppm as per OSWER Directive 9355.4-12. The level of 400 ppm is design to protect children from developing lead blood levels above 10 ug/dl. As a result of the Baseline Risk Assessment, EPA has determined that remediation of surface soil would be required for the protection of human health and the environment. Thus, since the screening level of 400 ppm is designed to protect children from developing lead blood levels above 10 ug/dl, EPA has selected the level of 400 ppm for lead as the remediation goal for surface soil.

No substantial risk to wildlife or the environment was found to exist under present or future conditions.

The Baseline Risk Assessment concluded that the subsurface soils, the surface water, and the sediments at the Site are not media of concern. During the FS, it was determined that the groundwater was not a media of concern. The Baseline Risk Assessment determined

that the surface soil 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 health or the environment.

7.0 DESCRIPTION OF SOIL REMEDIAL ALTERNATIVES

The FS would normally consider a wide variety of general response actions and technologies for remediating surface soil at the Site. However, due to the very focused scope of the FS and the small extent of contamination, the screening of potential remedial actions was limited. Several previous remedial actions have been performed at the Palmetto Recycling Site to remove contaminated sludge, soil, and wastewater. This FS focused on remediating the remaining "hot spots" of contamination.

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:

- Prevent ingestion, inhalation, or dermal contact with surface soil that contains lead concentrations in excess of the remediation level;
- Control migration of lead from soil to groundwater;
- Prevent ingestion or inhalation of soil particulates in the air having lead concentrations in excess of the remediation level;
- Control migration of lead from surface soil to a surface water body (via surface water runoff) that would result in contamination to levels greater than the Ambient Water Quality Criteria of 3.2 μg/l for lead;
- Control future releases of contaminants to ensure protection of human health and the environment; and
- Permanently and significantly reduce the mobility, toxicity, or volume (M/T/V) of characteristic hazardous waste with treatment.

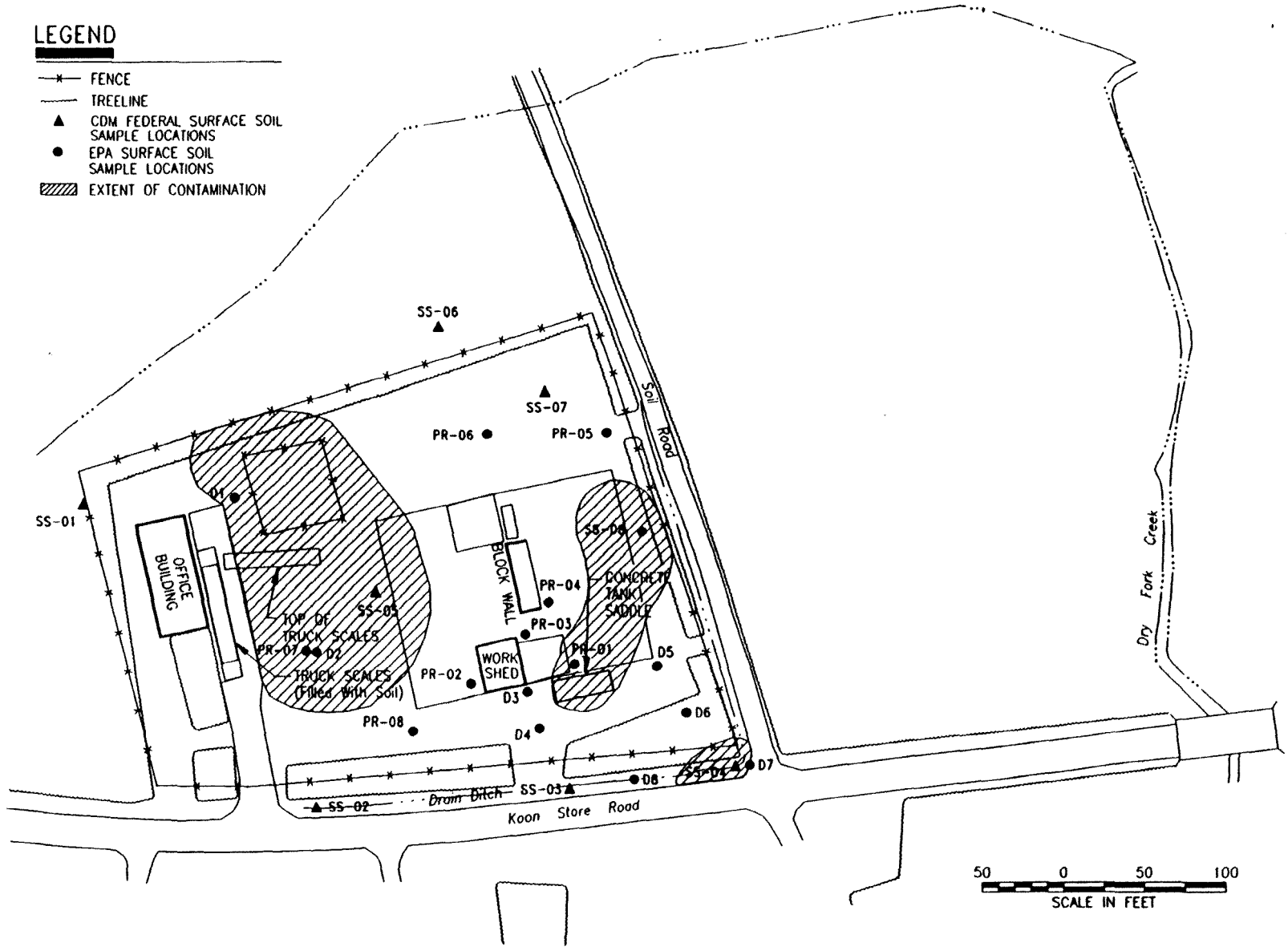
The results of the RI showed that the surface soil is contaminated with lead above the remediation level of 400 mg/kg (see Table 4). The soil contamination extends over an estimated area of approximately 29,500 square feet. The estimated depth of contamination is one foot. Therefore, the estimated volume of surface soil contamination is approximately 1,100 cubic yards (see Figure 10).

Since the volume of contamination is small, the only general response actions that were considered are no action, institutional actions, and removal followed by offsite treatment (if required) and disposal (at a treatment, storage, and disposal Facility). Onsite treatment such as solidification/stabilization was not evaluated in this FS because the estimated quantity of contaminated soil at this site falls short of the typical cut-off mark used within the industry to size whether a project is more cost-effectively treated onsite versus offsite (2000 tons ± 15%).

The most appropriate technologies applicable to the contamination found at the Palmetto Recycling Site were chosen for each of the general response actions. Specific process options were then selected to represent those technologies. Remedial action alternatives were formulated considering the extent of surface soil contamination, contaminant type, contaminant concentrations, and applicable technologies. The alternatives assessed for this site are presented in Table 5. These alternatives were evaluated on the basis of overall protection of human health and the environment, long-term effectiveness, compliance with ARARs, reduction of mobility, toxicity, or volume through treatment, short-term effectiveness, implementability, and cost.

Three alternatives were developed. These actions include: no further action at the site beyond monitoring the surface soil and groundwater (Alternative 1); implementing deed restrictions and fencing to control public access to the soils (Alternative 2); and removing the last potential source(s) of surface soil contamination and disposing of the soils at a properly permitted offsite facility (Alternative 3).

Each of the three (3) alternatives is discussed below. Alternatives 1 and 2 will not meet the remediation goal presented in Section 9.1.3 of this ROD. Alternative 3 will meet the remediation goal. Alternative 3 represents the highest level of protectiveness and the maximum reduction of contaminant mobility and toxicity. Alternative 2, Limited Action, is not expected to achieve a reduction in surface soil contaminant toxicity or volume, but will eliminate some exposure pathways through access restrictions.



CDM FPC ARCS IV

APPROXIMATE AREAL EXTENT OF LEAD CONTAMINATION ABOVE REMEDIATION LEVELS IN SURFACE SOIL

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 10

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TABLE 4
REMEDIAL ACTION OBJECTIVE FOR SURFACE SOIL
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Chemical of Concern	Remediation Level (mg/kg)	Basis
Lead	400	OSWER Directive 9355.4-12

*This level was selected for this Site based on the OSWER Directive 9355.4-12

TABLE 5

DEVELOPMENT OF REMEDIAL ACTION ALTERNATIVES FOR SURFACE SOIL
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Alterna-tive	Description of Process Options Employed
1	No Action Long-term soil and groundwater monitoring for 30 years
2	Limited Action: Deed restrictions Fencing Long-term soil and groundwater monitoring for 30 years
3	Excavation Offsite Disposal at either: a) Subtitle D landfill (if TCLP proves nonhazardous) b) Subtitle C treatment and disposal facility (if TCLP proves hazardous) Short-term groundwater monitoring for 5 years

Alternative 1, No Action, is the least protective alternative, in that it would not meet ARARs or eliminate exposure pathways.

"O&M costs" refer to the costs of operating and maintaining the treatment described in the alternative, for an assumed period of 30 years. O&M costs were calculated using a seven percent (7%) discount rate per year.

Alternatives 1 (No Action) and 2 (Limited Action) include long-term soil and groundwater monitoring at the Site for a period of 30 years. Alternative 3 (Excavation and Offsite Disposal) includes verification soil sampling to insure that all soil contaminated at concentrations exceeding the remediation goal is removed for treatment or disposal. Additionally, all alternatives except Alternative 3 include six Five Year Reviews to be conducted during the assumed 30-year O&M period.

Alternatives 1 and 2 would not comply with the Resource Conservation and Recovery Act (RCRA) landfill closure requirements, in 40 CFR Part 264 and in the South Carolina Hazardous Waste Management Regulations (SCHWMR), Reg. 61-79.264, which require removal of contamination "to the maximum extent possible." Alternative 3 would, assuming successful implementation, comply with the following major applicable ARARS. Alternative 3 involves materials handling and potential generation of particulates, and thus, must comply with the South Carolina Ambient Air Quality Standards (AAQS) which implement the South Carolina Pollution Control Act, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) under the Clean Air Act. Alternative 3 could include landfill disposal of hazardous wastes and, therefore, could be required to comply with RCRA land disposal restrictions (LDRS, 40 CFR Part 268, SCHWMR 61-79.268) if the soils are shown to be hazardous wastes subject to land disposal requirements (40 CFR Part 261, SCHWNR-61-79.261). Finally, U.S. Department of Transportation (DOT), EPA (40 CFR Part 262), and SCDHEC (SCHWMR 61-79.262) regulations governing the transportation of hazardous materials would also apply to alternatives 3 if the soils prove to be hazardous waste.

7.1 Alternative 1: No Action

CERCLA requires that EPA consider a "No Action" alternative to serve as a basis against which other alternatives can be compared. Under this alternative, no action would be taken to remedy the contaminated surface soil at the site and to reduce (M/T/V) waste. Because contaminants would be left on-site under this alternative, the No Action Alternative would involve the continued monitoring of the soil and groundwater quality at the site. Groundwater

monitoring would be accomplished utilizing existing monitor wells. These wells would be sampled for lead on a quarterly basis for the first five years and annually for a remainder of twenty-five years. Soil monitoring would consist of surface soil sampling for the same parameter and frequency. Public health evaluations would be conducted every five years and would allow EPA to assess the ongoing risks to human health and the environment posed by the site. The evaluations would be based on the data collected from soil and groundwater monitoring.

Capital Cost:	$ 0.00
Annual O&M Cost:	$ 68,000.00
Total Present Worth Cost:	$612,000.00

*The estimated annual O&M cost is approximately $68,000 during the first 5 years and $17,400 thereafter.

7.2 ALTERNATIVE 2 - LIMITED ACTION

This alternative is identical to the No Action Alternative (Alternative 1) described above except that it includes implementation of institutional measures to control, limit, and monitor activities onsite. The objectives of institutional actions are to prevent prolonged exposure to contaminant concentrations, control future development or excavation at the site, and prevent the installation of water supply wells within the boundaries of the site. These objectives are accomplished by monitoring soil and groundwater at the site and limiting use and access by placing fences and deed restrictions on all properties within potentially contaminated areas. The effectiveness of institutional actions depends on their continued implementation.

Soil and groundwater monitoring can be used to evaluate the effectiveness of any remedial action in controlling releases from the site. Fences and deed restrictions are designed to prevent access/exposure to soil by limiting what can be done at the site. Restrictions would be placed on the site to limit its future use. This could be accomplished by recording in the property deeds that potentially hazardous surface soil is located on the property and that use restrictions have been imposed. If implemented correctly, they provide low-cost moderate protection against direct contact with contaminants. Deed restrictions and fences are potential mechanisms to limit and monitor activity on the property, and ensure that all contact with potentially contaminated surface soil is regulated and monitored.

Capital Cost:	$ 53,000.00
Annual O&M Cost:	$ 68,000.00
Total Present Worth Cost:	$668,000.00

*The estimated annual O&M cost is approximately $68,000 during the first 5 years and $17,400 thereafter.

7.3 ALTERNATIVE 3 - EXCAVATION AND OFFSITE DISPOSAL

Alternative 3 includes excavation of surface soil that exceeds the remediation level and disposal in either a RCRA landfill or a solid waste landfill. Conventional excavation will be used to remove the top one foot of soil. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area would be backfilled with clean topsoil.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

If soils can go to a RCRA subtitle D (nonhazardous facility)

Capital Cost:	$158,000.00
Annual O&M Cost:	$ 13,000.00
Total Present Worth Cost	$237,000.00

*The estimated annual O&M cost is approximately $13,000 for 5 years.

If soils must go to a RCRA subtitle C (hazardous facility)

Capital Cost:	$857,000.00
Annual O&M Cost:	$ 13,000.00
Total Present Worth Cost:	$936,000.00

*The estimated annual O&M cost is approximately $13,000 for 5 years.

8.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVE

Overall Protection of Human Health and the Environment

The three (3) alternatives for surface soil 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 Surface Soil Remediation Alternatives

For ease of reference, the three (3) surface soil remedial alternatives that EPA considered are listed in Table 2.

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.

Regarding surface soil concerns, Alternatives 1 and 2 do not eliminate exposure pathways and reduce the level of risk. However, Alternative 2 minimally reduces the level of human risk by way of deed restrictions and fencing. Alternative 1 and Alternative 2 do not limit migration of or remove existing surface soil contamination. Alternative 3 eliminates exposure pathways and greatly reduces the level of risk. In addition, Alternative 3 removes contamination and eliminates further migration.

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 chemical-specific, action-specific and location-specific ARARs presented in Section 7.

Alternatives 1 and 2 will not meet chemical-specific ARAR's for surface soil. Under Alternative 3, ARAR's will be met through excavation and offsite disposal at a properly designed facility.

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 Three (3)

alternatives. Assuming satisfaction of the threshold criteria, these five (5) criteria are EPA's main considerations in selecting an alternative as the remedy.

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. The continued exposure of onsite receptors to surface soils is a potential long-term impact for Alternatives 1 and 2. Because contaminated soil remains onsite under these two alternatives. The remediation level derived for protection of human health and the environment would not be met by Alternatives 1 and 2. Under Alternative 3, removal of the soils will eliminate exposure pathways. The residual risk is low because the surface soil that exceeds the remediation level will be disposed of offsite. Landfill disposal has been proven to be an effective solution for containment of contaminated material over 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), directs 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.

Alternatives 1 & 2 do not achieve a reduction in the toxicity, mobility, or volume of the contaminants since these alternatives are considered complete at this time. Alternative 3 will reduce the mobility of contaminants, but the toxicity and volume will remain the same.

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

During the implementation of all the alternatives, both onsite workers and people surrounding the site will be protected when sampling the various media during review/reassessment every 5 years, when installing a fence around the site and from possible impacts caused by excavation activities. Risks from soil excavation and removal would be addressed in health and safety plans. There is no risk to the environmental receptors from implementation of any remedy, although, habitats could be disrupted during excavation activities.

4. Implementability considers the technical and administrative feasibility of an alternative, including the availability of

materials and services necessary for implementation.

All components of each alternative are both technically and administratively feasible. Alternative 1 and 2 can be implemented immediately because fencing and monitoring equipment are readily available. For Alternative 2 in administrative terms, implementing this alternative may have its difficulties. Access restrictions are subject to changes in political jurisdictions, legal interpretations, and regulatory enforcement. As properties change hands, it is imperative that owners are informed of the deed restrictions and abide by them. Alternative 3 can be implemented. Excavation and landfill disposal are proven technologies. There is an identifiable RCRA Subtitle C facility that can properly treat and dispose of the soils. Access to Subtitle D facilities is also available. Excavation of the surface soil requires only conventional equipment.

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. The total present worth cost for each of the four alternatives is presented in Table 3, and in Section 7.

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. South Carolina's letter of concurrence is provided in Appendix B to this ROD.

2. Community acceptance was indicated by verbal comments received at the Palmetto Recycling Site Proposed Plan public meeting, held on December 6, 1994. The public comment period opened on November 22, 1994, and closed on January 23, 1995 (after a 30-day extension). Written comments received concerning the Site, and those comments expressed at the public meeting, are addressed in the Responsiveness Summary attached in Appendix A to this ROD.

9.0 THE SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of the three (3) alternatives and public and state comments, EPA has selected a remedy that addresses surface soil contamination at this Site. At the completion of this remedy, the risk remaining at this Site will be considered protective of human health and the environment.

The selected remedy for the Site is:

Alternative 3, Excavation and Offsite Disposal

Total present worth cost of the selected remedy is:

If soils can go to a RCRA subtitle D (nonhazardous facility)

Total Present Worth Cost: $237,000.00

If soils must go to a RCRA subtitle C (hazardous facility)

Total Present Worth Cost: $936,000.00

This remedy consists of excavation of surface soil and offsite disposal in either a RCRA landfill or a solid waste landfill. The following subsections describe this remedy in detail, provide the criteria (ARARS and TBC material) which shall apply, and establish the performance standards for implementation.

9.1 Surface Soil Contamination

This remedy component consists of excavation of contaminated soil, verification sampling, and transport of the soil to either a permitted RCRA Subtitle C disposal facility or a Subtitle D solid waste landfill. The following subsections describe this remedy in detail, provide the criteria (ARARS and TBC material) which shall apply, and establish the performance standards for implementation.

For purposes of describing this portion of the remedy and specifying the requirements which shall apply to it, it is assumed that some or all of the contaminated soils to be addressed will be shown by laboratory analysis to be RCRA hazardous wastes. However, TCLP tests could prove otherwise.

9.1.1 Description

On-Site work shall be performed in accordance with the OSHA health and safety standards applicable to remedial activities. Proper materials handling procedures shall be used during the excavation and handling of soil. Such measures may include the use of water to minimize dust emissions during soil excavation, transport, and handling, and the use of tarps or plastic sheeting placed over temporary soil stockpiles to minimize dust emissions and runoff.

Soil in the area of soil contamination shall be excavated until the remaining soil achieves the concentrations established as performance standards as described in Section 9.1.3 of this ROD.

Prior to excavation, soil sampling sufficient to confirm the areal extent of soil which exceeds these criteria, shall be conducted at all three compass boundaries of the area shown in Figure 10 of this ROD. Verification sampling shall be employed to ensure that all soils contaminated at levels exceeding the performance standard are removed.

After excavation, the soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment.

Transport shall be accomplished in compliance with DOT regulations governing transportation of hazardous materials.

Excavation work shall be staged and coordinated with backfill/grading/seeding activities to minimize dust production and surface water runoff. The on-Site excavation shall be backfilled with clean soil, properly recompacted, and the land surface regraded to the preexisting natural slope. A vegetative cover will be established to minimize undue surface water runoff and minimize erosion.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

This alternative represents the best balance among the criteria used to evaluate remedies. Alternative 3 is believed to be protective of human health and the environment, would attain ARARs, would be cost effective, and would utilize permanent solutions and alternative treatment technologies or resource technologies to the maximum extent practicable.

9.1.2 Applicable or Relevant and Appropriate Requirements (ARARs)

ARARs originate from applicable requirements intended to definitely and specifically apply to a remedial action; or relevant and appropriate requirements, which, while not intended to apply to the specific situation in question, EPA judges to be applicable to a remedial action. In addition, when establishing criteria for ensuring the proper implementation of a remedial action, EPA may develop requirements from other guidance documents or criteria, sources often referred to as "To Be Considered" material (TBCs).

Applicable Requirements. Soil remediation shall comply with all applicable portions of the following Federal and State of South Carolina regulations listed in Tables 6-9 and below:

49 CFR Parts 107, 171-179, promulgated under the authority of the Hazardous Materials Transportation Act. Regulates the labelling, packaging, placarding, and transport of hazardous materials offsite.

40 CFR Parts 261, 262 (Subparts A-D), 263, and 268, promulgated under the authority of the Resource Conservation and Recovery Act., These regulations govern the identification, transportation, manifestation, and land disposal restriction requirements of hazardous wastes. If the contaminated soils fail TCLP, most likely, the land disposal restrictions in 40 CFR Part 268 will apply. However, if EP toxicity tests are performed and the contaminated soils do not exceed EP toxicity limits, then the land disposal restrictions in 40 CFR Part 268 will not apply, even though the contaminated soils fail TCLP. In the event that the Site soils requiring remediation do not test hazardous (i.e., do not fail TCLP), the regulations listed here will be considered relevant and appropriate rather than applicable.

SCHWMR 61-79.124, .261, .262, .263 and .268, South Carolina Hazardous Waste Management Regulations, promulgated pursuant to the Hazardous Waste Management Act, SC Code of Laws-, 1976, as amended, establishes criteria for identifying and handling hazardous wastes, as well as land disposal restrictions regulations will also become relevant and appropriate in the remediation do not prove to be event that the soils requiring hazardous, as described in the above paragraph.

Relevant and Appropriate Requirements. The following regulations are "relevant and appropriate" to source control actions (soil remediation) at the Palmetto Recycling Site. Applicability of these air quality control regulations is due to the potential for release of harmful particulates (metals) during soil excavation and handling activities.

40 CFR Parts 60 and 61, promulgated under the authority of the Clean Air Act. Included are the National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Ambient air quality standards for emissions to the atmosphere fall under these regulations.

SC Reg. 61-62, South Carolina Air Pollution Control Regulations and Standards, promulgated pursuant to the S.C. Pollution Control Act, SC Code of Laws, 1976, as amended. Establishes limits for emissions of hazardous air pollutants and particulate matter, and

establishes acceptable ambient air quality standards within South Carolina.

"To Be Considered" and Other Guidance.

Revised Procedures for Planning and Implementing Off-site Response Actions, OSWER Directive 9834.11, November 1987. This directive, often referred to as "the off-site policy," requires EPA personnel to take certain measures before CERCLA wastes are sent to any facility for treatment, storage, or disposal. EPA personnel must verify that the facility to be used is operating in compliance with $ 3004 and $ 3005 of RCRA, as well as all other federal and state regulations and requirements. Also, the permit under which the facility operates must be checked to ensure that it authorizes (1) the acceptance of the type of wastes to be sent, and (2) the type of treatment to be performed on the wastes.

40 CFR Part 50, promulgated under the authority of the Clean Air Act. This regulation includes the National Ambient Air Quality Standards (NAAQS), and establishes a national baseline of ambient air quality levels. The state regulation which implements this regulation, South Carolina Reg. 62-61, is applicable to the source control portion of the remedy.

Various TBC materials were utilized in the Baseline Risk Assessment and in the Feasibility Study. Because cleanup standards were established based on these documents, they are considered TBC.

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

In the FS, soil concentrations protective of human health and the environment were calculated based on the Site-specific risk calculations from the Baseline Risk Assessment, using TBC information as described above. These levels are established as performance standards in the following section. There are no established federal or state standards for acceptable levels of Palmetto Recycling Site contaminants in surface or subsurface soils.

The protective level for surface soils (0-1 feet) was established for lead (Pb) which is equivalent to the EPA Region IV Level of Concern 400 mg/kg for surface soils (0-1 feet). This criterion is also designated TBC.

Other requirements. Remedial design often includes the discovery and use of unforeseeable, but necessary, requirements, which result from the planning and investigation inherent in the design process itself. Therefore, during design of the source control 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 this portion of the remedy.

9.1.3 Performance Standards

The standards outlined in this section comprise the performance standard defining successful implementation of the remedy. The soil remediation goal is 400 ppm for Lead for all areas across the site. Excavation. The soil remediation goal (Table 4) is established as a performance standard. The performance standard shall control the excavation procedure described above. Additionally, all on-Site excavation work shall comply with 29 CFR 1910.120, the OSHA health and safety requirements applicable to remedial activities.

Transport of contaminated soil. Transportation shall be accomplished in compliance with the Hazardous Materials Transportation Act (49 CFR 107, 171-179).

Disposal of contaminated soil. Disposal of contaminated Site soil shall comply with the applicable, or relevant and appropriate, RCRA regulations (40 CFR Parts 261, 262 (Subparts A-D), 263, and 268). The determination of applicability, versus relevant and appropriate, is described in Section 9.1.2, under "applicable requirements," where the above regulations are cited. In any circumstance, the disposal of contaminated soils shall be done at a RCRA Subtitle C treatment, storage, and disposal facility.

Confirmation soil sampling will be conducted to insure that all contaminated soil has been excavated.

10. 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 surface soil remediation alternative will include excavation of surface soil that exceeds the remediation level of 400 ppm for Lead and disposal in either a RCRA Landfill or a solid waste landfill, thereby reducing and eventually removing the future risks to human health which could result from ingestion of the surface soil.

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

Cost effectiveness: Among the surface soil 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 similar to the other alternatives.

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 soil remedial action is the most practical and easily implemented alternative, given the relatively small volume of soil requiring remediation (approximately 1100 cubic yards).

Preference for treatment as a principal remedy element: The soil remedial action will not satisfy the preference, because it was determined that treatment of the small volume of soil requiring remediation is not practical. Additionally, offsite disposal is more feasible in that it does not result in creation of an onsite waste cell that must be monitored for an extended period of time. If the contaminated soils are treated prior to disposal at a RCRA facility, then the preference will be satisfied.

11. DOCUMENTATION OF SIGNIFICANT CHANGES

EPA issued a Proposed Plan (preferred alternative) for remediation of the Palmetto Recycling Site on November 22, 1994. The selected combination of remedies does not differ from the Proposed Plan. However, it was determined that an adjustment needed to be made in the cost estimates that were in the proposed plan.

TABLE 6

POTENTIAL CHEMICAL-SPECIFIC ARARs
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Water			
Inorganic chemicals in drinking water: 40 CFR 141.11 40 CFR 141.62 40 CFR 141.50-51 SC Reg. 61-58.5 B	The maximum contaminant levels (MCLs) for inorganic chemicals are the maximum permissible levels of a contaminant in water (mg/l) which is delivered to a free flowing outlet to the ultimate user of a public water system.	Relevant and Appropriate	These requirements are not applicable since a public water system (as defined in 40 CFR 141) is not involved. They are relevant and appropriate to protect groundwater, a potential drinking water source, from contaminants found on the site. These contaminants might migrate or leach into the underlying aquifer as a consequence of various alternative actions. Maximum contaminant level goals (MCLGs) are to be used when special circumstances, such as where multiple contaminants in groundwater or multiple pathways of exposure present extra-ordinary risks, require a more stringent level than the MCL. MCLGs for which the standard is zero are not considered ARARs or TBCs.
Organic chemicals in drinking water: 40 CFR 141.61 SC Reg. 61-58.5	The MCLs for organic chemicals are the maximum permissible levels of a contaminant in water (mg/l) which is delivered to a free flowing outlet to the ultimate user of a public water system.	Relevant and Appropriate (proposed MCLs are TBC)	These requirements are not applicable since a public water system (as defined in 40 CFR 141) is not involved. They are relevant and appropriate to protect groundwater, a potential drinking water source, from contaminants found on the site. These contaminants might migrate or leach into the underlying aquifer as a consequence of various alternative actions. SC has not promulgated MCLs for organic chemicals in drinking water that are more stringent than the federal standards.
Ambient Water Quality Standards: SC Reg. 61-68	Dry Fork Creek is classified as a fresh water stream to be protected for aquatic organisms. Instream concentration limits for heavy metals are established by SCDHEC using EPA's Gold Book of quality criteria for water and a formula.	Applicable	These standards for the contaminants of concern which may be carried by storm water runoff into Dry Fork Creek are applicable.

TABLE 6 (continued)

POTENTIAL CHEMICAL-SPECIFIC ARARs
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Chemicals in drinking water (solid waste disposal facility): 40 CFR 257.3-4 SC Reg. 61-79.264.94	A facility shall not contaminate an underground water source beyond the solid waste boundary (outermost perimeter of the waste). The concentration of chemicals shall not exceed background levels or listed MCLs, whichever is higher.	Applicable	Onsite residuals of solid waste (contaminated surface soil) might cause migration into the underlying aquifer and potentially contaminate drinking water systems as a consequence of remedial actions.
Air			
Ambient Air Quality Standards: SC Reg. 62.5 Standard No. 2	The ambient air standard for lead as determined by Federal Reference Methods is 1.5 mg/m^3 (calendar quarterly mean).	Applicable	During remedial activities at the site, lead in fugitive dust may be released. The ambient air standard is applicable statewide.
Control of Fugitive Particulate Matter Statewide: SC Reg. 62.6 Section III	Emissions of fugitive dust shall be controlled in such a manner and to the degree that it does not create an undesirable level of air pollution.	Applicable	During remedial activities at the site, fugitive dust may be released.
Soil			
OSWER Directive 9355.4-12: Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities	The remediation level for lead in surface soil is 400 mg/kg.	To Be Considered	Lead levels for surface soil are not established in promulgated regulations. Therefore, this guidance will be utilized. This requirement is designed to protect children from developing blood lead levels above 10 ug/dl from exposure to surface soil.

TABLE 7

POTENTIAL LOCATION-SPECIFIC ARARs
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Fish and Wildlife Conservation Act 16 USC Section 2901 *et seq.*	Requires states to identify significant habitats and develop conservation plans for these areas.	Relevant and Appropriate	Confirmation with the responsible state agency regarding the site being located in one of these significant habitats is required.
Endangered Species Act of 1973 16 USC Section 1531 *et seq.*	Requires action to conserve endangered species or threatened species, including consultation with the Department of Interior.	Relevant and Appropriate	Although threatened or endangered species or critical habitats have not been identified at the site, there are endangered plants and animals listed for the county and state that could potentially be affected by contamination at the site.
Wetlands Management Executive Order Executive Order 11990; Protection of Wetlands	Requires action to minimize the destruction, loss, or degradation of wetlands.	Relevant and Appropriate	Wetland areas are present within the vicinity of the site.

TABLE 8

POTENTIAL ACTION-SPECIFIC ARARs
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Discharge of storm water runoff: 40 CFR 122.26	Storm water from landfills, construction sites, and industrial activities must be monitored and controlled.	Applicable	Required of all industrial waste sites and construction sites of greater than 5 acres that discharge storm water runoff to the waters of the United States.
Discharge of treatment system effluent: 40 CFR 125.104	Best Management Practices (BMP) Develop and implement a BMP program to prevent the release of toxic or hazardous pollutants to the waters of the U.S. The BMP program must: • Establish specific procedures for the control of toxic and hazardous pollutant spills and runoff • Include a prediction of direction, rate of flow, and total quantity of toxic and hazardous pollutants where experience indicated a reasonable potential for equipment failure	Relevant and Appropriate	The requirement is not applicable because BMP under the National Pollutant Discharge Elimination System (NPDES) permit program applies only to ancillary facilities of manufacturing units that might have releases of toxic or hazardous pollutants. This substantive permit requirement is relevant and appropriate to the prevention of releases from spills or runoff during the implementation of remedial actions.
Generators who transport hazardous waste for offsite TSD: 40 CFR 262.20-.23	Any generator who transports hazardous waste for offsite TSD must originate and follow-up the manifest for offsite shipments.	Applicable	Any waste determined to be RCRA hazardous waste removed from this site for offsite treatment, storage, or disposal would be subject to the manifest requirements.

TABLE 8 (continued)

POTENTIAL ACTION-SPECIFIC ARARs
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale*
Closure of hazardous waste TSD facility: 40 CFR 264 Subpart G	Operator must close the facility in a manner that: • Minimizes the need for further maintenance • Minimizes post-closure escape of hazardous constituents • Complies with specific unit type closure requirements All contaminated equipment, structures, and soils must be properly disposed of or decontaminated.	Applicable	The site is a TSD facility in that hazardous materials are present as contaminants of environmental media. Remediation may involve treatment or storage of hazardous wastes.
Land disposal restrictions (LDRs): 40 CFR 268, Subpart D	Generally prohibits the placement of restricted RCRA hazardous wastes in land-based units such as landfills, surface impoundments, waste piles and facilities, unless one or more of the following are met: • Wastes have been treated in accordance with technology-based or concentration-based standards specified in Subpart D • The site manager can demonstrate that another technology can achieve an equivalent measure of performance in accordance with 40 CFR 268.42 • The site manager has demonstrated that the waste does not meet any of the criteria under which the waste was listed and other factors (including additional constituents that might not cause the waste to be hazardous.	Applicable	The contaminated surface soil at this site is restricted RCRA wastes that would be subject to the LDRs for lead. Remediation may involve land disposal of restricted hazardous wastes.

TABLE 9

OTHER REQUIREMENTS[a]
PALMETTO RECYCLING SITE
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
OSHA worker protection requirements: 29 CFR 1940 and 1910	These regulations establish requirements to protect work crews who might be exposed to radiation, noise, or hazardous waste at the remediation site.	Applicable	This site is a remediation site under CERCLA. Compliance with 29 CFR 1910.120 is required for all sites undergoing remediation by 40 CFR 300.150.
DOT Requirements for transportation of hazardous materials: 49 CFR 171-173, 177, 178	No one may transport hazardous material on public highways except in accordance with these regulations: Part 171 General requirements Part 172 This part establishes shipping papers marking, labeling, placarding, and emergency response information requirements Part 173 This part establishes packaging and other shipping requirements for hazardous materials Part 177 Requirements of the transporter Part 178 Specifications for the shipping containers	Applicable	These requirements are applicable to all remedial actions which will transport hazardous materials offsite.
Waste Acceptance Criteria	Establishes the waste that can be treated or disposed of at the receiving facility.	Applicable	Wastes can only be shipped from the site to a permitted treatment or disposal facility according to CERCLA Section 121(d)(3). All permitted facilities have acceptance criteria.

[a]Others requirements are not technically ARARs or TBCs since they are not environmental regulations or guidance subject to waiver, but must be complied with whenever applicable without deviation.

The cost estimates, as documented in the proposed plan, for the present worth of each alternative were calculated using a five percent (5%) discount rate per year. However, pursuant to the OSWER Directive 9355.3-20 (Revisions to OMB Circular A-94 on Guidelines and Discount Rates for Benefit-Cost Analysis), the cost estimates, as documented in this ROD, for the present worth of each alternative were calculated using a seven percent (7%) discount rate per year.

REFERENCES

CDM Federal Programs Corporation, November 1994. Remedial Investigation and Feasibility Study Report, Palmetto Recycling Site, Columbia, South Carolina

Knox, Raymond C., June 1983. Geohydrologic Assessment, Palmetto Recycling, Inc., Richland County, South Carolina.

Pooser, W.K. and H.S. Johnson, 1961. Geology of the Fort Jackson North Quadrangle, South Carolina. Division of Geology, South Carolina State Development Board.

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U.S. Department of Agriculture, 1978. Soil Survey of Richland County, South Carolina.

U.S. Environmental Protection Agency, 1992. Statement of Work for the Palmetto Recycling Site

U.S. Geological Survey Topographic Quadrangle Maps of South Carolina. Columbia North 1972, PR 1990; Irmo 1971, PR 1990; Blythewood 1971,PR 1990; Fort Jackson 1972, PR 1990. Scale 1;24,000.

Weston, October 1994. Final Baseline Risk Assessment, Palmetto Recycling Site, Columbia, South Carolina.

APPENDIX A

RESPONSIVENESS SUMMARY

FOR THE PALMETTO RECYCLING SUPERFUND SITE

RESPONSIVENESS SUMMARY
PALMETTO RECYCLING SUPERFUND SITE

1. Overview

The U. S. Environmental Protection Agency (EPA) held a public comment period from November 22, 1994 to December 22, 1994, for interested parties to comment on the Remedial Investigation/ Feasibility Study (RI/FS) results and the Proposed Plan for the Palmetto Recycling Superfund Site in Columbia, South Carolina. Upon receipt of a request, the comment period was extended an additional 30 days. The comment period closed on January 23, 1995.

EPA held a public meeting at 7:00 p.m. on December 6, 1994, at the Fairlawn Community Center in Columbia, South Carolina to present the results of the RI/FS and the Baseline Risk Assessment, to present the Proposed Plan and to receive comments from the public.

EPA proposed excavation and offsite disposal to address contaminated soil. Judging from the comments received during the public comment period, the residents and local officials in the Columbia, South Carolina area support the cleanup alternative proposed by EPA.

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 the Palmetto Recycling 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 on June 8, 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 were concerned about the Site and about any health risks from the Site. In addition, residents did voice some concerns about lack of information to the public during the removal work at the Site and lack of response to earlier complaints about the Site.

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 the Remedial Project Manager (RPM) and the Community Relations Coordinator (CRC). Local officials were briefed during the community interviews. The Site mailing list was expanded to include additional residents living in close proximity to the Site.

