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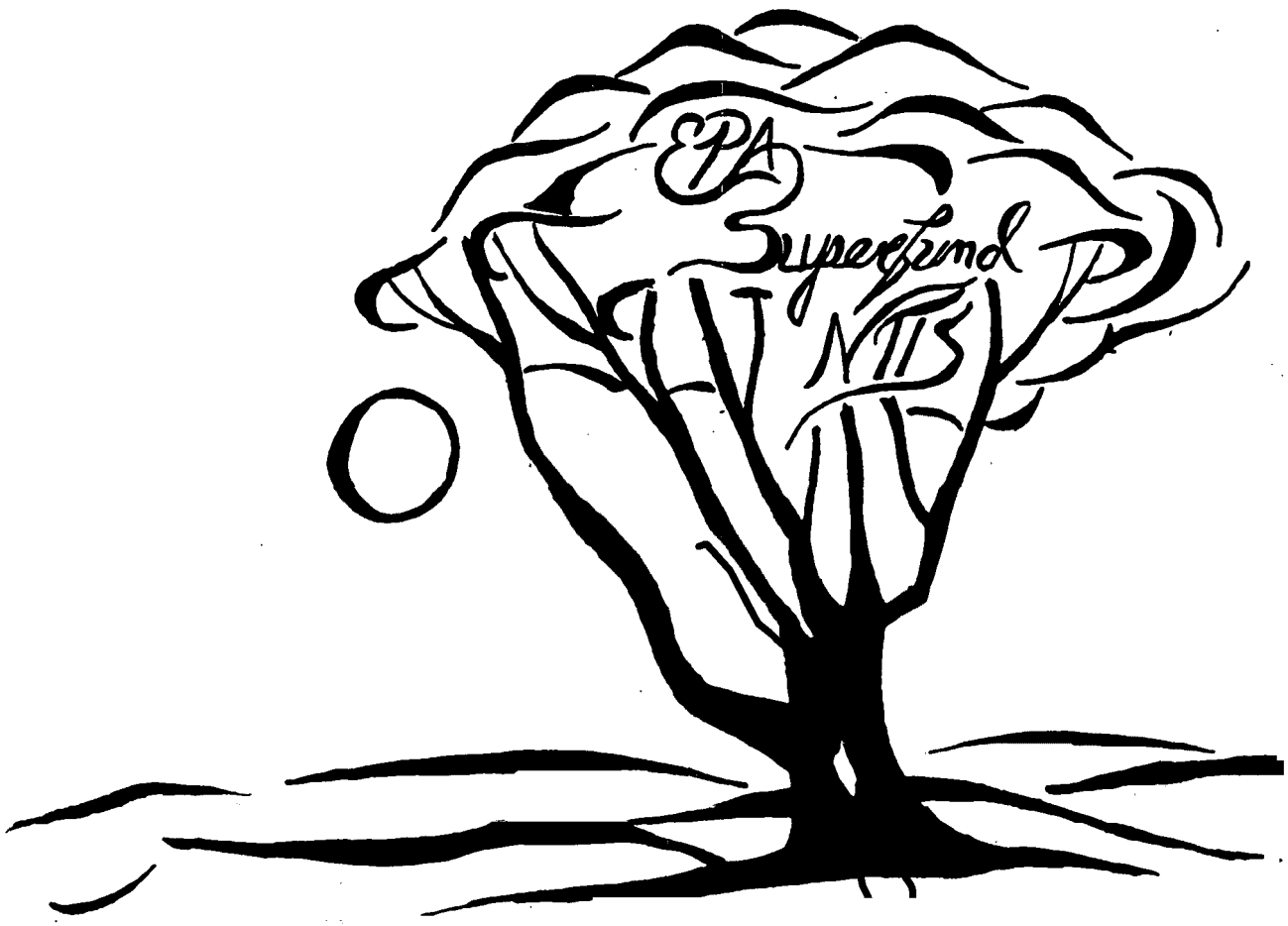
July 1994

EPA Superfund Record of Decision:

General Tire Landfill Site, Mayfield, KY



GENERAL TIRE LANDFILL SUPERFUND SITE

RECORD OF DECISION

U.S. Environmental Protection Agency
Region IV

October 1, 1993

GENERAL TIRE LANDFILL SUPERFUND SITE
RECORD OF DECISION

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DECLARATION FOR THE RECORD OF DECISION

Site Name and Location

General Tire/Rubber Landfill
One General Street
Mayfield, Kentucky 42066

Statement of Basis and Purpose

This Record of Decision presents the selected remedial action for the General Tire Landfill site, located in Mayfield, Graves County, Kentucky. The remedial action selected conforms with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document is based on the information contained in the General Tire Landfill Administrative Record.

EPA has determined that its response at this site is complete. Therefore, the site now qualifies for inclusion on the Construction Completion List.

The Commonwealth of Kentucky Department for Environmental Protection does not concur on the selected remedy.

Description of the Selected Remedy

Based on the data collected in the remedial investigation, and the potential current and future risks estimated in the Baseline Risk Assessment, no further action is necessary at this site to provide additional protection to human health and the environment.

The Mayfield General Tire facility located next to the site operates six groundwater extraction wells that provide the facility with non-contact cooling water. These wells are providing a significant level of protection to human health and the environment by preventing migration of any contaminants that have been or may be released into the groundwater. However, in the future, should the groundwater extraction system be discontinued, an evaluation of the groundwater would be necessary to determine the landfill's impact on the shallow aquifer without the influence of the plant wells. The landfill does not pose a threat to the public health, welfare, or the environment provided the plant wells continue to operate.

Patrick M Tobin

Patrick M. Tobin
Acting Regional Administrator

10-1-93
Date

DECISION SUMMARY

1.0 BACKGROUND

1.1 Site Location

The General Tire Landfill is located east of State Highway 45, approximately two miles north of the town of Mayfield in Graves County Kentucky. Graves County is located in southwestern Kentucky, in the south-central portion of the Jackson Purchase region.

The landfill covers an area of approximately 58.5 acres and is situated approximately one-third of a mile northeast of the General Tire Manufacturing facility. As shown in Figure 1, the landfill lies between the Paducah-Louisville Railroad and Mayfield Creek.

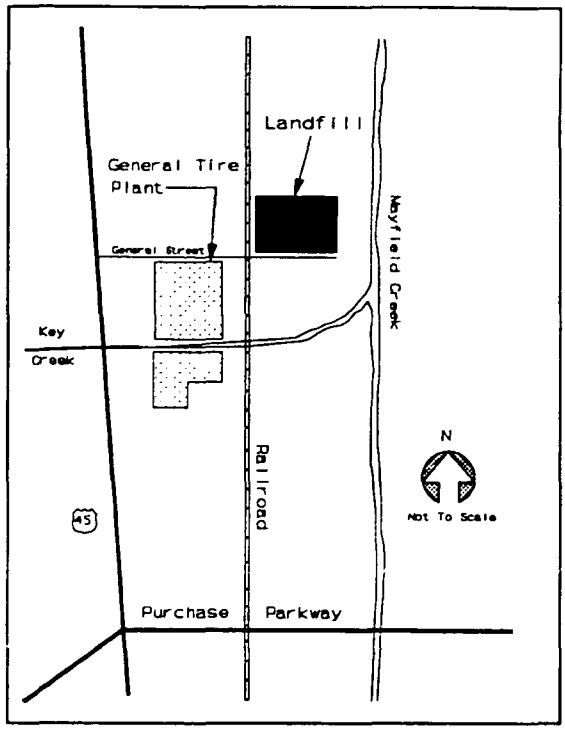
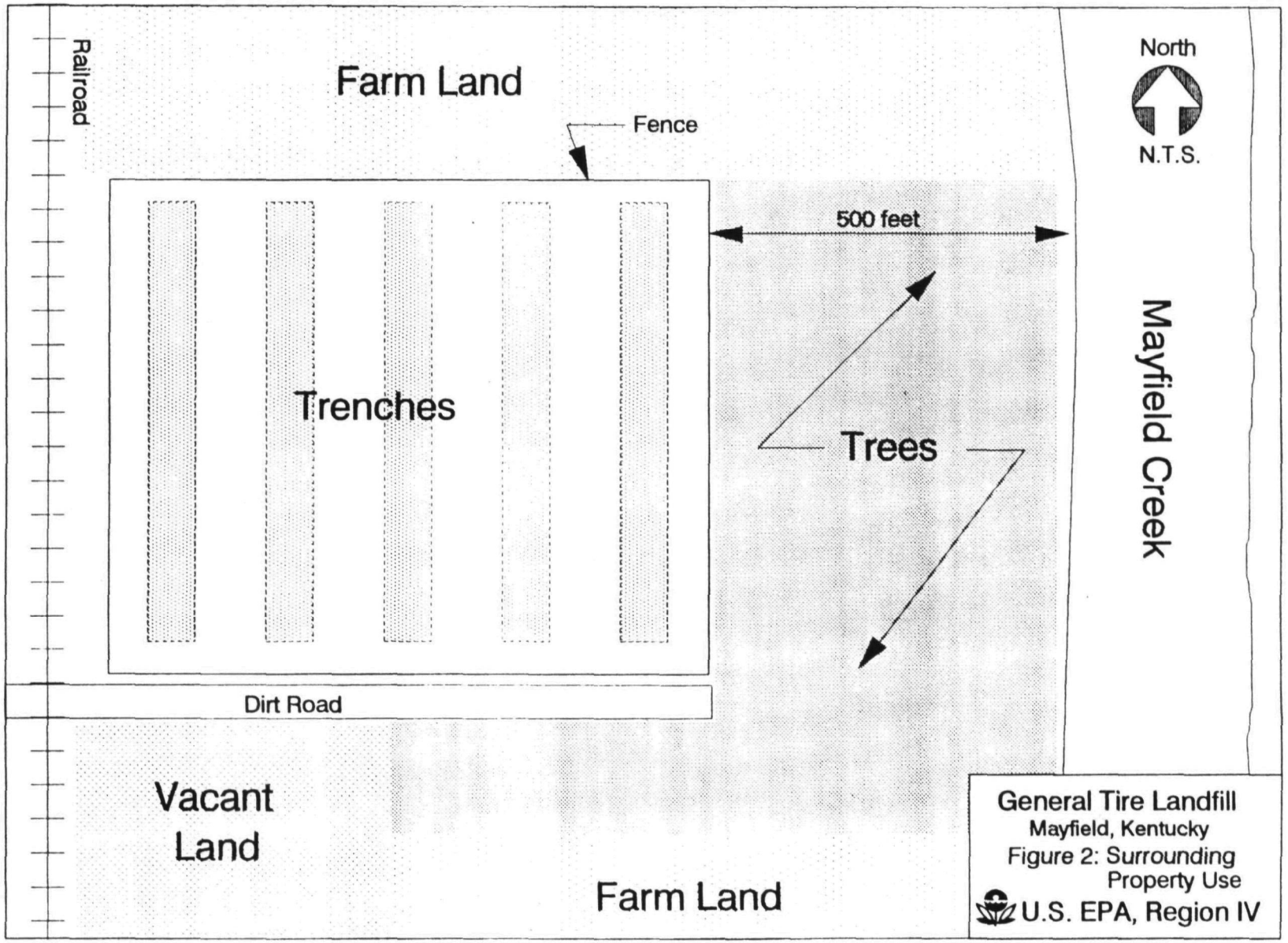