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

The Public Comment Period was opened on November 22,1994 and was to end on December 22, 1994. Upon request, a 30-day extension was granted, which extended the comment period to January 23, 1995. Public Notices which were published in local papers can be found in Attachment B.

On December 6, 1994, EPA held a public meeting to present the Proposed Plan to the community and to receive comments thereupon. All comments received at this public meeting and during the public comment period are summarized below. Part I of this section addresses those community concerns and comments that are non-technical in nature. Responses to specific legal and technical questions are provided in Part II.

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: An attendee asked a question regarding whether or not a Private Well Survey was conducted.

RESPONSE: EPA conducted a private well survey of 52 homes and residences during the Remedial Investigation. The Private Well Water Use survey revealed that at least 36 private wells are located within one mile of the site. Of these, 21 wells are currently used for drinking water. The remainder are used for household purposes, irrigation, or are not being used at all.

COMMENT: An attendee asked a question regarding whether or not testing was done under the asphalt pad.

RESPONSE: During the Remedial Investigation, EPA collected four surface soil samples located under the asphalt pad. These samples were collected under the asphalt of previous work areas to assess the impacts from past operations.

COMMENT: An attendee claimed during the proposed plan meeting that the Palmetto Recycling, Inc., owned approximately 20 acres of land including the site area. She was concerned that additional contamination could be present on the other 18 1/2 acres of the property.

RESPONSE: Previous studies suggested that there were numerous sources of contamination at the Site. Based on those studies, several previous remedial actions have been performed to remove the contaminated sludge, soil, and wastewater from the site. While those levels of contamination were greatly reduced, a Remedial Investigation was warranted to fully delineate all contamination of known areas and to characterize the site. Based on the information obtained from the operational history of the facility and the earlier investigations, including the Remedial Investigation, EPA has characterized the site and the nature of its contaminants to the best of its knowledge. However, if further information suggest additional sources of contamination, EPA will do its best to investigate the area and confirm the information.

COMMENT: An attendee asked a question regarding what was considered onsite or offsite for the purposes of looking at risk at the site.

RESPONSE: EPA stated during the public meeting that when we say living on site we mean that if someone built a house on the site and a child lived in that house and was in the yard every day coming and going under normal conditions, including drinking the water from the well on site and all of the other exposure pathways, then, that person or family would experience a higher level of exposure than a child who lives across the street or nearby. Onsite simply means that someone can or will be exposed on a day to day basis, not occasionally.

COMMENT: An attendee inquired about the likelihood of someone getting cancer from the contaminants of concern at the site and whether or not someone would have to be exposed for a period of ten years or so before they would get cancer.

RESPONSE: EPA stated during the public meeting that there is no clear evidence that lead is a carcinogen (a cancer causing agent). However, lead has very serious effects in other ways such as with the central nervous system. Therefore you would not expect to see cancer as a result of lead exposure. The only other contaminant

mention in the Risk Assessment that had any significant levels and might be a carcinogen is 1,2-Dichloroethane. However, it was found at such low levels that the risk associated with that is infinitesimally small.

COMMENT: An attendee inquired about how long the clean up of the site would take and whether or not there would be any exposure from the dust during the clean-up activities.

RESPONSE: First there are several enforcement issues that by law EPA would have to pursue to see if there are any viable parties out there. At that time, EPA will negotiate with the responsible parties to conduct the clean-up activities at the site. If agreements can't be reached then, EPA will conduct the clean-up activities. Because there are so many unknown factors involved, an exact time can not be determined.

Second, EPA will take several measures to ensure that proper handling procedures will be used during the excavation and handling of soil. Such measures may include the use of water to minimize dust emissions during the soil excavation, transport, and handling, and use of tarps or plastic sheeting placed over temporary soil stockpiles to minimize dust emissions and runoff. These measures should greatly reduce the level of exposure.

Part II - Technical Response to Public Comments

Many questions were raised during the Public Comment period regarding how the Palmetto Recycling Superfund Site Remedial Investigation and Feasibility Study were conducted (ie., the selection of sampling locations for background samples, soil boring samples and monitoring wells; the selection of the cleanup goal and the selection of the preferred alternative for remedial action). In addition, there was a suggestion for onsite treatment using Fixation/stabilization and disposal. The written comments concerning the previously mention questions are located in Attachment C of this Responsiveness Summary.

Responses addressing the following topics: selection of sampling locations for background samples, soil boring samples and monitoring wells

Before the activities necessary to conduct a Remedial Investigation and Feasibility Study can be planned, it is very important for EPA to compile the available data that have previously been collected for a Site. EPA's analysis of existing data serves to provide a better understanding of the nature and extent of contamination and aids in the design of several remedial investigation tasks (ie., identifying boundaries of the study area, determining the locations

of background samples, soil (surface/subsurface) samples, sediment samples, groundwater samples and surface water sediments).

In the case of the Palmetto Recycling Site, several studies suggested that there were numerous sources of contamination at the Site. Based on those studies, several previous remedial actions have been performed to remove the contaminated sludge, soil, and wastewater from the site. While those levels of contamination were greatly reduced, a Remedial Investigation was warranted to fully delineate all contamination of known areas and to characterize the site. Based on the information obtained from the operational history of the facility and the earlier investigations, several sampling locations, including background locations were selected during the initial Remedial Investigation fieldwork. Based on the analysis of the data obtained during phase 1 of the RI, additional surface soil samples were warranted in order to evaluate the extent of surface soil contamination. For surface and subsurface soil locations, one location for each of these background samples was collected. Additional background soil samples could have been obtained, but with results ranging from (6.4 mg/kg - 6400 mg/kg) for the lead contaminant, it is very unlikely that an additional background sample would have had a lead result equal to or greater than 3400 mg/kg). Levels in the 6400 mg/kg range are not naturally occurring in the boundaries of this Site. Based on information from previous investigations, including Phase I of the Remedial Investigation, an additional monitoring well cluster was not installed north of well cluster #3 to monitor groundwater downgradient of the suspected dumping area. Previous data does not support occurring groundwater contamination from this area. Therefore, installation of an additional well cluster was not warranted.

Responses addressing the following topics: Approaches used to determine the cleanup goal for lead at the Palmetto Recycling Superfund Site.

Currently there is not an EPA slope factor or reference dose for lead. EPA believes that the available studies in animals do not provide sufficient quantitative information for their calculation (ATSDR, 1990). Although lead is currently classified as a B2 carcinogen, the EPA considers the noncarcinogenic neurotoxic effects in children to be the critical toxic effect in terms of health based environmental cleanup. The neurotoxic effects of chronic low-level lead exposure in children may occur at blood levels as low as 10 ug/dl.

In the absence of lead health criteria, two approaches were considered. The first was to predict mean lead blood levels in children using the Lead Uptake/Biokinetic Model (version 0.99d, U.S. EPA 1994) pursuant to the guidance OSWER Directive 9355.14-2.

The second approach compares on-site mean level concentration with applicable or relevant and appropriate requirements (ARARs).

Pursuant to the guidance OSWER Directive 9355.14-2 the on-site mean level concentration for lead (528 mg/kg) was used as an input to the model as opposed to the 95% UCL concentration of (1,968 mg/kg).

The results of the model predicted that 10.61% of the population would have an unacceptable blood lead concentration. EPA generally requires further action if greater than 5% of the population has acceptable blood levels.

Consequently, it was suggested that the Lead Uptake/Biokinetic Model be run iteratively until the acceptable blood lead levels and population effects are reached (10 ug/dl and 5%, respectively). If the current Lead Uptake/Biokinetic Model is run with 400 mg/kg as the input for soil concentrations, the value approaches EPA's acceptable criterion which is less than or equal to 5% of the population exceeding the blood lead level concentration of 10 ug/dl. Based on this evaluation, a lead level concentration of 400 mg/kg was chosen as a cleanup goal to be used during remedial action at the Palmetto Recycling Site.

Responses addressing the following topics: the selection of the preferred alternative for remedial action (Excavation and offsite disposal) verses onsite treatment using Fixation/stabilization and disposal.

Although many remedial actions have been performed at the Palmetto Recycling Site to remove contaminated sludge, soil and wastewater, the results of the RI showed that several "hot spots" still exist. The FS focused on remediating those remaining "hot spots" to a lead remediation level of 400 mg/kg. Using a worst case scenario, the estimated area of soil contamination extends over an area of approximately 29,500 square feet. A depth of one foot was used to calculate the estimated volume of surface soil contamination. Based on the calculations, surface soil contamination is approximately 1,100 cubic yards. Please note that this estimate is very conservative. Sampling during the remedial design is warrented to completely delineate the lateral extent of contamination and more accurrately determine the volume of contaminated surface soil.

Since the volume of contamination is small, the only Genral Response Actions (GRAs) that will be considered are no action, institutional actions, and removal followed by offsite disposal and subsequent treatment at a treatment, storage, and disposal (TSD) facility. Onsite treatment such as solidification/stabilization was not evaluated in this FS because the estimated quantity of contaminated soil at this site falls short of the typical cut-off mark used within the industry to size whether a project is more

cost-effectively treated onsite versus offsite (2000 tons ± 15% is the cutoff mark used).

The soil remedial action will not satisfy the preference, because it was determined that treatment of the small volume of soil requiring remediation is not practical. Additionally, offsite disposal is more feasible in that it does not result in creation of an onsite waste cell that must be monitored for an extended period of time. If the contaminated soils are treated prior t disposal at a RCRA facility, then the preference will be satisfied.

Attachment A

Proposed Plan for the Palmetto Recycling Superfund Site

SUPERFUND PROPOSED PLAN FACT SHEET

Palmetto Recycling Superfund Site
Columbia, Richland County, South Carolina

U. S. Environmental Protection Agency, Region IV, Atlanta, GA **November 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 the glossary which begins on Page 16

INTRODUCTION

The United States Environmental Protection Agency (EPA), is proposing a cleanup plan, referred to as the preferred alternative, to address contaminated ***soil*** at the Palmetto Recycling Superfund Site (the Site) located in Columbia, Richland County, South Carolina. This document is being issued by EPA, the lead agency for Site activities, and the South Carolina Department of Health and Environmental Control (SCDHEC), the support agency.

This Proposed Plan summarizes the cleanup methods/technologies evaluated in the ***Feasibility Study (FS).*** In accordance with Section 117(a) of the ***Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, (CERCLA, known as Superfund),*** EPA is publishing this Proposed Plan to provide an opportunity for public review and comment on all cleanup options (known as remedial alternatives) under consideration for the Site, as developed in the Feasibility Study, including EPA's preferred alternative. EPA is initiating a thirty (30) day ***public comment period*** from November 22 to December 22, 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 addressing contamination at Superfund sites, and by providing an opportunity for the public to comment on the proposed remedial actions. Changes to the preferred alternative, or a change from the preferred alternative to another, may be made if public comments or additional data indicate that such a change would result in a more appropriate solution. The final decision regarding the selected remedy will be documented in a **Record of Decision (ROD)** after EPA has taken into consideration all comments from the public. Upon timely request, EPA will extend the public comment period by 30 additional days.

EPA's preferred alternative for cleanup of Site surface soil is: Excavation and Offsite Disposal. This alternative achieves the best balance of trade-offs among the criteria EPA uses to evaluate remedial alternatives. The selection of a cleanup plan, or "preferred alternative," represents a preliminary decision by EPA, subject to a public comment period. The preferred alternative for surface soil, as well as the others considered, are summarized in this fact sheet and presented more fully in the Feasibility Study (FS).

SCOPE OF THE PROPOSED ACTION. This Proposed Plan for the Palmetto Recycling Superfund site addresses remedies for surface soil contamination present at the site. Groundwater, sediments and surface water were sampled during the Remedial Investigation as well. The planned action is necessary to protect the public and environmental receptors from exposures to contaminated surface soils. Additional sources or operable units are not expected.

Public Comment Period:
Tuesday, November 22, 1994
- Thursday, December 22 1994

Public Meeting
Date: Tuesday, December 6, 1994
Time: 7:00 P.M.
Place: Fairlawn Community Center
9128 Wilson Boulevard
Columbia, SC

Provide written comments or call:
Yvonne Jones or *Cynthia Peurifoy*
US Environmental Protection Agency
North Superfund Remedial Branch
345 Courtland St, NE
Atlanta, Georgia 30365
1-800-435-9233

This fact sheet summarizes information that is explained in greater detail in the ***Remedial Investigation (RI)/Feasibility Reports (FS)*** Reports dated November 1994, and the ***Baseline Risk Assessment*** document dated November 1994. These documents and all other records utilized by EPA to make the proposal specified in this document 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, to better understand the Site, the Superfund process, and the intent of this Proposed Plan. The administrative record is available for public review during normal working hours, locally at the site **information repository**, which is the Northeast Regional Library or in the Record Center at EPA, Region IV's office in Atlanta, Georgia (see page 15).

THIS PROPOSED PLAN:

1. Includes a brief history of the Site, the principle findings of the RI and a summary of the Baseline Risk Assessment;

2. Presents the cleanup alternatives considered by EPA for the Site;

3. Outlines the criteria used by EPA to recommend an 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 the preferred alternative; and

6. Explains the opportunities for the public to comment on the remedial alternatives, and hence the cleanup of the Palmetto Recycling Superfund Site.

SITE BACKGROUND

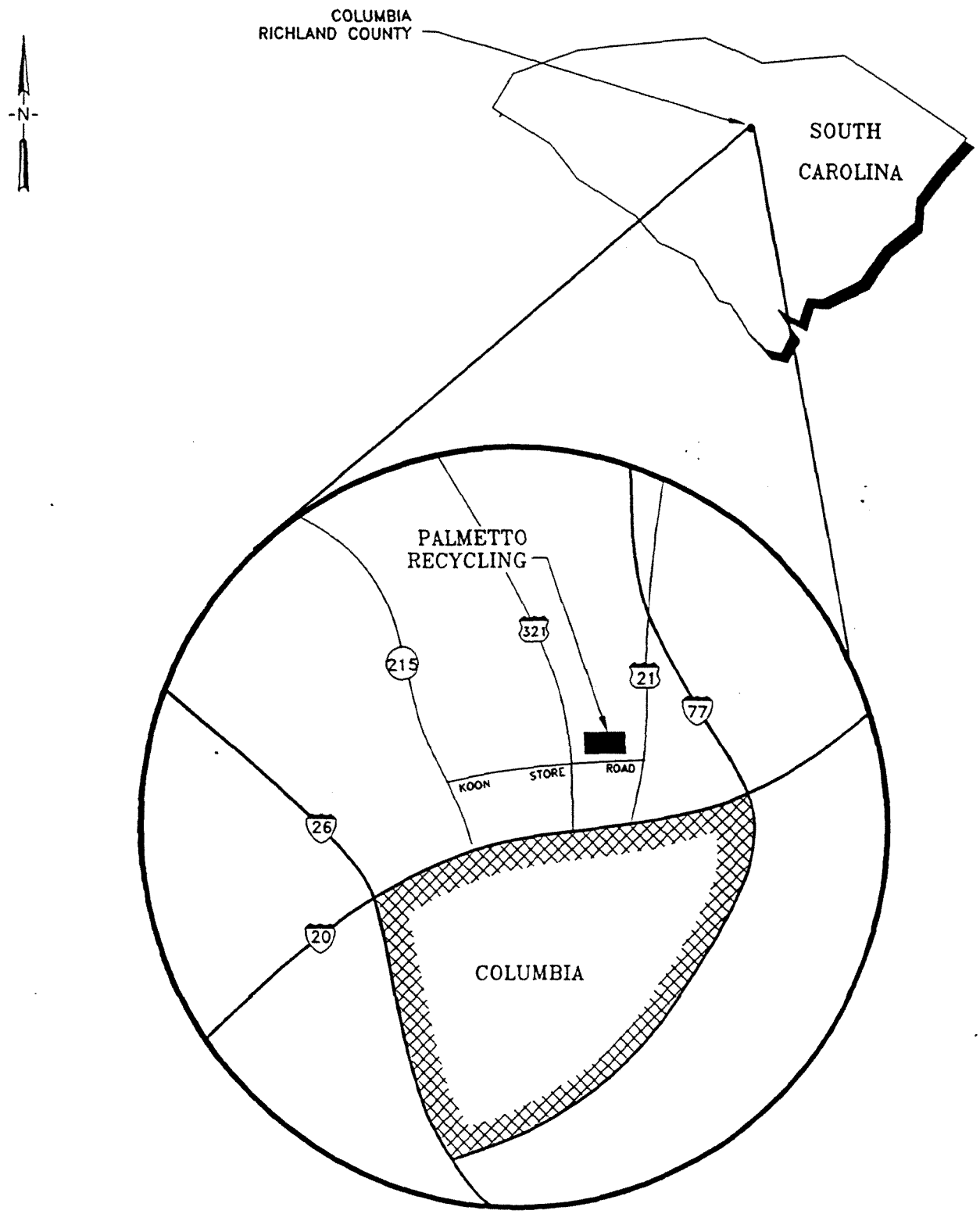
Site Description. The Site is located about 8 miles north of Columbia, South Carolina, in rural Richland County. The site is positioned between U.S. Highway 321 and U.S. Highway 21 on the north side of Koon Store Road - State Road S-40-61 (Figure 1). The Site occupies approximately 1.5 acres and is bounded by Koon Store Road to the south, an unnamed dirt road (and farther removed, Dry Fork Creek) to the east, an unnamed tributary of Dry Fork Creek to the north, and a residential lot and home to the west. Figure 2 shows the location of the Site.

Land use in the area is rural residential, with much of the surrounding area comprised of scrub vegetation and pines. According to the **Hazard Ranking System (HRS)** evaluation, conducted in 1986, EPA estimates 5,300 people live in a 3-mile radius of the site. Approximately 46 residences are located along Koon Store Road within 1 mile of the site.

Important physical features of the site include a 6-ft x 30-ft concrete walkway, an office building, a 135-ft by 170-ft asphalt pad with two concrete pads, a frame work shed, a concrete tank saddle, and an unnamed tributary that flows to Dry Fork Creek. A previously, open excavation which was filled with water associated with abandoned truck scales was sampled during the RI field effort and found to be uncontaminated. The water was pumped to the unnamed tributary and the pit was backfilled with clean soil and graded to prevent ponding. A sparse cover of crushed rock was applied for soil erosion control. The waste materials in the suspected dumping areas have been removed. In addition, five groundwater monitor wells, installed by Raymond Knox Consultants, are located onsite. Dry Fork Creek, located east of the site, flows toward the south into the North Branch of Crane Creek. Dry Fork Creek receives drainage from an unnamed tributary located north of the site.

Site History. The property was purchased in 1979 by Palmetto Recycling, Inc. for the purpose of operating a battery recycling company. From 1979 to 1983, the facility was involved in the reclamation of lead from batteries. In the process, the facility operations produced acid waste which collected in a sump. The reclamation process also produced wastewater from the washing of battery cases. Specific neutralization process details are unknown, but at some point, the facility discharged wastewater of unknown composition to the local sewer system.

After discharging wastewater for an unknown period of time, Palmetto Recycling attempted to obtain a discharge permit. In 1981, the South Carolina Department of Health and Environmental Control (SCDHEC) denied applications



CDM FPC ARCS IV

SITE LOCATION MAP

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PALMETTO RECYCLING
COLUMBIA, SOUTH CAROLINA

FIGURE No. 1

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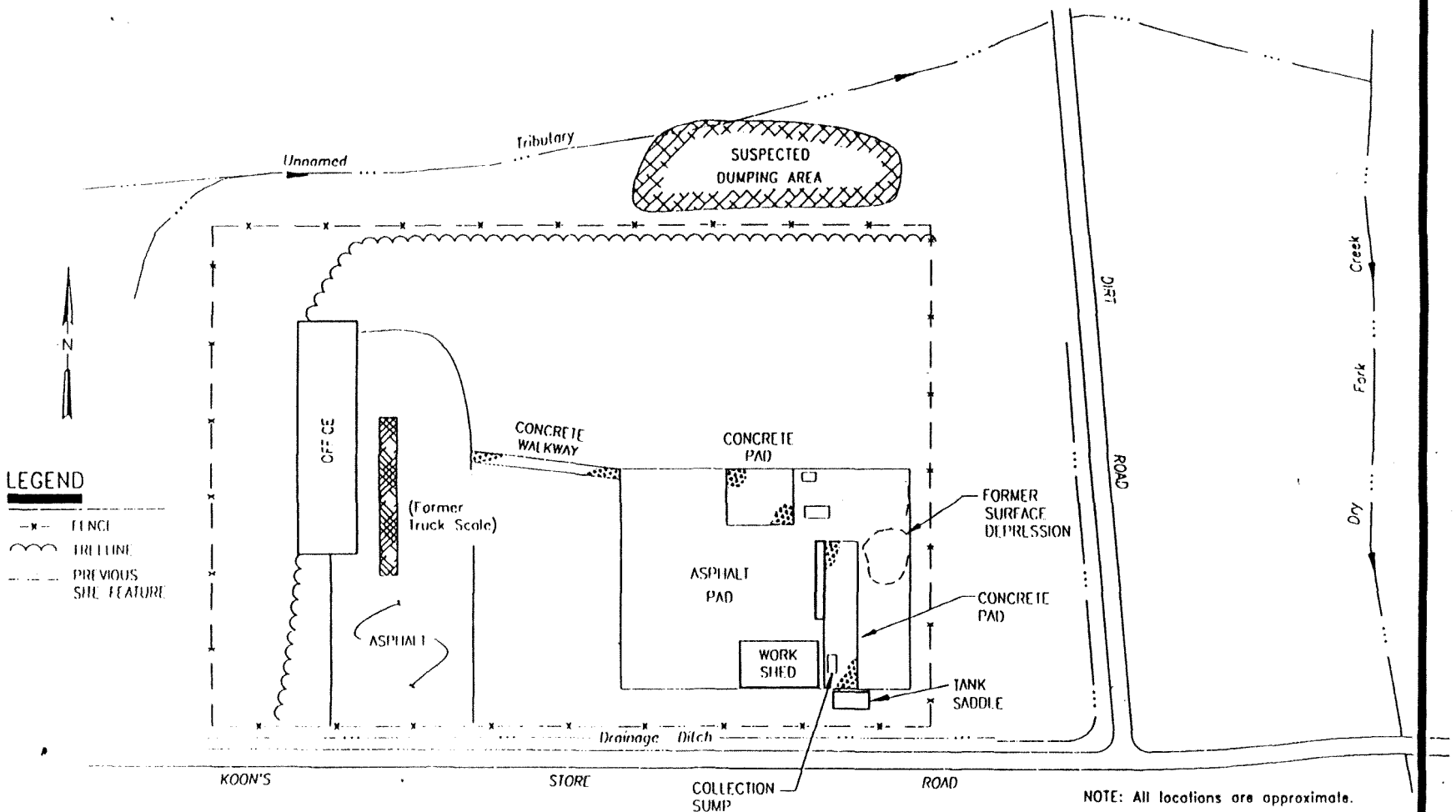


CDM FPC ARCS IV

CURRENT SITE FEATURES MAP

PALMETTO RECYCLING

RICHLAND COUNTY, SOUTH CAROLINA

FIGURE NO. 2

by Palmetto Recycling, Inc. to operate a hazardous waste facility and to transport hazardous wastes. After this attempt, some waste liquids were sent offsite to an acid recycler and some were disposed of onsite. It is not known if these wastes were neutralized before shipment or onsite disposal. The quantities are also unknown. Plastic battery cases and lead plates were eventually sold to other companies as reusable materials (EPA, 1992).

A study conducted by the SCDHEC identified elevated concentrations of lead and iron in the groundwater samples collected next to the sump. High levels of lead, barium, and chromium were in found in sediment from the unnamed stream that runs north of the site. The investigation also revealed the presence of elevated concentrations of lead in on-site soils. SCDHEC noted the presence of a five-foot deep, unlined acid pit containing 1,800 gallons of acid waste at the site, as well as 100 drums of caustic waste and unstablized pile battery casings.

On February 11, 1983, Palmetto Recycling filed for bankruptcy and Ryan Hovis was appointed trustee. In 1984, workers removing equipment from the site destroyed a section of the roof covering the on-site collection sump that collected wastewater containing lead oxide and sulfuric acid from the wash process. As a result of this incident, sump water percolated through soils adjacent to the pit area. To address immediate health and environmental risks posed by the Site, three removal actions have occurred at the site. On April 25, 1994, 10,800 gallons of contaminated water were collected by the Bryson Industries Services and taken to Alternate Energy Resources. On April 1984, SCDHEC informed the bankruptcy trustee that additional measures would be necessary to bring the site under control. Later in 1984, the contractors removed approximately 100 drums containing liquid caustic waste. On October 2, 1985, SCDHEC authorized Future Fuel Development, Inc., to remove site soils contaminated with lead and chromium. A total of 365 tons of soils were removed from various areas on-site and placed in off-site landfills during 1985 and 1986.

In 1986, EPA conducted a preliminary assessment of the site. Based on the results of the assessment, EPA proposed the site for inclusion on the **National Priorities List (NPL)** in June 1988. The NPL identifies the most serious abandoned or uncontrolled hazardous waste sites that warrant further investigation to determine if they pose a threat to human health and/or the environment. Sites included on the NPL are eligible for clean-up funds under the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA,** more commonly known as "Superfund") of 1980 as amended by the **Superfund Amendments and Reauthorization Act (SARA)** of 1986. The Palmetto Recycling site was formally added to the NPL on October 4, 1989.

In 1992, EPA negotiated with parties it had identified as **Potentially Responsible Parties (PRPs)** for the site to conduct the RI/FS. An agreement was not reached between EPA and the parties. Therefore, EPA conducted RI Field activities at the Site from April 1993 through June 1993 and March 30, 1994 through July 25, 1994.

The RI field activities were as follows:

- Conducted a land survey to establish the topographic variations across the site.
- Installed twelve (4 shallow, 4 intermediate, and 4 deep) monitoring wells;
- Collected groundwater samples from the monitoring wells;
- Collected surface soil samples from 24 locations that included one background surface soil sample;
- Collected 62 subsurface soil samples from 10 locations that included twelve background subsurface soil samples;
- Collected 3 surface water and 6 sediment samples from onsite and offsite locations;
- Surveyed monitoring wells and sampling locations;
- Conducted Private Well/Water Use Survey within a one-mile radius of the site. Each available resident was surveyed to determine the type of water supply and the uses of the water;
- Performed water level measurements in the 12 monitoring wells to determine the groundwater flow direction. Two staff gauge measurements were used to determine the water level of Dry Fork Creek.

- Performed an Ecological screening to identify endangered and threatened species within the site area. The screening was performed by contacting local, state and federal agencies concerning the wildlife and natural resources in Richland County. The data from these agencies were collected, reviewed and summarized as part of the field effort.

RESULTS OF THE REMEDIAL INVESTIGATION

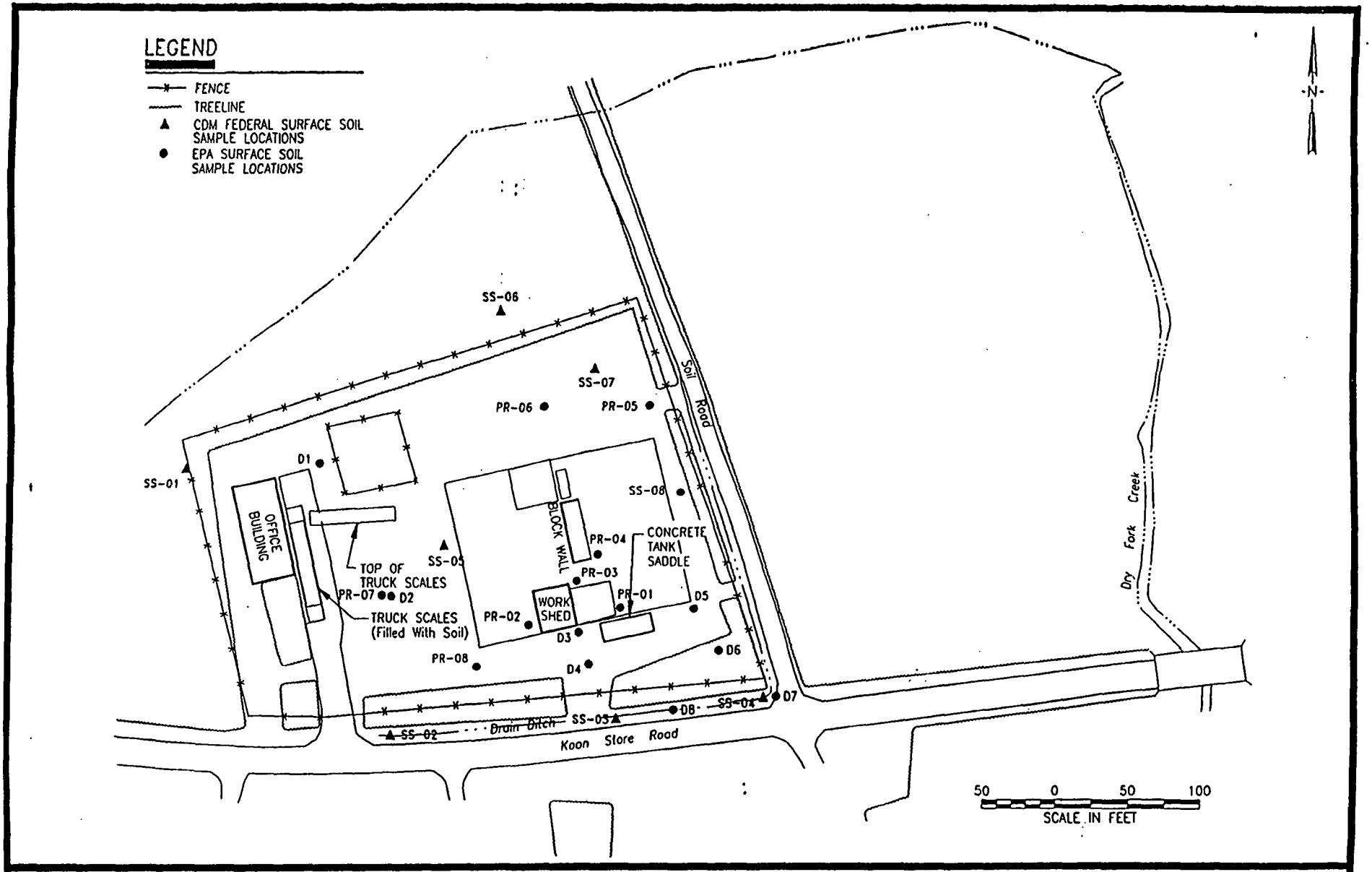
The RI investigated the nature and extent of contamination on and near the Site, and defined the potential risks to human health and the environment posed by the Site. A total of eighty-six (86) soil, twelve (12) groundwater, three (3) surface water, and six (6) sediment samples were collected (see Figures 3,4,5 and 6). More detailed information can be found in the RI and FS reports, and in the Baseline Risk Assessment.

Soil Contamination. One contaminant of concern, lead was detected above the background concentration of 15.1 ppm in 78% of the non-background surface soil samples. Levels of the lead ranged from 6.3 ppm to 6400 ppm. Lead concentrations, detected at all of the sampling locations exceeded the health risk-based concentration of 400 ppm, in six of the surface soil samples. A level of 400 ppm and below is designed to protect children from developing blood lead levels above 10 ug/dl. All of the other inorganics detected above baseline were detected very near the baseline concentration and do not appear to have significantly impacted the surface soil at the site. One volatile organic 1,2-dichloroethane was detected at a level of 0.0076 ppm (7 ppm is the screening level). Because 1,2-dichloroethane was detected at a very low concentration, volatile organics do not appear to significantly impact the surface soil at the site.

Groundwater Contamination. Three contaminants of concern, chloroform, arsenic, and chromium were detected above the background concentration. Chloroform was detected in only one sample at 6 ppb, which was below the **Maximum Contaminant Level (MCL)** of 100 ppb. Although, the MCL for chloroform was not exceeded, the chloroform level of 6 ppb did exceed the health risk-based concentration that was derived in the Baseline Risk Assessment in one sample. Levels of the arsenic were detected in two samples and ranged from 19 ppb to 38 ppb, which were below the MCL of 50 ppb. Although, the MCL for arsenic was not exceeded, the arsenic level of 38 ppb did exceed the health risk-based concentration that was derived in the Baseline Risk Assessment in one sample. Levels of chromium were detected in six samples and ranged from 3 ppb to 25 ppb, with two samples being detected above the background concentration of 5 ppb, and all samples being detected below the MCL of 100 ppb. Although, the MCL for chromium was not exceeded, and only two samples were detected above the background concentration, the chromium levels did exceed the health risk-based concentration that was derived in the Baseline Risk Assessment. Based on the results of the Baseline Risk Assessment, remedial goal options were identified for chloroform, arsenic and chromium. However, concentrations of these chemicals of concern in the groundwater at the site were well below the Federal Drinking Water Standards of 100 ppb, 50 ppb and 100 ppb, respectively. In addition, due to the low frequency of detection for each of the contaminants, there is no evidence of a groundwater plume at the site. Consequently, the contaminants have not significantly impacted the groundwater at the site.

Surface Water Contamination. There were no contaminants of concern identified for surface water and therefore this medium was dropped from the risk analysis. However, dieldrin was detected in the truck scale excavation pit surface water sample. The concentration measured was very low and therefore, while some potential impact is indicated by the presence of this one pesticide, it appears that contamination has not significantly impacted surface water. None of the inorganics that were detected in the truck scale excavation pit were at significant concentrations compared to Federal Drinking Water Quality Standards. Six inorganics were detected in the one stream surface water sample collected downgradient of the site. However, none of these inorganics were detected above background concentrations.

Sediment Contamination. Sediment analyses indicate that inorganic chemicals are present at levels above background. It appears that the constituents which were detected above background are concentrated in the portions of the stream system situated between the background location and downgradient location, suggesting that the downstream extent of impacts has been successfully estimated. Nickel and vanadium appear to be the most widespread constituents detected above background. Consequently, the contaminants have not significantly impacted the sediment at the site.