Figure 1

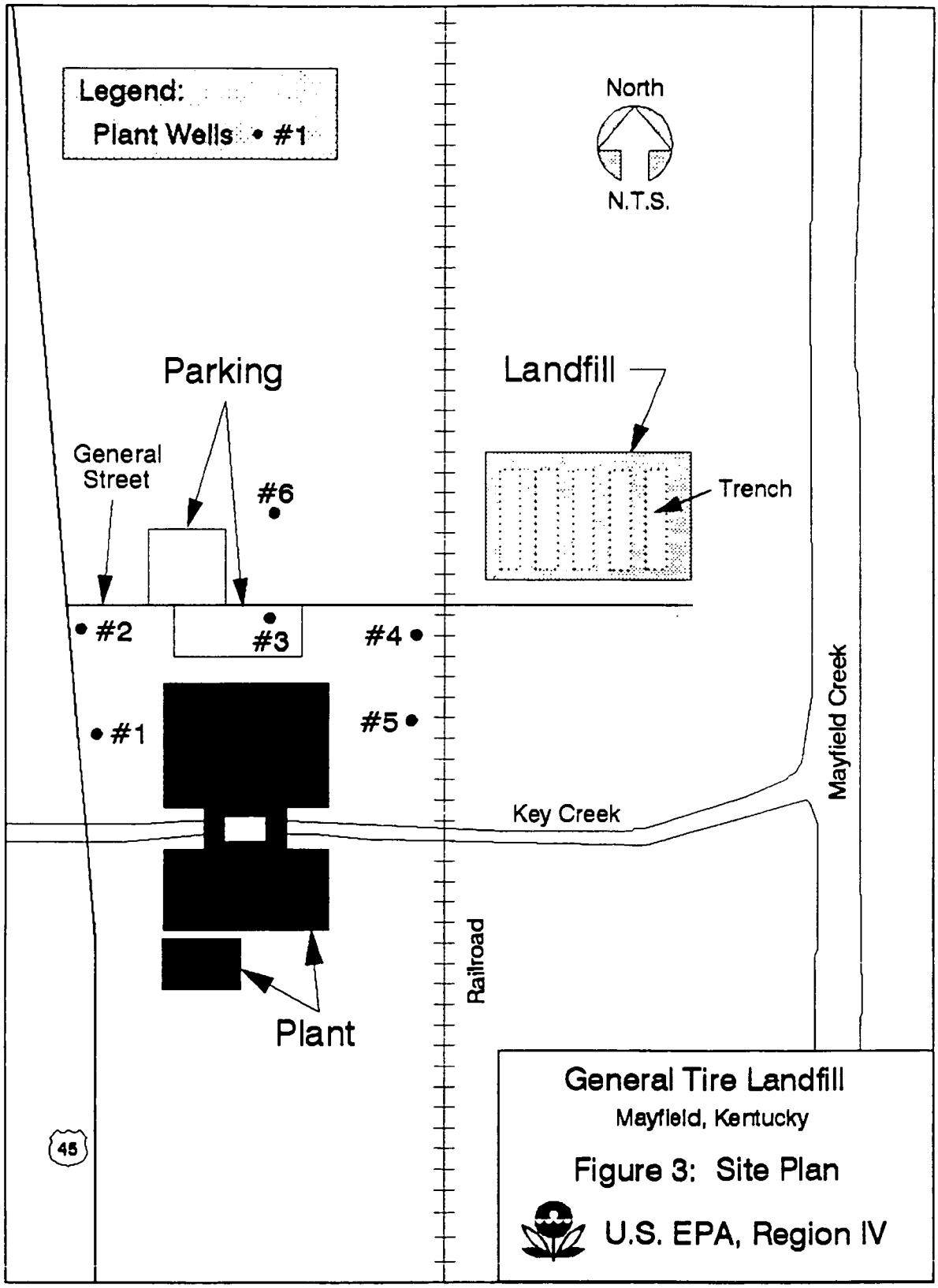
The landfill is bounded by farm land to the north and southeast; vacant land to the southwest; the Paducah-Louisville railroad to the west; and a wooded area to the east, between the landfill and Mayfield Creek. The site lies approximately 450 to 500 feet west of Mayfield Creek (see Figure 2).

1.2 Site Description

The landfill was active between 1970 and 1984, and was used exclusively by General Tire's Mayfield facility for disposal of hazardous and non-hazardous plant wastes. The wastes were disposed of in a series of trenches excavated in a north-south orientation, approximately 1,300 feet long, 40 feet wide and 30 feet deep (see Figure 3 and 4). The wastes included carbon black, scrap rubber and tires, scrap hydraulic oil, lubricating oil, floor sweepings, rejected product material, trash, wood, paper packaging, and cements containing solvents. Table 1 shows the approximate weight percentages of the plant wastes disposed of in the landfill. Based on historical aerial photographs and interviews with plant personnel, the trenches were excavated in an orderly fashion from the east side of the landfill to the west, and therefore, it can be assumed that hazardous waste

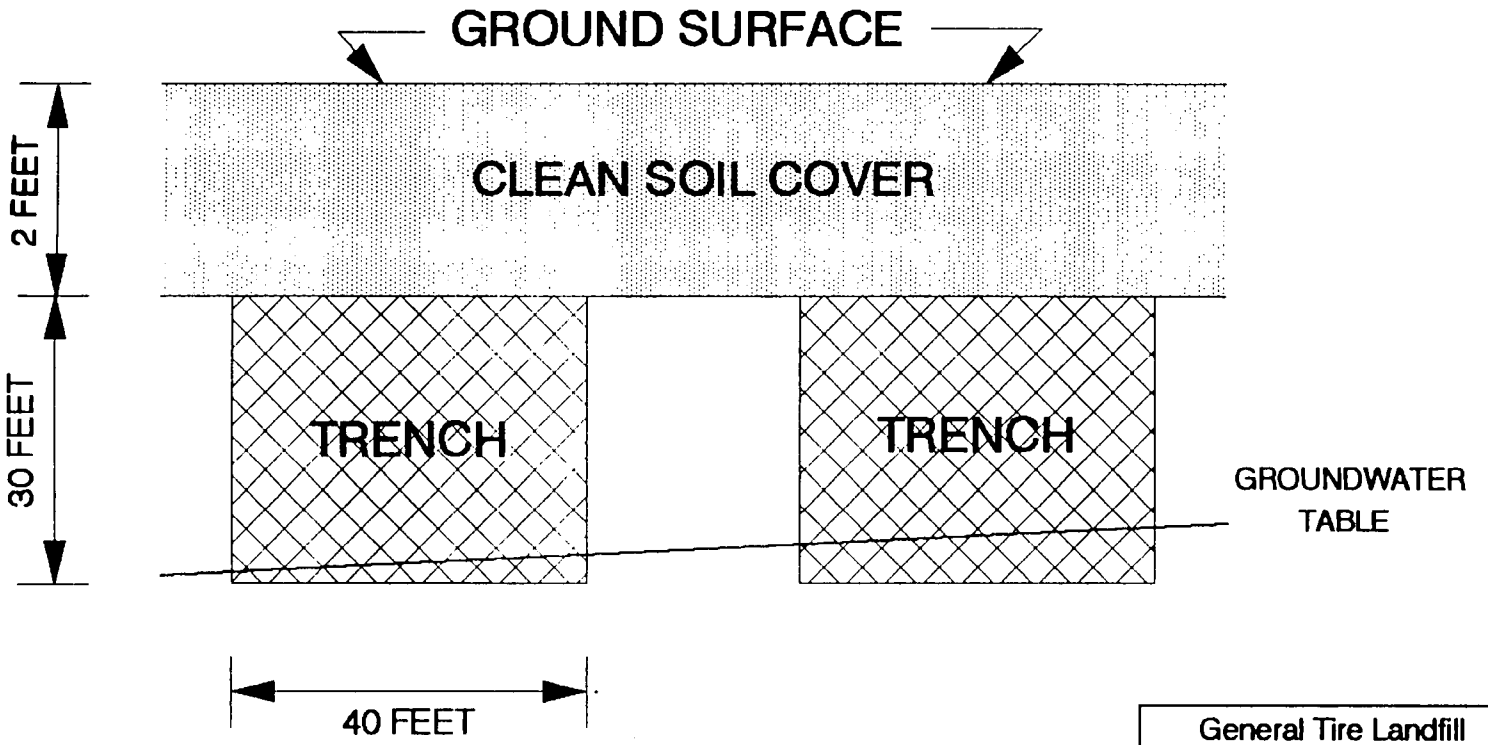


General Tire Landfill
Mayfield, Kentucky
Figure 2: Surrounding Property Use
U.S. EPA, Region IV


Legend:
Plant Wells • #1
North
N.T.S.
Parking
Landfill
General Street
#6
Trench
• #2
#3
#4 •
• #1
#5 •
Mayfield Creek
Key Creek
Railroad
Plant
45
General Tire Landfill
Mayfield, Kentucky
Figure 3: Site Plan
U.S. EPA, Region IV

LANDFILL TRENCH PROFILE

N.T.S.



General Tire Landfill
Mayfield, Kentucky
Figure 4
Landfill Trench Profile
U.S. EPA, Region IV

disposal (between 1970 and 1979) probably occurred on the eastern half of the landfill. However, there is no reason to believe that the wastes in the trenches are locally homogenous, or that drums would have been buried in specific areas of each trench.

Based on interviews with plant personnel who were involved with landfill operations, it was learned that the wastes were randomly deposited in the trenches and the waste materials may not have been containerized (i.e. drums were not sealed prior to burial and some tipped over in the process of unloading and consolidation).

The landfill surface is generally flat and graded with an average slope of less than 3 percent. In accordance with the final site closure grading plan, the surface was vegetated with a fescue-rye-crown vetch mixture.

Plant Wastes Placed Into The Landfill And Their Approximate Weight Percentages

Scrap rubber and tires	*42.3%*
Trash, wood, and paper packaging	*40.8%*
Rejected product material	*14.2%*
Scrap hydraulic oil	*1.6%*
Non-reclaimable lubricating oil	*0.85%*
Waste cement mixtures	*0.14%*
Carbon black	*0.08%*
Floor sweepings	*0.05%*

Table 1

1.3 Site History and Enforcement Actions

In 1970, the General Tire Plant received approval from the Commonwealth of Kentucky for construction and operation of a landfill at the Mayfield site. In 1979, disposal of hazardous wastes ceased in accordance with the Resource Conservation and Recovery Act (RCRA). However, the landfill continued to operate until 1984, disposing only non-hazardous plant wastes pursuant to a permit issued by the Commonwealth of Kentucky, Department for Environmental Protection (KYDEP).

In accordance with section 103(c) of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), General Tire submitted a Notification of a Hazardous Waste Site on June 2, 1981 to the Environmental Protection Agency (EPA).

In late 1980, KYDEP required General Tire to implement a groundwater monitoring program in the vicinity of the landfill. The program, beginning in 1981, included the installation of ten monitoring wells (three monitoring well clusters and one shallow well) surrounding the site. Initially, groundwater samples were analyzed for numerous parameters, but in 1982, KYDEP agreed to reduce the number of parameters to a specified list of indicator constituents and to collect samples on an annual basis. The groundwater monitoring results were submitted annually to KYDEP from 1983 through 1987.

In September 1984, General Tire submitted to KYDEP a closure plan for the landfill consisting of a site drawing showing the proposed site contours and a description of a proposed plan for erosion control. In the fall of 1985, a two foot soil cover was placed over the landfill and the surface was seeded to prevent erosion. The Kentucky Division of Waste Management conducted an inspection of the landfill and accepted the site "as closed" in February 1987. However, in accordance with Kentucky regulations, the site was subject to a post-closure monitoring period, in which maintenance of the cover, including erosion prevention, settlement and revegitation, was to be performed. The post-closure monitoring period ended on February 1989, but because the site was being investigated by EPA for CERCLA enforcement actions, final closure of the landfill was never granted by KYDEP.

In March 1989, EPA Region IV initiated negotiations with General Tire (the only Potentially Responsible Party (PRP) at this site) to conduct a Remedial Investigation/Feasibility Study. By February 1990 the site was added to the National Priorities List (NPL) with a hazard ranking score of 32.94. By December of 1989, General Tire and EPA entered into an Administrative Order by Consent for performance of the RI/FS. On October 22, 1990, after EPA approval of the Single Site Plan (Work Plan), the RI/FS commenced. Table 2 summarizes some of the major events in the landfill's history.

TABLE 2

SUMMARY OF ENFORCEMENT HISTORY

GENERAL TIRE
MAYFIELD, KENTUCKY

1970	General Tire received approval from the Commonwealth of Kentucky for construction and operation of the landfill at the Mayfield, Kentucky Plant.
1979	Disposal of RCRA-defined hazardous wastes ceased. KYDEP issued a Waste Management Permit (No. 042.05) to General Tire for non-hazardous solid waste disposal at the site.
1981	In compliance with CERCLA Section 103(c), General Tire provided EPA with a Notification of Hazardous Waste Site.
	A groundwater monitoring program was implemented at the site which included the installation of ten monitoring wells around the perimeter of the landfill and analysis of groundwater and surface water samples.
1982	KYDEP authorized annual sampling of the monitoring wells for a limited number of indicator parameters. This groundwater data was collected to assure continued compliance with state environmental performance standards and for the permit renewal application.
1984	Waste disposal ceased; the landfill was subsequently covered with two feet of clean soil and seeded.
1987	Closure of the landfill was approved by KYDEP. A two-year post closure monitoring period went into effect until February 9, 1989.
June 1988	EPA proposed that the landfill be placed on the National Priorities List (NPL) as a Superfund site.
March 1989	General Tire received a "Notice of Potential Liability" in a letter from the EPA.
September 1989	General Tire submitted the Single Site Plan (Work Plan) for the RI/FS to EPA for review.
December 1989	General Tire and EPA entered into the Administrative Order by Consent for General Tire to conduct the RI/FS.
September 1990	EPA granted approval of the Single Site Plan.
October 1990	The remedial investigation portion of the RI/FS commenced.
July 1993	The RI/FS is completed.

2.0 COMMUNITY PARTICIPATION

In accordance with the requirements of CERCLA §113(k)(2)(B) and §117, a Community Relations Plan (CRP) was developed to establish a framework for community relations activities at the General Tire Site. The CRP was finalized on April 30, 1990, and implemented throughout the Remedial Investigation and Feasibility Study (RI/FS).

The CRP contains information gathered from community interviews conducted by EPA in February 1990. Some of the information included in the document concerns community knowledge of the site, perceptions of the site, and other issues and concerns related to the site.

Prior to the start of the remedial investigation, in April 1990, EPA issued a Fact Sheet describing the Superfund process and the planned RI/FS activities. The fact sheet also provided the opportunity for the public to participate in the Superfund process, and provided the opportunity for community groups to receive Technical Assistance Grants (TAG) to closely monitor the technical progress of the investigation. The fact sheet was sent to the local community, and to local, State, and Federal officials. EPA also established and maintained an information repository and Administrative Record (AR) at a convenient and accessible location in Mayfield, Kentucky. The AR includes all documents and information EPA used as a basis for developing the proposed final action.

On May 15, 1993 EPA held an informal public information meeting in Mayfield to answer questions about the RI/FS being conducted. A few interested citizens attended.

Although EPA provided many opportunities for community participation and involvement, public interest throughout the investigation was minimal. In addition to EPA community relations efforts, several local newspaper articles were published about the site, but little or no inquiries were made by the public.

In July 1993, EPA issued a Proposed Plan Fact Sheet to present the results of the RI/FS and Baseline Risk Assessment. It also described EPA's proposed final action for the site and announced the public comment period. The Fact Sheet was sent to the local community, and to local, State, and Federal officials. The public comment period began on July 15, 1993 and ended on August 13, 1993.

On July 29, 1993, EPA conducted a public meeting to present the findings of the remedial investigation; describe the proposed final action; and answer questions concerning the site. Those in attendance at the meeting included: a reporter from The Mayfield Messenger newspaper; a reporter from a local radio station; representatives from General Tire; officials from the City of Mayfield; and representatives from the Commonwealth of Kentucky, Division of Waste Management. No concerned citizens attended the meeting. A transcript of the meeting is included in Appendix A.

3.0 SITE CHARACTERISTICS

3.1 Hydrogeologic Characteristics

The hydrogeologic characteristics of the site were very important in determining that no further actions are needed at the General Tire site. The specific hydrogeologic characteristics of this site are important because exposure to contaminated groundwater is the primary mechanism (i.e exposure pathway) by which the site threatens the health and welfare of the public and the environment. Special hydraulic conditions beneath the site are being created by the six plant wells operated by General Tire. The following sub-sections summarize some of the results and conclusions of the hydrogeologic study performed.

3.1.1 Hydrogeologic Setting

Groundwater occurs primarily within two units beneath the General Tire Landfill site. The shallower unit is an unconfined water table aquifer within the Sparta Sand and partially extending into the overlying alluvial gravel deposits. The deeper unit is a semi-confined aquifer within the deeper Tallahatta Formation. These two aquifers are separated by the basal silty clay unit of the Sparta Sand, which acts as a semi-confining layer. The Tallahatta Formation is also confined beneath by the predominantly silty clay Wilcox Formation. Deeper water-bearing units at the site have little relevance to the site because they are hydraulically separated from the upper water-bearing units (the Sparta and Tallahatta aquifers) by the Wilcox Formation and the underlying Porter Creek Clay.

Monitoring wells were installed in the Sparta and Tallahatta aquifers at various depths and locations around the landfill to collect groundwater samples and define groundwater potentiometric levels. In addition, water table piezometers were installed near Mayfield Creek, and staff gauges

were installed in Mayfield Creek and Key Creek, to further define the elevation of the water table surface.