CDM FPC ARCS IV

SURFACE SOIL SAMPLE LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE No. 3

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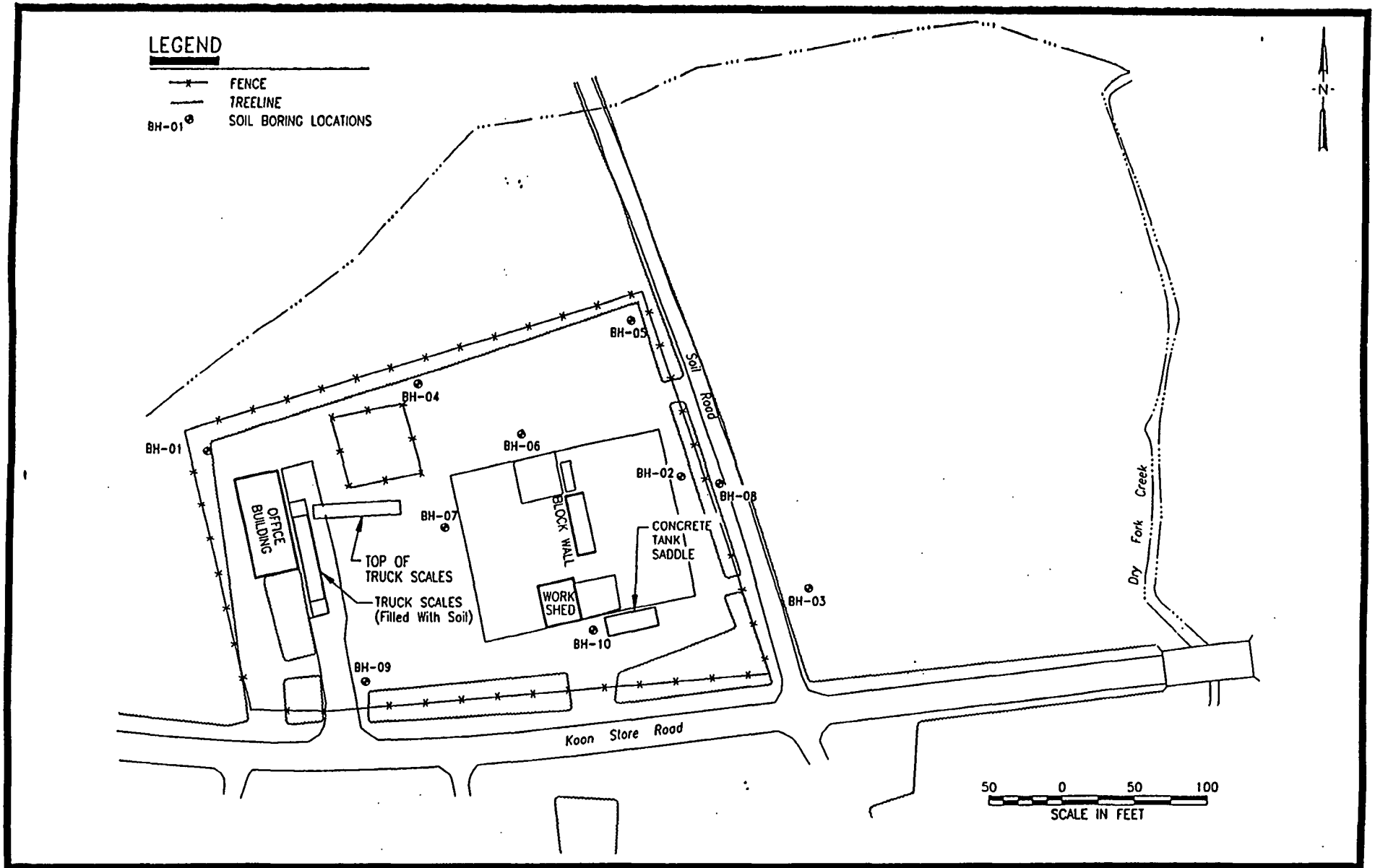

CDM FPC ARCS IV

SUBSURFACE SOIL SAMPLE LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE No. 4

CDM FEDERAL PROGRAMS CORPORATION
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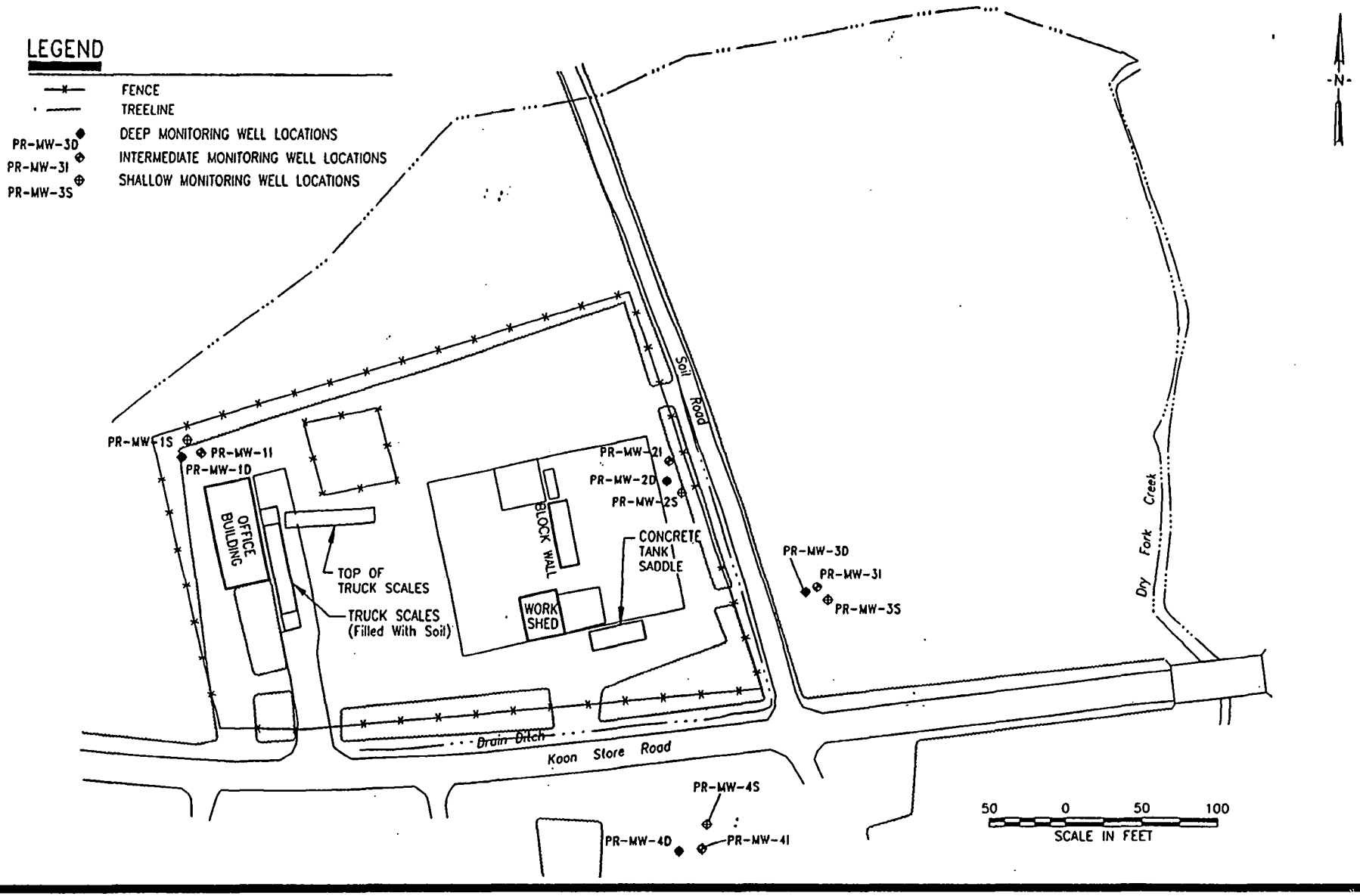

CDM FPC ARCS IV

MONITOR WELL LOCATIONS

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE No. 5

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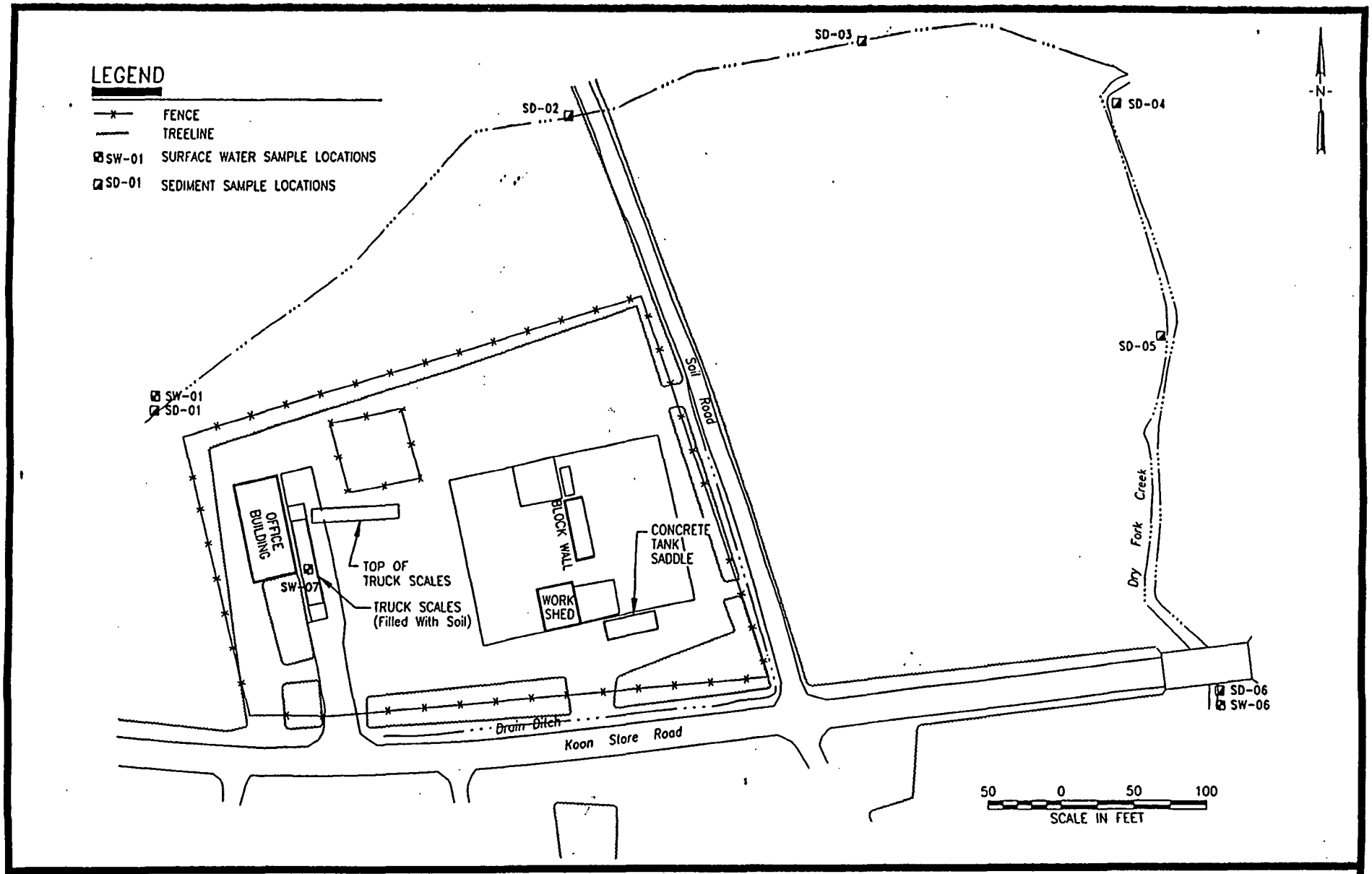

CDM FPC ARCS IV

SURFACE WATER/SEDIMENT SAMPLE LOCATIONS

PALMETTO RECYCLING
COLUMBIA, SOUTH CAROLINA

FIGURE No. 6

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SUMMARY OF RISK ASSESSMENT

CERCLA directs EPA to protect human health and the environment from current and potential future exposure to hazardous substances at the site. A risk assessment was conducted to evaluate the potential current and future risks associated with exposure to the site contaminants.

Human Risk

An evaluation was made of all potential exposure routes which could connect contaminants of concern (COC's) at the Site with people living or working in the area. Exposure by each of these pathways was mathematically modeled using generally conservative assumptions.

The Baseline Risk Assessment (BRA) for the Site was prepared by Roy F. Weston, Inc. for EPA Region IV. The BRA was finalized in November, 1994. EPA determined as a result of the risk assessment that potential future exposure to lead in surface soils was of concern and stated that remediation of surface soil would be required for the protection of human health and the environment. It should be noted that the risk levels incorporated both site-related and background-risks, since some contaminants existed in the study area naturally.

EPA determined as a result of the risk assessment that potential future residential exposures to chloroform, arsenic, and chromium in groundwater were of some concern. However, due to the low frequency of detection for each of the contaminants, and the fact that the concentrations of these contaminants are well below the Federal Drinking Water Quality Standards, groundwater remediation will not be required for the protection of human health. Based on the current use scenario, the Baseline Risk Assessment concluded that non-cancer effects are not expected for the trespasser exposed to sediment at the site. Cancer risk estimates for the current use scenario associated with exposure to sediment are 3E-6 for arsenic and 2E-6 for beryllium. The quantifiable carcinogenic risk due to exposure to sediment in this scenario are within EPA's target range. There are no cancer and non-cancer effects associated with exposure to sediment under the future resident scenario. EPA has determined that risks to human health from contaminants in the sediment (arsenic and beryllium) are within EPA's acceptable risk range and stated that remediation of sediment would not be required for the protection of human health. Subsurface soils and surface water were not identified in the risk assessment as media of concern for the Site. Therefore, subsurface soils and surface water remediation will not be required for the protection of human health.

Actual or threatened releases of the contaminant from the site, if not addressed by one of the alternatives in this plan, may present an imminent and substantial endangerment to public health, welfare or the environment.

Environmental Risk

A qualitative risk assessment was conducted to determine if contaminants present at the site have impacted plant life or animals in the area. In summary, contaminants of concern identified in the surface water and sediment of waterbodies located in the Palmetto Recycling site area show a slight potential for risk to aquatic organisms. The potential risks to terrestrial receptors are expected to be low due to the limited size and quality of the terrestrial habitat provided by the site.

SUMMARY OF ALTERNATIVES

Based on the results of the RI/FS reports and the risk assessment, cleanup levels were developed that would be protective of human health and the environment. These cleanup levels will form the basis of any remedial activity. Various alternatives were evaluated in the FS report using these cleanup levels as goals for site cleanup. Surface soil is the only medium of concern and the only contaminant of concern is lead. The soil/source cleanup levels were established to minimize site risks and insure future protection of groundwater. The current cleanup level for lead is 400 ppm.

The FS report evaluated a variety of cleanup methods that could be used at this site. As required by CERCLA, a no further action alternative was evaluated to serve as a basis for comparison with the other active cleanup methods. The cleanup methods to address site related contamination which exceeds the cleanup goals are presented below.

ALTERNATIVE 1 - NO ACTION

A no action alternative is required by the NCP to be carried forward as a baseline for detailed comparison. Under this alternative, no action would be taken to remedy the contaminated surface soil at the site to reduce mobility, toxicity, or volume (M/T/V) of the waste. If no action is taken, future risks to persons living on and near the Site

will remain. Because hazardous contaminants would remain, a five (5) year would be required. The No Action Alternative would only involve the continued monitoring of the soil and groundwater quality at the site. Groundwater monitoring would be accomplished utilizing existing monitor wells. These wells would be sampled for lead on a quarterly basis for the first five years and annually for a remainder of twenty-five years. Soil monitoring would consist of surface soil sampling for the same parameter and frequency. Public health assessments would be conducted every five years and would allow EPA to assess the ongoing risks to human health posed by the site. The evaluations would be based on the data collected from soil and groundwater monitoring.

The present worth costs of Alternative 1 are estimated to be $704,000.

ALTERNATIVE 2 - LIMITED ACTION

This alternative is identical to the No Action Alternative (Alternative 1) described above except that it includes implementation of institutional measures to control, limit, and monitor activities onsite. The objectives of institutional actions are to prevent prolonged exposure to contaminant concentrations, control future development or excavation at the site, and prevent the installation of water supply wells within the boundaries of the site. These objectives are accomplished by monitoring soil and groundwater at the site and limiting use and access by placing fences and deed restrictions on all properties within potentially contaminated areas. The effectiveness of institutional actions depends on their continued implementation.

Soil and groundwater monitoring can be used to evaluate the effectiveness of any remedial action in controlling releases from the site. Fences and deed restrictions are designed to prevent access/exposure to soil by limiting what can be done at the site. Restrictions would be placed on the site to limit its future use. This could be accomplished by recording in the property deeds that potentially hazardous surface soil is located on the property and that use restrictions have been imposed. If implemented correctly, they provide low-cost moderate protection against direct contact with contaminants. Deed restrictions and fences are potential mechanisms to limit and monitor activity on the property, and ensure that all contact with potentially contaminated surface soil is regulated and monitored.

The present worth costs of Alternative 2 are estimated to be $761,000.

ALTERNATIVE 3 - EXCAVATION AND OFFSITE DISPOSAL

Alternative 3 includes excavation of surface soil that exceeds the remediation level and disposal in either a RCRA landfill or a solid waste landfill. Conventional excavation will be used to remove the top one foot of soil. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area would be backfilled with clean topsoil.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

The present worth costs of Alternative 3 if TCLP results determine that the soils are to be transported to a RCRA Subtitle D facility (nonhazardous landfill) are $241,000.

The present worth costs of Alternative 3 if TCLP results determine that the soils are to be transported to a RCRA Subtitle C facility (hazardous landfill) are $940,000.

COMPARATIVE ANALYSIS OF ALTERNATIVES

EPA has established criteria for use in comparing the advantages/disadvantages of each alternative. The alternatives are evaluated against one another by using the nine criteria on the following table. The nine evaluation criteria fall into three groups: threshold criteria, primary balancing criteria, and modifying criteria.

The following discussion compares the various alternatives to the criteria.

Overall Protection of Human Health and the Environment

Regarding surface soil concerns, Alternatives 1 and 2 do not eliminate exposure pathways and reduce the level of risk. However, Alternative 2 minimally reduces the level of human risk by way of deed restrictions and fencing.

Alternative 1 and Alternative 2 do not limit migration of or remove existing surface soil contamination. Alternative 3 eliminates exposure pathways and greatly reduces the level of risk. In addition, Alternative 3 removes contamination and eliminates further migration.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Alternatives 1 and 2 will not meet chemical-specific ARAR's for surface soil. Under Alternative 3, ARAR's will be met through excavation and offsite disposal at a properly designed facility.

Cost

A summary of the present worth cost which includes the capital as well as the operation and maintenance cost for each of the alternatives is presented within the explanation of the alternative. Greater detail is provided in the Feasibility Study.

Implementability

The implementability of an alternative is based on technical feasibility, administrative feasibility and the availability of services and materials. All components of each alternative are both technically and administratively feasible. Alternative 1 and 2 can be implemented immediately because fencing and monitoring equipment are readily available. For Alternative 2 in administrative terms, implementing this alternative may have its difficulties. Access restrictions are subject to changes in political jurisdictions, legal interpretations, and regulatory enforcement. As properties change hands, it is imperative that owners are informed of the deed restrictions and abide by them. Alternative 3 can be implemented. Excavation and landfill disposal are proven technologies. There is an identifiable RCRA Subtitle C facility that can properly treat and dispose of the soils. Access to Subtitle D facilities is also available. Excavation of the surface soil requires only conventional equipment.

Reduction of M/T/V Through Treatment

Alternatives 1 & 2 do not achieve reduction in M/T/V of the contaminants. Alternative 3 will only reduce the mobility of the contaminants.

CRITERIA FOR EVALUATING REMEDIAL ALTERNATIVES

In selecting a preferred cleanup alternative, EPA uses the following criteria to evaluate each of the alternatives developed in the Feasibility Study (FS). The first two criteria are essential and must be met before an alternative is considered further. The next five are used to further evaluate all options that meet the first two criteria. The final two criteria are used to further evaluate EPA's proposed plan after the public comment period has ended and comments from the community and the State have been received. All nine criteria are explained in more detail here.

·Overall Protection of Human Health and the Environment – Assesses degree to which alternative eliminates, reduces, or controls health and environmental threats through treatment, engineering methods, or institutional controls.

·Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) – Assesses compliance with Federal/State requirements.

·Cost – Weighing of benefits of a remedy against the cost of implementation.

·Implementability – Refers to the technical feasibility and administrative ease of a remedy.

·Short-Term Effectiveness – Length of time for remedy to achieve protection and potential impact of construction and implementation of the remedy.

·Long-Term Effectiveness and Performance – Degree to which a remedy can maintain protection of health and environment once cleanup goals have been met.

·Reduction of Toxicity, Mobility, or Volume Through Treatment – Refers to expected performance of the treatment technologies to lessen harmful nature, movement, or amount of contaminants.

·State Acceptance – Consideration of State's opinion of the preferred alternatives.

·Community Acceptance -- Consideration of public comments on the Proposed Plan.

Short Term Effectiveness

During the implementation of all the alternatives, both onsite workers and people surrounding the site will be protected when sampling the various media during review/reassessment every 5 years, when installing a fence around the site and from possible impacts caused by excavation activities. Risks from soil excavation and removal would be addressed in health and safety plans. There is no risk to the environmental receptors from implementation of any remedy, although, habitats could be disrupted during excavation activities.

Long Term Effectiveness and Permanence

The continued exposure of onsite receptors to surface soils is a potential long-term impact for Alternatives 1 and 2. The remediation level derived for protection of human health and the environment would not be met by Alternatives 1 and 2.

State Acceptance

The State of South Carolina's Department of Health and Environmental Control was consulted during the drafting of this Proposed Plan. They are in support of the Alternative selected in this Proposed Plan.

Community Acceptance

The purpose of this Proposed Plan and the upcoming comment period is to encourage input from the public during the remedy selection process. Community acceptance of the preferred alternative will be evaluated after the public comment period and will be described in the Record of Decision for the Site.

EPA's PREFERRED ALTERNATIVE

In summary, based on the information available at this time, EPA is proposing **Alternative 3: Excavation and Offsite Disposal.** Alternative 3 includes excavation of surface soil that exceeds the remediation level (of 400 ppm) and disposal in either a RCRA landfill or a solid waste landfill. Conventional excavation will be used to remove the top one foot of soil. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area would be backfilled with clean topsoil.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

This alternative represents the best balance among the criteria used to evaluate remedies. Alternative 3 is believed to be protective of human health and the environment, would attain ARARs, would be cost effective, and would utilize permanent solutions and alternative treatment technologies or resource technologies to the maximum extent practicable.

Based on comments received from the public during the upcoming comment period, EPA, in consultation with SCDHEC, may later further modify the preferred alternative or select another remedial alternative presented in this Proposed Plan.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

EPA has developed a community relations program under Superfund to respond to citizens' concerns and needs for information as well as to enable residents and officials of a site community to participate in the decision-making process. Before EPA carries out or authorizes technical work on a site, EPA staff and/or EPA contractors prepare a **Community Relations Plan (CRP)** based upon discussions in the community with local leaders and private citizens. This plan identifies the techniques EPA will use to communicate effectively with the community during the remedial process. These communication efforts often include telephone contacts, small informal meetings or formal public meetings, news releases, correspondence and fact sheets. The CRP is available for review at the site **information repository.**

EPA establishes an **administrative record** and an information repository where reports and other documents are made available to citizens. The administrative record is a file which contains all information used by EPA to select a response action for the site under the **CERCLA.** A duplicate file is maintained at the Region IV EPA Office in Atlanta, Georgia. The information repository is a file that contains current information such a technical reports and reference documents regarding the site. The information repository documents can be reviewed at the library listed below. For information regarding the documents maintained in the administrative record and information repository, visit the library listed below or contact the EPA community relations coordinator for the site.

You are encouraged to visit the information repository and contact EPA and SCDHEC representatives listed in this document for additional information. EPA would also accommodate requests for informal meetings during the public comment period, to further explain the findings of the RI/FS and the Proposed Plan. Individuals interested in arranging briefings should contact EPA's Community Relations Coordinator for the Site.

TECHNICAL ASSISTANCE GRANTS ARE AVAILABLE

To assist communities in interpreting the technical findings at Superfund sites, communities may apply for Technical Assistance Grants of up to $50,000. Congress and EPA have established requirements for the use of this grant. Citizens who are interested in a TAG may contact Ms. Cynthia Peurifoy at 1-800-435-9233.

FOR FURTHER INFORMATION

Remedial Project Manager

Yvonne Jones
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365
(404) 347-7791 EXT. 4122 or (800) 435-9233

Community Relations Coordinator

Cynthia Peurifoy
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365
(404) 347-7791 or (800) 435-9233

Regional TAG Coordinator

Rosemary Patton
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30365
(404) 347-3931 Ext 6107

South Carolina Project Manager

Adrienne Felder
South Carolina Department of Health & Environmental Control
2600 Bull Street
Columbia, South Carolina 29201
(803) 734-5487

Administrative Record and Information Repository

Northeast Regional Library
7490 Parklane Road
Columbia, SC 29223
(803) 736-6575

HOURS

Monday - Thursday
9:00 am - 9:00 pm

Friday & Saturday
9:00 am - 6:00 pm

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, from taxes on chemical and petroleum companies, to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Feasibility Study (FS) - 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 Ranking System (HRS) - A scoring system used by EPA and the state to evaluate relative risks to public health and the environment. A score is calculate based on actual or potential release of hazardous substances through the air, soils, surface water or groundwater. If the site scores above 28.5, the site is proposed for inclusion on the National Priorities List.

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.

National Oil and Hazardous Substances Contingency Plan (NCP) - The Federal regulation that guides the Superfund program.

Noncarcinogens - Substances that may cause other adverse health effects besides cancer.

Parts Per Billion (ppb)/Parts Per Million (ppm) - Units commonly used to express low concentrations of contaminants. For example, 1 ounce of Chloroform in 1 million ounces of water is 1 ppm. If one drop of Chloroform's are mixed in a competition sized swimming pool, the water will contain about 1 ppm Chloroform.

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 an 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.

Reasonable Maximum Exposure (RME) - A term used in the Baseline Risk Assessment. The RME is the highest exposure to contaminants that is reasonably expected to occur at a site as is based on the professional judgement of the risk-assessor.

Responsiveness Summary - A summary of oral and/or written public comments received by EPA during a comment period on key EPA documents and EPA's responses to those comments. The responsiveness summary is especially valuable during the Record of Decision phase at a site on the National Priorities List when it highlights community concerns for EPA decision-makers.

Resource Conservation and Recovery Act (RCRA) - A Federal law that establishes a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing and disposing of hazardous substances. RCRA is designed to prevent the creation of new uncontrolled hazardous waste sites.

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

Volatile Organic Compounds (VOCs) - Organic compounds which easily change from a liquid to a gas when exposed to the atmosphere.

PALMETTO RECYCLING SUPERFUND SITE MAILING LIST COUPON

If you have had a change of address and would like to continue to receive site related information or would like for EPA to add your name and address to the mailing list for the Palmetto Recycling Superfund Site, please complete this self-addressed form. If you have any questions regarding this mailing list, please call Cynthia Peurifoy at 1-800-435- 9233.

NAME: _____

ADDRESS: _____

_____

TELEPHONE: ( ) - _____

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for the Palmetto Recycling 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.

_____

_____

_____

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PALMETTO RECYCLING SUPERFUND SITE

PROPOSED PLAN PUBLIC COMMENT SHEET

Fold on dashed lines, staple, stamp and mail
Name _____
Address _____
City _____ **State** ___**Zip** ____

Place Stamp Here

Cynthia Peurifoy, Community Relations Coordinator
North Superfund Remedial Branch/Waste Division
U. S. EPA, Region 4
345 Courtland Street, NE
Atlanta, GA 30365

Attachment B

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

MONDAY

METRO/REGION

THE STATE

NOVEMBER 21, 1994

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PUBLIC COMMENT PERIOD
Proposed Remedial Action Plan for the
PALMETTO RECYCLING SUPERFUND SITE
Columbia, Richland County, South Carolina
November 22 - December 22, 1994

PUBLIC MEETING
TUESDAY, DECEMBER 6, 1994, 7:00 p.m.
Fairlawn Community Center
9128 Wilson Boulevard
Columbia, South Carolina

The U.S. Environmental Protection Agency (EPA) has developed a Proposed Plan for remediation of contaminated soil at the Palmetto Recycling Superfund Site. The Proposed Plan summarizes the results of the Remedial Investigation of the Site and the alternative cleanup methods evaluated under the Feasibility Study. Three alternatives were studied: Alternative 1 - No Action, which provides only for continued monitoring of the Site; Alternative 2 - Limited Action, which provides for institutional measures to control, limit, and monitor activities at the Site; and Alternative 3 - Excavation and Offsite Disposal of contaminated soil. After evaluating the alternatives against nine criteria, EPA and the South Carolina Department of Health and Environmental Control have identified Alternative 3 as the preferred cleanup method. This alternative provides for excavation of surface soil that exceeds a contaminant level of 400 parts per million and disposal of the soil in an offsite landfill.

The Proposed Plan and other Site documents are available at the Palmetto Recycling Superfund Site Information Repository in the Northeast Regional Library at 7490 Park Lane Road, Columbia, SC, (803) 776-0855. Citizens are encouraged to review the Proposed Plan and comment on it during the Public Comment Period, which opens on November 22 and closes on December 22. EPA may extend the Public Comment Period by 30 days if they receive a timely request for extension.

EPA will hold a Public Meeting on Tuesday, December 6 at 7:00 p.m. to present the Proposed Plan, answer questions, and discuss concerns. Interested citizens are encouraged to attend the Public Meeting, which will be held at the Fairlawn Community Center. Questions about the Site can be referred to Cynthia Peurifoy, EPA Community Relations Coordinator, at 1-800-435-9233. Written comments should be postmarked by December 22, 1994 and directed to:

Yvonne Jones, Remedial Project Manager
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, GA 30365

40601-41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

EXTENSION OF PUBLIC COMMENT PERIOD
Proposed Remedial Action Plan for the
PALMETTO RECYCLING SUPERFUND SITE
Columbia, Richland County, South Carolina
November 22, 1994 - January 23, 1995

The U.S. Environmental Protection Agency (EPA) has extended the Public Comment Period for the Proposed Plan for remediation of contaminated soil at the Palmetto Recycling Superfund Site. The Public Comment Period, which opened on November 22 and was scheduled to close on December 22, will close on January 23, 1995.

The Proposed Plan summarizes the results of the Remedial Investigation of the Site and the alternative cleanup methods evaluated under the Feasibility Study. Three alternatives were studied: Alternative 1 - No Action, which provides only for continued monitoring of the Site; Alternative 2 -Limited Action, which provides for institutional measures to control, limit, and monitor activities at the Site; and Alternative 3 - Excavation and Offsite Disposal of contaminated soil. After evaluating the alternatives against EPA's nine criteria, EPA and the South Carolina Department of Health and Environmental Control have identified Alternative 3 as the preferred cleanup method. This alternative provides for excavation of surface soil that exceeds a contaminant level of 400 parts per million and disposal of the soil in an offsite landfill. The estimated present worth cost of this alternative is $241,000 (nonhazardous waste landfill) to $940,000 (hazardous waste landfill).

The Proposed Plan and other Site documents are available at the Palmetto Recycling Superfund Site Information Repository in the Northeast Regional Library at 7490 Park Lane Road, Columbia, SC (803) 776-0855. Citizens are encouraged to review the Proposed Plan and comment on it during the Public Comment Period.

Questions about the Site can be referred to Cynthia Peurifoy, EPA Community Relations Coordinator, at 1-800-435-9233. Written comments should be postmarked by January 23, 1995 and directed to:

Yvonne Jones, Remedial Project Manager
U.S. Environmental Protection Agency
345 Courtland Street, NE
Atlanta, GA 30365

Attachment C

Written Public Comments Received During the Public Comment Period

South Carolina
DHEC
Department of Health and Environmental Control
Robert Mills Complex, Box 101106
Columbia, SC 29211

Memorandum

TO: Lovyst L. Luker
Project Administrator
ATSDR Cooperative Agreement
Division of Health Hazard Evaluation

FROM: William T. Going, MPH
Environmental Quality Manager
ATSDR Cooperative Agreement
Division of Health Hazard Evaluation

DATE: January 10, 1995

RE: Palmetto Recycling Record of Decision

Attached are my comments for the Environmental Protection Agency's (EPA) draft Record of Decision (ROD) for the Palmetto Recycling site. The EPA released the draft ROD on November 22, 1994 to the public for comments by December 22, 1994. However, the EPA granted the public an extension for comments with a deadline of January 23, 1995.

Overall the ROD appears to be in line with the public health assessment. The ROD proposes to remediate surface soil that exceeds EPA's remediation levels for lead. The contaminated soil will be disposed of in a Resource Conservation and Recovery Act (RCRA) landfill or in a solid waste landfill. The excavated area will be backfilled with clean topsoil. It also proposes groundwater monitoring on an annual basis, for at least five years.

I feel like the soil excavation is needed. However, I also feel that the proposed remedy will not address public health concerns related to off-site soil contamination or groundwater contamination. I recommended that the EPA strengthen the remedy to include testing of private drinking water wells and community education for groundwater. I also recommend that additional off-site soil samples be collected from residential yards and from the dirt road that borders the site to the east. I feel that these samples are needed to fully characterize the extent of contamination at the site.

COMMENTS FOR THE DRAFT RECORD OF DECISION

PALMETTO RECYCLING SITE

The South Carolina Department of Health and Environmental Control under cooperative agreement with the Agency for Toxic Substances and Disease Registry, submits the following comments for the draft Record of Decision, dated November 22, 1994, for the Palmetto Recycling site in Richland County, South Carolina.

1.0 SITE LOCATION AND DESCRIPTION

1) Paragraph 1. Second Sentence.

Please verify the longitude coordinate defined for the site. It appears that it should be reported at 81°00'43".

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2) Please insert the following narrative between the fourth and fifth paragraphs on page 4:

In 1988, SCDHEC under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), released a preliminary health assessment for the Palmetto Recycling, Inc. site. The site was classified as a potential public health hazard based on the limited available data at the time. The preliminary health assessment recommended that additional investigations be completed to better characterize the site classification and to assess public health concerns.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

3) Please define the "XXXX" in the last sentence of the first paragraph.

5.0 SUMMARY OF SITE CHARACTERISTICS

4) Page 5, 2nd sentence in paragraph that continues from previous page.

This sentence states that 86 soil samples were collected during the Remedial Investigation (RI) and the last sentence of this paragraph states that the majority of the work was performed in April 1993, June 1993, March 1994, June 1994, and July 1994. However, the draft RI report states that 69 soil samples were collected. Later in the ROD (page 14, 5.3 Nature and Extent of Contamination, Surface Soil Samples, paragraph 1), the ROD states CDM collected 69 soil samples and the EPA collected

17 soil samples. However, it does not explain the rationale as to why, where, and when the EPA samples were collected after the remedial activities were completed.

In addition, the same sentence states that 3 surface water samples were collected and the draft RI states that 2 surface water samples were collected. Was the sample taken after the draft RI? If so, when and where was this sample collected and why was it collected?

6.0 SUMMARY OF SITE RISKS

5) The EPA should give greater consideration to the groundwater pathway even though the baseline risk calculations do not indicate that the contaminants in this pathway pose an adequate risk to human health. This recommendation is not based as much on scientific principles as it is based on the repeated concerns expressed by the public about the quality of their private drinking water wells. Based on the findings of EPA's private well survey, several residents who use or used private wells noted discolored water with a bad taste and bad odor; in addition, several residents have requested that their private well water be tested. On December 6, 1994, SCDHEC agreed to sample the private wells of area residents who desired this service.

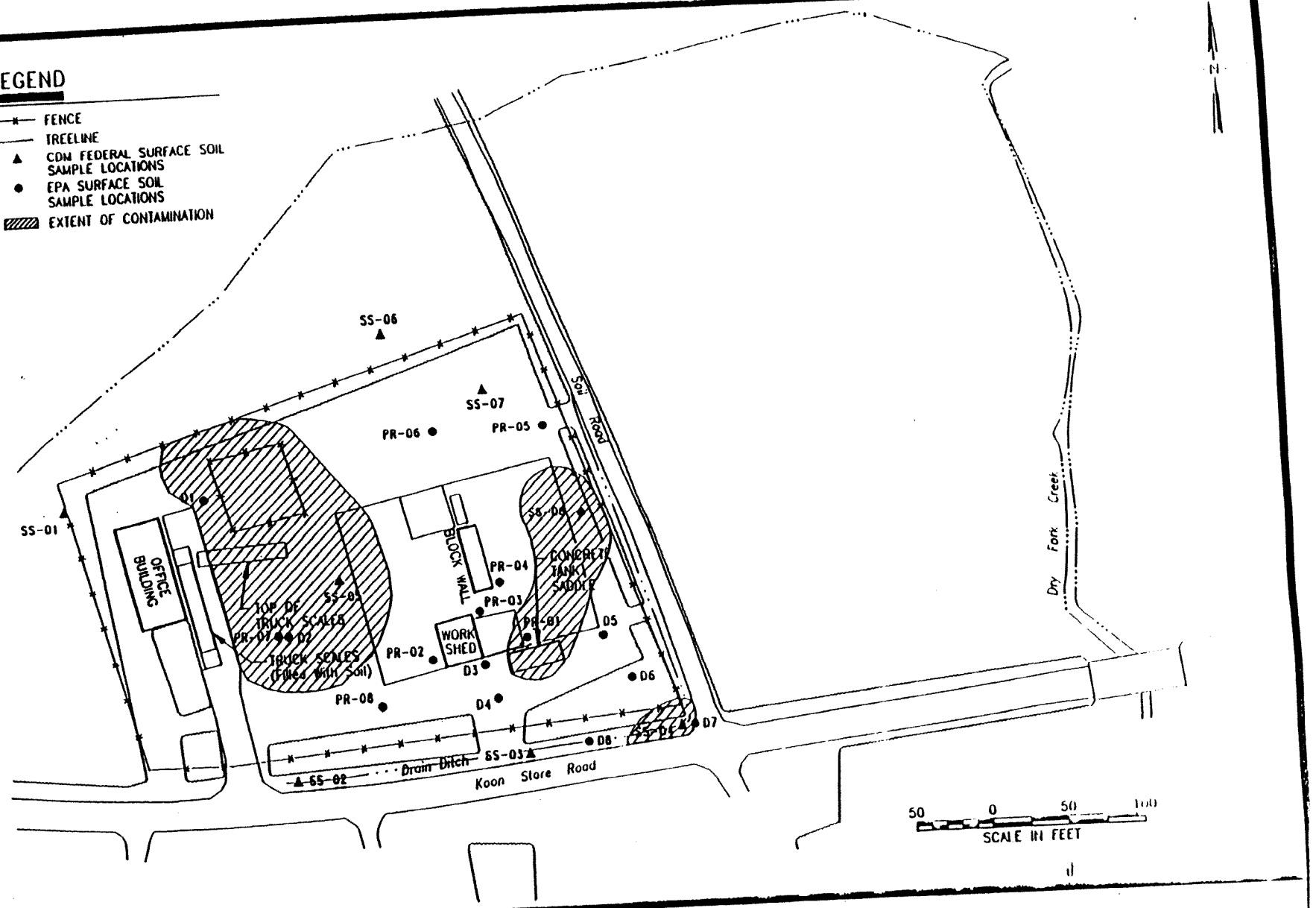
In the ROD, the EPA has stated that it will conduct a review of the site "within five years after commencement of remedial actions to ensure that the remedy continues to provide adequate protection of human health and the environment protection." Since many residents fear that site-related contaminants have impacted their private well water, the results of this sampling should be discussed with the public as it relates to the Palmetto Recycling site. The EPA should consider periodic sampling of the private wells in the area over this five-year period.

6) The current ROD will not address community concerns in regards to off-site human exposure to contaminants. The public has expressed concerns about possible contamination in the area of the off-site dirt road. We recommend that soil samples be collected from off-site locations including the area of the dirt road and from the residential yards that border the site along Koon Store Road. While there indeed may not be contamination in these areas, these samples are needed to fully characterize the extent of contamination at the site and to adequately address community health concerns. Figure 10 (attached) in the ROD that defines the "Approximate Areal Extent of Lead Contamination Above Remediation Levels in Surface Soil" supports this rationale since this area (in the southeast corner of the site) is adjacent to the dirt road that is east of the site and diagonally across from a residential yard.