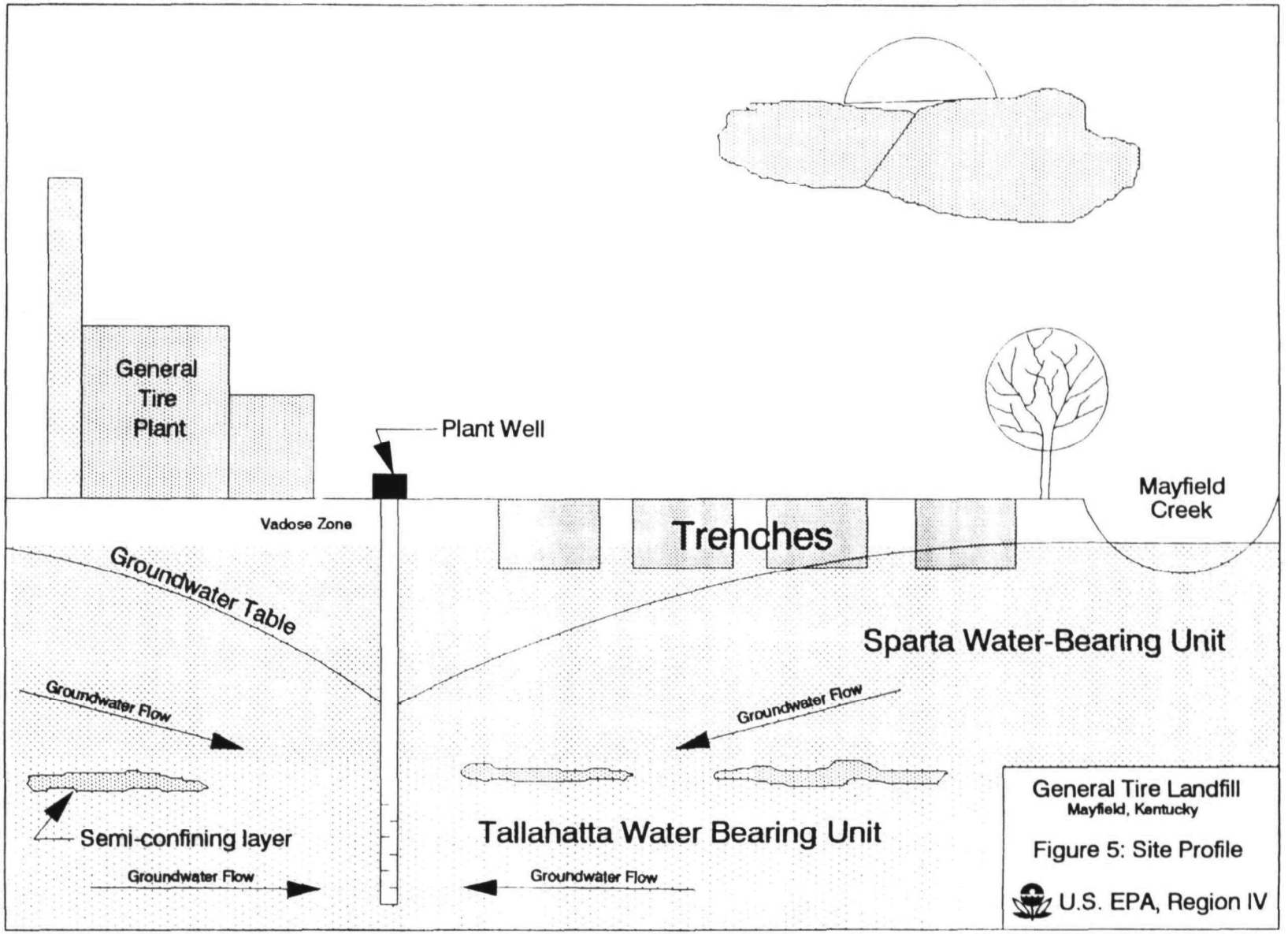
Groundwater flow in both aquifers in the vicinity of the landfill converges toward the six plant water supply wells, which have an average combined pumping rate of approximately 10 million gallons of water per day. The first two plant extraction wells were placed in operation in 1959 and the remaining plant wells were in operation prior to 1970, with the exception of plant well No. 6 which began operating in 1972. Groundwater in the Sparta and Tallahatta units has therefore flowed towards the plant wells and away from Mayfield and Key Creeks long before landfilling operations began.

3.1.2 The Effect of the Plant Wells

The groundwater potentiometric surface maps developed for the site show that the influence of a cone of depression associated with these pumping wells extends under and beyond the landfill in both aquifers (see Figure 5). The results of the study also indicate that water in Mayfield Creek is at a higher elevation than groundwater in the Sparta aquifer, and therefore, appears to be recharging the aquifer. Elevation data for Key Creek suggest the same recharge condition. Near the landfill, water from the creeks recharge the Sparta aquifer, along with direct infiltration of precipitation. Beneath the landfill, the flow direction is west to southwest.

The groundwater elevation data also show that throughout the investigation area, water level elevations in the Sparta aquifer are higher than those at the same locations in the Tallahatta aquifer. These data demonstrate that a vertical hydraulic gradient exists across the confining unit between the Sparta and Tallahatta aquifers. This vertical hydraulic gradient influences groundwater flow by introducing a downward component of flow from the Sparta aquifer to the Tallahatta aquifer.

Regionally, groundwater in the Sparta and Tallahatta aquifers generally flows toward and discharges to surface streams. If pumping of the plant wells ceased, groundwater beneath the landfill would be expected to reverse its current flow direction, and upon reaching steady state, groundwater would probably flow from west to east, discharging into Mayfield Creek. Discharge to Key Creek may also exert some influence on the flow direction under the no-pumping condition.


General
Tire
Plant
Plant Well
Vadose Zone
Trenches
Mayfield
Creek
Groundwater Table
Sparta Water-Bearing Unit
Groundwater Flow
Groundwater Flow
Semi-confining layer
Tallahatta Water Bearing Unit
Groundwater Flow
Groundwater Flow
General Tire Landfill
Mayfield, Kentucky
Figure 5: Site Profile
U.S. EPA, Region IV

In June and July 1991, four of the six plant wells were shut off for six days for pump maintenance (the pumping wells were rotated during this period). The average pumping rate during this period was approximately 600,000 gallons per day. To determine the effect of reduced pumping, water level elevations were collected on July 5, 1991, the sixth day of pump shutdown. Groundwater potentiometric surface maps for this day for the Sparta and Tallahatta aquifers show that water levels rose 2 to 3 feet, and that the direction of groundwater flow had shifted from generally southwestward to westward.

3.1.3 Hydrogeologic Conclusions

The hydrogeologic investigation revealed that the General Tire plant wells have a significant effect on the direction of groundwater flow beneath the landfill and in the vicinity of the site. These plant wells, pumping at a combined rate of approximately 10 million gallons per day, have reversed the natural flow of the groundwater and are capturing any contaminants that may be released from the landfill. While the natural groundwater flow is towards Mayfield Creek, the current groundwater flow direction is towards the six plant wells located around the perimeter of the General Tire facility. The landfill is entirely within the zone of capture in both the shallow (Sparta) and deep (Tallahatta) aquifer. East and south of the landfill the zone of capture of the Sparta aquifer probably coincides with Mayfield and Key Creeks, both of which are recharging the aquifer under current pumping conditions. The zone of capture may extend beyond these streams in the Tallahatta aquifer, which is not directly connected to these recharge sources. No water elevation data are available west of the plant pumping wells. However, based on the natural (prepumping conditions) direction of groundwater flow, which was generally from west to east in this area, the zone of capture is expected to extend radially around the plant pump field in both aquifers.

Operation of the plant wells has significantly limited the migration and potential human and environmental exposure to any contaminants that may have been released into the groundwater from the landfill. Since migration of contaminants through the groundwater is the primary mechanism by which the landfill can impact human health or the environment, the EPA believes that the plant wells are providing a significant level of protection by capturing those contaminants released

into the groundwater. There are no private or public water supply wells within close proximity to the landfill which may be adversely impacted under the current hydrogeologic conditions. Therefore, it can be concluded that the landfill does not pose a threat to human health or the environment provided the plant wells continue to operate. There is currently no way to determine whether future groundwater risks would be significant as long as the plant wells are operating. Consequently, an evaluation of the groundwater would be necessary in the future to determine the landfill's impact on the shallow aquifer without the influence of these wells.

3.2 Remedial Investigation Summary

The remedial investigation has demonstrated that the primary chemical constituents which have been released from the landfill are low concentrations of volatile organic compounds in groundwater. These compounds (or their precursors) were contained in the 305,000 pounds of waste cement mixtures placed into the site from 1970 to 1979. However, the waste cement mixtures comprise only 0.14 percent of the total estimated weight of 221,705,000 pounds of total waste material disposed (see Table 1 on page 4).

The location and extent of wastes within the landfill was defined during the remedial investigation by non-intrusive methods (no confirmatory chemical analyses were performed). This was accomplished utilizing existing records, aerial photograph interpretation, and a surface geophysical survey. An evaluation of the aerial photographs indicated that the trenches were first excavated on the eastern portion of the landfill when the landfill began operation in the early 1970s, and were constructed sequentially to the west until operations ceased in 1984. All of the aerial photographs indicate that the trenching occurred within the boundaries of the landfill. The results of the surface geophysical survey confirmed this conclusion.

The following environmental media were sampled and analyzed as part of the remedial investigation:

- Air (Organic Vapor Analyzer (OVA) measurements)
- Surface soils
- Surface water (Mayfield Creek and site ditches)
- Sediment (Mayfield Creek and site ditches)
- Groundwater in the Sparta (shallow) water-bearing unit
- Groundwater in the Tallahatta (deeper) water-bearing unit

The following sub-sections summarize the findings of each of the media sampled. Table 3 shows the constituents of interest found in each site media.