7.3 ALTERNATIVE 3 - EXCAVATION AND OFFSITE DISPOSAL

7) The groundwater monitoring program under this option should be expanded to include testing of area private drinking water well residents who desire this testing. Community education should be considered to meet concerns expressed by the community about the quality of their drinking water.

8) We concur with the selected remedial activity - the excavation of on-site soil. However, we would like to see the community concerns of off-site soil contamination and groundwater contamination more adequately addressed.



CDM FPC ARCS IV

APPROXIMATE AREAL EXTENT OF LEAD CONTAMINATION ABOVE REMEDIATION LEVELS IN SURFACE SOIL

PALMETTO RECYCLING

COLUMBIA, SOUTH CAROLINA

FIGURE NO. 10

CDM FEDERAL PROGRAMS CORPORATION

A Subsidiary of Camp Dresser & McKee Inc

A8288/27.MW6/100

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

January 12, 1995

Ms. Yvonne Jones
Remedial Project Manager
USEPA
345 Courtland Street, NE
Atlanta, GA 30365

RE: Proposed Plan Fact Sheet (November 1994)
Draft Record of Decision (ROD) November 1994
Palmetto Recycling NPL Site
SCD 037 398 120
Richland County

Dear Ms. Jones:

The above referenced documents for the Palmetto Recycling site have been reviewed by the Department. Comments from Jim Bowman, SCDHEC Hydrologist, are attached in a memorandum to Adrienne Felder.

PROPOSED PLAN FACT SHEET

1. Page 5. Correct the date April 25, 1994 in the third paragraph, column one. It should be rewritten as April 25, 1984.

2. Page 11. Alternative 1 - No Action. Please review sentences two and three of this section. Some rewording may be necessary for clarity.

3. Page 13. Reduction of M/T/V Through Treatment. Please spell out M/T/V.

4. Page 14. Short Term Effectiveness. Please review the first sentence in this section. Some rewording may be necessary for clarity.

5. Page 15. The correct phone number for Adrienne Felder, South Carolina Project Manager, is (803) 896-4071.

DRAFT RECORD OF DECISION

1. Page iv. Table of Contents. The title of Section 7.0 - Description of Groundwater Remedial Alternatives should be rewritten as Section 7.0 - Description of Soil Remedial Alternatives.

DRAFT RECORD OF DECISION

2. Page 4. Third paragraph, fifth sentence. Correct the date to state April 25, 1984.

3. Page 27. The fourth sentence in the second complete paragraph should be rewritten for clarity.

4. Page 37. Please define the acronym TBC in the third paragraph of section 9.1.

5. Page 38. Two sections of 9.1.2 - ARARs appear on page 38. The second section of 9.1.2 should be section 9.1.3 - Performance Standards. Section 9.1.3 should include more discussion on soil excavation and confirmation soil sampling following the excavation to verify that soil remaining on site does not exceed 400 ppm.

6. Page 40. Table 3 (Continued). The rationale for soil discusses protective blood lead levels for children as 18 mg/dl. The protective blood lead levels for children should be 10 ug/dl.

7. Page 45. Section 10.0 - Documentation of Significant Changes should be renumbered as Section 11.0.

Please contact me regarding a letter of concurrence from the State of South Carolina. If I can be of further assistance, contact me at 803/896-4071.

Sincerely,

Adrienne Felder

Adrienne Felder
Site Engineering Section
Division of Site Engineering & Screening
Bureau of Solid & Hazardous Waste Management

Enclosure

cc: Jim Bowman
R. Gary Stewart

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

MEMORANDUM

TO: Adrienne Felder, Engineer
Site Engineering Section
Division of Site Engineering and Screening
Bureau of Solid and Hazardous Waste Management

FROM: Jim Bowman, Hydrologist JB
Superfund Section
Division of Hydrogeology
Bureau of Solid and Hazardous Waste Management

DATE: January 9, 1995

RE: Proposed Plan Fact Sheet dated November 1994 and
Draft Record of Decision (ROD) dated November 16, 1994
Palmetto Recycling NPL Site
SCD 037 398 120
Richland County, South Carolina

The Division of Hydrogeology has completed a review of the above-referenced documents for the Palmetto Recycling NPL Site. Our comments on these documents are provided as follows:

A. PROPOSED PLAN FACT SHEET

1. Site Background, 3rd Paragraph, page 2: The Fact Sheet states that five groundwater monitor wells, installed by Raymond Knox Consultants, are located onsite. However, in September 1981, the month in which these five wells were installed, Raymond Knox was an employee of the Groundwater Protection Division of the Department. These five wells were installed by a contractor hired by Palmetto Recycling, but this contractor was not Raymond Knox. Please correct the statement concerning the five wells. We also recommend that EPA state the purpose of the five original monitor wells so that these wells are not confused with the monitor wells that were installed as part of the Remedial Investigation (RI).

B. DRAFT ROD

1. Section 1.0, Site Location and Description, Second Paragraph, page 1: The Draft ROD states that five groundwater monitor wells, installed by Raymond Knox Consultants, are located onsite. Please refer to Comment A.1. of this memorandum for our correction to this statement in the ROD concerning the five monitoring wells.

2. Section 3.0, Highlights of Community Participation, page 5: Information regarding the extension to the public comment period should be included in the second and third paragraphs of this section.

3. Section 7.3, Alternative 3- Excavation and Off-Site Disposal, page 33 and Section 9.1, Surface Soil Remediation, page 37: These sections should state that the soil excavation will be followed up with soil testing for lead. The purpose of the soil testing is to ensure that excavation is successful in removing lead contamination above the remediation level (400 ppm) in the surface soil.

4. A list of references that are cited in Draft ROD should be provided at the end of the document.

J. Michael Hartnett
Senior Attorney

Room 32060
131 Morristown Road
Basking Ridge, NJ 07920
908 204-6435
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January 20, 1995

VIA FACSIMILE

Ms. Cynthia Peurifoy
U.S. Environmental Protection Agency
North Superfund Remedial Branch
345 Courtland Street, NE
Atlanta, Georgia 30365

Re: Palmetto Recycling Superfund Site

Dear Ms. Peurifoy:

As we discussed yesterday, I herewith provide AT&T's comments on the proposed plan for the subject site.

General Comments

In the Feasibility Study (FS) it is suggested at one point that the remediation of lead-contaminated surface soil should be focused on the removal of "hot spots." Elsewhere in the FS and in the proposed plan it is recommended or implied that gross excavation of soil take place. It is recommended that the documents be revised to consistently suggest limited hot spot removal.

The conclusion regarding ecological concerns contains the vague recommendation that a further ecological study "may be necessary." It is AT&T's view that since the potential for adverse ecological effects is low, the recommendation should be that further assessment is not warranted.

Specific Comments

Final Remedial Investigation/Feasibility Study Report

Page	Location	Comment
1-15	¶ 1	This section states that the amount of dust detected at the site did not vary from background conditions. The amount of dust detected would not be expected to vary. It is the incidence of lead absorbed to the dust particles that would be the measure of concern. Can a concentration of lead in the dust be assumed to evaluate the potential for exposure due to airborne concentrations?
3-1	¶ 2	One background soil location will not adequately describe background conditions. The number of background samples collected should be statistically determined as described in *Risk Assessment Guidance for Superfund*.
3-5	Table 3-1	Additionally, several samples collected from one borehole do not constitute different background sampling locations. No solid borings were conducted in the former suspected dumping area. For completeness, subsurface soil conditions should have been evaluated in this area.
5-3	Table 5-1	Why was no well cluster installed north of well cluster #3 to monitor groundwater downgradient of the suspected liquid waste dumping area?

Page	Location	Comment
8-13	Table 8-5	The logic for using 400 mg/kg as the cleanup goal for lead in the surface soil is not consistent with the guidance OSWER Directive #93-55.14-2 in which it is suggested that the UBK model be run iteratively until the acceptable blood lead levels and population effects are reached (10 ug/dl and 5%, respectively). In the FS, the average lead concentration (528 mg/kg) was used as input to the model, as opposed to the 95% UCL concentration (1,968 mg/kg).
11-4	¶2	This section states that a discount rate of five percent for present worth estimates was used. Recent correspondence with USEPA had indicated that a discount rate of 7 percent for feasibility study present worth estimates is currently being used.

Proposed Plan

Soil excavation and off-site disposal was the only remedial action considered for the site soils. Two options were considered within the soil excavation and disposal alternative Option 1 involves soil disposal at the Subtitle D solid waste facility at an estimated present worth cost of $241,000. Option 2 involves soil disposal at a RCRA Subtitle C facility at an estimated present worth cost of $941,000 In the Feasibility Study, it was stated that other alternatives such as the on-site treatment were not considered because the volume of soil requiring remediation (1,110 cubic yards) fell short of the 2,000 cubic yard cut-off typically used within the industry to evaluate whether soil is more cost effective treated on site or off site. However, since there is a significant difference in cost between Option 1 and Option 2 and since it is likely that the more expensive option will be required (i.e., excavated soils will exceed the 5 mg/l TCLP level for lead), AT&T believes that on-site treatment and disposal could prove cost effective. We recommend TCLP testing of the surface soil at the site prior to selection of the final remedy to determine if the soils can be disposed at a Subtitle D solid waste facility. If results indicate that the soil can be disposed at a Subtitle D facility, then we agree that the excavation and off-site disposal alternative is the most appropriate alternative. If test results

indicate that the soil must be treated and disposed at the RCRA Subtitle C facility, then we recommend that on-site treatment and disposal be evaluated. Based on the depth and total volume of soil above the 400 mg/kg action level, on-site treatment by fixation/stabilization could be implemented using conventional earth-moving equipment. Fixation/stabilization is a well-demonstrated technology for the treatment of lead-contaminated soil. Although a detailed cost evaluation has not been performed, it is anticipated that on-site treatment and disposal could be implemented at a present worth cost of approximately $350,000. This alternative would satisfy EPA's preference for treatment and would minimize lead exposure via contact with surface soils while eliminating the need to transport soils off site for disposal in a landfill.

Please address any questions you may have to me.

Very truly yours,

J. MICHAEL HARTNETT

cc: J. McCarthy

Attachment D

Official Transcript of the Proposed Plan Public Meeting

STATE OF SOUTH CAROLINA)
)
COUNTY OF RICHLAND)

- - -

UNITED STATES ENVIRONMENTAL

PROTECTION AGENCY

REGION IV

PUBLIC INFORMATION MEETING

FOR THE PALMETTO RECYCLING, INC.

SUPERFUND SITE

- - -

FAIRLAWN COMMUNITY CENTER
COLUMBIA, SOUTH CAROLINA
TUESDAY, DECEMBER 6, 1994
7:10 P.M. - 9:20 P.M.

- - -

COURT REPORTER: SHEILA STAGGS, CCR (GA)
HANWELL REPORTING SERVICE
920 MOHEGAN TRAIL
WEST COLUMBIA, SOUTH CAROLINA 29169
(803) 791-4127

APPEARANCES:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365
BY: CYNTHIA PEURIFOY, COMMUNITY RELATIONS
BERNIE HAYES
YVONNE JONES, PROJECT MANAGER
JAN ROGERS

SOUTH CAROLINA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL CONTROL
2600 BULL STREET
COLUMBIA, SOUTH CAROLINA 29201
BY: ENAYET ULLAH
ERIC MELARO
GARY STEWART
GAIL JETER
ADRIENNE FELDER
CRAIG MARRINER
JIM BOWMAN

E X H I B I T S

* * * (NO EXHIBITS WERE MARKED) * * *

MS. PEURIFOY: GOOD EVENING EVERYBODY. MY NAME IS CYNTHIA PEURIFOY AND I'M THE COMMUNITY RELATIONS COORDINATOR FOR E.P.A. REGION IV SOUTH CAROLINA SECTION OR THE NORTH SUPERFUND REMEDIAL BRANCH. WE'RE HERE TONIGHT TO TALK TO YOU ABOUT OUR WORK AT THE PALMETTO RECYCLING SITE. WE'RE HERE TONIGHT TO PRESENT YOU THE PROPOSED CLEAN UP PLAN FOR THE SITE. AND TO RECEIVE YOUR COMMENTS AND QUESTIONS.

TONIGHT'S MEETING PURPOSE AS I JUST SAID, WE'RE GOING TO SUMMARIZE THE REMEDIAL INVESTIGATION. WE'RE GOING TO GIVE YOU THE BACKGROUND OF THE SITE, THE FINDINGS OF THE REMEDIAL INVESTIGATION. WE'RE GOING TO SUMMARIZE THE BASE LINE RISK ASSESSMENT AND WE'RE GOING TO SUMMARIZE THE FEASIBILITY STUDY. WE'RE GOING TO PRESENT CLEAN UP ALTERNATIVES AND THEIR COSTS. AND WE'RE GOING TO PRESENT TO YOU OUR PREFERRED ALTERNATIVE FOR THE CLEAN UP OF THE SITE.

AND LAST BUT CERTAINLY NOT LEAST WE'RE GOING TO SOLICIT YOUR INPUT, YOUR COMMENTS, YOUR QUESTIONS, YOUR CONCERNS.

OKAY. WE'RE HERE BECAUSE THIS IS A SUPERFUND SITE. SO I WANT TO GO OVER WITH YOU A LITTLE BIT THE SUPERFUND PROCESS. THIS SITE HAS

GONE THROUGH QUITE A BIT OF THE PROCESS. WHEN A SITE IS DISCOVERED IT UNDERGOES A PROCESS WHERE IT IS RANKED. AND IF IT RANKS AND IT SCORES A SCORE OF 28.5 OR HIGHER IT IS LISTED ON THE NATIONAL PRIORITIES LIST. AT THAT TIME A REMEDIAL INVESTIGATION IS DONE AND A FEASIBILITY STUDY.

AND THERE YOU SEE BLOCK FIVE. WE HAVE PUBLIC COMMENTS. AND THAT'S WHY WE'RE HERE TONIGHT. I'M GOING TO GO AHEAD AND TELL YOU A LITTLE BIT ABOUT WHAT'S GOING TO HAPPEN NEXT. AFTER TONIGHT'S MEETING WE'RE GOING TO GO BACK. WE'RE GOING TO COMPLETE THE COMMENT PERIOD WHICH IS EXTENDABLE FOR ANOTHER 30 DAYS IF WE RECEIVE THAT TYPE OF REQUEST. AND THEN WE'RE GOING TO DO WHAT IS CALLED A RESPONSIVENESS SUMMARY. THAT IS A RESPONSE TO ALL THE COMMENTS THAT WE RECEIVE DURING THE COMMENT PERIOD. THAT BECOMES PART OF BLOCK 6, THE RECORD OF DECISION, WHICH IS A PUBLIC DOCUMENT THAT WILL BE ADDED TO THE INFORMATION REPOSITORY. AT THAT TIME WE WILL GO INTO NEGOTIATIONS AND WE WILL START WORKING ON THE DESIGN OF THE CLEAN UP PLAN. THAT'S BLOCK 7 UP THERE. AND THEN WE WILL GO INTO THE ACTUAL CLEAN UP PROCESS.

NOW, I WANT TO GO OVER WITH YOU A LITTLE BIT OF THE COMMUNITY RELATIONS HISTORY OF THE SITE. WE WERE HERE IN JUNE OF '92 AND WE CONDUCTED COMMUNITY INTERVIEWS. WE HAD A PUBLIC MEETING HERE IN AUGUST OF '92. AND WE FINALIZE OUR COMMUNITY RELATIONS PLAN IN SEPTEMBER OF 1992. SOME OF THE THINGS THAT WE PUT IN THAT COMMUNITY RELATIONS PLAN THAT WE WOULD DO, WE WERE GOING TO ESTABLISH POINTS OF CONTACT WHICH WE DID BY LETTING YOU KNOW WHO I AM AND WHO THE PROJECT MANAGER WAS FOR THE SITE. WE HAVE A TOLL FREE NUMBER THAT YOU SHOULD ALL HAVE IN YOUR FACT SHEETS WHERE YOU CAN CALL US ANY TIME WITH ANY QUESTIONS OR CONCERNS. WE'VE HAD MEETINGS. PUBLIC MEETINGS. WE'VE DONE FACT SHEETS. WE'VE PUT OUT NEWS RELEASES TO TRY TO KEEP YOU UP-TO-DATE ON WHAT'S GOING ON. AND WE'VE ESTABLISHED AN INFORMATION REPOSITORY. WE MAINTAIN A MAILING LIST FOR THE SITE. AND OUR COMMUNITY RELATIONS PLAN CALLS FOR REVISION AS NEEDED.

I WANT TO ALSO TELL YOU A LITTLE BIT ABOUT TECHNICAL ASSISTANCE GRANTS. WE SPOKE ABOUT THIS WHEN WE WERE HERE BEFORE. TECHNICAL ASSISTANCE GRANTS ARE $50,000 GRANTS THAT ARE AVAILABLE TO

COMMUNITY GROUPS THAT LIVE NEAR SUPERFUND SITES. IT IS GIVEN TO HIRE A TECHNICAL ADVISOR TO HELP YOU INTERPRET AND UNDERSTAND SITE RELATED TECHNICAL INFORMATION SUCH AS THE INFORMATION THAT'S GOING TO BE PRESENTED HERE TONIGHT.

COMMUNITY GROUPS DO HAVE TO CONTRIBUTE 20 PERCENT. AND THAT CAN BE DONE THROUGH IN KIND SERVICES SUCH AS VOLUNTEERING YOUR TIME, PUTTING OUT NEWSLETTERS OR WHATEVER. IT'S NOT TOO LATE FOR A TECHNICAL ASSISTANCE GRANT. I WILL BE MORE THAN HAPPY TO WORK WITH YOU ANY WAY I CAN TO HELP YOU TO GET THAT DONE SHOULD YOU SO DESIRE.

NOW, I WANT TO INTRODUCE SOME PEOPLE TO YOU WHO ARE HERE TONIGHT FROM E.P.A. AND ALSO FROM THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL. FIRST OF ALL FROM E.P.A. THE PROJECT MANAGER FOR THE SITE IS MS. YVONNE JONES. SHE'S BACK HERE IN THE REAR. SHE'S GOING TO BE SPEAKING TO YOU QUITE A BIT TONIGHT. OUR SECTION CHIEF FOR THE SOUTH CAROLINA SECTION IS MR. JAN ROGERS AND HE'S IN THE REAR ALSO. AND WE HAVE WITH US ALSO FROM E.P.A. MR. BERNIE HAYES WHO'S ANOTHER PROJECT MANAGER IN OUR SECTION.

NOW, FROM OUR COLLEAGUES AT THE DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL WE HAVE

MR. GARY STEWART. WE HAVE MS. GAIL JETER. WE HAVE MS. ADRIENNE FELDER. WE HAVE MR. JIM BOWMAN. AND WE HAVE MR. ERIC MELARO. AND WE HAVE MR. ENAYET ULLAH.

NOW, I'M GOING TO TURN THE PRESENTATION OVER TO MS. JONES AND I WOULD ENCOURAGE YOU TO ASK QUESTIONS, GIVE US FEEDBACK HOWEVER YOU SO DESIRE. PLEASE MAKE SURE THAT WHEN YOU SPEAK TONIGHT THAT OUR COURT REPORTER CAN HEAR YOU AND IDENTIFY YOURSELF BECAUSE WE ARE MAKING A TRANSCRIPT OF THIS MEETING. THANK YOU.

MS. JONES: HELLO. BASICALLY I'M NOT REALLY USED TO WORKING WITH A MIKE SO IF AT ANY TIME THAT IT MAY APPEAR THAT YOU CANNOT MAKE OUT WHAT I AM SAYING FEEL FREE TO RAISE YOUR HAND. AND I'LL TRY AND SPEAK A LITTLE LOUDER. BASICALLY WHAT I WOULD LIKE TO DO TONIGHT IS FOR THE MOST PART SUMMARIZE THE SITE HISTORY, SITE BACKGROUND AND THE SITE LOCATION. IN ADDITION TO THAT I WOULD ALSO LIKE TO GIVE YOU A BRIEF SUMMARY OF WHAT WAS DONE DURING THE REMEDIAL INVESTIGATION AND WHAT THE RESULTS WERE FROM THE REMEDIAL INVESTIGATION. CAN EVERYBODY HEAR ME? OKAY.

BASICALLY AS EVERYONE KNOWS THE PALMETTO

RECYCLING SITE IS LOCATED APPROXIMATELY 8 MILES NORTH OF COLUMBIA, SOUTH CAROLINA, IN RURAL RICHLAND COUNTY. THE SITE IS POSITIONED BETWEEN U.S. ROUTES 321 AND U.S. ROUTE 21 ON THE NORTH SIDE OF KOON STORE ROAD.

FEATURES OF THE SITE ARE BASICALLY TO THE EAST OF THE SITE YOU HAVE A DIRT ROAD. I'M SURE EVERYONE IS FAMILIAR WITH DRY FORK CREEK. TO THE NORTH OF THE SITE YOU HAVE AN UNNAMED TRIBUTARY WHICH IS UPSTREAM OF DRY FORK CREEK. AS FAR AS THE SITE ITSELF THERE IS I GUESS APPROXIMATELY 130 BY 170 FOOT ASPHALT PAD ON WHICH MOST OF THE PRODUCTION PROCESS TOOK PLACE. THERE WAS AN OFFICE BUILDING. AND AS EVERYONE IS PROBABLY AWARE OF, THERE WAS ALSO AN EXCAVATED PIT AREA WHICH NOW HAS BEEN BACK FILLED WITH SOIL WHICH IS KNOWN AS -- WE WOULD CALL IT THE FORMER TRUCK SCALE AREA.

IN ADDITION TO THIS PARTICULAR FIGURE THIS IS THE WORK SHED OR IT HOUSED THE WORK SHED WHICH IS REALLY WHERE A LOT OF THE PROCESS TOOK PLACE.

MS. BROWN: I BEG YOUR PARDON. THE WORK PLACE WAS THE BACK ONE BACK THERE, THE BACK BLOCK. THAT'S WHERE ALL THE WORK WENT ON. AND THEY HAD A CONVEYOR BELT THAT WENT FROM THERE

OVER TO THE SUMP TANK.

MS. JONES: THANK YOU. CAN YOU SEE THE TANKS WHERE YOU ARE?

MS. BROWN: YES, I CAN SEE IT.

MS. JONES: AND ALSO THE TANK SADDLE WHICH WAS PART OF THE PROCESS. BASED ON I GUESS INFORMATION FROM A PREVIOUS WORKER FROM THE SITE THIS PARTICULAR AREA WAS CONSIDERED AS THE DUMPING AREA. IT CONSISTED OF THE AREA WHICH HELD MATERIAL FROM BATTERY CASINGS, GROUND BATTERY CASINGS.

MS. BROWN: CASINGS BEING BURNED.

MS. JONES: CORRECT. AS FAR AS LOOKING AT SOME OF THE SITE HISTORY OF THE SITE, PRIOR TO 1979 FROM THE DATA THAT I HAVE BASICALLY READ THE OVERALL AREA OR THE AREA SURROUNDING THE SITE WAS CONSIDERED TO BE RURAL RESIDENTIAL. IN 1979 THE PROPERTY WAS PURCHASED BY A COMPANY BY THE NAME OF PALMETTO RECYCLING INCORPORATED FOR THE PURPOSE OF OPERATING A BATTERY RECYCLING COMPANY. FROM 1979 TO 1983 THE FACILITY WAS INVOLVED IN THE RECLAMATION OF LEAD FROM THE BATTERIES. AS PART OF THE RECLAMATION PROCESS OF LEAD FROM THE BATTERIES BASICALLY I GUESS IN A NUTSHELL LEAD WAS BASICALLY RECLAIMED FROM THE

BATTERIES.

I DON'T KNOW IF ANY OF YOU HAVE EVER LOOKED IN A BATTERY. IT LITERALLY CONSISTS OF AN OUTER CASING WITH METAL PRONGS THROUGHOUT THE BATTERY. AND SULFURIC ACID DOWN IN THE BATTERY. WHAT WOULD ACTUALLY TAKE PLACE IS I GUESS DURING THE PROCESS THE LEAD WAS RECLAIMED AND BASICALLY THE SULFURIC WASTE JUST IN A NUTSHELL WAS YOU KNOW DISCHARGED.

IN 1981 OR AROUND THE AREA OF 1981 THE PALMETTO RECYCLING INC. AND REALLY JUST AFTER A PERIOD OF DISCHARGE TO THE LOCAL SEWER BASICALLY APPLIED FOR AN APPLICATION TO DISCHARGE HAZARDOUS WASTE WHICH I THINK EVERYONE HERE PRETTY MUCH KNOWS ABOUT. THAT PARTICULAR APPLICATION WAS DENIED BY DHEC. AND IN 1983 THE FACILITY FILED FOR BANKRUPTCY.

IN 1984 AS A RESULT --

MS. BROWN: MAY I INJECT SOMETHING RIGHT HERE?

MS. JONES: OKAY.

MS. BROWN: FROM 1979 TO 1983 THE COMPANY WAS NOT OPERATING ALL THAT TIME.

MS. JONES: CORRECT. BUT THEY WERE TRYING TO APPLY FOR A PERMIT.

MS. BROWN: AND DURING THE TIME THAT THEY DID TRY TO OPERATE THEY WERE OPERATING WITHOUT THE FIRST PERMIT, PERIOD.

MS. JONES: CORRECT. IN FACT FROM MY READING THEY WERE ALREADY DISCHARGING WHEN THEY --

MS. BROWN: DISCHARGING AND PUTTING ACID, BATTERY ACID, OVER AT OLDHAM'S GARAGE ON 321 AS WELL AS ON THEIR OWN PROPERTY.

MS. JONES: CORRECT. I'M NOT REALLY FOR SURE WHY THEY EVEN MADE THE STATE AWARE BY OBTAINING A PERMIT.

MS. BROWN: WELL, WHEN WE FOUND THE RED TRUCK GOING UP AND DOWN THE ROAD THE ONES OF US THAT NOTICED IT IS THE ONES THAT CALLED DHEC'S ATTENTION TO IT IS HOW THEY FOUND THE BATTERY ACID BEING DISCHARGED INTO THE DRY CREEK BED.

MS. JONES: OKAY. I GUESS 1984 -- I GUESS YOU REMEMBER THE FIRE THAT OCCURRED.

MS. BROWN: 1984. YES. THAT'S WHEN THEY WENT DOWN THERE WHENEVER THE PEOPLE CONSIDERED THEIRSELF BANKRUPT AND TRYING TO SELL SOME OF THE PROPERTY AND THEY SET THE SHED ON FIRE.

MS. JONES: CORRECT. AS A RESULT OF

THAT THE SHED THAT WAS COVERING I GUESS THE PIT AREA WHICH HELD THE SULFURIC ACID -- BECAUSE IT WAS NOT PROTECTED IT WAS BASICALLY LEFT OPEN FOR CONTAMINATED WASTE TO MAKE ITS WAY INTO THE SOILS. TO ADDRESS THIS IMMEDIATE HEALTH AND ENVIRONMENTAL RISK POSED BY THE SITE THREE ACTIONS WERE CONDUCTED BY DHEC. THE FIRST REMOVAL TOOK PLACE IN APRIL OF 1984. AND IT CONSISTED OF THE REMOVAL OF 10,000 GALLONS OF CONTAMINATED WATER AND APPROXIMATELY 100 DRUMS CONTAINING LIQUID WASTE.

IN OCTOBER OF 1985 -- AND OF COURSE THIS WAS AFTER THE SITE WAS REASSESSED. THE STATE REMOVED A TOTAL OF 365 TONS FROM THE SITE OF SOILS WHICH WERE CONTAMINATED.

IN 1986 --

MS. BROWN: DO YOU BY ANY CHANCE HAVE A MAP SHOWING WHERE THAT CONTAMINATION WAS REMOVED?

MS. JONES: I HAVE THOSE MAPS BUT I DON'T HAVE THOSE WITH ME. BASICALLY THE MAPS THAT I HAVE ARE JUST ROUGH SKETCHES. I CAN KIND OF SHOW YOU ABOUT WHERE IT IS USING A POINTER. BASICALLY FROM THE MAPS THAT WE HAVE SEEN AND AGAIN THOSE MAPS WERE LITERALLY HAND DRAWN SO YOU

CAN'T REALLY GET AN ACCURATE -- THEY WERE NOT TO SCALE. BASICALLY IT LOOKED LIKE A LOT OF THE SOIL WAS REMOVED FROM THIS PART OF THE AREA TO MAYBE -- IT'S KIND OF HARD WITH THE LASER -- TO MAYBE OVER HERE AND MAYBE DOWN TO HERE. OR JUST TO SUM IT UP, RIGHT AROUND THE ASPHALT PAD. THAT MIGHT BE THE EASIEST WAY TO SAY IT.

MS. BROWN: WAS ANY TESTING DONE UNDER THE ASPHALT PAD?

MS. JONES: DURING THIS INVESTIGATION?

MS. BROWN: YES. DURING THAT INVESTIGATION OR SINCE.

MS. JONES: NO, MA'AM. THERE WAS SOME DONE DURING THE REMEDIAL INVESTIGATION CONDUCTED IN 1992.

MS. BROWN: UNDER THE ASPHALT?

MS. JONES: CORRECT. BUT NOT AT THE TIME THE REMOVAL WAS DONE. IN 1986 E.P.A. CONDUCTED A PRELIMINARY ASSESSMENT OF THE SITE AND BASED ON THE RESULTS OF THIS ASSESSMENT E.P.A. PROPOSED THE SITE FOR INCLUSION ON THE NATIONAL PRIORITIES LIST IN JUNE OF 1988. IN 1989 THE PALMETTO RECYCLING SITE WAS FORMALLY ADDED TO THE NATIONAL PRIORITIES LIST WHICH FROM NOW ON I'LL PROBABLY SAY NPL ON OCTOBER 4TH,

1989. IN 1992 E.P.A. NEGOTIATED WITH POTENTIALLY RESPONSIBLE PARTIES WHICH FROM NOW ON I WILL SAY PRP'S. AND BASICALLY WHAT I MEAN ABOUT POTENTIALLY RESPONSIBLE PARTIES, THEY WOULD BE PARTIES THAT EITHER GENERATED THE WASTE OR TRANSPORTED THE WASTE TO THIS PARTICULAR SITE. HOWEVER, AFTER A SERIES OF NEGOTIATIONS THOSE BROKE DOWN AND E.P.A. BASICALLY CONDUCTED THE REMEDIAL INVESTIGATION AND THE FEASIBILITY STUDY WHICH AT THIS POINT I'LL START CALLING IT THE RI/FS.

BASICALLY AS YOU PROBABLY ALREADY KNOW A REMEDIAL INVESTIGATION LITERALLY IS A SITE INVESTIGATION WHICH BASICALLY GOES OUT, TRIES TO CHARACTERIZE THE SITE SO WE CAN DETERMINE WHAT THE EXACT NATURE AND EXTENT OF THE CONTAMINATION IS AT THE SITE. WHEN WE CONDUCT OR PERFORM A FEASIBILITY STUDY KNOWN AS AN FS BASICALLY THAT LOOKS AT DIFFERENT ALTERNATIVES ON HOW WE SHOULD OR HOW WE CAN CLEAN UP THE SITE.

AND IN 1992 E.P.A. CONDUCTED RI FIELD ACTIVITIES AT THE SITE. AND THAT OCCURRED IN 1992. SINCE THEN THE E.P.A. HAS GONE BACK OUT TO THE SITE IN JUNE OF 1994 AND ALSO JULY 1994.

MR. FOGLE: CAN YOU IDENTIFY THE

PRP'S? IS THAT THE BANK THAT WAS HOLDING THE MORTGAGE FOR THE PROPERTY OR ARE YOU UNABLE TO IDENTIFY THEM?

MS. JONES: WELL --.

MS. BROWN: BECAUSE I LEARNED THAT AT&T HAD A PART OF IT.

MS. JONES: WELL, I GUESS I MIGHT LEAVE THIS QUESTION TO MR. ROGERS.

MR. ROGERS: THE FIVE PRP'S THAT WE WERE TALKING TO BACK EARLY ON ARE THOSE THAT HAD BEEN IDENTIFIED AS HAVING SHIPPED SOME WASTE THERE.

MR. FOGLE: THESE WERE PEOPLE WHO SHIPPED WASTE?

MR. ROGERS: YES. THE FACILITY OPERATORS WERE IN BANKRUPTCY AND THERE WERE OTHER THINGS THAT WE COULD NOT DO WITH SOME OF THOSE PEOPLE. WE'VE SINCE -- WELL, THIS WILL COME LATER, BUT WE BASICALLY DO A LITTLE MORE THOROUGH PRP SEARCH AS WE FINISH UP THE RECORD OF DECISION AND PURSUE IMPLEMENTATION JUST TO ENSURE THAT WE'VE LOOKED AT ALL AVENUES OF GETTING RESPONSIBLE PARTIES TO DO THE WORK. ON THE FRONT END WE TYPICALLY DO A QUICK SURVEY IN ORDER TO FIGURE OUT WHO'S LIABLE OR WHO'S MOST LIKELY

INVOLVED AT THE SITE, TRY TO NEGOTIATE WITH THEM. AND IF WE CAN'T REACH A CONCLUSION WE GO AHEAD AND DO THE STUDIES SUCH AS WE'VE DONE HERE. THERE WERE FIVE AND I DON'T KNOW THE NAMES OF THEM. YVONNE MIGHT REMEMBER SOME OF THEM. THAT'S IN THE PUBLIC RECORD.

MS. JONES: THAT'S WHAT I WAS WONDERING, IF WE WERE ALLOWED TO --

MR. FOGLE: IT'S IN THE RECORD.

MR. GRANT: I'M JOHN GRANT. THE QUESTION WAS WHAT BANK HAS A MORTGAGE OVER THERE. I BELIEVE THAT I'VE SEEN ON A TAX MAP THAT WHAT BANK WAS INVOLVED. I DON'T KNOW IF I CAN GET MY HANDS ON THOSE READILY. BUT I THINK THAT DID HAVE ALL THE PROPERTY COMING UP AND DOWN THE NORTH SIDE, TWO BANKS.

MR. ROGERS: THAT TYPICALLY -- THOSE ARE THE KINDS OF RECORDS WE WOULD USE TO MAKE SURE WE HAD A COMPLETE SEARCH IN TRYING TO EVALUATE ALL THE PEOPLE THAT WE SHOULD TRY TO NOW DEAL WITH TO SEE IF THEY WANT TO COME FORWARD AND PARTICIPATE IN THE CLEAN UP OF THE SITE. IT'S REALLY TWO MAIN AREAS OF TIME WHEN WE PURSUE THAT. BEFORE WE INITIATE A REMEDIAL INVESTIGATION AND THEN AFTER WE'VE DONE A RECORD

OF DECISION WE PURSUE THAT AGAIN TO SEE IF SOMEBODY WANTS TO STEP IN AT THAT POINT.

MS. JONES: DO WE NORMALLY OR TYPICALLY RELEASE THE NAMES?

MR. ROGERS: THEY'RE IN THE RECORD I THINK.

MS. JONES: OKAY. DOES THAT ANSWER -- BASICALLY TO SUMMARIZE THE RI ACTIVITIES E.P.A. COLLECTED 86 SOIL SAMPLES WHICH 24 OF THOSE WERE --

MS. BROWN: WAS THIS THIS YEAR?

MS. JONES: SOME WERE TAKEN BACK IN MAY OF 1992. AND ADDITIONAL SAMPLES WERE COLLECTED IN JUNE OF 1994 AND IN JULY OF 1994. TWELVE GROUND WATER SAMPLES WERE COLLECTED. THREE SURFACE WATER SAMPLES WERE COLLECTED. SOME ON SITE AND SOME WERE DOWNSTREAM OFF SITE. SIX SEDIMENT SAMPLES WERE COLLECTED AND SOME OF THOSE WERE ALSO ON SITE AND OFF SITE.

IN ADDITION TO THAT, E.P.A. CONDUCTED A PRIVATE WELL WATER USE SURVEY WITHIN I GUESS APPROXIMATELY A MILE RADIUS OF THE SITE.

MS. BROWN: WAS IT INDIVIDUAL WELL WATERS, THE PEOPLE THAT YOU TALKED TO ABOUT THAT OR JUST --

MS. JONES: INDIVIDUAL WELL WATERS.

MS. BROWN: WHEN YOU CONDUCTED THE PRIVATE WELL WATER USE DID YOU TALK TO INDIVIDUALS IN THE AREA OF KOON STORE ROAD OR YOU HAD KNOWLEDGE THROUGH THE CITY THAT SOME OF US WERE ON CITY WATER NOW?

MS. JONES: INDIVIDUALS WERE SPOKEN TO ON KOON STORE ROAD.

MS. BROWN: DO YOU KNOW WHO THOSE PEOPLE WERE?