3.2.1 Air Quality

An air quality survey was conducted on and in the vicinity of the landfill to determine the presence of volatile organic emissions from the landfill and to determine the effectiveness of the soil cover. Approximately three hundred and eighty (380) OVA measurements were obtained at the site. All readings were obtained from a height of approximately one (1) foot above ground level. Forty two (42) locations with detectable levels of volatile organic compound (VOC) concentrations were detected above background concentrations, and only five (5) locations were equal to or greater than 5 ppm (based on a methane (100 ppm) calibration of the OVA).

3.2.2 Surface Soil

Ten surficial soil samples were collected from the landfill cover and from adjacent farm fields to the north, south and west. Based on the analytical results and screening and evaluation procedures in the Baseline Risk Assessment (BRA), four constituents of interest were determined to be present in the surface soil. These compounds are: 2-chlorophenol, p-chloro-m-cresol, phenol, and benzene. Minimal amounts of three acid extractable compounds (2-chlorophenol, p-chloro-m-cresol, and benzene) were detected in surficial soils atop the landfill, but were determined to be most likely attributed to fugitive emissions from an adjacent creosote facility. Nonetheless, these constituents were retained as constituents of interest in surficial soils for evaluation in the BRA. Minimal amounts of three volatile organic compounds (benzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene) were detected in surficial soils in the field north of the landfill, but were also determined to be most likely associated with farming operations conducted in that field. Benzene, however, was retained and evaluated as a constituent of interest in surficial soils since it is a compound known to be present in the landfill waste.

The concentrations of inorganics were well within or below the typical background concentration ranges for native soils.

3.2.3 Surface Water

Surface water samples were collected from ditches surrounding the landfill and from Mayfield and Key Creeks. Results of the analyses indicate that lead and zinc are constituents of interest present in water in the ditches surrounding the site. Several other inorganics were detected in surface water from Mayfield Creek and have been identified as potential constituents of interest only because there was no background data with which to compare them. These compounds include: aluminum, antimony, cadmium, chromium, iron, manganese, and nickel. A low concentration of 1,1,1-trichloroethane (TCA) was detected in Mayfield and Key Creeks, but was discovered to be coming from a source up-gradient of the landfill.

3.2.4 Sediment

Sediment samples were collected from ditches surrounding the site and from Mayfield and Key Creeks. Analyses of the sediment samples revealed that lead, barium, and zinc were constituents of interest. Other inorganic constituents of interest detected in the sediments include: aluminum, arsenic, calcium, chromium, copper, iron, magnesium, manganese, and vanadium. Benzene, found in one sample at a low concentration, is the only organic constituent of interest.

3.2.5 Groundwater: Sparta Water-bearing Unit

Groundwater samples were collected from fifteen (15) monitoring wells installed in the Sparta aquifer. Two separate samples were collected from each well during two separate time periods to determine the presence of landfill contaminants in the shallow groundwater.

Twelve organic compounds were identified as constituents of interest in the Sparta water-bearing unit. These compounds include: acetone, benzene, chloroethane, chlorobenzene, di-n-butyl phthalate, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, (cis and trans)1,2-dichloroethene, di-n-octyl phthalate, TCA, and trichloroethene.

The inorganics identified as constituents of interest include: calcium, copper, iron, magnesium, mercury, potassium, sodium, and thallium. Elevated concentrations of inorganics in two shallow wells up-gradient

and south of the landfill were detected, but were attributed to an unknown source(s) originating from the direction of Key and Mayfield Creeks, and are not associated with the landfill.

3.2.6 Groundwater: Tallahatta Water-bearing Unit

Groundwater samples were collected from six (6) monitoring wells installed in the Tallahatta aquifer, and the six plant wells (also screened in the Tallahatta). Two separate samples were collected from each well at different times during the investigation to determine the presence of landfill contaminants in the groundwater.

The results of the groundwater analyses of the Tallahatta water-bearing unit indicated that there were six organic constituents of interest. These compounds include acetone, benzene, 1,1,1 trichloroethane, 1,1 dichloroethane, di-n-octyl phthalate, and di-n-butyl phthalate. The inorganic constituents of interest include: aluminum, barium, cadmium, calcium, copper, iron, magnesium, mercury, potassium, sodium, thallium, and zinc.

A private drinking water well, closest to the landfill, was also sampled at a residence approximately 0.9 miles north-northwest of the landfill. Although not known, it is presumed that this well is completed in the Tallahatta because the majority of the private wells in this area are completed in this formation. The only contaminant found to be present in the water was lead (0.0227 ppm). This lead value is considerably higher than other lead values in the Tallahatta groundwater. However, because the groundwater in the vicinity of the landfill is flowing toward the plant wells and not off site, it was determined that the source of the lead is most likely lead-bearing material in the well, piping, or the holding tank. The laboratory results were shared with the owner of the well and with the Graves County Health Department.

TABLE 3

CONSTITUENTS OF INTEREST IN SITE MEDIA[a]

Constituent	Surficial Soils	Surface Water (Creek)	Surface Water (Ditches)	Sediment (Creek)	Sediment (Ditches)	Groundwater (Sparta)	Groundwater (Tallahatta)
Acetone						X	X
Aluminum		X		X			X
Antimony		X					
Arsenic				X			
Barium					X		X
Benzene	X				X	X	X
Cadmium			X				X
Calcium		X		X		X	X
Chlorobenzene							
p-Chloro-m-cresol	X						
Chloroethane						X	
2-Chlorophenol	X						
Chromium (III)		X		X			
Chromium (IV)		X		X			
Copper				X		X	X
Di-n-butyl phthalate						X	X
1,1-Dichloroethane						X	X
1,2-Dichloroethane						X	
1,1-Dichloroethene						X	
cis-1,2-Dichloroethene						X	

TABLE 3

CONSTITUENTS OF INTEREST IN SITE MEDIA*

Constituent	Surficial Soils	Surface Water (Creek)	Surface Water (Ditches)	Sediment (Creek)	Sediment (Ditches)	Groundwater (Sparta)	Groundwater (Tallahatta)
trans-1,2-Dichloroethene						X	
Di-n-octyl phthalate						X	X
Iron		X		X		X	X
Lead		X	X	X	X		
Magnesium				X		X	X
Manganese		X		X			
Mercury						X	X
Nickel		X					
Phenol	X						
Potassium						X	X
Sodium		X				X	X
Thallium						X	X
1,1,1-Trichloroethane						X	X
Trichloroethene						X	
Vanadium				X			
Zinc			X	X	X		X
Total	4	10	3	12	4	21	18

* Summary of constituents in each medium evaluated in the baseline risk assessment.

4.0 SUMMARY OF SITE RISKS

4.1 Summary of Human Health Risks

Constituents of interest and associated environmental media that were identified at the site during the RI were evaluated in the Baseline Risk Assessment (BRA) to estimate levels of potential risk associated with various human exposure pathways. Both carcinogenic and noncarcinogenic risks under current conditions and possible future conditions were assessed.

Relevant exposure routes were quantified for site media for the current and future exposure scenarios. Risk estimates for these routes are organized by site medium (including Mayfield Creek water, Mayfield Creek sediment, site ditch surface water, site ditch sediment, and surficial soils atop the landfill at SS-6) and are summarized in Table 4. Exposure routes quantified for the current and future scenario included dermal contact with each medium; incidental ingestion of Mayfield Creek water, site ditch water and sediment, and surficial soils atop the landfill; and inhalation of airborne constituents from surficial soils atop the landfill. Populations evaluated for various media exposure routes included recreational (adults and children), and occupational maintenance workers.

As shown in Table 4, potential carcinogenic risks were estimated to range from 2.7×10^{-9} for incidental ingestion of site ditch sediment by recreational children to 1.0×10^{-7} for dermal contact with site ditch sediment by recreational adults. All of the individual carcinogenic risk estimates for these current and future potential exposures were well below the lower limit of the acceptable carcinogenic risk range of 10^{-6} to 10^{-4}.

The estimated potential noncarcinogenic hazard indices for individual pathways under the current exposure scenarios were estimated to range from 1.6×10^{-6} (incidental ingestion of surficial soils atop the landfill (SS-6) by occupational maintenance workers) to 2.1×10^{-2} (dermal contact with Mayfield Creek water for recreational children). All of the total noncarcinogenic hazard indices for current individual pathways were below the acceptable limit of 1.0.

Two future scenarios were considered for the site in addition to the baseline scenario: (1) future site development with the cessation of pumping from the General Tire plant wells, and (2) future site development in conjunction with the continued operation of the General Tire plant wells. Under the baseline future scenario, it was assumed that any current activities and use scenarios are also relevant in the future. It was also conservatively assumed that concentrations in site media will remain constant in the future.

As mentioned in the previous section, groundwater in both the Sparta and Tallahatta water-bearing units in the vicinity of the landfill currently flows toward the General Tire facility because of the influence of the plant water wells. The cone of depression associated with these wells extends under and beyond the landfill in both the Sparta and Tallahatta water-bearing units. The landfill is entirely within the zone of capture of the plant wells. Beneath the landfill, the direction of groundwater flow is generally towards the west. If the first future scenario were to occur (i.e., the General Tire plant wells ceased pumping) groundwater flow direction beneath the landfill would begin to reverse, and upon reaching steady state, groundwater would probably flow from west to east/northeast and discharge to Mayfield Creek and would probably not reach the closest municipal water supply wells at the Hickory and Hardeman districts, located 1.8 and 2.7 miles from the site, respectively. With the cessation of pumping of the plant wells, the vertical groundwater gradient from the Sparta aquifer to the Tallahatta aquifer would be expected to be negligible, and therefore, would substantially reduce the transport of constituents between the two aquifers. In addition, lateral groundwater flow velocity (without the influence of the plant wells) would be dramatically reduced thereby decreasing the rate of lateral transport of constituents of interest. Constituents potentially present in groundwater in the Tallahatta unit moving laterally from the site (which would not discharge to the creeks) would be expected to decrease through attenuation. Because the cessation of pumping of the plant wells would decrease the groundwater flow and thus constituent transport, this future scenario is not considered a worst-case scenario.

Conversely, the future scenario which considered nearby site development in conjunction with the continued operation of the General Tire plant wells is the worst-case scenario because of the significant vertical gradient induced between the Sparta and Tallahatta units, and the subsequent transport of constituents from the upper to the lower unit. Therefore, this potential future scenario was considered the worst-case, and intakes and risks associated with this scenario were quantified.

Site development was assumed to involve the construction of residential housing in the vicinity of the site, not on the site. Residential development would not reasonably be expected to occur within the limits of the landfill because of deed restrictions already in place. Therefore, the future scenario involving the continued operation of the plant wells will consider residential development north of the landfill.

Risk estimates for individual future exposure routes were quantified under the potential future site development scenario and are summarized in Table 5 by relevant medium: Sparta groundwater, Tallahatta groundwater, and surficial soils north of the landfill (at SS-3). Exposure routes quantified for the future site development scenario included dermal contact with each media, ingestion of groundwater, incidental ingestion of surficial soils in the field north of the landfill, inhalation of volatiles from groundwater, and inhalation of airborne constituents from surficial soils in the field north of the landfill. Populations evaluated for various media and exposure routes included residential adults, residential children, occupational adults, including construction workers.

As shown in Table 5, potential carcinogenic risks were estimated to range from 8.4×10^{-11} (potential ingestion of surficial soils in the field north of the landfill (SS-3) by construction workers) to 4.1×10^{-5} (potential ingestion of Sparta groundwater by residential adults). The carcinogenic risk estimates for the potential exposure of both adult and children residential populations to constituents present in Sparta groundwater were primarily attributed to the presence of 1,1-dichloroethene and benzene. The carcinogenic risk estimate for potential exposure through dermal contact with surficial soils in the field north of the landfill by the adult residential population (the only pathway addressing exposure at SS-3 which exceeded the lower limit of the acceptable carcinogenic risk range of 10^{-6}) was attributed to the presence of benzene. All of the individual potential carcinogenic risk estimates for future populations were within the acceptable range of 10^{-6} to 10^{-4}.

The estimated potential noncarcinogenic hazard indices for future site development individual pathways were estimated to range from 7.9×10^{-6} (inhalation of volatiles from Tallahatta groundwater by residential adults) to 5.1×10^{-1} (potential ingestion of Tallahatta groundwater by residential adults). All of the total noncarcinogenic hazard indices for future individual pathways were below the limit of 1.0.

The individual (i.e. single pathway) estimates of potential risk for current and future receptors were combined, where appropriate, to represent the reasonable maximum exposure (RME) expected for populations with the potential to be exposed to site constituents by more than one exposure route. For all populations and exposure routes potentially associated with the current scenario, combined carcinogenic risk estimates ranged from 7.9×10^{-8} (recreational adult exposure to Mayfield Creek media) to 1.7×10^{-7} (recreational children exposure to the site ditches). Combined noncarcinogenic hazard indices for the current populations ranged from 1.0×10^{-4} (maintenance worker exposure to surficial soil at SS-6) to

4.5×10^{-2} (recreational children exposure to Mayfield Creek media). These ranges of potential carcinogenic risks are well below the lower acceptable limit of 10^{-6}, and below the hazard index level of 1.0 for noncarcinogens.

In order to combine populations to evaluate multiple exposures under the future site development scenario, a "worst case" and "best case" approach was determined to be most representative. Potential exposures associated with site media which were considered to be "landfill-influenced" (i.e. water and sediment from the site ditches, groundwater in the Sparta unit, and surficial soils from sample location SS-6) were combined to estimate a "worst case" estimate of potential future risks for recreational/residential populations and the occupational maintenance worker population; site media not believed to be landfill-influenced (i.e., water and sediment from Mayfield Creek, groundwater from the Tallahatta unit, and surficial soils north of the landfill at sample location SS-3) were combined to estimate a "best case" for potential future recreational/residential populations and occupational populations.

Combined potential carcinogenic risk estimates for the potential future site development scenario ranged from 3.7×10^{-8} (occupational construction worker exposure to surficial soils at SS-3) to 6.6×10^{-5} (recreational/residential adult exposure to landfill-influenced media). Noncarcinogenic hazard index estimates ranged from 1.0×10^{-4} (maintenance worker exposure to surficial soil at SS-6) to 5.7×10^{-1} (recreational/residential children exposure to non-landfill-influenced media).

All of the combined noncarcinogenic hazard indices for potential future populations (assuming residential site development) were below the hazard index value of 1.0. The highest carcinogenic risk estimate total for future populations (6.6×10^{-5}) was within the acceptable range of 10^{-6} to 10^{-4}.

Using the information presented in the BRA, risk-based concentrations of the constituents of interest in site media were calculated which correspond to risk levels of 10^{-4}, 10^{-5}, and 10^{-6} for potential carcinogens, and hazard indices of 1.0 and 10 for non-carcinogens. These risk-based concentrations were presented as preliminary remediation goals (PRGS) in the BRA.

No PRGs were exceeded under current and future no action scenarios. There were three cases where the level of a constituent used in the estimation of risk (i.e. either a measured level such as at SS-3 or a calculated 95 percent upper confidence limit for other media) exceeded the risk-based PRG. For the ingestion of Sparta groundwater exposure route under the future site development scenario,

the measured concentration of benzene (0.0096 mg/L) exceeded the 10^{-6} carcinogenic risk-based PRG for benzene (0.0029 mg/L), and the 1,1-dichloroethene concentration (0.0053 mg/L) exceeded the 10^{-5} and 10^{-6} risk-based PRGs (0.0014 mg/L and 0.00014 mg/L, respectively). For the dermal contact with surficial soils exposure route (north of the site at SS-3), the measured concentration of benzene (0.4 mg/kg) just slightly exceeded the 10^{-6} carcinogenic risk-based PRG (0.32 mg/kg).

4.2 Summary of the Ecological Assessment

Potential exposures to biota from constituents present at the General Tire site were qualitatively evaluated in the BRA. In soils, potential biota exposures would be expected to be restricted to primarily terrestrial animals and avian (bird) species. However, as the surficial soils were not considered to have elevated levels of constituents attributable to the landfill, surficial soils at the General Tire site are not reasonably expected to present risks to either avian or terrestrial species. Furthermore, there have been no signs of stressed vegetation within the vicinity of the site and there have been no reports of visible adverse impacts to animal species.

As concluded in the BRA, the landfill is not thought to impact any.possible wetlands during flooding events. Several "wetland" areas were identified within a one-mile radius of the site on the National Wetland Inventory Maps, although they do not represent field-verified wetlands for this area. In addition, the operation of the plant process water supply wells effectively prevent the potential for groundwater discharge to wetlands in the vicinity of the site.

A bioassessment survey was completed per the EPA's Rapid Bioassessment procedures, in June 1991. Results of the survey indicated that both upstream and downstream stations on Mayfield Creek had experienced adverse impacts to fauna. However, because the upstream locations were affected, these impacts are not believed to be related to the landfill.

TABLE 4

SUMMARY OF POTENTIAL CARCINOGENIC RISKS AND NONCARCINOGENIC HAZARD INDICES (CURRENT AND FUTURE NO ACTION SCENARIO)[a]

Medium/Exposure Route	Recreational Population Adult		Recreational Population Children		Occupational Maintenance Worker Population	
	CR[b]	HI[c]	CR	HI	CR	HI
Mayfield Creek Water						
Dermal Contact	NA[d]	3.7×10^{-3}	NA	2.1×10^{-2}	--	--
Incidental Ingestion	--[e]	--	NA	6.7×10^{-3}	--	--
Mayfield Creek Sediment						
Dermal Contact	7.9×10^{-8}	3.0×10^{-3}	1.3×10^{-7}	1.7×10^{-2}	--	--
Site Ditch Water						
Dermal Contact	NA	7.4×10^{-6}	NA	4.1×10^{-5}	--	--
Incidental Ingestion	--	--	NA	5.1×10^{-5}	--	--
Site Ditch Sediment						
Dermal Contact	1.0×10^{-7}	2.4×10^{-4}	1.7×10^{-7}	1.4×10^{-3}	--	--
Incidental Ingestion	--	--	2.7×10^{-9}	2.1×10^{-3}	--	--
Surficial Soils (SS-6 atop the Landfill)						
Dermal Contact	--	--	--	--	NA	1.0×10^{-4}
Incidental Ingestion	--	--	--	--	NA	1.6×10^{-6}
Inhalation of Airborne Constituents	--	--	--	--	NA	NA

[a] Values represent the worst case risk estimates as presented in Tables A7-14 through A7-16 of the Baseline Risk Assessment.
[b] Carcinogenic Risk
[c] Hazard Index
[d] NA indicates that no constituents were detected in the specified medium; toxicity factors not available; or no constituents exhibit that type of toxic effect.
[e] -- (Dash) indicates pathway not quantified because it is not a reasonable exposure pathway for the particular population.