MS. JONES: I HAVE A LIST OF THEM. APPROXIMATELY 36 TO 42 PEOPLE. AND SOME WERE ALSO LOCATED ON WILSON BOULEVARD. AND BASICALLY WHAT WE HAVE IT IS A PART OF THE RECORD WHERE EACH PARTICULAR RESIDENT HAD THEIR OWN I GUESS --

MS. BROWN: ALL OF US AT ONE TIME HAD OUR WELLS UNTIL WE WENT WITH CITY WATER.

MS. JONES: THAT'S REALLY WHAT THE SURVEY --

MS. BROWN: HE WAS TELLING ME THAT HIS WAS STILL OPERATING. I WAS TELLING HIM MINE IS NOT BECAUSE THE PUMP IS BROKE.

MS. JONES: REAL QUICK I CAN SHOW YOU WHERE THE SAMPLES WERE TAKEN. BASICALLY THESE WERE THE SOIL BORINGS THAT WERE TAKEN.

MS. BROWN: THE BORINGS WENT HOW DEEP?

MS. JONES: I THINK OUR DEEPEST ONE WAS DOWN TO ABOUT 58 FEET.

MS. BROWN: 58 FEET?

MS. JONES: CORRECT. AND BASICALLY --

MS. BROWN: WELL TYPE BORINGS?

MS. JONES: CORRECT. THANK YOU. BASICALLY I GUESS REAL QUICK WHEN YOU SEE SOMETHING LIKE BH-6 OR BH-4, THAT'S JUST OUR WAY OF LABELING WHAT EACH OF THOSE LOCATIONS WERE.

MS. BROWN: THE LITTLE INDICATOR UP AT THE TOP TELLS WHAT THOSE DIFFERENT THINGS ARE THERE.

MS. JONES: CORRECT. BASICALLY WE USE THIS TO TRY TO DETERMINE WHAT THE GENERAL I GUESS GEOLOGICAL FORMATION WE HAVE.

MS. BROWN: PUT THAT BACK UP THERE A MINUTE. I WANT TO POINT OUT SOMETHING. IN THE AREA RIGHT IN THE BACK OF WHERE THE FENCE IS THERE OFF OF THE SCALES, THE FENCED IN AREA THERE, IN BEHIND THAT AREA IS THE AREA THAT YOU HAD ON YOUR OTHER MAP THAT YOU FOUND BEFORE YOU GOT TO THAT UNNAMED DRY CREEK BED BACK THERE IS WHERE THEY BURNED THE BATTERY CASINGS. WHAT WAS FOUND THERE? THERE'S NO BORING THERE. NO SOIL

SAMPLE THERE AT ALL.

MS. JONES: WELL, BASICALLY -- AND I GUESS I SKIPPED OVER IT A LITTLE BIT. I'M GOING TO SHOW ABOUT FOUR OR FIVE MORE SEGMENTS THAT WILL SHOW ALL OF THE SAMPLES THAT WERE TAKEN. THIS IS JUST SHOWING WHERE THE BORINGS WERE TAKEN. BASICALLY WE WERE THINKING IF WE TRIED TO PUT ALL THE LOCATIONS ON ONE FIGURE IT WOULD REALLY CROWD IT TO THE POINT WHERE YOU COULDN'T REALLY SEE.

MS. BROWN: ANOTHER QUESTION. THIS COMPANY YOU HAVE STATED THAT THEIR ON 1.5 ACRES. THIS IS. BUT THESE PEOPLE BOUGHT 20 ACRESS. WAS THERE ANY TESTING DONE IN THE REST OR ANY PARTS OF THE EXTRA 20 ACRES?

MS. JONES: NO, MA'AM. THERE WERE NOT. BASICALLY WHAT WE WERE CONSIDERING THE SITE AS FAR AS THE CONTAMINATED AREA WAS THIS. REALLY SOME OF IT CONCERNING OR SOME OF IT CONTAINING OR BEING A PART OF THE UNNAMED TRIBUTARY, A LITTLE BIT OF DRY FORK CREEK. THERE IS A DRAINAGE DITCH WHICH YOU CAN BARELY SEE FROM WHERE YOU ARE PROBABLY. AND THEN EVERYTHING WITHIN THIS SQUARE, APPROXIMATE SQUARE.

MS. BROWN: WHEN THEY WENT BANKRUPT

THEY LOST ALL OF IT, DIDN'T THEY? NOT JUST THAT 1.5 ACRES.

MS. JONES: CORRECT. WELL, TYPICALLY OR I SHOULDN'T SAY TYPICALLY BUT TRADITIONALLY WHAT E.P.A. WILL DO WHEN THEY GO OUT TO A SITE BASED ON PAST INFORMATION OR PAST DATA WHAT THEY WILL DO OR EVEN WHERE SAY FOR INSTANCE WHERE THE MAIN PROCESSORS WERE, FROM THAT STANDPOINT E.P.A. WILL ACTUALLY GO OUT AND TRY TO CHARACTERIZE THE SITE. IF IT LOOKS LIKE THE DATA IS LEANING TOWARDS MAYBE A HIGHER LEVEL CONTAMINATION AS YOU GO AWAY FROM THE SITE, THEN WE WOULD CONTINUE. WE WOULD INCREASE OUR SITE BOUNDARIES UNTIL WE FULLY HAVE DETERMINED THE EXTENT OF THE CONTAMINATION.

MS. BROWN: THE SOIL SAMPLES, THE WELLS AND WHAT HAVE YOU ARE ON THE 1.5 ACRES?

MS. JONES: CORRECT. AND SOME OF THOSE ARE LOCATED ON THE --

MS. BROWN: ON THE CREED BED AND ON ACROSS THE ROAD.

MS. JONES: OKAY. IF YOU'D LIKE WE CAN GO THROUGH THEM.

MR. ROGERS: GO THROUGH THE REST OF THEM.

MS. JONES: BASICALLY, AND I'LL JUST SUM THIS UP REALLY REALLY QUICKLY SO I CAN SHOW YOU WHERE THE OTHER SAMPLES WERE TAKEN. WHAT WE FOUND FROM TAKING SEVERAL SOIL BORINGS AND ALSO WHEN WE INSTALLED THE 12 MONITORING WELLS, JUST LOOKING AT THE OVERALL GEOLOGICAL PICTURE, THE OVERALL AREA SEEMS TO BE A MIXTURE OF CLAY AND I GUESS SILT. AND SILT BEING THE MORE POROUS. SO WITH SILT BEING THE MORE POROUS AND THEN OF COURSE CLAY LOCATED WITHIN THIS AREA AND THEN OF COURSE SAND. AND REAL QUICK I'LL GO THROUGH WHERE THE SURFACE SOIL SAMPLES WERE TAKEN. BASICALLY THERE WERE 24 SURFACE SOIL SAMPLES TAKEN RANGING FROM A DEPTH OF ZERO OR FROM 1 TO 12 INCHES.

THE REASON WHY WE HAVE SS DASH WHATEVER THE NUMBER IS VERSUS PR DASH WHATEVER THE NUMBER IS MAINLY THAT WAS OUR WAY OF DETERMINING WHEN THAT SAMPLE WAS TAKEN. THE SAMPLES LABELED SS DASH WHATEVER THE NUMBER WERE TAKEN BACK IN MAY OF 1992. AND THE SAMPLES LOCATED PR DASH WHATEVER THAT NUMBER IS WERE THE SAMPLES TAKEN LATER THIS PAST SUMMER.

AND AGAIN REALLY THIS IS JUST THE SAME DRAWING SHOW THE SUB SURFACE SOIL BORINGS.

MR. HICKS: WHAT WAS DONE IN THE TESTING THAT WAS DONE THIS YEAR?

MR. ROGERS: THAT GETS SUMMARIZED LATER ON.

MR. HICKS: OKAY.

MS. JONES: BASICALLY THERE WERE 12 MONITORING WELLS INSTALLED. AND AS YOU NOTICED IT'S REALLY A CLUSTER OF THREE WELLS IN FOUR DIFFERENT AREAS. WHAT MAYBE AN I WOULD MEAN OR AN S WOULD MEAN OR A D WOULD MEAN, S JUST MEANS IT'S A SHALLOW WELL. AND IT'S PROBABLY DOWN TO ABOUT APPROXIMATELY 20 FEET. AND I IS CONSIDERED AN INTERMEDIATE WELL WHICH IS EVEN FARTHER DOWN. AND THEN OF COURSE A DEEP WELL CAN GO ALL THE WAY DOWN TO 50, 60 FEET. BASICALLY WE DO THAT TO TRY TO GET A FEEL OF WHAT'S HAPPENING TO GROUND WATER AT CERTAIN LEVELS INSTEAD OF JUST ONE LOCATION WHERE WE HAVE ONE DEPTH.

AND OF COURSE THIS PARTICULAR FIGURE IS JUST SHOWING WHERE THE SURFACE WATER SAMPLES WERE COLLECTED AND THE SEDIMENT SAMPLES WERE COLLECTED WITHIN DRY FORK CREEK AND THE UNNAMED TRIBUTARY.

SOMETHING I WOULD LIKE TO ADD, ONE OF THE SURFACE WATER SAMPLES WAS COLLECTED IN THE EVACUATION PIT OVER WHERE THE TRUCK SCALES WHICH

YOU MENTIONED EARLIER. BASICALLY I GUESS DUE TO OR JUST AS A SAFETY PRECAUTION THERE WAS WATER IN THAT PARTICULAR PIT. BASICALLY TO SAVEGUARD TO MAKE SURE THAT WE DIDN'T HAVE ANY PROBLEMS E.P.A. WENT OUT AND TESTED THE WATER TO MAKE CERTAIN IT WASN'T CONTAMINATED. BASED ON THE RESULTS OF THE WATER IT WAS PUMPED OUT AND BACKFILLED WITH CLEAN SOIL.

MS. BROWN: THE CLEAN SOIL CAME FROM WHERE?

MS. JONES: USUALLY WE'LL BRING IT IN. AND OF COURSE IT IS TESTED JUST TO MAKE CERTAIN IT IS NOT CONTAMINATED.

MR. ROGERS: IT CAME FROM OFF SITE. IT WAS TRUCKED IN.

MS. JONES: WE WOULDN'T TAKE IT FROM THE SITE ITSELF. BASICALLY I GUESS TO ANSWER MR. HICKS' QUESTION, BASICALLY THERE WAS SOIL CONTAMINATION AND IT WAS MOSTLY IN THE AREAS NORTHWEST AND SOUTHEAST OF THE ASPHALT PAD. THE MAIN CONTAMINANTS OF CONCERN WERE LEAD, WHICH WE FOUND RANGING FROM 6.3 PARTS PER MILLION TO 6400 PARTS PER MILLION. IN ADDITION TO THAT WE DID HAVE ONE HIT OF 1,2-DICHLOROETHANE AT A RESULT OF .0076 PARTS PER MILLION.

MS. BROWN: WHY WOULD THEY BE USING THAT? WHAT WERE THEY DOING WITH THAT OUT THERE?

MS. JONES: BASICALLY IT'S NORMALLY NOT NATIVE TO A LEAD BATTERY RECLAMATION PROCESS.

MR. ROGERS: THAT'S SUCH A SMALL CONCENTRATION. IT COULD HAVE JUST BEEN USED IN THE SHOP AREA AS A DEGREASER OR SOMETHING ELSE. AN ARTIFACT THAT SHOWED UP IN SOME OF THE SAMPLES.

MS. BROWN: AS A DEGREASER YOU SAY?

MR. ROGERS: I THINK THAT'S ONE OF THE USES OF IT.

MS. JONES: MAYBE TO PUT THIS IN A LITTLE BIT OF PERSPECTIVE, WHEN YOU LOOK AT LEAD WHICH IS 6.3 OR WE FOUND 6.3 PARTS PER MILLION TO 6400 PARTS PER MILLION, CURRENTLY E.P.A. HAS A PROPOSED SCREENING LEVEL OF 400 PARTS PER MILLION WHICH IS CONSIDERED SAFE AND PROTECTIVE. BASICALLY 78 PERCENT OF OUR SAMPLES WERE BELOW THE 400 LEVEL. AND WE HAVE ONE SAMPLE WHICH IS THE 6400 AND THEN ANOTHER ONE WHICH WAS 1500 PARTS PER MILLION.

MS. JONES: IN ADDITION TO THAT THE GROUND WATER WAS SAMPLED AND THE 12 WELLS. WHAT THE CONTAMINANTS OF CONCERN THAT WE FOUND OUT

THERE WERE CHLOROFROM, ARSENIC AND CHROMIUM. CHLOROFORM WAS FOUND AND DETECTTED AT 6 PARTS PER BILLION. IT WAS ONLY DETECTED ONCE OUT OF 12 SAMPLES. ARSENIC WAS DETECTED TWICE AND THE RANGE WAS FROM 19 PARTS PER BILLION TO 38 PARTS PER BILLION. CHROMIUM WAS DETECTED SIX TIMES AND THOSE RESULTS RANGED FROM THREE PARTS PER BILLION TO 25 PARTS PER BILLION. HOWEVER, ONLY TWO OF THOSE SAMPLES WERE CONSIDERED TO BE ABOVE BACKGROUND.

MS. BROWN: WELL, IS THIS CONSIDERED THE PORTIONS OF THE BATTERY ACID, WHAT WOULD BE IN BATTERY ACID NORMALLY?

MR. HAYES: CHROMIUM COULD BE.

MS. BROWN: MAYBE CHROMIUM IS THAT MUCH, BUT ARSENIC AND CHLOROFORM?

MR. HAYES: ARSENIC, NO, IS NOT TYPICALLY ASSOCIATED WITH A BATTERY CRACKING OPERATION. AND THE CHLOROFORM, THAT'S A LITTLE DIFFICULT TO EXPLAIN. YOU WOULDN'T EVEN USE THAT AS A DEGREASER OR SOLVENT AT A SITE LIKE THIS. SO THAT ONE'S A LITTLE BIT OF A MYSTERY. THE CHROMIUM COULD VERY WELL BE RELATED TO THE BATTERY CRACKING OPERATION. BUT THE OTHER TWO, THE ARSENIC COULD VERY WELL BE NATURALLY

OCCURRING AS WELL.

MS. BROWN: NATURALLY OCCURRING IN THE SOIL OR WHAT?

MR. HAYES: YES. ARSENIC IS NOT AN UNCOMMON SOIL COMPONENT. IT'S AN ELEMENT THAT'S FOUND JUST AS A NATURAL COMPONENT OF SOILS IN SOME PLACES. PARTICULARLY IN THE PIEDMONT WHICH I KNOW WE'RE SORT OF ON THE BORDER OF THE PIEDMONT HERE. BUT PIEDMONT SOIL SAMPLES OFTEN CONTAIN A LITTLE ARSENIC.

MR. GRANT: THIS IS JOHN GRANT. WOULD CHLOROFORM POSSIBLY BE USED TO START UP SOME EQUIPMENT THEY MIGHT HAVE HAD?

MR. HAYES: I DON'T KNOW. I KNOW THAT THERE ARE -- I DON'T KNOW THAT I'VE EVER SEEN CHLOROFORM USED FOR THAT. MAYBE YOU HAVE. BUT I ALWAYS THOUGHT IT WAS SOME SORT OF ETHER THAT THEY USED.

MR. ROGERS: CHLOROFORM IS MORE OF A PRESERVATIVE. YOU SOMETIMES SEE IT AS A LABORATORY ARTIFACT. HERE IT SHOWED UP IN THE SAMPLE. IT COULDN'T BE WRITTEN OFF AS A LABORATORY ARTIFACT. WE CARRIED IT INTO THE DATA. IT'S WELL BELOW ANY HEALTH BASED LEVEL OF CONCERN IN GROUND WATER.

MS. BROWN: BOTH OF THEM ARE WELL BELOW?

MS. JONES: CORRECT. FOR CHLOROFORM WE HAD SIX AND THE PROTECTIVE LEVEL IS 100. SO THAT'S 94 PARTS PER BILLION LESS. FOR ARSENIC OUR HIGHEST HIT WAS 38 AND THE LEVEL WAS 50 PARTS PER BILLION. AND FOR CHROMIUM THE HIGHEST HIT WAS 25 PARTS PER BILLION. AND THE LEVEL FOR THAT WHICH WOULD BE CONSIDERED PROTECTIVE IS 100.

MS. BROWN: THAT'S E.P.A. STANDARDS?

MS. JONES: THAT'S FEDERAL DRINKING WATER STANDARDS. IT WAS CONSIDERED SAFE TO HAVE IN YOUR DRINKING WATER.

MR. HICKS: IF YOU CONTINUE TO DRINK THIS WATER WITH THIS 19 PERCENT ARSENIC FOR A PERIOD OF TIME IT WOULD HAVE SOME KIND OF EFFECT ON YOU, WOULDN'T IT?

MR. ROGERS: NO. THE MCL STANDARDS ARE BASED ON LONG-TERM EXPOSURES. THERE'S BEEN NO DEMONSTRATED ADVERSE HEALTH RISK RELATED TO THOSE LEVELS.

MS. HICKS: MY NAME IS LOVOLA HICKS. THE 12 WELLS THAT YOU MONITORED, ARE THEY PRIVATE RESIDENTIAL WELLS OR DID YOU GO DRILL THOSE WELLS YOURSELF JUST FOR THE TESTING?

MS. JONES: THOSE WERE INSTALLED FOR THE PURPOSES OF THE TESTING.

MS. HICKS: DID YOU ACTUALLY GO OUT TO THE RESIDENCE AND CHECK THEIR WELLS TO THE PEOPLE ON KOON STORE ROAD?

MS. JONES: CORRECT.

MS. HICKS: DO YOU HAVE A LISTING OF THE PEOPLE THAT YOU CHECKED THEIR WATER?

MS. BROWN: I HAD ASKED HER THAT EARLIER.

MR. ROGERS: SHE ASKED DID YOU SAMPLE ANY PRIVATE WELLS.

MS. JONES: NO, MA'AM.

MS. HICKS: YOU DUG YOUR OWN WELLS AND YOU CHECKED YOUR OWN WATER?

MS. JONES: CORRECT. I THINK I'M HEARING, UNDERSTANDING.

MR. HAYES: THE WELLS THAT WERE SAMPLED WERE DRILLED SPECIFICALLY FOR THE INVESTIGATION.

MS. HICKS: SO YOU DIDN'T GO OUT AND CHECK THE RESIDENTS OF CONCERN IN THE SURROUNDING AREA?

MR. HAYES: NO. ALL THAT WE DID WAS TO CHECK TO SEE IF THERE WERE WELLS IN USE. NONE

OF THOSE WELLS WERE SAMPLED.

MS. HICKS: THAT'S WHAT I WANTED TO KNOW.

MR. HICKS: SO THE WELLS THAT ARE IN USE NOW YOU DIDN'T WHICH MEANS THERE'S A POSSIBILITY THEY COULD BE CONTAMINATED ALSO?

MS. JONES: CORRECT. MAINLY --

MR. ROGERS: THAT'S NOT REALLY CORRECT. THE REASON WE DON'T USE PRIVATE WELLS IS THESE WELLS ARE INSTALLED WITH VERY SPECIFIC STANDARDS OF MATERIALS AND OTHER THINGS BECAUSE THE CONCENTRATIONS YOU'RE LOOKING AT ARE VERY SMALL. IF WE GO OUT AND TEST YOUR PRIVATE WELL WE MAY FIND A HIT SOMEWHERE IN THESE ACTUAL NUMBERS, NOT THE MCL BUT THE ACTUAL NUMBERS OF SOME MATERIAL THAT WE HAVE NO WAY OF EXPLAINING BECAUSE WE DON'T KNOW HOW YOUR WELL WAS PUT IN. IT COULD BE INTRODUCED BY CONTAMINANTS IN THE TYPES OF MATERIALS THAT WERE USED IN THE WELL OR ANY NUMBER OF OTHER WAYS IT WAS INTRODUCED IN THE WELL. WHEN WE DO A STUDY OF A SITE WE PUT IN OUR OWN WELLS THAT WE NO ARE BASICALLY PRISTINE CLEAN TO LOOK AT THE AQUIFER FROM SEVERAL DIFFERENT LEVELS AROUND THE SITE IN THE PREDOMINANT DIRECTION OF GROUND WATER FLOW. AND WE USE THE

WELLS TO CONFIRM THAT THAT IS THE DIRECTION OF GROUND WATER FLOW. AND IT ALSO TELLS US A PICTURE OF WHAT'S UNDER THE SITE. AND IF YOU KNOW ANYTHING ABOUT SUPERFUND SITES, THERE'S A GREAT DEBATE AS TO WHETHER WE'LL EVER BE ABLE TO CLEAN UP AQUIFERS THAT ARE CONTAMINATED BECAUSE IT DOESN'T FLUSH OUT OF THERE CLEAN AFTER IT'S BEEN THROUGH THERE. SO THE WELLS ON SITE SHOULD HAVE SHOWN SOME ELEVATED CONTAMINATIONS IF THERE WERE IN FACT A BIG PROBLEM THAT HAD PASSED THROUGH AND MOVED OFF SITE. SO TYPICALLY WE START ON SITE AND AROUND THE SITE LOOKING AT THE GROUND WATER THERE, SEE IF THERE'S ELEVATED CONCENTRATIONS AND THEN WE WOULD FOLLOW IT OUT. IN THIS CASE WE DIDN'T FIND ANY. AND IT WOULD BE EXTREMELY UNUSUAL FOR THOSE MATERIALS TO WASH OUT CLEAN IF THERE HAD BEEN WHAT WE WOULD CALL A PLUME IN THE GROUND WATER THAT HAD GONE THROUGH THE AREA FROM A DISCHARGE AT THE SITE AND THEN MOVED DOWN GRADIENT. SO IT'S VERY UNLIKELY THAT YOU HAVE ANYTHING IN YOUR WELLS. BUT WE DON'T RUN OUT AND CHECK --

MS. BROWN: BEFORE THAT COMPANY WENT IN DOWN THERE THAT WAS WOODS. A WOODED AREA. NOW, HOW WOULD THAT ARSENIC AND CHLOROFORM GET

INTO THAT AREA UNLESS IT WAS USED IN THAT AREA?

MR. ROGERS: CHLOROFORM IN THAT LOW A CONCENTRATION COULD BE LIKE I SAY ANY NUMBER OF THINGS. IT COULD BE LABORATORY ARTIFACT. IT COULD HAVE BEEN INTRODUCED IN THE LAB. WE DON'T THINK SO. WE DO RUN CONTROLLED SAMPLES. BUT THE ARSENIC, IT CAN BE NATURALLY OCCURRING. THE CHROMIUM TO SOME EXTENT CAN SHOW UP NATURALLY. JUST BASED ON THE WAY WE HAVE TO TAKE THE SAMPLES WE TAKE THE SAMPLE OF GROUND WATER AND WE CANNOT FILTER IT. SO IF IT HAS SUSPENDED SEDIMENT IN IT IT CAN INTRODUCE ARSENIC HITS AND OTHER THINGS.

MS. BROWN: ISN'T CHROMIUM CONSIDERED A HEAVY METAL?

MR. ROGERS: YES. ARSENIC AND CHROMIUM AND LEAD ARE ALL HEAVY METALS.

MR. HAYES: JUST A LITTLE FURTHER, THESE ARE THE WELLS THAT WERE SAMPLED AS PART OF THE INVESTIGATION. AND THESE ARE WELLS AS JAN SAID THAT WERE DRILLED SPECIFICALLY FOR THE PURPOSES OF INVESTIGATION. THEY ARE NOT DRINKING WATER WELLS. THEY WERE NEVER USED FOR DRINKING WATER WELLS. THEY WON'T EVER BE USED. BUT THESE WELLS THAT ARE RIGHT ON THE SITE AS JAN SAID, IF THERE WAS GROUND WATER CONTAMINATION IT WOULD BE

IN THESE WELLS BECAUSE THAT'S WHERE THE CONTAMINATION WOULD BE COMING FROM.

MS. BROWN: AND THE FLOW OF THE LAND FALLS THAT WAY ANYWAY.

MR. HAYES: RIGHT. SO IF WE DON'T GET ANY CONTAMINATION AS WE DIDN'T IN ANY OF THESE ON SITE WELLS THEN THE ODDS OF ANY WELL FARTHER AWAY BEING CONTAMINATED IS VERY REMOTE, ALMOST NON EXISTENT. SO AS JAN WAS SAYING IF WE CHECK ON SITE AND WE DON'T GET ANY GROUND WATER CONTAMINATION FROM WELLS THAT WE DRILL ON SITE SPECIFICALLY FOR THAT PURPOSE, THEN THERE'S ALMOST NO CHANCE THAT ANY OFF SITE WELLS WERE CONTAMINATED FROM THE SITE.

MS. JONES: I GUESS I NEED TO CORRECT MY ANSWER TO YOUR QUESTION. I ANSWERED CORRECT THAT WE DID NOT TEST YOUR WELLS BUT WE DID TEST WELLS ON SITE.

MS. HICKS: SO YOU'RE TELLING ME FROM 1979 TO 1983 WHEN THEY OPERATED AND THEN YOU CAME ALONG IN 1994 AND 1992 AND TESTED -- WHEN DID YOU DIG THOSE WELLS?

MS. JONES: MAY OF 1992.

MS. HICKS: SO FROM '79 TO '83 WHEN THEY OPERATED YOU'RE TELLING ME THAT THE WATER

COULDN'T HAVE TRAVELLED ANY PLACE ELSE, THE SOIL COULDN'T HAVE GONE ANY PLACE ELSE, BUT REMAINED IN THAT AREA?

MS. JONES: CORRECT. BASICALLY THE GROUND WATER FLOW FOR THIS PARTICULAR SITE IS AN AVERAGE OF LIKE .00 --

MS. HICKS: WHERE DID YOU GET THIS INFORMATION FROM, WHAT BOOK?

MR. ROGERS: IT'S A CALCULATED NUMBER FROM ACTUAL SAMPLES THAT WERE DONE.

MS. HICKS: THERE'S NO PLACE I CAN GO AND LOOK IT UP?

MR. ROGERS: IT'S IN THE RECORDS. IT'S IN THE E.P.A. RECORD.

MS. BROWN: THIS IS E.P.A. DHEC DID HAVE MONITORING WELLS DOWN THERE AT ONE TIME. I DON'T KNOW WHETHER OR NOT THEY'RE STILL DOWN THERE.

MR. ROGERS: AS PART OF THE REMEDIAL INVESTIGATION WE REVIEWED THE TECHNICAL DOCUMENTS THAT ARE IN THE RECORD CENTER. THE REMEDIAL INVESTIGATION SHOULD SHOW RESULTS FROM ANY GIVEN WELL AND IT SHOULD SHOW ALSO HAVE PROBABLY AN APPENDIX OF THE CALCULATIONS OF ESTIMATED GROUND WATER FLOWS AT THE SITE.

MR. HAYES: GROUND WATER MOVES VERY VERY SLOWLY.

MS. HICKS: THE OLD SAYING STILL WATER RUNS DEEP DOESN'T APPLY ANYMORE?

MR. HAYES: NO. THAT'S STILL TRUE.

MS. JONES: ANY QUESTIONS REGARDING THIS PARTICULAR SITE? OKAY. BASICALLY AS FAR AS SEDIMENT CONTAMINATION, THERE WERE TWO CONTAMINANTS OF CONCERN. ONE WAS ARSENIC AND BERYLLIUM. THOSE CONTAMINANTS OF CONCERN HOWEVER FROM A RISK STANDPOINT ARE WITHIN E.P.A.'S ACCEPTABLE TARGET RANGE. AND BASICALLY MR. HAYES WILL GO OVER THAT WITH YOU MORE IN DEPTH WHEN HE TALKS ABOUT THE RISK ASSESSMENT.

AS FAR AS THE SURFACE WATER CONTAMINATION TO TRY TO GET A FEEL OF WHAT SHOULD BE OUT AND WHAT IS NORMAL FOR THAT PARTICULAR STREAM THERE WERE NO CONTAMINANTS OF CONCERN WHICH EXISTED FOR THAT AREA.

MS. BROWN: YOU DIDN'T FIND ANY LEAD AT ALL IN THAT FIRST CREEK?

MS. JONES: NOT TO THE LEVEL WHICH WOULD WARRANT CONCERN.

MR. ROGERS: TYPICALLY YOU WOULDN'T EXPECT THAT BECAUSE THAT IS A DYNAMIC ENVIRONMENT

WHERE YOU HAVE THE SITE DIDN'T EXIST AFTER ABOUT '83. THE DHEC PEOPLE WENT IN AND DID A SIGNIFICANT REMOVAL IN THE MID '80S AND IT REALLY WAS VERY LIMITED FROM ANYTHING FROM THE SURFACE TO ROLL OFF THE SITE INTO THOSE STREAMS.

MS. BROWN: BUT THEY HAD DUMPED INTO THAT CREEK?

MR. ROGERS: I KNOW, BUT IT WILL WASH OUT.

MS. BROWN: LEAD DOESN'T THOUGH.

MR. ROGERS: WELL, IT'S SOLUABLE USUALLY. WHERE YOU WILL SEE IT IS IN THE SEDIMENT. YOU WON'T SEE IT IN THE WATER BECAUSE ALL THAT WATER IS JUST WATER FLUSHING THROUGH THERE NOW. IT WILL PICK UP CONTAMINATION OF THE SEDIMENT BUT YOU GENERALLY WON'T SEE IT IN THE WATER BECAUSE ALL THE CONTAMINATION OCCURRED WHAT, TEN YEARS AGO. IT'S ALL FLUSHED OUT.

MS. BROWN: BERYLLIUM ALSO IS A HEAVY METAL, ISN'T IT?

MR. ROGERS: YES. BOTH OF THOSE SHOW UP FREQUENTLY AT SITES AND THEY'RE NATURALLY OCCURRING.

MS. JONES: BASICALLY THIS CONCLUDES I GUESS THE REMEDIAL INVESTIGATION FINDINGS. AT

THIS TIME MR. BERNIE HAYES WILL BASICALLY GO THROUGH THE BASELINE RISK ASSESSMENT AND PRESENT WHAT THE RISK WERE OR WERE NOT AT THE SITE.

MR. HAYES: THANK YOU, YVONNE. GOOD EVENING. MY NAME IS BERNIE HAYES AS YVONNE SAID. I APPRECIATE YOU ALL COMING OUT TONIGHT. I BET YOU'RE STARTING TO WONDER WHETHER THEY BROUGHT ME JUST TO FLIP THOSE SLIDES OR NOT.

I'M GOING TO TALK A LITTLE BIT ABOUT THE RISK ASSESSMENT. WE THROW THE TERM RISK ASSESSMENT AROUND A LOT. SO I'LL GIVE YOU A LITTLE INTRODUCTORY DISCUSSION ON WHAT WE MEAN BY SOME OF THESE TERMS. RISK ASSESSMENT IS AN ATTEMPT TO QUANTIFY THE RISKS THAT MIGHT RESULT FROM THE CONTAMINATION OF THE SITE. WE WANT TO QUANTIFY THOSE RISKS SO THAT WE CAN COMPARE THEM TO THE STANDARDS AND SAFE LEVELS AND MAKE AN INFORMED EVALUATION OF WHETHER THERE ARE UNACCEPTABLE PUBLIC HEALTH IMPACTS ASSOCIATED WITH THE SITE OR NOT.

YOU ALSO HEAR US TALK ABOUT BASELINE RISK ASSESSMENT AS IT'S USED IN SUPERFUNDS. AND WHAT A BASELINE RISK ASSESSMENT IS IS THE ESTIMATE OF RISK TO PUBLIC HEALTH THAT WOULD RESULT IF THE SITE WERE LEFT UNREMEDIATED. IN OTHER WORDS, IF

WE DIDN'T DO ANYTHING WITH THE SITE, IF WE DIDN'T MAKE ANY RESPONSE, THE BASELINE RISK ASSESSMENT GIVES US AN ESTIMATE OF WHAT THE RISK TO PUBLIC HEALTH WOULD BE IN THAT UNREMEDIATED CONDITION.

AND HOW DO WE QUANTIFY THOSE LEVELS OF RISK. WE ESTIMATE EXPOSURE LEVELS BY IDENTIFYING COMPLETE EXPOSURE PATHWAYS LEADING FROM A SOURCE OF CONTAMINATION. AND WHEN WE'RE TALKING ABOUT SUPERFUND SITES THAT SOURCE IS USUALLY THE SITE ITSELF TO A POINT OF HUMAN OR PUBLIC EXPOSURE. AND THE NEXT SLIDE I HAVE GIVES A FEW EXAMPLES OF SOME OF THOSE COMPLETE EXPOSURE PATHWAYS THAT WE NORMALLY LOOK AT.

IF YOU HAVE A SITE, A SOURCE OF CONTAMINATION, YOU CAN HAVE RELEASES TO GROUND WATER OF CONTAMINANTS THAT CAN ENTER A WELL AND THE PUBLIC CAN BE EXPOSED TO DRINKING WATER FROM THAT CONTAMINATED WELL. THAT'S A COMPLETE EXPOSURE PATHWAY LEADING FROM THE SITE TO GROUND WATER TO THE WELL TO THE POINT OF PUBLIC EXPOSURE. IN A SIMILAR MANNER IF THERE ARE RELEASES OF GASES OR CONTAMINATED DUST FROM THE SITE THE WIND COULD BLOW IT TO A POINT WHERE PEOPLE LIVE OR WHERE PEOPLE NORMALLY ARE AND PEOPLE COULD INHALE THAT GAS OR INHALE THAT

CONTAMINATED DUST AND CREATE ANOTHER POINT OF PUBLIC EXPOSURE. THESE ARE TWO EXAMPLES OF COMPLETE EXPOSURE PATHWAYS. AND THERE ARE NUMEROUS COMPLETE EXPOSURE PATHWAYS OTHER THAN THESE. I MEAN WE TRY TO LOOK AT ALL OF THEM WHEN WE EVALUATE THE RISK ASSOCIATED WITH A SUPERFUND SITE.

MS. BROWN: SUCH AS BURNING BATTERY CASINGS.

MR. HAYES: POSSIBLY. IF THERE WERE WIND BLOWING TOWARD A HOUSE AND THERE WAS CONTAMINANTS CREATED YOU COULD BE EXPOSED BY THAT ROUTE. THAT'S RIGHT. THESE ARE THE PRINCIPAL ROUTES OF HUMAN EXPOSURE. YOU HAVE INHALATION, WHICH IS THE BREATHING OF DUST OR VAPORS, INGESTION WHICH IS YOU COULD DRINK CONTAMINATED WATER OR GET CONTAMINATED SOIL IN YOUR MOUTH. IN ADDITION, SOMETIMES AT SITES THAT ARE NEAR RIVERS OR STREAMS AND THE CONTAMINATION GETS IN THOSE RIVERS OR STREAMS WE LOOK AT THE POSSIBILITY OF CONTAMINATED FISH AND PEOPLE EATING THE FISH. SO THERE'S LOTS OF DIFFERENT WAYS BY WHICH INGESTION CAN OCCUR. DERMAL ABSORPTION IS ONE THAT YOU DON'T HEAR ABOUT A LOT. THERE ARE A LOT OF CONTAMINANTS THAT CAN ACTUALLY MOVE THROUGH YOUR

SKIN RELATIVELY EASILY. AND CREATE EXPOSURE IN THAT MANNER.

AND I HAVE A LITTLE SLIDE ABOUT EACH ONE OF THOSE REAL QUICK. INGESTION OCCURS THROUGH EATING CONTAMINATED FOOD OR DRINKING CONTAMINATED WATER. INCIDENTAL OR ACCIDENTAL INGESTION OF CONTAMINATED SOIL. IN OTHER WORDS, IF SOMEBODY GOES ON THE SITE BEFORE IT'S CLEANED UP THEY MIGHT GET SOIL ON THEIR HANDS, PUT THEIR HANDS IN THEIR MOUTH. THINGS LIKE THAT. INCIDENTAL OR ACCIDENTAL INGESTION OF CONTAMINATED WATER DURING SWIMMING OR BOATING OR OTHER RECREATIONAL ACTIVITIES. AGAIN, IF THE SITE IS NEAR A STREAM OR RIVER OR LAKE AND THE WATER BECOMES CONTAMINATED AND IF PEOPLE ARE SWIMMING, BOATING, WHATEVER IN THAT WATER THEY MIGHT GET A LITTLE IN THEIR MOUTHS AND SWALLOW IT ACCIDENTALLY. INHALATION AS I SAID OCCURS THROUGH BREATHING OF TOXIC VAPORS, GASES THAT MIGHT BE RELEASED FROM THE SITE OR IF YOU HAVE CONTAMINATED DUST THAT'S BLOWN FROM THE SITE YOU CAN BREATH IN THE CONTAMINATED DUST AS WELL.

AND DERMAL ABSORPTION I THINK IS INTERESTING. AS I SAID, IT OCCURS WHEN CONTAMINANTS ARE ABSORBED DIRECTLY THROUGH THE

SKIN. YOUR SKIN IS A GOOD BARRIER AGAINST WATER ITSELF AND AGAINST BACTERIA, INORGANIC CONTAMINANTS, HEAVY METALS AS SOME OF THE THINGS AT THIS SITE. AND ANYTHING THAT'S ATTACHED TO OR ABSORBED THROUGH SOILS, CONTAMINATED SOILS. NOW YOUR SKIN IS A LESS EFFECTIVE BARRIER AGAINST CERTAIN ORGANIC CONTAMINANTS. BENZENE IS A GOOD EXAMPLE. WE DIDN'T HAVE BENZENE AT THIS SITE. BUT AS YOU KNOW IF YOU GO FILL UP YOUR CAR WITH GAS THERE ARE WARNING SIGNS ON THE PUMP SAYING DON'T GET THE GASOLINE ON YOUR HANDS. AVOID CONTACT WITH SKIN. THAT'S BECAUSE SOME OF THE CONTAMINANTS LIKE BENZENE IN GASOLINE CAN BE ABSORBED THROUGH YOUR SKIN.

WHEN WE FIND OUT WHAT CONTAMINANTS ARE PRESENT ON THIS SITE THEN WE HAVE TO ASSESS THE TOXICITY OF THOSE CONTAMINANTS. AND WE GENERALLY LOOK AT TWO DIFFERENT EFFECTS. WE LOOK AT CARCINOGENIC EFFECTS OR NON CARCINOGENIC EFFECTS. CARCINOGENS ARE CONTAMINANTS WHICH ARE KNOWN TO CAUSE OR SUSPECTED OF CAUSING THE DEVELOPMENT OF CANCER.

MANY CONTAMINANTS ARE NOT CONSIDERED TO BE CARCINOGENIC BUT HAVE OTHER ADVERSE HEALTH IMPACTS. THEY MAY HAVE TOXIC EFFECTS ON SPECIFIC

ORGANS BUT DON'T LEAD TO THE DEVELOPMENT OF CANCER. AND THERE ARE CONTAMINANTS WHICH HAVE BOTH, CARCINOGENIC AND NON CARCINOGENIC EFFECTS. WHEN WE DO TOXICITY ASSESSMENTS FOR CARCINOGENS WE OPERATE UNDER A FAIRLY CONSERVATIVE ASSUMPTION. AND THAT ASSUMPTION IS THAT ANY EXPOSURE TO A CARCINOGENIC CONTAMINANT, NO MATTER HOW SMALL, CARRIES WITH IT A PROPORTIONAL LEVEL OF RISK. IN OTHER WORDS, THERE IS NO COMPLETELY RISK FREE LEVEL OF EXPOSURE TO A CARCINOGEN. ANY EXPOSURE AT EVEN A VERY LOW RATE OR EVEN A ONE TIME EXPOSURE CARRIES WITH IT A CERTAIN RISK. NOW, THE IMPORTANT THING TO REMEMBER FROM THAT IS NOT THAT ANY EXPOSURE CARRIES SOME RISK, BUT THAT THE RISK IS PROPORTIONAL TO THE EXPOSURE. IF THE EXPOSURE IS LOW OR IF IT'S A ONE TIME EVENT, THEN YOUR RISK IS VERY VERY LOW. WE TRY TO CONTROL RISKS ASSOCIATED WITH SUPERFUND SITES TO VERY LOW LEVELS. E.P.A. IS REQUIRED TO REDUCE THE RISKS ASSOCIATED WITH EXPOSURE TO CARCINOGENS ASSOCIATED WITH SITES TO LESS THAN 1 TIMES 10 TO THE MINUS 4. IN OTHER WORDS, THAT'S 1 IN 10,000. WHAT THAT MEANS IS WE TRY TO CONTROL EXPOSURE AT THE SITE SO THAT ANY PERSON WHO MAY BE EXPOSED UNDER THE REMEDIATED SITE CONDITIONS HAS NO MORE

THAN A 1 IN 10,000 CHANCE OF CONTRACTING OR DEVELOPING CANCER AS A RESULT. AND WE USE VERY CONSERVATIVE EVALUATION TECHNIQUES TO COME UP WITH THAT ESTIMATE. SO THAT ESTIMATE IS PROBABLY A HIGH ESTIMATE. IN FACT, THE RISK ASSOCIATED WITH EXPOSURE TO THE SITE ONCE IT'S REMEDIATED IN ALL LIKELIHOOD IS VERY MUCH LOWER.

FOR THE PALMETTO SITE THIS MEANS THAT UNDER THE MOST STRINGENT EXPOSURE SCENARIO, WHICH I'LL GET TO IN A SECOND, THAT WOULD BE RESIDENTS LIVING ON THE SITE FOR THEIR ENTIRE LIVES OF 70 YEARS, THOSE RESIDENTS SHOULD NOT HAVE A GREATER THAN A 1 IN 10,000 CHANCE OF DEVELOPING CANCER DUE TO EXPOSURE.

WHEN WE ASSESS THE TOXICITY OF NON CARCINOGENS THERE'S A LITTLE BIT DIFFERENT WAY OF LOOKING AT THEM. AT LOW LEVELS OF EXPOSURE IT IS ASSUMED THAT THERE ARE NO ADVERSE IMPACTS TO HUMAN HEALTH. IN OTHER WORDS, THERE IS A SAFE EXPOSURE LEVEL THAT YOU CAN REPEATEDLY EXPERIENCE WITHOUT ANY ADVERSE HEALTH IMPACT. AND THAT GETS BACK TO THE QUESTION ABOUT ARSENIC. IT IS TRUE THAT AT THOSE LOW LEVELS YOU COULD HAVE CONSTANT EXPOSURE TO DRINKING WATER AND NOT EXPERIENCE ANY ADVERSE HEALTH EFFECTS. THE DRINKING WATER

STANDARD OF 50 PARTS PER BILLION IS SET AT A LEVEL WHICH IS PROTECTIVE AND ASSUMES THAT YOU'RE EXPOSED TO THAT CONSTANTLY. AND THAT THERE WOULD BE NO ADVERSE HEALTH EFFECT AS A RESULT.

AT SUPERFUND SITES WE'RE REQUIRED TO REDUCE NON CARCINOGENIC RISKS TO A LEVEL SUCH THAT THE HAZARD INDEX IS LESS THAN ONE. THE HAZARD INDEX IS JUST A FANCY TERM FOR SAYING WE LOOK AT THE RATIO OF THE EXPOSURE LEVEL THAT PEOPLE ARE EXPERIENCING TO THE SAFE LEVEL. IF THAT RATIO IS GREATER THAN ONE THEN OBVIOUSLY YOUR EXPOSURE IS GREATER THAN THE SAFE LEVEL AND WE WANT TO CONTROL THAT EXPOSURE TO GET IT DOWN BELOW ONE.

OKAY. WE LOOKED AT FOUR PRIMARY EXPOSURE PATHWAYS AT THE PALMETTO SITE. WE LOOKED AT A TRESPASSER SCENARIO. THAT'S THE CURRENT SITE CONDITIONS. CURRENT SITE CONDITIONS, THERE'S NOBODY LIVING ON THE SITE. THE PRIMARY ROUTE OF EXPOSURE OR THE MOST STRINGENT ROUTE OF EXPOSURE WOULD BE A TRESPASSER GOING ONTO THE SITE IN AN UNCONTROLLED MANNER REPEATEDLY.

BUT WE ALSO WANT TO MAKE SURE THAT THE SITE IS CLEANED UP SO THAT THE SITE IS SAFE FOR POTENTIAL FUTURE USES AS WELL. SO WE ALSO LOOKED AT EXPOSURE SCENARIOS FOR RESIDENTS, FOR CHILDREN

AND ADULTS. THE YOUTH RESIDENT EXPOSURE SCENARIO IS KIND OF A SPECIAL ONE AND I'LL TALK ABOUT THAT A LITTLE MORE. USUALLY THE GUIDING EXPOSURE SCENARIOS FOR SETTING THE CLEAN UP LEVELS AT THESE SITES ARE BASED ON USING THE SITE FOR RESIDENTIAL PURPOSES IN THE FUTURE. AND VERY AFTER THE CHILD RESIDENT BECAUSE CHILDREN ARE OFTEN MORE SUSCEPTIBLE TO TOXIC EFFECTS. THE CHILD RESIDENT EXPOSURE SCENARIO IS VERY OFTEN THE ONE THAT GUIDES THE REMEDIATION AND SETS THE CLEAN UP GOALS. AND THAT IN FACT WAS THE CASE AT THIS SITE.

MS. BROWN: GOING BACK TO YOUR TRESPASSER, IS IT POSSIBLE THAT THE CONTAMINATION THAT'S DOWN THERE NOW THAT PEOPLE DRIVING THEIR CAR ON THAT TARMAC THERE FOR THE PLACE THERE, EDMOND'S, GOING IN THERE AND COMING OUT, WOULD PICK UP CONTAMINATION?

MR. HAYES: I'M NOT SURE WHERE YOU MEAN. BUT IT IS POSSIBLE THAT PEOPLE NEAR THE SITE MIGHT EXPERIENCE SOME EXPOSURE. BUT IT'S UNLIKELY --

MS. BROWN: I'M TALKING ABOUT GOING ON THE TARMAC, WALKING ON THE TARMAC, DRIVING CARS ON THE TARMAC, WOULD THEY GET EXPOSED TO THE LEAD

AND THE OTHER --

MR. HAYES: THE TARMAC ON THE SITE?

MS. BROWN: YES.

MR. HAYES: YES. THAT'S PART OF THE TRESPASSER EXPOSURE SCENARIO. AND THE ASSUMPTIONS THAT GOES INTO THE TRESPASSER EXPOSURE SCENARIO ARE A LITTLE BIT MORE CONSERVATIVE THAN SOMEONE WHO MIGHT JUST DRIVE ONTO THE TARMAC AND WALK AROUND ON THE PAVED AREA. IT ASSUMES THAT PEOPLE ARE REPEATEDLY --

MS. BROWN: WELL, THEY COME OUT ON THAT DIRT, TOO, WHEN THEY WALK OUT THAT GATE.

MR. HAYES: THAT'S WHAT THE TRESPASSER SCENARIO LOOKED AT. IT LOOKS AT PEOPLE REPEATEDLY GOING ON THE SITE OVER A LONG PERIOD OF TIME, YEARS AND YEARS AND YEARS.

MS. BROWN: THAT'S BEEN HAPPENING DOWN THERE.

MR. HAYES: THAT'S EXACTLY WHAT THE TRESPASSER EXPOSURE PATHWAY LOOKS AT. BUT AS I'LL TALK ABOUT A LITTLE BIT MORE, THE RISK ASSOCIATED WITH THAT EXPOSURE SCENARIO IS VERY LOW AND WITHIN WHAT WE CONSIDER TO BE ACCEPTABLE OR SAFE LIMITS. THE ONLY EXPOSURE SCENARIO THAT'S CREATED ANY UNACCEPTABLE RISK WAS THE

CHILD RESIDENT EXPOSURE SCENARIO.

MS. ANDERSON: LILLIE ANDERSON. I'VE WONDERED FROM THE BEGINNING WHAT EFFECT IF ANY DID IT HAVE ON THE ROAD ITSELF ADJACENT TO WHERE PEOPLE DRIVE?

MS. BROWN: THE MAIN ROAD.

MR. HAYES: I DON'T KNOW TO BE HONEST WITH YOU.

MS. ANDERSON: IT SEEMS LIKE THAT SHOULD BE LOOKED AT.

MR. ROGERS: THERE WERE SAMPLES OUT IN THE ROADSIDE DITCH THAT INDICATE THAT THERE WASN'T ANY SIGNIFICANT CONTAMINATION. WE DID HAVE A HIT WHICH WE COULDN'T REPRODUCE.

MS. ANDERSON: BECAUSE AS THEY HAULED THEY SPILLED AS THEY WENT ALONG ALL THE WAY.

MS. BROWN: THE TRUCKS SPILLED THE CASINGS, THE BATTERY ACID. IN OTHER WORDS, THEY WERE NOT COVERED AND ALL THAT WAS FLYING ALONG THE ROAD. ALL THAT WAS REPORTED TO DHEC.

MS. ANDERSON: THEY WAS SPILLING ALL ALONG THERE.

MS. BROWN: IT WASN'T JUST COMING FROM 321. IT WAS 21 COMING IN.

MR. ROGERS: IN RELATIVE TERMS THAT

WOULD BE A VERY SMALL AMOUNT. THAT ROAD GETS SCRAPED AND DIFFERENT THINGS OCCUR TO IT SUCH THAT THERE WOULDN'T HAVE BEEN NOTICEABLE ACCUMULATION THAT WOULD HAVE CAUSED THAT KIND OF EXPOSURE.

MR. HAYES: OKAY. WE'LL COME BACK TO THOSE QUESTIONS AND THOSE ARE GOOD QUESTIONS. I DON'T MEAN TO NOT ADDRESS THEM OR ANSWER THEM TO YOUR SATISFACTION. WE CAN COME BACK TO THAT QUESTION.

MS. BROWN: YOU SAID TO ASK QUESTIONS. THAT'S WHAT WE'RE DOING.

MR. HAYES: GOOD. I WANT TO GO THROUGH THE TRESPASSER AND YOUTH RESIDENT BECAUSE THEY'RE SOMEWHAT SPECIAL CASES. IN LOOKING AT PATH SIZE AND LOOKING AT EXPOSURE SCENARIOS ASSOCIATED WITH THE SITE IN THE PAST IT'S E.P.A.'S EXPERIENCE THAT THE MOST RESTRICTIVE OR THE MOST LIKELY EXPOSURE IS GOING TO OCCUR WITH NOT A CHILD OR AN ADULT. YOUNG CHILDREN BELOW THE AGE OF 6 ARE NOT LIKELY TO BE ON THE SITE UNSUPERVISED. ADULTS MAYBE KNOW A LITTLE BIT BETTER THAN TO PLAY AROUND AN INDUSTRIAL SITE. THE HIGHEST LEVELS OF EXPOSURE, THE GREATEST RISKS UNDER A TRESPASSER SCENARIO OCCUR IN WHAT

WE WOULD CALL A YOUTH OR TEENAGE YEARS. AND THE PATHWAYS EVALUATED WITH THAT WERE INCIDENTAL INGESTION OF SURFACE SOIL AND SEDIMENT, DERMAL ABSORPTION FROM CONTACT WITH THOSE CONTAMINATED SOILS AND SEDIMENTS AND INHALATION OF CONTAMINATED DUST AND SOILS. WE ALSO LOOKED AT OUR YOUTH RESIDENT BECAUSE AGAIN SOMEONE LIVING ON THE SITE, A CHILD, IS NOT LIKELY TO ROAM UNSUPERVISED AND GET INTO THE DITCHES AND CREEKS. AN ADULT PROBABLY KNOWS BETTER. BUT A YOUTH, A KID OR A TEENAGER, MAY AT TIMES COME INTO CONTACT WITH THE SEDIMENTS IN THOSE CREEKS AND DITCHES. AND SO WE WANTED TO MAKE SURE WE COVERED THAT. SO WE LOOKED AT A YOUTH RESIDENT SCENARIO WHICH INVOLVED INCIDENTAL INGESTION OF CONTAMINATED SEDIMENTS AND DERMAL CONTACT WITH THOSE SEDIMENTS TO MAKE SURE WE COVERED ALL OUR BASES.

MS. BROWN: ONE QUESTION. MR. EARLE IS HERE TONIGHT AND HIS CHILDREN ACROSS THE STREET WERE TESTED BY DHEC FOR LEAD WHENEVER THE BATTERY CASINGS WERE BURNED. IS IT POSSIBLE THAT THEY NEED TO BE RETESTED NOW BY E.P.A. SINCE THEY ARE CHILDREN AND YOUNG TEENAGERS?

MR. HAYES: WELL, THAT'S A VERY DIFFICULT QUESTION TO ANSWER. I WOULDN'T WANT TO

SAY THAT IT WOULDN'T DO ANY GOOD TO RETEST THEM. BUT BASED ON THE EVALUATION AND THE RISK ASSESSMENT THE ONLY CHILDREN THAT WOULD BE AT ANY RISK ON THIS SITE WOULD BE IF THEY ACTUALLY LIVED ON THE SITE EVERY DAY AND WERE EXPOSED AND PLAYING ON THE SITE EVERY DAY. ANY EXPOSURE LESS THAN THAT IS NOT LIKELY TO HAVE CREATED AN UNACCEPTABLE LEVEL OF RISK. SO WHILE I CAN'T SAY THAT IT WOULDN'T BE OF ANY PURPOSE TO HAVE THOSE CHILDREN TESTED AGAIN OR TO HAVE ANYBODY WHO'S BEEN ON THE SITE TESTED AGAIN, ALL I CAN SAY IS THAT IT WOULD BE VERY UNLIKELY THAT THAT TYPE OF EXPOSURE WOULD CREATE AN UNACCEPTABLE HEALTH RISK. THERE IS SOME UNCERTAINTY ASSOCIATED WITH HOW LEAD EXPOSURE EFFECTS PEOPLE. IT AFFECTS DIFFERENT PEOPLE IN DIFFERENT WAYS AND AT DIFFERENT LEVELS. SO A LOWER LEVEL OF EXPOSURE TO A CHILD WHO WAS VERY SUSCEPTIBLE TO THOSE KINDS OF EFFECTS IT MIGHT CREATE A PROBLEM. BUT THE LIKELIHOOD OF THAT IS VERY SMALL. AND AGAIN I HAVE SOME SLIDES THAT MIGHT TALK ABOUT THAT A LITTLE BIT MORE AS WE GO ON. AND AGAIN, WE CAN COME BACK TO IT. BUT AGAIN, THAT'S A VERY GOOD QUESTION. AND I'M NOT SURE I'M GOING TO BE ABLE TO SATISFACTORILY ANSWER ALL YOUR QUESTIONS ABOUT

LEAD TOXICITY AND HOW IT MAY AFFECT DIFFERENT PEOPLE DIFFERENTLY. BECAUSE IT'S NOT SOMETHING THAT'S EASY TO UNDERSTAND. IT'S NOT EVEN EASY FOR ME TO UNDERSTAND.

MS. BROWN: WELL, WOULDN'T E.P.A. AS WELL AS THE NEIGHBORS BE SATISFIED IF THEY WERE TESTED AGAIN TO MAKE SURE THAT THEY WERE NOT?

MR. HAYES: WELL, I THINK THAT'S A POSSIBILITY THAT WE CAN TALK ABOUT. BUT I CAN'T TELL YOU WHETHER SOMETHING NEEDS TO BE DONE OR NOT. AND THAT'S SOMETHING WE CAN TAKE BACK WITH US AND TALK ABOUT WHETHER IT'S SOMETHING THAT WOULD BE A GOOD IDEA TO DO AS PART OF THE SITE INVESTIGATION.

MS. BROWN: BECAUSE THEY ARE ACROSS THE ROAD FROM IT.

MR. HAYES: THE ADULT RESIDENT PATHWAY WE LOOKED AT AGAIN A VERY COMPREHENSIVE EXPOSURE SCENARIO. WE LOOKED AT INGESTION OF CONTAMINATED SURFACE SOILS AND GROUND WATER. IN OTHER WORDS, ASSUMING THAT SOMEBODY WOULD BUILD A HOUSE ON THE SITE, SINK A WELL ON THE SITE AND DRINK THE WATER FROM THAT WELL. WE ADDED DERMAL ABSORPTION FROM CONTACT WITH THOSE CONTAMINATED SURFACE SOILS AND INHALATION NOT ONLY FROM CONTAMINATED DUST AND

SOIL BUT FROM THE VOLATILE CONTAMINANTS THAT MIGHT BE PRESENT IN THE GROUND WATER THAT COULD BE RELEASED WHILE SOMEBODY IS TAKING A SHOWER AND INHALED WHILE YOU'RE TAKING A SHOWER. SO WE TRIED TO BE VERY COMPREHENSIVE IN LOOKING AT ALL THE VARIOUS EXPOSURE PATHWAYS.

AND THE EXPOSURE PATHWAYS FOR THE CHILD ARE JUST THE SAME BUT THE DIFFERENCE IN HOW WE EVALUATED THE RISK ASSOCIATED WITH A CHILD IS THAT A CHILD DRINKS LESS WATER. A CHILD HAS A LOWER BODY WEIGHT. AND SO IS LIKELY TO BE MORE SUSCEPTIBLE. AND THE TOXIC END POINTS OR THE LEVEL AT WHICH TOXIC EFFECTS ARE EXPERIENCED BY A CHILD GENERALLY TEND TO BE LOWER FOR MOST CONTAMINANTS. SO EVEN THOUGH THE PATHWAYS EVALUATED ARE THE SAME, A LOT OF THE NUMBERS THAT WENT INTO THOSE CALCULATIONS FOR A CHILD ARE DIFFERENT THAN THEY ARE FOR AN ADULT.

ALL RIGHT. A LOT OF CONTAMINANTS WERE FOUND IN THE SAMPLES AT PALMETTO. THERE WERE FOUR ORGANICS FOUND IN EITHER SURFACE SOILS OR GROUND WATER, ETC. YVONNE ALREADY MENTIONED SHE GOT. BUT SAMPLES WERE FOUND TO HAVE HAD SOME OF THESE OTHER CONTAMINANTS IN THEM. ALSO, A FAIRLY LARGE NUMBER OF METALS WERE FOUND. THE THING TO

REMEMBER ABOUT THIS IS THAT WHEN WE RAN THESE CONTAMINANTS THROUGH THE RISK ASSESSMENT NONE OF THEM CREATED ANY THREAT TO HEALTH OR ANY UNACCEPTABLE RISK WITH ONE EXCEPTION. AND THAT EXCEPTION AS YOU MIGHT EXPECT WAS LEAD. EVEN IN THE GROUND WATER AS YVONNE POINTED OUT, WE DIDN'T FIND ANY LEAD ABOVE DRINKING WATER STANDARDS. THERE WAS ONE SAMPLE THAT WAS A LITTLE BIT HIGH BUT WHEN WE WENT BACK AND RESAMPLED THAT WELL A COUPLE MORE TIMES WE DIDN'T FIND ANYTHING. BUT THE LEAD ASSOCIATED WITH THE SURFACE SOILS CREATED AN UNACCEPTABLE LEVEL OF RISK FOR THE CHILD RESIDENT EXPOSURE SCENARIO. SO WE'LL TALK ABOUT THAT A LITTLE BIT.

OKAY. THE PRELIMINARY CONCLUSIONS FROM THE RISK ASSESSMENT WERE THAT UNDER CURRENT EXPOSURE CONDITIONS UNDER THE TRESPASSER SITUATION THERE IS NO UNACCEPTABLE LEVEL OF RISK. THE UNACCEPTABLE RISK ASSOCIATED WITH POTENTIAL FUTURE EXPOSURE SCENARIOS IS DUE EXCLUSIVELY TO CONTAMINATED SOILS. AND THE RISK LEVELS ARE ASSOCIATED WITH POTENTIAL EXPOSURE TO LEAD. THE OTHER CONTAMINANTS AND THE OTHER MEDIA DID NOT CONTRIBUTE SIGNIFICANTLY TO ANY UNACCEPTABLE RISK.

THIS IS THE SUMMARY OF THE HEALTH EFFECTS OF LEAD. AND THERE IS A HANDOUT ON THE BACK TABLE, A FACT SHEET, ABOUT THE HEALTH EFFECTS. IT GOES INTO A LITTLE BIT MORE DETAIL. EXPOSURE TO HIGH LEVELS OF LEAD CAN CAUSE SEVERE BRAIN DAMAGE AND KIDNEY DAMAGE. CERTAINLY NOTHING LIKE THE LEVELS OF EXPOSURE WE HAVE AT THIS SITE. THAT WOULD BE PERHAPS INDUSTRIAL EXPOSURE IN AN UNCONTROLLED SITUATION. CERTAINLY THOSE KINDS OF LEVELS ARE NOTHING LIKE WHAT WE WOULD FIND AT THIS SITE. THERE IS SOME EVIDENCE TO SUGGEST THAT LOWER LEVELS OF EXPOSURE MAY CAUSE INCREASES IN BLOOD PRESSURE IN MEN ALTHOUGH I THINK THERE'S A LOT OF THINGS THAT CAUSE INCREASED BLOOD PRESSURE IN MIDDLE AGED MEN. I KNOW THAT I HAVE THAT PROBLEM. VERY HIGH LEVELS MAY ALSO EFFECT MALE REPRODUCTIVE SYTEMS. EXPOSURES OF PREGNANT WOMEN CAN RESULT IN PREMATURE BIRTH, LOW BIRTH WEIGHT OR EVEN MISCARRIAGE. AND THIS IS THE IMPORTANT ONE, THIS LAST ONE. LEAD EXPOSURES IN INFANTS AND YOUNG CHILDREN CAN SHOW DECREASED IQ SCORES, RETARD PHYSICAL GROWTH AND CAUSE HEARING PROBLEMS.

NOW, LEAD IS A BAD ACTOR. THERE IS NO QUESTION ABOUT IT. AND THERE'S BEEN A LOT OF

RESEARCH ON THE EFFECTS OF LEAD. THAT'S ONE REASON FOR THOSE OF YOU WHO ARE OLD ENOUGH TO REMEMBER WHY LEAD GASOLINE WAS PHASED OUT, WHY LEAD PAINTS ARE NO LONGER USED. ALL THAT WAS AS ATTEMPT TO REDUCE THE PUBLIC'S EXPOSURE TO LEAD BECAUSE OF THE ADVERSE AND IN SOME CASES SEVERE HEALTH EFFECTS OF LEAD. SO WE DON'T WANT TO UNDERESTIMATE THE POTENTIAL HEALTH EFFECTS OF LEAD. IT IS A REAL PROBLEM.

OKAY. THIS IS -- THE WAY THAT WE EVALUATE THE EFFECTS OF LEAD ON THE PUBLIC OR ON HUMAN HEALTH IS BY MEANS OF THIS LEAD UPTAKE BIOKINETIC MODEL. AND THAT'S JUST A FANCY TERM FOR A COMPUTER PROGRAM THAT GIVEN THE EXPOSURE LEVELS OF LEAD AT A SITE PREDICTS THE AVERAGE BLOOD CONCENTRATIONS OF LEAD IN CHILDREN AGE 0 TO 6 YEARS.

THE RESEARCH THAT HAS BEEN DONE REGARDING TOXIC EFFECTS OF LEAD HAS SHOWN THAT THE NEUROTOXIC EFFECTS, THOSE LOW IQ SCORES, OTHER CENTRAL NERVOUS SYSTEM EFFECTS, MAY OCCUR AT BLOOD LEAD LEVELS AS LOW AS TEN MICROGRAMS PER DECALITER. THIS IS JUST A MEASUREMENT TOOL THAT THE MEDICAL PROFESSION USES TO MEASURE CONCENTRATIONS IN BLOOD. THE NUMBER 10 IS WHAT

TO REMEMBER. AND E.P.A.'S GOAL IS TO ENSURE THAT BASED ON THIS BIOKINETIC MODEL, BASED ON THIS COMPUTER PROGRAM, THAT 95 PERCENT OF EXPOSED CHILDREN AT THE SITE HAVE BLOOD LEAD LEVELS LESS THAN THIS RELATIVELY SAFE LEVEL OF 10 MICROGRAMS PER DECALITER. SO THE IMPORTANT THING TO TAKE AWAY FROM THIS SLIDE IS THAT WE WANT TO CONTROL BLOOD LEAD LEVELS TO BELOW TEN. WE WANT TO MAKE SURE THAT NO MORE THAN FIVE PERCENT OF THE EXPOSED POPULATION WOULD BE PREDICTED TO HAVE LEAD LEVELS ABOVE THAT. AND THAT THIS MODEL IS USED TO PREDICT THOSE BLOOD CONCENTRATIONS IN CHILDREN.

THIS IS A GRAPH SHOWING THE RESULTS OF THAT MODEL, OF THAT COMPUTER PROGRAM. NOW, THIS LINE IS TEN MICROGRAMS PER DECALITER, THE LEVEL AT WHICH WE WANT TO CONTROL EXPOSURE. WHAT THIS LINE INDICATES IS THE PERCENTAGE OF CHILDREN THAT WOULD HAVE A GIVEN CONCENTRATION OF LEAD IN THEIR BLOOD UNDER EXPOSURES TO SITE CONDITIONS. NOW, I KNOW THIS CAN BE A LITTLE CONFUSING. BUT WHAT THIS GRAPH MEANS IS THIS PEAK HERE IS THE AVERAGE BLOOD LEVEL CONCENTRATION OR THE MOST FREQUENT BLOOD LEVEL CONCENTRATION THAT WOULD RESULT AS AN EXPOSURE TO THE SITE. AND THAT NUMBER IS ABOUT

5.6 MICROGRAMS PER DECALITER, WHICH IS WELL BELOW THE 19. WHAT THIS GRAPH ALSO SHOWS IS THAT ABOUT 10.6 PERCENT OF THE CHILDREN WHO ARE EXPOSED AT THIS SITE WOULD HAVE BLOOD LEAD LEVELS ABOVE THIS SAFE LEVEL OF 10. AND UNDER E.P.A. GUIDELINES AND UNDER E.P.A. PROTOCOLS THAT'S CONSIDERED AN UNACCEPTABLE LEVEL OF RISK. WE WANT TO CONTROL THAT TO BE LESS THAN 5 PERCENT. SO IN ORDER TO DO THAT WE HAVE TO REDUCE THE LEAD AT THE SITE. IN THIS GRAPH WERE SHIFTED BACK THIS WAY SO THAT LESS OF IT WERE ON THE RIGHT OF THIS LINE OF 10 PERCENT THEN IT MIGHT BE THAT THE PERCENT WOULD BE 5 PERCENT AND THE SITE WOULD BE OKAY. BUT SINCE IT IS GREATER THAN 5 PERCENT THAT'S CONSIDERED AN UNACCEPTABLE LEVEL OF RISK FOR CHILDREN EXPOSED TO LEAD AT THE SITE AND IT'S THE BASIS FOR OUR PROPOSAL TO REMEDIATE SURFACE SOILS AT THE SITE.

THE CLEAN UP LEVEL FOR LEAD, WHICH YVONNE HAS ALREADY MENTIONED, IS PROPOSED AT 400 MILLIGRAMS PER KILOGRAM. THAT'S BASED ON AGENCY GUIDANCE. THIS IS JUST AN INTERNAL GUIDANCE DOCUMENT THAT WAS DEVELOPED TO HELP PEOPLE LIKE YVONNE AND ME CHOOSE THE RIGHT CLEAN UP LEVEL. AND THAT LEVEL OF 400 MILLIGRAMS PER KILOGRAM IS

DESIGNED TO MEET THE GOAL OF 95 PERCENT BLOOD LEVELS LESS THAN 10 MICROGRAMS PER DECALITER.

THE CURRRENT SOIL LEAD CONCENTRATIONS AVERAGE 528 MICROGRAMS PER KILOGRAM. SOME OF THE SAMPLES WERE MUCH HIGHER AS YVONNE SAID. AND THAT AVERAGE LEVEL IS 32 PERCENT GREATER THAN THE PROPOSED CLEAN UP LEVEL OF 400 MILLIGRAMS PER KILOGRAM.

THE IMPORTANT THING TO REMEMBER I THINK FROM LOOKING AT THIS INFORMATION IS THAT EVEN UNDER CURRENT SITE CONDITIONS A CHILD LIVING ON THE SITE WOULD NOT BE LIKELY TO HAVE BLOOD LEAD LEVELS THAT EXCEED THE SAFE LEVEL. BUT A CERTAIN PERCENTAGE OF CHILDREN MIGHT. AND BECAUSE OF THAT POSSIBILITY WE WANT TO MAKE SURE THAT WE REMEDIATE THE SITE SO THAT THAT LIKELIHOOD IS VERY, VERY SMALL.

I'LL TAKE A COUPLE QUICK QUESTIONS. BUT IF YOU DON'T MIND WE'LL LET YVONNE DO THE REST OF HER PRESENTATIOON AND THEN ANSWER QUESTIONS IN GENERAL AT THE END.

MR. EARLE: OKAY. MY QUICK QUESTION IS YOU'RE SAYING ABOUT CHILDREN LIVING ON THE SITE. HOW MANY FEET WOULD A CHILD HAVE TO LIVE BEFORE IT'S CONSIDERED LIVING OFF SITE?

MR. HAYES: WELL, WHEN WE SAY LIVING ON SITE WE MEAN THAT IF SOMEBODY BUILT A HOUSE AND THE CHILD LIVED IN THAT HOUSE AND WAS IN THAT YARD EVERY DAY COMING AND GOING UNDER NORMAL CONDITIONS AND THAT INCLUDES AS I SAID DRINKING WATER FROM A WELL ON THAT SITE. IT INCLUDES ALL THE OTHER EXPOSURE PATHWAYS BASICALLY. THE ONE THAT REALLY CREATES THE PROBLEM IS THE CONTAMINATED SOIL. BUT I THINK THAT A CHILD THAT DOESN'T LIVE RIGHT ON THE SITE IS NOT GOING TO EXPERIENCE THE SAME LEVEL OF EXPOSURE AS A CHILD WHO LIVES SAY ACROSS THE STREET OR NEARBY IF FOR NO OTHER REASON THAN THE HOUSE ITSELF IS LIKELY TO HAVE DUST IN IT AND IS CONTAMINATED WITH LEAD AND IS MORE LIKELY TO HAVE THAT KIND OF PROBLEM IF IT'S RIGHT ON THE SITE AS OPPOSED TO SOME DISTANCE AWAY.

MS. BROWN: YOU'RE TALKING ABOUT THE DUST. NORMALLY WE HAVE SOUTHWEST WINDS WHICH WOULD BLOW TO THE NORTH, NORTHEAST. BUT HERE LATELY WE'VE HAD NORTH NORTHEAST WINDS THAT WOULD BLOW THAT DUST ACROSS INTO THE AREA OF MR. EARLE'S AND THE OTHER PEOPLE LIVING ACROSS THE ROAD. THAT CONTAMINATED DUST WOULD BE BLOWN INTO THEIR YARD INTO THEIR HOUSE.

MR. HAYES: YES.

MS. BROWN: THAT'S WHY I ASKED YOU THE FIRST TIME WOULDN'T IT BE OF INTEREST FOR THE E.P.A. TO HAVE THOSE CHILDREN RETESTED AND PEOPLE OVER 65 RETESTED IN THAT AREA?

MR. HAYES: WELL, AGAIN, I'LL JUST REPEAT THAT THAT MAY BE A GOOD IDEA. I DON'T WANT TO TELL YOU THAT WE'RE GOING TO DO SOMETHING OR NOT DO SOMETHING WITHOUT GOING BACK AND THINKING ABOUT IT AND TRYING TO MAKE A DECISION ABOUT WHAT'S THE BEST THING TO DO. SO IT MAY BE A GOOD IDEA. AND THAT'S EXACTLY THE KIND OF THING THAT WE NEED TO DO.

MS. BROWN: BECAUSE YOU STOOD THERE AND STATED THAT WE DO HAVE LEAD CONTAMINATION THERE.

MR. HAYES: BUT THE IMPORTANT THING TO REMEMBER IS THAT TYPE OF EXPOSURE, WIND BLOWN EXPOSURE OF DUST, IS GOING TO BE MUSH LESS THAN A CHILD WHO IS LIVING AND PLAYING ON THE SITE EVERY DAY FOR THE FIRST SIX YERAS OF ITS LIFE. I THINK THAT'S AGAIN -- IT HELPS ANSWER YOUR QUESTION. THIS IS BASED ON EFFECTS FOR CHILDREN 6 YEARS AND YOUNGER. THAT'S THE CRITICAL EXPOSURE SCENARIO. I KNOW THAT THINGS ARE A LITTLE BIT DIFFERENT IN

THE COUNTRY THAN THEY ARE IN ATLANTA, BUT I STILL WOULD THINK THAT A CHILD THAT YOUNG IS NOT LIKELY TO WANDER ACROSS THE STREET AND OUT OF ITS YARD AND ONTO AN INDUSTRIAL SITE VERY OFTEN AT LEAST UNTIL THEIR PARENTS WERE TO FIND OUT ABOUT IT AND TRY TO REIN THEM IN A LITTLE BIT. BUT THAT'S DIFFERENT FROM SOMEBODY WHO'S LIVING ON THE SITE AND A CHILD PLAYING IN THE YARD EVERY DAY. SO IF THE EXPOSURE ASSOCIATED WITH LIVING ON THE SITE IS UNACCEPTABLE BUT SOMEWHAT WAS CLOSE TO BEING ACCEPTABLE, WITHIN FIVE PERCENT OF BEING ACCEPTABLE, THAN A CHILD LIVING ACROSS THE STREET THAT YOUNG WHO'S NOT ON THE SITE EVERY DAY IS NOT LIKELY TO BE EXPERIENCING THE SAME EXPOSURES.

MR. EARLE: WELL, MY CONCERN WAS BECAUSE FROM '83 TO THE TIME THE PLANT CLOSED THESE PEOPLE OPERATED BETTER THAN TEN HOURS A DAY. AND WHEN THEY HAD THOSE CONVEYOR BELTS RUNNING AND WHEN THE WIND WAS BLOWING I'M QUITE SURE THERE WAS DUST AND THINGS IN THE AIR FOR THE DURATION THE PLANT WAS OPEN. SO I MEAN WOULDN'T THAT BE SOMEWHAT DIFFERENT BASED ON THE FINDINGS OF WHAT YOU FINDING ON THE SITE RIGHT NOW?

MR. HAYES: IT WOULD BE DIFFERENT. AND THE PROBLEM WITH THAT IS AND THERE LIKELY WAS

EXPOSURE OCCURRING AS A RESULT OF THAT. THE PROBLEM WITH THAT IS WE DON'T HAVE ANY WAY TO TRY TO MEASURE OR ESTIMATE WHAT THOSE EFFECTS WERE.