TABLE 5

SUMMARY OF POTENTIAL CARCINOGENIC RISKS AND NONCARCINOGENIC HAZARD INDICES (FUTURE SITE DEVELOPMENT SCENARIO)[a,b]

Medium/Exposure Route	Residential Population Adult		Residential Population Children		Occupational Population Adult		Occupational Construction Worker Population	
	CR[c]	HI[d]	CR	HI	CR	HI	CR	HI
Groundwater - Sparta Unit								
Dermal Contact	2.3×10^{-5}	4.9×10^{-2}	1.5×10^{-5}	6.1×10^{-2}	--[e]	--	--	--
Ingestion	4.1×10^{-5}	5.0×10^{-1}	2.1×10^{-5}	4.7×10^{-1}	--	--	--	--
Inhalation of Volatiles	2.0×10^{-6}	2.8×10^{-4}	2.0×10^{-6}	5.6×10^{-4}	--	--	--	--
Groundwater - Tallahatta Unit								
Dermal Contact	4.6×10^{-7}	3.4×10^{-2}	3.1×10^{-7}	4.2×10^{-2}	2.8×10^{-7}	2.5×10^{-2}	--	--
Ingestion	1.4×10^{-7}	5.1×10^{-1}	7.0×10^{-8}	4.8×10^{-1}	--	--	--	--
Inhalation of Volatiles	3.5×10^{-9}	7.9×10^{-6}	3.5×10^{-9}	1.5×10^{-5}	--	--	--	--
Surficial Soils (SS-3 location, North of the Landfill)								
Dermal Contact	1.2×10^{-6}	NA[f]	9.3×10^{-7}	NA	--	--	5.2×10^{-9}	NA
Incidental Ingestion	6.7×10^{-9}	NA	1.4×10^{-8}	NA	--	--	8.4×10^{-11}	NA
Inhalation of Airborne Constituents	4.1×10^{-7}	NA	4.1×10^{-7}	NA	--	--	3.2×10^{-8}	NA

[a] Future site development assumes that the area north of the landfill would be developed into a residential area, and domestic wells placed in the Sparta unit could be used as the drinking water supply source; General Tire facility would continue to operate. Only the additional routes evaluated under the future site development scenario are presented in this table.
[b] Values represent the worst case risk estimates for the specified medium, for the additional future populations (only) as presented in Tables A7-17 through A7-20 of the Baseline Risk Assessment.
[c] Carcinogenic Risk
[d] Hazard Index
[e] -- (Dash) indicates pathway not quantified because it is not a reasonable exposure pathway for the particular population.
[f] NA indicates that no constituents were detected in specified medium; toxicity factors not available; or no constituents exhibit that type of toxic effect.

5.0 SCOPE AND ROLE OF THIS RESPONSE ACTION

EPA has determined that no further action is necessary to provide additional protection to human health and welfare, or the environment. The results of the RI and BRA indicates that there are no current or future risk from exposure to soils, sediment, surface water, or groundwater, although the groundwater is a possible future threat should the plant wells be shut down. However, there is currently no feasible way to determine whether future groundwater risks would be a significant threat to human health or the environment, as long as the plant wells are operating. Consequently, an evaluation of the groundwater would be necessary in the future to determine the landfill's impact on the shallow aquifer without the influence of the plant wells.

Due to the uncertainty about the future of groundwater quality at the site without the influence of the plant wells, ongoing groundwater monitoring is recommended to detect potential migration of any contaminants. General Tire has provided a commitment to the Commonwealth of Kentucky to perform operation and maintenance activities at the landfill and implement a groundwater monitoring plan. EPA cannot make a recommendation at this time for a remedy to mitigate possible future groundwater conditions without supporting data to indicate that a remedial action is necessary. However, in the event any ongoing groundwater monitoring indicates the presence of a significant release at a level that poses an unacceptable risk to human health and the environment, the site shall be restored to the NPL without application of the HRS (40 CFR §300.425(e)(3)). EPA could initiate clean-up actions (i.e. conducting a groundwater investigation and feasibility study, and/or performing an emergency response action) in the future pursuant to CERCLA and in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan.

This Record of Decision presents the selected remedial action for the General Tire Landfill Superfund Site. The selected remedial action was chosen based on the results of Remedial Investigation and Baseline Risk Assessment and all other documents and information contained in the Administrative Record. EPA makes this determination pursuant to the requirements of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan.

EPA has determined that its response at this site is complete. Therefore, the site now qualifies for inclusion on the Construction Completion List.

RESPONSIVENESS SUMMARY

The public comment period was established from July 15, 1993 to August 13, 1993. No comments by the public were received by EPA on the recommended proposed plan for the General Tire site.

As mentioned previously, EPA conducted a public meeting on July 29, 1993, to present the findings of the remedial investigation; describe the proposed final action; and answer questions regarding the site. No concerned citizens attended the meeting. A transcript of the meeting is included in Appendix A.

Additionally, comments submitted to EPA by the Commonwealth of Kentucky concerning the proposed plan is included for reference in this document, in Appendix B. EPA's response to these comments are also included.

GENERAL TIRE LANDFILL
SUPERFUND SITE
RECORD OF DECISION

APPENDIX A

PROPOSED PLAN PUBLIC MEETING TRANSCRIPTS

COPY

GENERAL TIRE LANDFILL

SUPERFUND SITE

PROPOSED PLAN PUBLIC MEETING

JULY 29, 1993

GRAVES COUNTY HIGH SCHOOL

HIGHWAY 121

MAYFIELD, KENTUCKY

REPORTED BY: ELIZABETH MILLER, RPR-CM

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1 APPEARING ON BEHALF OF THE
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2 REGION IV:

3

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(The hearing commenced at 7:10 p.m.)

MR. TAYLOR: I'd like to welcome everybody tonight. My name is Harold Taylor, and I'm an employee of the United States Environmental Protection Agency. My office is in Atlanta, Georgia, and I work for Region IV of the Environmental Protection Agency.

We have ten regions scattered throughout the United States. Region IV, we work the eight southeastern states: Alabama, Georgia, Mississippi, Florida, Kentucky, Tennessee, North Carolina, and South Carolina. I work in the Superfund Remedial Program. We basically work on the 20 National Priority List sites in the Commonwealth of Kentucky.

First of all, I'd like to thank everybody for coming tonight. I know it takes a lot out of your time to come to meetings like this. We appreciate you showing up. For those of you who haven't been to the school before, the restrooms are to your right. The ladies' is over here. The men's is toward the front.

We're going to try to run through a brief presentation and get to the question and answer period here tonight. If I could, I'd like to ask you to hold your questions until the end of our

presentation, and we'll stay here until we've answered all your questions.

I'd like to introduce a few people. We have a few elected officials here tonight. We have the mayor, Arthur Byrn. Arthur? Graves County Judge Executive Tony Smith back there. Appreciate you guys coming.

If I can, I'll introduce the people that are here from Atlanta tonight first. Nestor Young. Nestor is the Remedial Project Manager assigned to this site from Region IV. He's basically responsible for the day-to-day activities of the site for the Environmental Protection Agency.

Over again to Nester's left is Sue Munger. Sue is an attorney. She works for the Office of Regional Counsel for the Environmental Protection Agency in Region IV. And she's the attorney assigned to this site.

We have a number of State people here. I'll try to remember their names. Rick Hogan. We have Larry Moscoe with the Commonwealth of Kentucky Department of Law, Eric Liebenauer, and William Keel, all with the Commonwealth Superfund program, basically our counterparts. I hope all of you signed in. If you didn't, please sign in up front before you leave and

take advantage of the handouts that we have up front.

I'd like to remind everybody that this is not a formal hearing like a lot of meetings, perhaps, that you go to. This is basically a public meeting where we're just going to present information to you, try and answer any questions that you may have. And so we will answer your questions, not like a hearing where you just present comments.

Again, tonight, we're going to basically go over -- I'm going to basically go over the Superfund process. Mr. Young is going to go over the site background and remedial investigation that was done at the site. He'll also go over EPA's recommendations for the General Tire site. And Sue Munger will go over the enforcement activities for the site. I will go over the community relations, and then we'll have the question and answer period at the end.

We do have a court reporter here to keep a record tonight of your comments, Elizabeth Miller. She'll do a good job, I'm sure, of getting a record so that we can formally respond to any concerns of yours that we don't respond to sufficiently tonight.

When we do get to the question and answer period, I'll ask that you state your name, and if you

1 have a name that's difficult to spell, I ask that you
2 spell your name so the court reporter can get it.
3 Again, we're going to try to run through this quick,
4 since it is a fairly small crowd, and we'll try not
5 to take a full hour.
6 Real quickly, to go over what Superfund is and
7 how it's funded, in 1980, Congress passed what's
8 called the Comprehensive Environmental Response
9 Compensation and Liability Act. CERCLA is the
10 acronym. People commonly refer to it as Superfund
11 because it's such a long name. It gives basically
12 the Environmental Protection Agency a broad range of
13 response authorities to respond to what generally
14 people refer to as uncontrolled waste sites.
15 All the money that's in the Fund is generated
16 from taxes on the chemical and petroleum industry,
17 and together with what's called the Resource
18 Conservation and Recovery Act, it gives EPA a pretty
19 broad range of control over disposal and handling of
20 hazardous waste.
21 The Trust Fund was authorized originally in 1980
22 at 1.6 billion. '86 amendments authorized the Fund
23 to 8.6. And then in 1990, it was authorized with an
24 additional 5.1 billion dollars, current funding of
25 which lasts until 1994, at which time Congress will

1 have to either reauthorize the Fund or, basically,
2 the Superfund will expire as we know it today.
3 The two broad ranges of response authority that
4 we have of the Superfund are the removal authority.
5 This is basically, classically, what people refer to
6 as your emergency spills, your midnight dumps.
7 Somebody has taken waste and put it down on the
8 surface of the ground somewhere, and people who come
9 in contact with it will be harmed. We have the
10 authority to go out and basically take action to
11 either compel people to do that or spend Fund money
12 to do it yourself.
13 The second is remedial action, and that's
14 generally more of a long-term problem of groundwater
15 problem, a landfill, something that's not easily
16 addressed that generally will take years to address
17 properly and study properly, and it doesn't pose at
18 least an immediate health threat. And that's what
19 the program that we're here really to discuss with
20 you tonight is what EPA's been working on with the
21 General Tire site.
22 Again, just to briefly go over the Superfund
23 remedial process, obviously, sites have to be
24 discovered. Typically, they're sites reported by the
25 public to state agencies. In most states, including