MR. EARLE: THEN FOR CLARIFICATION THE POINT I WAS SAYING ABOUT WHAT YOU WERE SAYING ABOUT AS FAR AS THE GROUND CONTAMINATION NOW WHICH I CAN UNDERSTAND BUT IT STILL DOES NOT TELL ME BASICALLY WHAT WAS HAPPENING IN THE TIME '83 LIKE I SAID, WHICH WOULD AFFECT THE CHILD AND COULD, POSSIBILITY. 6 YEARS OLD. THEN I CAN LOOK AT IT ON THE OTHER HAND AND SAY WELL, MY LITTLE DAUGHTER BORN IN 1978 DURING THE TIME THE SITE WAS IN OPERATION.

MR. HAYES: YOU'RE RIGHT. THAT'S A VERY GOOD POINT. AND THE ONLY THING I CAN TELL YOU IS EXPOSURE MAY HAVE OCCURRED IN THOSE PERIODS. AND THERE'S NO WAY FOR US TO MEASURE THAT NOW OR EVEN TO TRY AND ESTIMATE IT. AND SO WE'RE LOOKING AT THE SITE AS THE WAY IT IS NOW AND LEAVING IT UNREMEDIATED AND ASSESSING THE RISKS THAT WOULD RESULT. I DON'T THINK -- AND THIS IS A QUESTION THAT COMES UP AT SITES A LOT. WHAT ABOUT THE PERIOD WHEN IT WAS IN OPERATION. WHAT ABOUT THE PERIOD BEFORE. AND UNFORTUNATELY THERE'S JUST NO REAL WAY FOR US TO ANSWER THOSE

QUESTIONS FOR YOU SINCE THOSE TIMES ARE PAST. THERE'S NO WAY FOR US TO GATHER THAT EVIDENCE AND MAKE ASSESSMENTS.

MR. EARLE: ONE FINAL QUESTION. YOU DID MENTION SOMETHING ABOUT THE POSSIBILITY OF CANCER. WHAT IS THE LIKELIHOOD OF SOMEONE GETTING CANCER AS FAR AS DURING THAT PARTICULAR TIME OR DO THEY HAVE TO BE EXPOSED SAY FOR A PERIOD OF TEN YEARS OR DO YOU KNOW ANYTHING ABOUT THAT?

MR. HAYES: WELL, THERE IS NO CLEAR EVIDENCE THAT LEAD IS A CARCINOGEN. LEAD HAS VERY SERIOUS EFFECTS IN OTHER WAYS. CENTRAL NERVOUS SYSTEM EFFECTS AND SOME OF THE OTHERS THAT I MENTIONED. THERE IS NO CLEAR EVIDENCE THAT LEAD IS A CARCINOGEN. SO I GUESS THE ANSWER TO YOUR QUESTION IS WE WOULD NOT EXPECT TO SEE CANCER AS A RESULT OF LEAD EXPOSURE. NOW, THE ONLY OTHER CONTAMINANT THAT WAS MENTIONED IN THE RISK ASSESSMENT OR WAS CARRIED THROUGH THE RISK ASSESSMENT THAT HAD ANY SIGNIFICANT LEVELS AND MIGHT BE A CARCINOGEN IS THE 1,2-DICHLOROETHANE. AND IT WAS FOUND AT SUCH LOW LEVELS THAT THE RISK ASSOCIATED WITH THAT IS INFINITESIMALLY SMALL. AND I DON'T THINK THAT YOU WOULD EXPERIENCE ANY

SIGNIFICANT RISK FROM A LIFE TIME OF EXPOSURE TO SOILS AT THOSE LOW LEVELS.

MS. HICKS: WHAT DO YOU CONSIDER A NORMAL LIFE TIME?

MR. HAYES: WE USE 70 YEARS. IF I MAKE IT THAT LONG I WILL BE GREAT.

MR. EARLE: THE REASON I ASK THAT QUESTION I'M NOT SAYING IT WOULDN'T HAVE ANYTHING TO DO WITH THAT BUT BY YOU HAVING CANCER IN YOUR PRESENTATION AND THEN I CAN LOOK AT THE SITUATION FROM MY WIFE WHO HAS IT IN 1988 AND I ASK WELL IS THAT A POSSIBILITY OR IS IT NOT A POSSIBILITY?

MR. HAYES: I SEE WHAT YOU MEAN. LET ME ANSWER THAT TWO WAYS. THE FIRST THING IS WE LOOKED AT THIS SITE UNDER VERY STRINGENT AND CONSERVATIVE EXPOSURE SCENARIOS. WE DIDN'T FIND ANY CARCINOGENIC RISKS UNDER THE CURRENT CONDITIONS. NOW, I KNOW THAT DOESN'T ADDRESS WHAT MIGHT HAVE GONE ON IN THE PAST. SO FOR WHAT THAT'S WORTH. THE OTHER THING THAT I'LL SAY IS THAT SINCE WE DIDN'T FIND ANY CARCINOGENIC RISKS AT THIS SITE IT MIGHT HAVE BEEN BETTER IF I HAD NOT TALKED ABOUT CARCINOGENIC RISKS AND RAISED THOSE QUESTIONS. ON THE OTHER HAND WE TRY TO BE AS COMPLETE AS POSSIBLE WHEN WE TALK ABOUT RISKS

ASSOCIATED WITH THE SITE AND TO BE HONEST THAT'S JUST PART OF THE SHOW. IT'S PART OF THE REGULAR PRESENTATION I MAKE TO TALK ABOUT CARCINOGENIC RISKS. SO MAYBE IN THE FUTURE WHEN THERE ARE NO CARCINOGENIC RISKS ASSOCIATED WITH THE SITE I MAY PARE THAT PART OF THE TALK BACK A LITTLE BIT. SO IF YOU DON'T MIND IF YOU HAVE ANY OTHER QUESTIONS WE'RE GOING TO HAVE A QUESTION AND ANSWER SESSION AT THE END AFTER YVONNE DOES THE REST OF HER PRESENTATION. AND I'LL STILL BE AROUND. THANK YOU.

MS. JONES: OKAY. AS MR. HAYES STATED EARLIER 400 MILLIGRAMS PER KILOGRAM WHICH IS THE SAME AS 400 PARTS PER MILLION AND I'LL USE PARTS PER MILLION BUT THEY'RE THE SAME THING, JUST ANOTHER TERM ANOTHER PERSON. IS THE REMEDIATION LEVEL FOR THE SOIL, SURFACE SOIL AT THE SITE. BASED ON THIS DETERMINATION E.P.A. BASICALLY WENT THROUGH AND LOOKED AT THE RESULTS OF THE DATA PRESENTED TO US OR GATHERED FROM EACH OF THESE SOIL SAMPLES AND DETERMINED OR TRIED TO DETERMINE THE EXTENT OF LEAD CONTAMINATION AT THE SITE. BASED ON THE DATA WE APPROXIMATED THAT PROBABLY OR WE AT LEAST HAVE 1100 CUBIC YARDS OF CONTAMINATED SOIL AT THE SITE THAT NEEDS TO BE

REMEDIATED DOWN TO THE SAFE LEVEL OF 400 PARTS PER MILLION.

MS. BROWN: THE SHADED AREA IS WHAT YOU'RE TALKING ABOUT NOW?

MS. JONES: CORRECT.

MS. BROWN: BOTH SHADED AREAS?

MS. JONES: CORRECT.

MS. BROWN: ALL RIGHT. PART OF THAT IS THAT ON TOP OF THE TARMAC THERE ON THAT LOT?

MS. JONES: YES, MA'AM.

MS. BROWN: WAS IT TESTED UNDER THE TARMAC DOWN AT THAT AREA?

MS. JONES: WELL, WE TESTED AT -- IF YOU CAN ACTUALLY TELL IT, PR-04, PR-03 AND PR-02.

MS. BROWN: BUT THAT WAS JUST ON THE TARMAC, WASN'T IT?

MS. JONES: CORRECT. WELL, BASICALLY WHAT WE DID WAS WE BORED DOWN THROUGH THE ASPHALT.

MS. BROWN: YOU DID BORE DOWN THROUGH THAT.

MS. JONES: CORRECT. THE LEVEL THAT YOU KNOW JUST THAT I CAN REMEMBER FOR THIS PARTICULAR ONE HERE WAS 675. THE LEVEL TAKEN AT THE SOIL SAMPLE LOCATION NUMBER 8 WHICH REALLY

LOOKS LIKE IT'S ON THE TARMAC BUT ACTUALLY IT'S OFF. THAT PARTICULAR RESULT WAS 425 OR 475.

MS. BROWN: IN OTHER WORDS, 400 PARTS PER BILLION IS CONSIDERED SAFE?

MS. JONES: PARTS PER MILLION, CORRECT.

MS. BROWN: IS CONSIDERED SAFE?

MS. JONES: CORRECT.

MS. BROWN: AND YOU'RE SAYING THAT OVER THERE ON THE RIGHT ON THE SOIL AREA YOU FOUND FOUR HUNDRED AND WHAT?

MS. JONES: 25. IN OTHER WORDS, WE'RE WANTING TO TAKE ALL AREAS THAT HAVE SOIL CONTAMINATION ABOVE 400 AND REMEDIATE THOSE AREAS DOWN TO 400. 400 PLUS.

MS. BROWN: AND THEN THE FRONT AREA THERE WHERE THE TANK USED TO SIT, YOU FOUND WHAT THERE?

MS. JONES: BASICALLY WE WERE GOING ON SAMPLE LOCATION PR-01. AND WHAT WE FOUND THERE WAS 675.

MS. BROWN: THAT'S WHERE THEY PUMPED THE BATTERY ACID OUT OF THE SUMP UP INTO THAT HOLDING TANK.

MS. JONES: CORRECT. WHICH WOULD MAKE

SENSE WHY WE WOULD FIND A LEVEL ABOVE 400 THERE.

MS. BROWN: WAS WAS THAT SUMP TANK THEN UNLINED RIGHT THERE?

MS. JONES: RIGHT HERE OR RIGHT THERE?

MS. BROWN: BETWEEN THE BUILDING WHERE YOU CALL THE WORK SHED.

MS. JONES: OKAY. OVER HERE?

MS. BROWN: YES. IN THERE WHERE THE SUMP TANK WAS LOCATED. WAS IT UNLINED?

MS. JONES: IT WAS AN ASPHALT PAD THERE BUT AT ONE TIME THE SUMP TANK WAS UNLINED. IT WAS LITERALLY AN UNLINED PIT.

MS. BROWN: DID YOU NOT CHECK THAT AREA?

MS. JONES: BASICALLY WE CHECKED THE AREA HERE AND WE BASICALLY USED PR-01 TO TRY TO ESTIMATE TO SEE IF THAT AREA WAS CONTAMINATED. WHAT WE LOOKED AT IN LOOKING AT THE ASPHALT PAD THERE WAS SEVERAL AREAS ON THE ASPHALT PAD WHERE THERE WAS ACTUALLY I GUESS WHAT I WOULD CALL STRESSED AREAS. WHAT I MEAN BY STRESSED AREA IF THERE WAS A SPILL OR IF THERE EVER WAS A SPILL THERE IF THERE WERE ACTUALLY CRACKS IN THE ASPHALT IT WOULD MAKE IT FAIRLY EASY FOR THE CONTAMINATION TO FLOW DOWN TO THE SOIL.

MS. BROWN: AND THE TARMAC IS NOT LIKE ASPHALT. IT'S POROUS TO THE SENSE IT COULD HAVE EVENTUALLY YEARS TO COME WOULD LEACH THROUGH.

MS. JONES: CORRECT. WHICH IS WHAT WE FOUND IN THIS AREA, IN THESE AREAS.

MS. BROWN: IS THIS AREA, WHAT WERE YOUR FINDINGS THERE?

MS. JONES: BASICALLY WE HAD A HIT OF 6500 PARTS PER MILLION.

MS. BROWN: THAT'S WHERE THEY BROUGHT THE TRUCKS IN AND DUMPTED THE BATTERIES SUPPOSEDLY UNDERNEATH THAT SHED.

MS. JONES: OKAY. IN THIS AREA HERE I THINK IT WAS AROUND 525 JUST OFF THE TOP OF MY HEAD.

MS. BROWN: THAT'S WHERE THEY HAD WOODEN CRATES THAT THEY HAD THE GROUND UP BATTERY CASINGS IN.

MR. ROGERS: ALL OF THOSE DATA POINTS ARE IN THE ACTUAL RECORD. I THINK ONE POINT YVONNE TRIED TO EMPHASIZE EARLIER WAS MOST OF THE SAMPLES CAME IN BELOW THAT NUMBER.

MS. JONES: THE MAJORITY OF THEM WERE UNDER 400.

MR. ROGERS: AND IF THERE WERE ANY

RESIDUALS FROM DUMPING AND THAT SORT OF THING FROM LIQUIDS IN BATTERIES AND THAT SORT OF THING YOU WOULD SEE IT WELL ABOVE THOSE LEVELS. WHAT WE SAW THROUGHOUT THE SITE IS RELATIVELY LOW CONCENTRATIONS. PARTIALLY BECAUSE THERE ALREADY WAS A CLEAN UP DONE THERE. WE HAVE IDENTIFIED SOME THINGS THAT FOR THE MOST PART ARE SLIGHTLY ABOVE OUR CLEAN UP GOAL OF 400. THEREFORE WE ARE PROPOSING TO GO OUT AND DO SOME REMEDIATION DEALING WITH THAT. THIS IS -- THE SKETCHED IN AREA IS BASICALLY AN APPROXIMATION AND GUESS OF THE ACTUAL AMOUNT OF CONTAMINATED SOIL BECAUSE AT THIS STAGE WE DON'T HAVE ENOUGH SAMPLES TO TOTALLY QUANTIFY THAT. BUT WE DON'T REALLY NEED TO AT THIS POINT. WHEN WE GO IN THERE TO TRY TO ACTUALLY REMEDIATE IT YOU COULD FURTHER QUANTIFY THOSE STATIONS BETWEEN SAMPLE POINTS TO DETERMINE JUST WHERE DO YOU HAVE CONTAMINATION ABOVE THE 400 AND DEAL WITH THE EXCAVATION AND REMOVAL OR WHATEVER THE REMEDY HAPPENS TO BE. THERE'S ONLY TWO SAMPLES THAT WERE ELEVATED AND ONE OF THOSE COULDN'T BE REPRODUCED.

MS. JONES: CORRECT. WHICH WAS THIS AREA.

MR. ROGERS: BUT IN RELATIVE TERMS

THERE'S A VERY LIGHT CONTAMINATION LEFT AT THIS SITE BASED ON ALL THESE SAMPLE POINTS. AND THEREFORE YVONNE'S GOING TO GO INTO SLIDES TALKING ABOUT CONSIDERATIONS OF DIFFERENT WAYS TO DEAL WITH THIS SITE AND REMEDIATE IT. AND AFTER WE ACTUALLY SIGN THE RECORD OF DECISION WE'LL DO SOME FURTHER ANALYSIS TO FIGURE OUT EXACTLY WHAT SHOULD BE TAKEN OUT AND DEALT WITH AS WE REMEDY IT.

MR. EARLE: I HAVE ONE QUESTION. I THINK I HEARD EARLIER THESE PEOPLE OWNED 20 ACRES, RIGHT?

MS. BROWN: RIGHT.

MR. EARLE: AND MY QUESTION IS THAT EVERYTHING THAT YOU HAVE DONE HAS BEEN DONE AROUND ABOUT THE FIRST ONE POINT SOME ACRES AROUND THE FRONT. THESE PEOPLE HAVE BEEN GOING APPROXIMATELY TWO AND A HALF MILES TO OLDHAM'S GARAGE AND DUMPING ON THE BACK OF HIS PROPERTY. NOW, IF THEY OWN 20 ACRES IF THEY WERE THAT DEVIOUS TO DO IT ON SOMEONE ELSE'S PROPERTY WHY WOULD THEY NOT GO FURTHER BACK IN THOSE WOODS AND DUMP IT ON PROPERTY THAT THEY OWN?

MS. BROWN: THAT'S WHY I ASKED HAD THEY TESTED BACK THERE.

MR. ROGERS: WELL, THAT'S PROBABLY TRUE FOR THE WHOLE NORTHWEST SECTOR OF COLUMBIA. WHAT BASIS DO YOU USE TO GO OUT AND LOOK FOR NEEDLES IN A HAYSTACK? IF THERE'S INFORMATION THAT HE WAS DUMPING SOMEWHERE ELSE USUALLY PEOPLE AROUND THERE KNOW WHAT HE WAS DOING WHEN HE WAS OPERATING. YOU SHOULD GET THAT INFORMATION TO US SO WE CAN PURSUE THOSE TIPS. THERE'S NOTHING IN THE RECORD THAT INDICATES THERE WAS ANY REASON TO BELIEVE HE WENT OUT AND DID ANYTHING ON THE OTHER PARTS OF THE ACRES THAT HE OWNED.

MR. EARLE: WELL, YOU CAN HARDLY SEE HIM IN THE RED TRUCK AND ASK HIM WHERE HE'S GOING?

MR. ROGERS: YES. THAT'S WHAT I'M SAYING THAT'S A WHOLE UNIVERSE. AND THERE WOULD BE NO WAY OF IDENTIFYING WHERE TO START TO LOOK FOR IT. IF THERE WERE SOME KNOWLEDGE THAT SOMETHING ELSE WAS GOING ON YOU CAN PASS THAT BACK TO US AND WE CAN PURSUE IT. BUT THE RECORD AND STATE ACTIVITIES WITH THE STATE AND ANYTHING ELSE FROM THE HISTORY OF THE SITE WOULD INDICATE THAT HIS OPERATIONS AT THE SITE DEALT WITH THE IMMEDIATE AREA THAT WAS INVESTIGATED. AND YES MAYBE HE DID SOMETHING OFF SITE. IF YOU GIVE US

MORE INFORMATION AS TO THAT WE'LL SEE THAT THAT'S LOOKED INTO.

MR. HAYES: THERE'S ONE OTHER THING YOU MIGHT WANT TO REMEMBER ABOUT BATTERY CRACKING OPERATIONS. WE HAVE A LOT OF SUPERFUND SITES THAT ARE BATTERY CRACKING OPERATIONS. THEY WERE CONDUCTING THE OPERATIONS TO RECLAIM THE LEAD. SO THE ACTUAL LEAD PLATES THEY DIDN'T DISPOSE OF. THAT'S WHAT THEY WANTED TO RESELL. THE WASTE WAS ASSOCIATED WITH THE SULFURIC ACID AND THE LIQUID THAT THEY POURED OUT OF IT. AND AT MOST BATTERY CRACKING SITES AND APPARENTLY AT THIS ONE, TOO, THEY JUST DUMPED THAT RIGHT THERE WHERE THEY CRACKED THE BATTERIES. THERE WASN'T ANY POINT IN TAKING THAT WASTE BACK IN THE WOODS AND POURING IT OUT BECAUSE THEY WERE POURING IT OUT RIGHT THERE AT THE SITE. SO WHILE IT IS POSSIBLE THAT THEY CONDUCTED SOME DISPOSAL OPERATIONS ELSEWHERE, IF THIS SITE WAS LIKE MOST BATTERY --

MS. BROWN: IT ISN'T POSSIBLE. THEY DID IT. THEY WERE CAUGHT DOING IT.

MR. HAYES: IF THIS SITE IS LIKE MOST BATTERY CRACKING OPERATIONS THOUGH, THE REAL PROBLEM IS THE WASTE ACID THAT THEY DUMPED RIGHT ON THE SITE.

MS. BROWN: WELL, DHEC CAME TO MY HOME. WE'RE BACK IN THAT PROPERTY. ON THEIR PROPERTY WITHOUT THEIR KNOWLEDGE TO SEE IF THERE WAS ANY POSSIBILITY THAT THEY HAD DUMPED BACK THERE.

MR. ROGERS: TYPICALLY IF THEY WERE TO HAUL OFF THESE CASINGS YOU SHOULD HAVE SEEN EVIDENCE. AS YOU SAID HE DUMPED IT RIGHT THERE. IT WAS JUST DUMPED IN THE CREEK OR IT WAS CONTROLLED IN SOME PIT AND DEALT WITH AT A LATER POINT. IN THAT BUSINESS THE LEAD IS PULLED OUT AND RECYCLED. THEY'RE SENT OFF SITE. ALL THEY'RE DOING IS CUTTING OPEN BATTERY CASINGS AND DRAINING THE LIQUID OUT AND DUMPING IT IN THAT AREA. THE WASTE WAS CONTROLLED TO SOME EXTENT BY SOME TANKS. THE BIGGEST BULK OF WHAT IS LEFT IS THE CASINGS. THOSE PILE UP AND YOU HAVE TO DO SOMETHING WITH THEM. YOU'RE SAYING THEY BURNED THEM.

MS. BROWN: THEY GROUND THEM UP. AND HELD THEM FOR A WHILE. BEFORE THEY DID THAT WHEN DHEC CAUGHT THEM OR AT LEAST WHENEVER I CARRIED THE SAMPLE TO DHEC TO SHOW THEM THAT THEY WERE BURNING DOWN THERE ON THE PROPERTY.

MR. ROGERS: THE ONLY THING THEY WOULD

BE BURNING WAS THE CASINGS. LATER AS THEY TRIED TO CONTROL THE OPERATION WHILE THEY WERE PURSUING PERMITTING THEY PUT THAT IN THE TRUCK AND WERE TAKING IT SOMEWHERE.

MS. BROWN: AND BEFORE THEY TOOK IT OVER THERE THEY WERE PUTTING IT UP IN THAT BIG LONG TANK SITTING ON THE OUTSIDE BECAUSE THEY WERE GETTING MORE THAN THE SUMP TANK WOULD HOLD.

MR. ROGERS: IT'S ALSO CONCEIVABLE IT'S NOT BEYOND THESE PEOPLE TO GO OUT AND JUST DUMP IT IN THE SEWER.

MR. EARLE: ANOTHER QUESTION I KNOW OF THE RED TRUCK AND I KNOW THE RED TRUCK HAS PASSED BY MY HOUSE. IT'S A NICE SIZED TRUCK. IF YOU'RE GOING TO TAKE SOMETHING AWAY FROM YOUR PLACE AND DUMP IT QUITE FRANKLY YOU'D HAVE THE WOODS RIGHT THERE. IT'S THEIR PROPERTY. YOU COULD NOT SEE WHAT WAS GOING ON BEHIND THEIR PROPERTY.

MR. ROGERS: A LOT OF THINGS COULD BE BACK THERE. THERE'S A ROAD BACK INSIDE THE PROPERTY.

MS. BROWN: IS IT POSSIBLE THAT E.P.A. WILL DO ANY TESTING ON THE REST OF THAT ACREAGE?

MR. ROGERS: WE WOULDN'T WANT TO COMMIT TO THAT RIGHT NOW. WE'RE TRYING TO DEAL

WITH THIS SITE, THE KNOWN SITE. I THINK IF WE HAD SOME CONFIRMATION --

MS. BROWN: YOU WERE TALKING ABOUT TRYING TO TURN IT INTO A RESIDENTIAL AREA OR SOMETHING THAT WOULD BE FEASIBLE FOR USE. WHAT WOULD SAY THAT THAT OTHER PART OF THE ACREAGE IS NOT CONTAMINATED, TOO?

MR. ROGERS: ALL WE'RE SAYING IS WE'RE USING CLEAN UP STANDARDS BASED ON POTENTIAL FUTURE USE OF RESIDENTIAL. WE DON'T KNOW WHAT'S GOING TO HAPPEN TO THAT PROPERTY. WE HAVE NO INTEREST IN IT OTHER THAN TO CLEAN IT UP TO WHAT WE FEEL IS A PROTECTIVE LEVEL FOR A REALISTIC FUTURE USE SCENARIO. IT DOESN'T MEAN IT WILL EVER BE USED FOR RESIDENTIAL.

MS. BROWN: PROBABLY WON'T.

MR. ROGERS: LET'S LET YVONNE FINISH AND WE'LL BE MORE THAN HAPPY TO TALK TO YOU AFTERWARDS ABOUT ANY OTHER CONCERNS OR ANY OTHER THINGS YOU MIGHT HAVE.

MS. JONES: TYPICALLY DURING THE FEASIBILITY STUDY WHICH I WILL CAUSE THE FS FOR THE DURATION OF THE MEETING, NORMALLY LOOKS AT SEVERAL ALTERNATIVES IN ORDER TO REMEDIATE CONTAMINATION AT THE SITE. E.P.A. LOOKED AT

THREE ALTERNATIVES. AND THE REASON FOR THAT WAS ONE THE AMOUNT OF CONTAMINATION ON THE SITE WAS CONSIDERED LOW. IN OTHER WORDS, USUALLY IF YOU HAVE APPROXIMATELY 2,000 CUBIC YARDS OF SOIL THEN YOU KNOW YOU'LL PROBABLY LOOK AT LEAVING IT ON SITE. AND IN THIS CASE WE'RE ESTIMATING THAT WE HAVE APPROXIMATELY 1100 CUBIC YARDS OF SOIL. THE THREE ALTERNATIVES THAT WERE LOOKED AT WERE THE FIRST ALTERNATIVE BEING NO ACTION WHICH WOULD LITERALLY BE DOING NOTHING. AND BECAUSE OF THAT WE WOULD BE LEAVING CONTAMINATION ON THE SITE. BECAUSE WE ARE LEAVING CONTAMINATION ON THE SITE WE'D HAVE TO DO LONG-TERM MONITORING OF THE SOIL AND GROUND WATER. AND THAT LONG-TERM MONITORING BEING 30 YEARS. AND OF COURSE THIS IS THE COST ASSOCIATED WITH DOING NOTHING.

MS. BROWN: E.P.A. WOULD BE RESPONSIBLE FOR THE LONG-TERM CHECKING OF THE MONITORING WELLS OR WHATEVER?

MS. JONES: CORRECT. AND AGAIN, YOU WOULD BE LEAVING CONTAMINATION ON SITE. THE SECOND ALTERNATIVE TO BE CONSIDERED WAS LIMITED ACTION WHICH WOULD CONSIST OF DEED RESTRICTIONS ON THE SITE, PUTTING UP A FENCE AND OF COURSE BECAUSE WE ARE LITERALLY STILL LEAVING

CONTAMINATION ON THE SITE WE'D HAVE TO DO LONG TERM MONITORING OF THE SOIL AND GROUND WATER FOR APPROXIMATELY 30 YEARS. AND AS YOU CAN SEE, THE COST ASSOCIATED WITH EITHER ONE OF THOSE IS LESS THAN MAYBE $800,000. IN OTHER WORDS, THE ONLY THING YOU'RE DOING IN THIS PARTICULAR ALTERNATIVE IS PUTTING UP A FENCE AND OF COURSE PUTTING DEED RESTRICTIONS ON THAT SO THAT IT COULD NOT BE USED AS RESIDENTIAL.

THE THIRD ALTERNATIVE WHICH E.P.A. CONSIDERED WAS EVACUATION AND OFF SITE DISPOSAL TO EITHER A NON HAZARDOUS LANDFILL OR A HAZARDOUS LANDFILL. BASICALLY IF THE CONTAMINATION WAS REMOVED OFF SITE YOU WOULD NOT HAVE TO DO LONG-TERM MONITORING OF THE SOIL BECAUSE YOU HAVE REMOVED THE SOURCE LITERALLY. HOWEVER, TO ENSURE THAT WE ARE STILL BEING PROTECTIVE OF THE GROUND WATER WHICH WAS THE CONCERN EARLIER E.P.A. WOULD STILL MONITOR THE GROUND WATER ON AN ANNUAL BASIS FOR FIVE YEARS. BASICALLY THE REASON WHY WE HAVE TWO DIFFERENT COSTS IS IF THE WASTE WINDS UP GOING TO A NON HAZARDOUS LANDFILL THAT COST WOULD BE APPROXIMATELY $241,000. IF THE WASTE WAS TO GO TO A HAZARDOUS LANDFILL -- IN OTHER WORDS ONCE WE --

MS. BROWN: WHERE DO WE HAVE A HAZARDOUS LANDFILL?

MS. JONES: THE ONE THAT WE LOOKED AT I THINK WAS IN DORCHESTER. I'M NOT SAYING THAT'S WHERE THIS WOULD GO. WHAT WOULD HAPPEN IS -- AND THAT'S WHY WE HAVE AN EITHER/OR HERE. BASICALLY WHAT WE DO WHEN WE GO OUT TO THE SITE WE WILL BASICALLY TEST THE SOIL TO SEE IF IT'S CONSIDERED HAZARDOUS OR NON HAZARDOUS. BASICALLY THERE ARE CERTAIN REQUIREMENTS AND CERTAIN LEVELS THAT WE HAVE TO OBTAIN AND THAT LEVEL WILL DETERMINE WHETHER OR NOT IT WILL GO TO A HAZARDOUS OR NON HAZARDOUS LANDFILL.

THE COST ASSOCIATED WITH IT GOING TO A HAZARDOUS LANDFILL IS $940,000 AND THE REASON FOR THAT INCREASE IS WE WOULD NOT BE TREATING IT ON SITE. BUT OF COURSE IN ORDER FOR IT TO GO TO THAT HAZARDOUS LANDFILL THEY WOULD HAVE TO TREAT IT THERE FOR PROPER DISPOSAL.

E.P.A. BASICALLY USES NINE CRITERIA IN EVALUATING THE DIFFERENT ALTERNATIVES. THE FIRST TWO CRITERIA ARE WHAT WE WOULD CALL THE THRESHOLD CRITERIA. BASICALLY THAT CONSISTS OF THE OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT IN COMPLIANCE WITH APPLICABLE AND RELEVANT AND

APPROPRIATE REQUIREMENTS. THESE TWO ARE THE MOST IMPORTANT IN THAT THEY ARE TO ENSURE THAT THAT PARTICULAR REMEDY IS BEING PROTECTIVE OF THE PUBLIC HEALTH AND THE ENVIRONMENT. BASED ON THE EVALUATION, ALTERNATIVE 1 AND ALTERNATIVE 2 WERE RULED OUT. ONE BECAUSE ALTERNATIVE 1 WE WEREN'T GOING TO LITERALLY BE DOING ANYTHING ON THE SITE. WE DO HAVE LEVELS ABOVE 400 PARTS PER MILLION WHICH AS MR. HAYES STATED BEFORE THAT IS CONSIDERED VERY UNSAFE. AND TWO, ALTERNATIVE 2, EVEN THOUGH WE WOULD BE PUTTING UP FENCES AND DEED RESTRICTIONS WE WOULD STILL BE LEAVING CONTAMINATED WASTE ON SITE. ALTERNATIVE 3 IS PROTECTIVE OF THE ENVIRONMENT AND PUBLIC HEALTH.

E.P.A. ALSO USED WHAT WE WOULD CALL BALANCING CRITERIA. WE LOOK AT THE COSTS, HOW EASY IT IS TO IMPLEMENT IT, THE SHORT TERM EFFECTIVENESS, THE LONG-TERM EFFECTIVENESS. IN OTHER WORDS, IS IT GOING TO BE PERMANENT OR IS IT SOMETHING THAT WE'RE GOING TO HAVE TO COME BACK AND CHECK ON AND IF THERE'S STILL A PROBLEM STILL DO SOMETHING. IN ADDITION TO THAT WE ALSO LOOKED AT THE REDUCTION OF TOXICITY, MOBILITY AND THE VOLUME THROUGHOUT THE TREATMENT. AT THIS TIME E.P.A. HAS USED THE FIRST SEVEN OF THE NINE

CRITERIA TO EVALUATE THOSE ALTERNATIVES. THE OTHER TWO CRITERIA CONSIST OF THE STATE ACCEPTANCE WHICH IS CONSIDERATION OF THE STATE'S OPINION OF THE PREFERRED ALTERNATIVE AND THE 9TH CRITERIA IS COMMUNITY ACCEPTANCE WHICH IS THE CONSIDERATION OF PUBLIC COMMENT ON THE PROPOSED PLAN WHICH I'M SURE MANY OF YOU RECEIVED IN THE MAIL.

BASICALLY E.P.A.'S PREFERRED ALTERNATIVE IS ALTERNATIVE 3 WHICH CONSISTS OF EXCAVATION AND OFF SITE DISPOSAL WHICH INCLUDES EXCAVATION OF SURFACE SOILS DOWN TO A LEVEL OF ONE FOOT. AND AGAIN AS I STATED BEFORE AND I GUESS WHICH I WAS SHOWING THE AERIAL MAP OF THE EXTENT OF LEAD CONTAMINATION WE WOULD BE LOOKING AT THOSE AREAS TO REMEDIATE THEM DOWN TO A LEVEL OF 400 PARTS PER MILLION.

AGAIN AT THIS TIME WE DO NOT KNOW WHETHER OR NOT IT WILL BE -- WHETHER THE WASTE WILL BE SENT TO A NON HAZARDOUS WASTE LANDFILL OR A HAZARDOUS WASTE LANDFILL. AT THE TIME THAT WE ACTUALLY GO OUT AND EXCAVATE THE SOIL WILL BE TESTED. AND DEPENDING ON THAT NUMBER -- IN OTHER WORDS, IF YOU KNOW THE SOIL OR LEACHABILITY OF THE SOIL EXCEEDS 5 PARTS PER MILLION FOR LEAD -- AND I

GUESS I SHOULD BACK UP. IN OTHER WORDS, IF YOU HAVE SOIL AND YOU HAVE SOIL I GUESS WITH LEAD CONTAMINATION WITHIN SOIL. WHAT LEACHABILITY MEANS IS JUST THE ABILITY OF LEAD TO LEACH THROUGH THE SOIL FARTHER DOWN AND JUST BE MOBILE AND LEACH TO GROUND WATER. THAT'S REALLY WHAT LEACHABILITY MEANS.

AND I GUESS AT THIS TIME THAT WOULD CONCLUDE I GUESS OUR ALTERNATIVES. I GUESS NOW IS A GOOD TIME FOR QUESTIONS.

MS. ANDERSON: I'M JUST WONDERING WHY THEY OPENED THE GATE THERE.

MS. JONES: WHY THEY OPENED THE GATE?

MS. ANDERSON: YES.

MS. BROWN: WHY THE GATE IS OPEN NOW.

MR. NEILSEN: IT'S BEEN OPEN FOR ABOUT THREE WEEKS. I THOUGHT SOMEONE WAS IN THERE WORKING OR SOMETHING BECAUSE THE GATE IS ALWAYS OPEN.

MS. JONES: I DON'T THINK SO. I DON'T THINK WE'VE BEEN ON SITE.

MR. NEILSEN: IT'S BEEN OPEN FOR THREE WEEKS. FOUR WEEKS AGO WE WALKED BY AND IT WAS CLOSED. AND THEN THREE WEEKS AGO WE WALKED BY AND IT WAS OPEN. AND IT'S BEEN OPEN EVER SINCE.

MS. HICKS: EVEN WHEN THEY WAS REPAIRING THE BRIDGE THE GATE WAS OPEN.

MS. JONES: I GUESS SOMETHING THAT I DID NOTICE REALLY EVEN THOUGH WE HAVE THAT GATE THERE AS EVERYONE PROBABLY KNOWS RIGHT NOW ANYONE CAN WALK ON THAT SITE. I'M NOT REALLY FOR CERTAIN THAT --

MR. NEILSEN: IT'S NOT A SECURE SITE.

MS. BROWN: IT MAINLY STOPS CARS FROM GOING IN THERE.

MR. ROGERS: WHEN WE FIRST GOT INVOLVED IN THE SITE ONE OF THE CONCERNS WAS THE OPEN PIT IN WHERE THE SCALES USED TO BE. AND THE FACT THAT PEOPLE HUNG OUT IN THERE. SO ONE OF THE EFFORTS THAT WE DONE WAS TO GO IN AND TEST WHAT WAS IN THE PIT TO MAKE SURE THERE WASN'T ANYTHING HAZARDOUS IN THERE AND TO BACK FILL THE HOLE. WE ALSO PUT THAT GATE ACROSS THERE AND DECIDED NOT TO FENCE THE SITE BECAUSE WE DIDN'T KNOW HOW LONG THE FENCE WOULD STAY THERE BECAUSE WE ASSUMED SOMEBODY WOULD TAKE IT. AND IT'S NOT THE MOST DESIRABLE PLACE TO HANG OUT. AND AS BERNIE WAS TALKING ABOUT SOMEBODY WALKING ON THAT SITE DOESN'T EXPERIENCE AN UNACCEPTABLE HEALTH RISK WITH INFREQUENT TRESPASSING IS WHAT WE CALL

IT. THAT'S LEGALLY WHAT IT IS. BUT WE HAVEN'T TAKEN ANY OTHER MEASURES BECAUSE NOW THAT WE'VE BEEN THROUGH THE REMEDIAL INVESTIGATION AND FOUND OUT WHAT IS TRULY AT THE SITE AND LOOKED AT THE RISK ASSESSMENT APPROACH WE DON'T FEEL LIKE THERE'S ANY CURRENT EXPOSURE ROUTE UNLESS YOU STUCK SOMEBODY OUT THERE AND THEY BASICALLY LIVED OUT THERE AND PLAYED IN THE SOIL. SO I THINK I'M LESS CONCERNED ABOUT WHETHER THEY CAN WALK AROUND THE GATE VERSUS WHY IS THE GATE OPEN. AND THEY CAN GO BY TOMORROW AND CHECK AND SEE WHY IT'S OPEN AND WE CAN PUT A PADLOCK BACK ON. BUT WE MIGHT WANT TO LOOK INTO WHY SOMEBODY IS IN THERE AT ALL.

MS. JONES: ONE QUICK THING THAT I NEED TO ADD, AGAIN THIS IS E.P.A.'S PREFERRED ALTERNATIVE. AND AS I STATED BEFORE YOU KNOW BEFORE FINALIZING ANYTHING WE WOULD TAKE COMMENTS FROM THE STATE AND ALSO COMMENTS FROM THE CITIZENS TO SEE HOW DO YOU FEEL. DO YOU FEEL COMFORTABLE WITH THIS ALTERNATIVE. AS EVERYONE PROBABLY KNOWS THE COMMENT PERIOD STARTED ON NOVEMBER 22ND AND AS OF RIGHT NOW IT WOULD BE CONTINUED THROUGH DECEMBER 22. IF AN EXTENSION HAS NOT BEEN REQUESTED BY THAT TIME E.P.A. WILL

BASICALLY MOVE TOWARDS WHAT WE WOULD CALL A RECORD OF DECISION. BASICALLY WHAT THAT IS IS A DECISION AS TO WHAT REMEDY WILL BE USED TO REMEDIATE THE SITE. AS CYNTHIA STATED EARLIER AN EXTENSION CAN BE REQUESTED AT ANY TIME DURING THE PUBLIC COMMENT PERIOD.

MR. MOSSER: MY NAME IS GLEN MOSSER. I LIVE ABOUT FOUR MILES FROM THE SITE. AND I WANT TO SAY THAT I AGREE WITH YOUR ALTERNATIVE AND I APPRECIATE THE GOVERNMENT'S CONTINUING TO FOLLOW THIS THING THROUGH TO A SATISFACTORY CONCLUSION FOR US. I'VE GOT A COUPLE OF QUESTIONS THOUGH. IF YOU DON'T HAVE ANY EXTENDED COMMENT PERIOD AND YOU DECIDE TO GO AHEAD WITH THIS ALTERNATIVE WHEN WOULD THE WORK BEGIN, HOW LONG WOULD IT TAKE AND WOULD THERE BE ANY EXPOSURE TO THE PEOPLE THAT LIVED IN THE IMMEDIATE AREA AND SPECIFICALLY ACROSS THE STREET AND UP THE HILL WHILE THIS WAS BEING DISLODGED AND LOADED IN TRUCKS AND SOMEBODY WAS TALKING ABOUT WIND BLOWING AND CREATING DUST. IS THERE ANY HAZARD TO THE FOLKS WHILE THE REMEDIATION IS GOING ON?

MS. JONES: I GUESS THE FIRST PART OF YOUR QUESTION AS FAR AS WHEN WOULD THE WORK TAKE PLACE OR A HOW LONG WOULD IT TAKE PLACE,

BASICALLY AS WE TALKED ABOUT EARLIER THERE ARE POTENTIALLY RESPONSIBLE PARTIES WHICH WE WILL HAVE TO NOTICE UPON THE SIGNING OF THE RECORD OF DECISION. AT THAT TIME THEY ARE GIVEN A CERTAIN TIME LIMIT TO ACTUALLY DETERMINE WHETHER OR NOT THEY WOULD LIKE TO CONDUCT THE CLEAN UP THEMSELVES OF COURSE WITH E.P.A.'S OVERSIGHT OR WHETHER OR NOT THEY DO NOT WANT TO CONDUCT IT. TYPICALLY NEGOTIATIONS WHICH IS WHAT WE WOULD CALL THAT MAY LAST ANYWHERE FROM -- REALLY JUST DEPENDS ON THE PARTIES THAT YOU'RE WORKING WITH. BUT YOU KNOW AT LENGTH YOU'RE PROBABLY LOOKING AT A THREE TO FOUR MONTH TIME PERIOD BEFORE THAT WOULD BE WORKED OUT.

AS FAR AS THE ACTUAL WORK BEING DONE ON THE SITE YOU PROBABLY WILL NOT SEE THAT DUE TO ITS A BEHIND THE SCENES PROCESS GOING ON. YOU PROBABLY WOULDN'T SEE THAT UNTIL MAYBE EARLY -- LATE SUMMER OR EARLY FALL. IT REALLY JUST DEPENDS ON THE OUTCOME OF THAT.

MR. ROGERS: THERE'S A LOT OF UNKNOWNS IN THERE. THE ENFORCEMENT ISSUE WE WOULD HAVE TO BY LAW PURSUE IF THERE ARE VIABLE PARTIES OUT THERE. IT MAY BE THEY JUST WON'T WANT TO TALK TO US OR WHATEVER. THAT COULD TAKE UP A SMALL PART

OF TIME OR A LONG PERIOD OF TIME. IF WE DO THE WORK WE ARE GOING TO HAVE TO HAVE A DESIGN CONTRACTOR COME IN AND DO A LITTLE DESIGN WORK TO BETTER IDENTIFY THE AREA THAT NEEDS TO BE EXCAVATED. THAT WILL BE WORKED OUT IN THE DESIGN. WE TRY TO STREAMLINE THAT AND SHORTEN IT BUT IT JUST TAKES A COUPLE OF MONTHS TO GET THOSE TYPES OF CONTRACTORS IN ORDER TO ENSURE WE GET THE BEST PRICE AND THEN PURSUING IMPLEMENTATION. IT REALLY CAN BE DONE IN A COUPLE OF WEEKS. IT'S NOT A BIG JOB. BUT DURING THAT TYPE OF WORK WHICH IS WHAT I DID FOR FIVE YEARS IN THE AGENCY, YOU CAN DO FOGGING TO DO DUST CONTROL SHOULD THERE BE CONCERN OF THINGS BLOWING OFF SITE WHILE YOU'RE DOING EXCAVATION. SO THERE'S REALLY SIMPLE TECHNIQUES FOR CONTROLLING THAT DURING THE EXCAVATION. THE ONLY CONCERN WOULD BE SOME KIND OF WIND TRANSPORTING IT DURING THE EXCAVATION AND HAULING IT OUT.

MR. MOSSER: CAN I MAKE ONE OTHER COMMENT? I THINK PART OF THE PROBLEM DEALING WITH STATE GOVERNMENT AND LOCAL GOVERNMENT AND FEDERAL GOVERNMENT, PART OF THE COMMUNITY'S CONCERN WAS THAT WE THOUGHT IT WAS A BAD SITUATION TO START WITH AND TRIED TO GET THE

AUTHORITIES TO AGREE WITH US AND THEY JUST SORT OF RAN OVER US AND WE WOUND UP BEING A SUPERFUND SITE. THAT'S ONE OF THE REASONS WE'RE NOT REAL COMFORTABLE WITH THE GOVERNMENT'S APPROACH TO THINGS. BUT YOU BRING UP A POINT THAT I AS A CONTRACTOR WOULD HAVE A CONCERN OR ANY OTHER OF US WHO ARE NOW USING RECYCLING CENTERS AND TAKING OIL TO THESE COLLECTION PLACES. WHAT YOU'RE REALLY SAYING IS THAT THIS OPERATION AT ONE TIME WAS DEEMED TO BE ACCEPTABLE AND DESIRABLE TO RECYCLE THINGS.

MR. ROGERS: NO.

MR. MOSSER: MY QUESTION IS IS THERE GOING TO BE A POINT IN TIME WHEN THE GOVERNMENT IS GOING TO COME BACK TO ME BECAUSE I PUT FIVE QUARTS OF OIL IN A RECYCLING CENTER SOMEWHERE AND THIS STUFF IS BACK. WE WANT YOU TO HELP CLEAN IT UP NOW.

MR. ROGERS: THAT'S TWO QUESTIONS. THE FIRST ONE IS NO. THE SECOND ONE IS I DON'T KNOW. WE DO HAVE THAT PROBLEM WITH RECYCLING. SOME OF THEM GO UNDER. IT'S A PROBLEM THAT UNFORTUNATELY THIS OCCURRED IN THE EARLY '80S. THE GOVERNMENT WASN'T DOING A WHOLE LOT TO CONTROL THAT KIND OF OPERATION BACK THEN. THERE

WERE A LOT OF GOOD INTENDING FACILITIES THAT DID MARGINAL WORK IN THEIR HARDWARE INVESTMENTS, THEIR CAPITAL INVESTMENTS AND ENDED UP FOLDING. AND YOU CAN SPECULATE AS TO WHY. THEY'RE FLY-BY-NIGHT OR DIDN'T HAVE ANY BETTER GUIDANCE. THERE'S A WHOLE LOT MORE CONCERN ABOUT REGULATION IN THAT MATERIAL AND THOSE RECYCLING CENTERS TODAY SUCH THAT EVERYBODY WAS ON THE BAND WAGON TO RECYCLE A YEAR AGO. NOW WE'RE FINDING THAT WE'RE ACCUMULATING THINGS THAT THERE IS NO MARKET TO RECYCLE. RECYCLERS ARE CUTTING BACK ON THE MATERIAL THEY WANT TO TAKE BECAUSE OF LIABILITY, BECAUSE OF THE INABILITY TO MAKE ANY MONEY OFF OF IT. WASTE OIL HAS BEEN A PROBLEM FOR AT LEAST FIVE YEARS BECAUSE OF CONTROLS ON THE PRICES THEY COULD CHARGE FOR THE OIL WHEN IT WAS RECYCLED AND THEY DID GENERATE A LARGE AMOUNT OF WASTE, FAIRLY TOXIC WASTE, IN RECYCLING WASTE OIL. AND YES, WE GENERALLY AVOID GOING AFTER INDIVIDUALS WHO ARE RECYCLING. BUT THAT'S ONE OF THE CONTROVERSIES OF THE SUPERFUND. IT'S A RETROACTIVE LAW THAT GOES BACK TO AND TRIES TO GO AFTER ANYBODY WHO GENERATED OR TRANSPORTED OR COOPERATED WITH IN ANY WAY THAT FACILITY. THAT'S PROBABLY GOING TO CHANGE IN THE NEAR FUTURE. THE INDIVIDUAL IS NOT

A MAJOR CONCERN IF YOU'RE GOING TO A RELIABLE COMPANY. BUT YOU WOULDN'T JUST GIVE STUFF TO SOMEBODY THAT GOES DOWN THE ROAD AND ASSUME YOU'RE DOING THE RIGHT THING. THEY NEED TO LOOK LIKE A RELIABLE COMPANY WITH REASONABLE INVESTIGATION ON YOUR PART. THIS SITE WAS NEVER SANCTIONED BY THE ENVIRONMENTAL AGENCIES. IT'S STARTED ON ITS OWN. IT APPROACHED DHEC FOR A PERMIT TO DISCHARGE AND WAS REFUSED A PERMIT AND NEVER WAS A PERMITTED FACILITY.

MS. BROWN: IT NEVER WAS PERMITTED?

MR. ROGERS: NO, THEY NEVER WERE.

MS. BROWN: THEY DIDN'T GET THE FIRST ONE, LET ALONE THE LAST ONE.

MR. ROGERS: SO YOU CAN'T REALLY SAY --

MR. MOSSER: IT WAS NOT EFFECTIVELY SHUT DOWN.

MR. ROGERS: UNFORTUNATELY THE LAWS DON'T GIVE US DICTATORIAL AUTHORITY. AND IN FACT THE STATE WENT IN AND DID A LOT OF THINGS. THE STATE TOOK ACTION EARLY ON. IT DID A SIGNIFICANT AMOUNT OF CLEAN UP. I WORKED IN THE EMERGENCY RESPONSE PROGRAM FOR DHEC MANY YEARS. WE WENT OUT. BUT THERE WAS INABILITY FOR YEARS

TO COME UP WITH HOW CLEAN IS CLEAN. THE RISK ASSESSMENT APPROACH DOES THAT BUT IT'S A VERY COMPLICATED AND LABORIOUS APPROACH THAT HAS TO BE GONE THROUGH ON THE REMEDIATION SIDE TO FIGURE OUT WHAT'S LEFT. WHAT WE'RE SAYING IS YOU HAVE RELATIVELY LOW CONTAMINATION OUT THERE WHICH IS WHY I WOULDN'T GET TOO EXCITED ABOUT DUST BLOWING ACROSS THE STREET. IT BARELY ABOVE FOR THE MOST PART OUR CLEAN UP GOAL OF 400. BUT WE DID HAVE A COUPLE OF HITS AND ONE OF WHICH WE CAN'T REPRODUCE. SO THERE'S VERY SPORADIC CONTAMINATION.

MS. BROWN: YOU COULDN'T GO BACK IN THE SAME SPOT AND GET THE SAME AMOUNT AGAIN?

MR. ROGERS: OUT OF THE ROAD SIDE DITCH WE COULD NOT WHICH TELLS YOU THERE'S VERY SPORADIC CONTAMINATION OUT THERE. BUT TO BE ON THE SAFE SIDE WHEN WE WENT BACK AGAIN AND LOOKED AT THE SITE THERE WAS A RELATIVELY HIGH HIT AND WE BASICALLY DECIDED THAT IT THREW OUR AVERAGE UP HIGH ENOUGH THAT WE SHOULD GO IN AND DO SOME REMEDIATION OF THE SOIL. AT ONE POINT IN TIME WE THOUGHT THIS SITE WAS A NO ACTION SITE BECAUSE IT IS MARGINALLY CONTAMINATED ABOVE WHAT WE WOULD CONSIDER A SAFE LEVEL.

MR. MOSSER: JUST A POINT OF INFORMATION, IS YOUR REASONING FOR NOT DELINEATING ANYTHING ON THE DEED OR TALKING ABOUT RESTRICTIONS INDIFFERENT TO THE PROPERTY OWNERS AROUND THE SITE? IF SOMEWHERE DOWN THE ROAD IT DEVALUES THEIR PROPERTY BECAUSE YOU GOT THIS.

MR. ROGERS: NO. WE'RE CHARGED WITH CLEANING IT UP TO A SAFE FUTURE USE SCENARIO. A REASONABLE FUTURE USE SCENARIO. WHAT WE'RE USING IS FUTURE RESIDENTIAL BECAUSE IT'S NOT BEYOND IMAGINATION THAT THAT SITE GOES MORE RESIDENTIAL THAN COMMERCIAL. MY ARGUMENT FOR THE SPECIFIC SITE IS IT'S A LITTLE LESS OBVIOUS FOR THAT SITE BECAUSE MOST PEOPLE AREN'T GOING TO SPEND THE MONEY TO BUILD A HOUSE AND FILL IN WHEN YOU CAN GO RIGHT UP THE ROAD AND BUILD A HOUSE OVER THERE. SO YOU KNOW IT'S -- WE'RE USING FUTURE RESIDENTIAL BECAUSE THE AREA COULD GO RESIDENTIAL. NOT THE MOST LIKELY THING THAT WILL EVER HAPPEN.

MR. HAYES: PLUS REMEMBER THAT THE DEED RESTRICTION WAS PART OF THE ALTERNATIVE THAT DIDN'T INVOLVE ANY SITE CLEAN UP. SINCE WE'RE PROPOSING TO CLEAN THE SITE UP IF WE DO THERE WON'T BE ANY NEED FOR DEED RESTRICTIONS. THE

SITE COULD REALLY BE USED FOR ANY PURPOSE.

MR. ROGERS: THE REASON WE AVOID DEED RESTRICTIONS ON THE CLEAN UP SITE IS IT'S MORE PROTECTIVE AND WE'RE NOT GOING TO ENSURE THOSE DEED RESTRICTIONS AND IN THIS CASE WE CAN JUST GO IN AND REMEDIATE THE SITE AND DEAL WITH IT. THERE'S NO REASON TO NEED THE DEED RESTRICTIONS OTHER THAN THE PLACE WILL ALWAYS BE IDENTIFIED AS HAVING BEEN A HAZARDOUS WASTE SITE AND THAT IN AND OF ITSELF TAINTS IT. BUT FOR ALL PRACTICAL PURPOSES IT WILL BE CLEAN. THAT'S THE EXTENT OF WHAT WE'RE TRYING TO DO. AND WE REALLY ARE IN NO WAY TAXED BY THE LAW TO GET INVOLVED IN ZONING OR REHAB OF THE PROPERTY VERSUS JUST CLEANING IT UP FOR A SAFE CLEAN UP.

MS. BROWN: THE PEOPLE THAT OWNED IT PLUS THE PEOPLE THAT'S BACKED IT ARE THEY GOING TO BE ABLE TO BE FORCED TO PAY?

MR. ROGERS: WE CERTAINLY PURSUE ALL THOSE. BUT IN ORDER TO GET THINGS MOVING WE DO QUICK SEARCHES TO FIGURE OUT WHO COULD BE LIABLE AND WE DO NEGOTIATIONS. WE START USING FEDERAL MONEY TO PURSUE IT. ANY TIME WE SPEND FEDERAL MONEY WE ALWAYS TRY TO GET IT BACK FROM ANYBODY WHO HAS INVOLVMENT IN THE SITE. BUT WE START

WITH THE PROCESS. WE FINISH THE RI/FS WHEN WE COULD HAVE SPENT TWO YEARS MESSING AROUND WITH TRYING TO NEGOTIATE AND FIND PEOPLE.

NOW BY THIS POINT IN TIME WE'VE USUALLY SPENT THE LAST TWO YEARS DOING MORE THOROUGH PRP SEARCHES SO THAT WE'RE READY TO DO NEGOTIATIONS AND DEAL WITH THOSE ISSUES AS WE SIGN THE RECORD OF DECISION AND WANT TO START PURSUING DESIGN AND IMPLEMENTATION. WE DO HAVE A FAIRLY LENGTHY LIST OF NAMES. ONE OF THE PROBLEMS IS USUALLY DOCUMENTATION IS NOT VERY GOOD. AND MOST OF THOSE PEOPLE WERE VERY --

MS. BROWN: WHY NOT?

MR. ROGERS: THESE ARE RECORDS THAT WE JUST FIND. THERE'S NOT GREAT RECORDS FROM WHO SPENT WHAT WHERE. THE S.B.A. STILL HAS A LARGE CHUNK.

MR. MOSSER: BUT THE PEOPLE WHO TOOK THE BATTERIES OUT OF THE CARS AND SENT THEM OVER THERE ARE THE ONES THEY'RE GOING TO GO LOOKING FOR.

MR. ROGERS: WE HAVE AVOIDED THAT FOR OBVIOUS REASONS.

MS. BROWN: BUT THERE WAS SEVERAL COMPANIES THAT WERE BACKING THIS.

MR. ROGERS: ULTIMATELY WE WILL SPEND THE MONEY TO TAKE ACTION SHOULD WE NOT BE ABLE TO GET SOMEBODY ELSE TO DO IT. WE'RE NOT GOING TO ARGUE IN COURT FOREVER. WE'RE GOING TO GO AHEAD AND START THE WORK. WE CAN ALWAYS GO BACK AND PURSUE RECOVERY OF THE MONEY. IN ALL CASES WHERE WE SPENT MONEY A SIGNIFICANT REVIEW OF THE RECORD IS MADE TO DETERMINE WHETHER OR NOT THERE IS ANYONE TO GO BACK AND PURSUE FOR THOSE COSTS.

MS. BROWN: I NOTICE THEY SAY YOU CAN'T GET BLOOD OUT OF A TURNIP. I'M ONE WHO THINKS THOSE PEOPLE OUGHT TO BE MADE TO PAY FOR THIS.

MR. ROGERS: WE'LL HAVE TO FOLLOW THE LEGAL PROCEDURES AND WHERE WE CAN GO AFTER THEM WE'LL GO.

MR. FOGLE: I'VE GOT A FEW QUESTIONS. JOHN VOGLE. MY FIRST QUESTION IS WHO IS THE DEED, HOLDS THE DEED TO THAT PROPERTY AT THIS TIME? WHO IS THE RESPONSIBLE PARTY?

MR. ROGERS: WELL, THERE'S A LOT OF PRP'S BUT WHO HOLDS THE DEED, WE'VE GOT AN ATTORNEY WORKING ON THAT NOW.

MR. FOGLE: THE QUESTION THAT I HAVE IS IF THAT PERSON WHETHER IT BE A BANK OR AN

INDIVIDUAL OR WHATEVER, HAVE THEY BEEN ASKED TO ATTEND THESE MEETINGS AND WHY DIDN'T THEY ATTEND THEM?

MS. JONES: I DON'T THINK WE CAN FORCE PEOPLE -- PLEASE CORRECT ME IF I'M WRONG -- TO ATTEND.

MR. FOGLE: I DON'T THINK FORCING --

MS. JONES: YOU'RE TALKING ABOUT THE NEGOTIATIONS?

MR. ROGERS: THE QUESTION IS WHETHER WE NOTICED ANYBODY WHO IS A PRP ABOUT THE MEETING.

MS. JONES: YES, WE DID. WE DID SEND THEM THE PROPOSED PLAN OF ACTION.

MR. FOGLE: AND THEY NEGLECTED OR DECLINED TO ATTEND AS FAR AS I KNOW. NOBODY IN HERE IS GOING TO LAY CLAIM TO THAT.

MS. PEURIFOY: WE CAN'T SAY THAT WE ACTUALLY NOTICED WHO OWNS THE PROPERTY RIGHT NOW. WE DID HAVE A LIST OF POTENTIALLY RESPONSIBLE PARTIES.

MR. FOGLE: WELL, I'M NOT CONCERNED WITH THEM. I THINK YOU ALREADY KNOW WHO THEY ARE. I THINK THE PEOPLE -- IF IT WAS FINANCED THROUGH THE BANK AND IT WAS DECLARED IN A

BANKRUPTCY IT'S GONE INTO RECEIVERSHIP. WHAT I WANT TO KNOW IS WHO AFTER THIS IS OVER WITH IS GOING TO HOLD THE DEED TO THAT PROPERTY.

MS. JONES: IN OTHER WORDS YOU WANT TO KNOW IF IT IS A BANK WHICH BANK IS HOLDING IT?

MS. BROWN: THAT'S RIGHT.

MR. FOGLE: AND THE REPLY TO -- WHAT I WOULD LIKE TO KNOW IS WHY AREN'T THEY REPRESENTED? IF I COULD HAVE A NAME I WOULD CALL THEM AND ASK THEM. YOU KNOW? I THINK THAT THEY OWE AN OBLIGATION TO THIS COMMUNITY TO GET INVOLVED IN THIS PROGRAM. THAT IT HAS BEEN TOTALLY CARRIED BY A FEW PEOPLE IN THIS COMMUNITY. AND FINALLY ARRIVED AT THIS POINT WHERE THEY ARE. THE OTHER QUESTION IS UP TO THIS POINT FROM HERE ON IF YOU SPEND THE MAXIMUM AMOUNT YOU'RE GOING TO SPEND $900,000. HOW MUCH HAVE YOU SPENT UP TO THIS POINT? AND MY QUESTION TO THE STATE REPRESENTATIVES OVER THERE IS HOW MUCH HAVE YOU SPENT UP TO THIS POINT? ARE WE AT A PLACE OF TWO MILLION, THREE MILLION, FOUR MILLION DOLLARS ON 1.5 ACRES?

MS. JONES: AS FAR AS THE RI/FS AND BASED ON THE DATA -- AND THIS IS JUST AN ESTIMATE BECAUSE EVEN NOW WE ARE INCURRING COSTS BUT I

THINK IT WAS APPROXIMATELY $524,000. THAT CONSISTS OF ALL THE INVESTIGATION THAT WAS DONE PRIOR TO EVEN GETTING SITE RANKED ON THE NATIONAL PRIORITY LIST. ACTUALLY THERE WERE TWO. THEY WENT BACK AND REVISED IT. SO APPROXIMATELY THAT'S THE COST.

MR. ROGERS: A DECENT CHUNK OF THAT WAS SPENT JUST TO GET IT ON THE NPI.

MS. JONES: RIGHT. JUST TO RANK IT.

MR. ROGERS: I FORGET THE COST OF THE STUDY BUT THE RELATIVE COSTS OF THE STUDY WERE TRIED TO BE KEPT TO A MINIMUM.

MS. BROWN: HE'S NOT TALKING ABOUT THE COST OF THE STUDY. HE'S TALKING ABOUT THE CLEAN UP.

MR. FOGLE: WELL, I'M TALKING ABOUT THE TOTAL. JUST LEAVING IT THERE YOU ARE RIGHT NOW CLOSE TO 1.5 MILLION DOLLARS. I'M TALKING ABOUT JUST THE FEDERAL SUPERFUND SITE WHAT THE FEDERAL GOVERNMENT HAS TIED UP IN IT. WORST CASE IT WOULD BE 1.5 MILLION DOLLARS, THEREABOUTS GIVE OR TAKE A COUPLE HUNDRED THOUSAND. WE CAN TALK ABOUT THAT. I WOULD LIKE TO KNOW IF ANYONE FROM THE STATE HAS AN IDEA -- THEY REMOVED SOIL. THEY DID TESTING. THEY SPENT TIME. WOULD YOUR

ESTIMATE BE THAT YOU SPENT ANOTHER $500,000 AT THAT SITE?

MR. STEWART: WE WERE JUST DISCUSSING WHETHER IT WAS THE STATE WHO SPEND THE MONEY OR WHETHER THE STATE OVERSAW THE COMPANY ACTUALLY DO SOME OF THE EXCAVATION. THE ONES OF US HERE TONIGHT AREN'T SURE. I CAN TELL YOU FOR SURE IT WOULD HAVE BEEN MUCH LESS THAN $500,000.

MR. ROGERS: THAT CLEAN UP WAS DONE IN CHEAP TIMES. THE MID '80S.

MR. STEWART: I WOULD SAY PROBABLY LESS THAN $500,000.

MR. FOGLE: I THINK THAT EVERYBODY SHOULD TAKE A LESSON FROM THIS. WHEN THEY SEE SOMETHING LIKE THIS GOING ON AND THEY'VE GOT A QUESTION YOU KNOW WE NEED TO GET INVOLVED WITH THESE STATE FOLKS AND FEDERAL FOLKS. YOU KNOW SOMEWHERE IN HERE I WOULD BE CONVINCED THAT TWO MILLION DOLLARS HAS BEEN SPENT ON 1.5 ACRES. I HAVE 1.5 ACRES I'LL LET YOU HOLD FOR TWO MILLION DOLLARS TONIGHT.

MS. BROWN: THE PEOPLE THAT OWNED IT DOWN THERE HAD A MILLION DOLLAR INSURANCE POLICY ON THE PROPERTY FOR SUCH --

MR. ROGERS: UNFORTUNATELY FROM WHEN

WE FIRST STARTED WORKING ON THE SITE UNTIL NOW THE COST OF CLEANING UP THE SITE IS MUCH MORE SIGNIFICANT. I WOULD GUESS THE STATE CLEAN UP WOULD HAVE BEEN $50, 100,000. NOW, IT'S HARD TO SAY. ONE OF THE THINGS ON THE DISPOSAL LIST MY GUESS FROM HAVING CLEANED UP SITES OVER THE YEARS THAT SOIL WOULDN'T BE CONSIDERED HAZARDOUS WASTE BECAUSE OF THE LEACHABILITY TEST AND THEREFORE IT WILL GO TO AN INDUSTRIAL GRADE LANDFILL. IT WON'T GO TO A MUNICIPAL LANDFILL I DON'T BELIEVE. BUT THERE ARE SOME INDUSTRIAL LANDFILLS THAT ARE AROUND AND MORE SECURE AND APPROPRIATE FOR THAT KIND OF MATERIAL AT A MUCH SIGNIFICANTLY REDUCED COST.

MR. GRANT: WHAT DO YOU HAVE TO DO --

THE REPORTER: I CAN'T HEAR BACK HERE.

MR. ROGERS: HIS QUESTIONS WAS WHAT DO YOU HAVE TO DO TO DECONTAMINATE THE SOIL THAT HAS LEAD IN IT. THERE'S REALLY SOME REAL SOPHISTICATED TECHNOLOGIES THAT ARE INVOLVED THAT AREN'T APPROVED TO WORK IN THE FIELD YET WHERE YOU ACTUALLY WASH THE EXCAVATION AND THEN DISPOSE OF IT. WE DON'T REALLY USE A LOT OF THAT YET. SO WHAT YOU WANT TO SEE HAPPEN IS THE SOIL IS SHIPPED TO A DISPOSAL FACILITY AND IF IT DOES

EXCEED THE CHARACTERISTIC LEACHABILITY TEST THEN IT MIGHT VERY WELL HAVE TO BE DEEMED HAZARDOUS. IT DOESN'T MOVE IN WATER. IT'S NOT GOING ANYWHERE. WE'VE DONE THAT WHERE IT'S APPROPRIATE AT SOME SUPERFUND SITES AND WE'VE ALSO TAKEN IT OFF SITE. YOU JUST TAKE IT OFF AND LANDFILL IT. YOU MENTIONED INCINERATION. INCINERATION DOESN'T WORK ON METALS. THEY JUST BLOW OUT THE STACK. SO THAT WOULDN'T BE APPROPRIATE.

MS. BROWN: WHAT'S PROZZOLAN, HOW WOULD IT STABLIZE LEAD?

MS. JONES: BASICALLY IT'S PRETTY MUCH THE SAME OR SAME TYPE OF TEXTURE AS CONCRETE. IT'S NOT LITERALLY THE SAME AS THIS CONCRETE.

MS. BROWN: BUT IT STABLIZES THE LEAD SO IT WON'T FLOW?

MR. ROGERS: IT MAKES IT SO IT'S NOT SOLUABLE AND CAN'T LEACH.

MR. MOSSER: I MOVE WE ADJOURN.

MR. STEWART: A COUPLE PEOPLE MENTIONED THINGS ABOUT PRIVATE WELLS. ARE THERE ANY PEOPLE HERE WHO ARE CURRENTLY DRINKING WELL WATER? IF WE CAN HAVE YOUR NAMES AFTERWARDS, ADDRESS AND PHONE NUMBER. DHEC CAN COLLECT SAMPLES FROM PRIVATE WELLS AND HAS THEM ANALYZED.

MR. HICKS: I APPRECIATE THAT. BECAUSE I'D LIKE TO KNOW.

MR. MOSSER: HOW ABOUT THE GENTLEMAN HERE THAT'S CONCERNED ABOUT HIS CHILDREN AND THE LEAD CONTENT AND WANTING THEM RETESTED. A SIMPLE PHYSICIAN CAN DO THAT WITH A BLOOD TEST.

MS. HOLLIS: I'M ELIZABETH HOLLIS. AND DHEC DID SEND A NURSE OUT TO COLLECT THE BLOOD SPECIMENS OF THE CHILD IN THE COMMUNITY AT THAT TIME. I THINK IT WOULD BE A GOOD IDEA AS A FOLLOW-UP SUMMARY IF THIS IS GOING TO BE RESOLVED IN ANY WAY TO FOLLOW-UP ON THOSE CHILDREN OR PROBABLY I'M SURE NOW ADULTS WHO HAD THESE LEVELS DRAWN.

MS. BROWN: DHEC DOES HAVE THAT RECORD AT THE DHEC OFFICE.

MR. ROGERS: THAT'S AN APPROPRIATE FUNCTION OF DHEC. WE DON'T LIKE TO SPEAK FOR THEM. THERE'S SOME THINGS WE CAN PURSUE AND TALK ABOUT TO THAT END. OBVIOUSLY THE EXPOSURE OF BURNING BATTERIES AND DOING OTHER THINGS WAS OCCURRING THEN AT ITS MAXIMUM EXTENT AND IF THEY DID BLOOD WORK THEN YOU SHOULD HAVE SEEN SOME ACCUMULATION THEN.

MS. BROWN: BUT EVEN THEN IT WOULD NOT

SHOW UP AS MUCH AS LATER.

MR. HAYES: THAT'S NOT TRUE. IT'S REVERSIBLE.

MR. ROGERS: IT'S GOING TO SHOW UP PRETTY QUICKLY IF YOU'RE BREATHING IT.

MS. BROWN: IT WOULD SHOW UP IMMEDIATELY?

MR. ROGERS: YES.

MR. HAYES: HERE'S WHAT WE'RE LOOKING AT. CHILDREN NEAR THE SITE MIGHT HAVE BEEN TESTED THEN. AND WHATEVER THEIR BLOOD LEVELS WERE IF THEY DON'T LIVE NEAR THE SITE NOW THEN OBVIOUSLY THEIR EXPOSURE HAS CEASED IF THEY'RE GROWN UP.

MS. BROWN: WELL, THEY STILL DO.

MR. HAYES: WELL, I'M NOT SAYING IT'S A BAD IDEA TO MAYBE TEST THEM.

MS. BROWN: THAT'S WHY I ASKED E.P.A. IF THEY WOULD RETEST THOSE CHILDREN.

MR. HAYES: BUT IF THE EXPOSURE IS NOT CONTINUING THEN THEIR BLOOD LEVELS WOULD HAVE DROPPED.

MS. BROWN: IT STILL WOULDN'T HURT E.P.A. TO TEST THOSE CHILDREN.

MR. ROGERS: THAT'S SOMETHING WE CAN

LOOK INTO. THERE ARE SOME OTHER AVENUES TO PURSUE THAT. ANY OTHER QUESTIONS? IF YOU CAN IF YOU THINK OF ANYTHING ELSE YOU CAN STILL USE I GUESS THE BACK OF THE FACT SHEET AND SEND IN ANY ADDITIONAL QUESTIONS OR CONCERNS TO US.

MS. PEURIFOY: CALL US AT THE 800 NUMBER IF YOU HAVE ANY QUESTIONS. DECEMBER 22ND IS THE END OF THE COMMENT PERIOD.

MR. ROGERS: WE DON'T BRING ALL THE DETAILED TECHNICAL DOCUMENTS TO THESE MEETINGS BECAUSE IT WOULD BE TOO LONG BUT THEY ARE AVAILABLE IN THE REPOSITORY AND CYNTHIA CAN TELL YOU WHERE THAT IS.

MS. PEURIFOY: THANK YOU ALL FOR COMING. THANK YOU.

(THEREUPON, AT 9:20 P.M.
THE TAKING OF THE FOREGOING
HEARING WAS CONCLUDED)

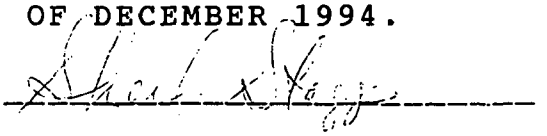
CERTIFICATE OF REPORTER

STATE OF SOUTH CAROLINA)
COUNTY OF LEXINGTON)

I, SHEILA STAGGS, CERTIFIED COURT REPORTER (GA) AND NOTARY PUBLIC IN AND FOR THE STATE OF SOUTH CAROLINA AT LARGE, DO HEREBY CERTIFY THAT I WAS AUTHORIZED TO REPORT THE E.P.A. HEARING AT THE TIME AND PLACE HEREINABOVE SET FORTH; THAT THE WITNESSES WERE FIRST DULY SWORN BY ME TO TELL THE WHOLE TRUTH; AND THAT THE FOREGOING PAGES NUMBERED 3 THROUGH 104 INCLUSIVE, CONSTITUTE A TRUE AND CORRECT TRANSCRIPTION OF MY STENOGRAPHIC REPORT OF THE TESTIMONY OF SAID WITNESS.

I FURTHER CERTIFY THAT I AM NEITHER ATTORNEY NOR COUNSEL FOR, NOR RELATED TO OR EMPLOYED BY ANY OF THE PARTIES CONNECTED TO THE APPLICATION, NOR AM I FINANCIALLY INTERESTED IN THE APPLICATION.

WITNESS MY HAND AT COLUMBIA, SOUTH CAROLINA, THIS 21ST DAY OF DECEMBER 1994.



SHEILA STAGGS, CCR (GA)

MY COMMISSION EXPIRES: OCTOBER 29, 2002.

APPENDIX B

STATE OF SOUTH CAROLINA CONCURRENCE LETTER

PALMETTO RECYCLING SUPERFUND SITE

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

March 28, 1995

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

RE: Record of Decision
Palmetto Recycling NPL Site
Richland County

Dear Mr. Hankinson:

The Department has reviewed the revised Record of Decision (ROD) dated March 21, 1995 for the Palmetto Recycling 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 surface soil source control alternative of excavation of contaminated surface soil that exceeds the remediation level for lead, with verification sampling. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restriction (LDR) of 5 ppm for lead, then the soil will be transported to a RCRA Subtitle C Facility where it will be pretreated in order to comply

with the LDRs. If the soil does not exceed the 5 ppm LDR, then the soil will be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area shall be backfilled with clean soil, properly recompacted, and the land regraded to the natural slope. A vegetative cover will be established to minimize undue surface water runoff and minimize erosion. Groundwater monitoring will be conducted on an annual basis for at least five years to evaluate the site progress.

State concurrence on this remedial alternative is based on the alternative meeting all applicable clean-up criteria. This concurrence with the above selected remedy for the Palmetto Recycling NPL Site is contingent upon the State's above mentioned reservation of rights.

Sincerely,

R. Lewis Shaw

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

RLS/amf

cc: Hartsill Truesdale
Keith Lindler
Gary Stewart
Adrienne Felder
Lewis Bedenbaugh, Central Midlands EQC