1 the Commonwealth, the EPA has a grant to do
2 preliminary assessments and site investigations. And
3 generally, after that, if the site so warrants, there
4 will be a draft Hazardous Ranking Score and on to the
5 NPL if a site scores high enough.
6 The next step -- this chart over here might help
7 a little bit. The next step after sites are put on
8 the NPL is remedial investigation. It's basically a
9 study of pathways of exposures. Typically, remedial
10 investigations take two to three years to complete.
11 Enforcement actions can be taken basically at any
12 time if there's an immediate threat that's posed.
13 And public involvement basically continues throughout
14 the whole process. After the remedial investigation,
15 there's a Record of Decision, and ultimately, if so
16 warranted, remedial design and remedial action.
17 Again, just to go over site discovery,
18 basically, anyone can discover sites. I believe the
19 General Tire site, if memory serves me, was --
20 Companies that disposed of hazardous waste were
21 required originally when the Superfund was authorized
22 to notify the Agency that there might be a potential
23 of disposal. I believe that was how that site came
24 to the attention of the Agency. And again, once the
25 site is discovered, a preliminary assessment and site

1 investigation is done, either by the EPA or the
2 State, to see if it warrants further study.
3 A lot of people ask why an NPL and why an HRS.
4 And basically, Congress required an HRS system
5 because of the vast multitude of sites and basically
6 recognized there wasn't enough money to address all
7 of the sites at one time. So a Hazardous Ranking
8 System was developed to prioritize the sites.
9 The Hazardous Ranking System basically ranks
10 sites according to potential risk. Sites are scored
11 anywhere from a zero to one hundred points based upon
12 three factors: contaminants released into the
13 environment, concentration of toxicity and quantity
14 of the waste on-site, and people and sensitive
15 environments affected. Right now, sites that score
16 above 28.5 are added to the National Priority List.
17 This will give you a brief overview, and I know
18 this map is hard to see. But there are basically 19
19 -- or actually 20 sites now on the National Priority
20 List or proposed for the priority list in the
21 Commonwealth of Kentucky. The Paducah site, which is
22 just north of here, was added just a few months ago.
23 The majority of the sites, if you had to see
24 where they're clustered, are clustered around the
25 Louisville area, obviously where there's a lot of

industry.

I'll just go over basically what remedial investigation is for. It's basically to identify the nature and extent of contamination at a site. After remedial investigation is done, there's a risk assessment which is conducted to evaluate and qualify the risk posed by specific chemicals found at the site and to identify pathways of exposures.

To sort of bring this to a conclusion about the Superfund process, after the RI/FS is complete, the agency will issue a proposed plan, which if you haven't already gotten one, there are copies up at the front. We'll have a public -- 30-day public comment period on the proposed plan. We generally hold a public meeting, as we're doing tonight, to review the proposed plan and address any concerns or questions that you may have. And then we'll document the final choice for remedy in what's called a Record of Decision.

I believe with that, I will turn it over to Mr. Young, who will basically explain what we've been doing the last few years at the site as far as investigation.

MR. YOUNG: Thank you, Harold. My name is Nestor Young. I'm Remedial Project Manager for the

1 site. I was responsible for making sure that the
2 investigation being conducted by General Tire was
3 conducted within EPA protocol and was sufficient to
4 EPA standards.
5 I'm going to run through that investigation,
6 starting with the site background. Copies of my
7 overheads are up front. If you didn't get a copy,
8 you may want to do so. I'm going to be running
9 through essentially these overheads. I'm not going
10 to get into much detail. If you have a copy of the
11 proposed plan fact sheet, that gives you a little
12 more detail than what I'm going to be presenting
13 tonight. If you have any questions, if you can ask
14 towards the end, during the question and answer
15 period, I'd appreciate that.
16 Let's get started. Let's start off by talking a
17 little bit about the background of the General Tire
18 site. General Tire, if you don't know, produces
19 automobile tires, as well as tractor and truck
20 tires. They operated a landfill to dispose of plant
21 wastes from about 1970 to 1984.
22 During the early years, some hazardous wastes
23 were disposed of, and that ceased in approximately
24 1979. Between the years of 1979 and '84,
25 nonhazardous wastes were disposed of at the landfill,

1 comprised mainly of just general plant waste, packing
2 material, scrap rubber, things like that.
3 Wastes were buried in trenches that are
4 approximately 1,300 feet long, 40 feet wide and
5 approximately 30 feet deep. Some of the trenches lie
6 below the groundwater level, approximately ten feet
7 under. Some other trenches, I think we believe that
8 they're completely dry, above the groundwater.
9 EPA included the site on the Superfund list in
10 1990, again because of the potential threat to the
11 nearby municipal water supply wells. We had
12 hazardous and nonhazardous waste disposed of at the
13 landfill, wastes that were sitting in groundwater,
14 and a municipal water supply well that was
15 approximately two miles away from the site. So that
16 potential threat existed. The groundwater pathway
17 potentially contaminated groundwater getting to the
18 public.
19 We'll just throw up a site plan so that you see
20 what the site looks like. The landfill is located
21 approximately a third of a mile northeast of the
22 plant itself. As you can see, the trenches are
23 oriented in a north-to-south direction. It's
24 approximately 500 feet from Mayfield Creek, and the
25 land around it is basically farmland. To the west,

there's a railroad; generally, a vacant area just full of trees between the landfill and Mayfield Creek; and farmland to the south and to the north of the landfill.

Again, the potential threat was to the two municipal water supply well fields that were located within three miles of the site, both the Hickory water well field and the Hardeman. There's also one residential drinking water well located approximately one mile from the site. The well was tested and found not to be contaminated from any contaminants from the site.

The plant operates six water supply wells that are adjacent to the facility, and they pump approximately ten million gallons a day. The water is basically pumped from the ground and to the plant, and it's used as noncontact cooling water. Then the water is discharged to the rear of the facility into Key Creek. We tested the water coming into the plant from the plant wells and did not detect any contaminants. Essentially clean.

Since this is a landfill and it was being addressed through the State, in 1987 the landfill was approved for closure by the Commonwealth. The landfill closure consisted of monitoring the site for

a period of two years and installing a landfill cap. The cap consisted of approximately two feet of clean soil.

And I have a visual that will give you an idea of what that looks like. Again, the trenches are about 40 feet wide, 30 feet deep, and it's got two feet of clean soil over the top. And as I mentioned, some of the trenches on the eastern side of the landfill we believe are below the water table.

These diagrams that I'm showing you are located in the back of the copies if you want to refer to them. I think I may have missed -- EPA's investigation of the landfill began in October of 1990. And the investigation, along with a preliminary feasibility study -- there's a couple of letters missing here -- and a Baseline Risk Assessment was completed in May of this year.

The investigation consisted of the following. Aerial photographs were reviewed, and that was basically to get a chronology of events. Several photographs representing several years from the past were reviewed to take a look at the progress of the landfill, when the trenches were dug and what sequence the trenches were dug, things like that, and to what extent the landfill encompassed.

We conducted a surface geophysical study, which is essentially an electromagnetic device that -- basically, we used the device to determine what the extent or the outer limits of the landfill was. It detects metal, metal objects in the ground, and we just wanted to confirm what we already knew, which was the outer boundaries of this landfill.

We did an air quality survey, which consisted of taking samples all throughout the surface of the landfill and wanted to find out if there was any gas escaping through the surface and if that was a potential threat.

There were some surface soil samples taken, surface water, sediment samples, groundwater sampling. We also evaluated the groundwater flow and the geology underneath the landfill to determine if there were any contaminants escaping from the landfill and what direction they would be flowing. There was also an ecological assessment conducted to determine if there were any impacts to the local environment.

These are the number of samples that we collected. As you can see, there are a few surface soil samples, surface water. Surface water consisted of both samples from the Mayfield Creek, from Key

1 Creek, and also from ponding of water in ditches
2 around the site. That's also true for the sediment.
3 Sediment samples were collected along both creeks and
4 along ponding ditches. There were also groundwater
5 samples collected. There are numerous monitoring
6 wells that are located around the perimeter of the
7 landfill, both shallow monitoring wells and deep
8 monitoring wells, and a number of samples were
9 collected.
10 There were two sampling rounds that were
11 completed, two different times of the year, and that
12 was basically to confirm the results that we were
13 getting. And as I mentioned, there were samples of
14 the air to detect any gases being emitted from the
15 landfill. And we had approximately 390 samples that
16 were collected throughout the top of this landfill.
17 These are the type of compounds that we were
18 finding. In the surface soils, you can see we found
19 four organic and no inorganic compounds, mainly
20 metals and all that. When I say number of compounds
21 found, I'm talking about compounds that were detected
22 and that were determined to be possibly from the
23 landfill.
24 These compounds were essentially looked at,
25 background concentrations or existing standards, EPA

1 standards, and if they exceeded EPA standards, then
2 they were retained as compounds of interest. And if
3 they exceeded background concentrations, they were
4 also considered compounds of interest.
5 So we essentially sampled for a wide range of
6 compounds, both metals and organics. And we went
7 through a screening process to determine or to more
8 closely look at those compounds that could
9 potentially be coming from the landfill. After the
10 screening process, we essentially carried these
11 contaminants forward onto the Baseline Risk
12 Assessment and determined their potential health
13 risks. And as you can see, 12 compounds were found
14 -- 12 organic and 12 inorganic compounds were found
15 in the groundwater.
16 Essentially, what we found is that there were no
17 significant levels of contaminants in the shallow
18 aquifer or the deep aquifer. There were no
19 contaminants from the landfill found in Mayfield
20 Creek or Key Creek. No residential drinking water
21 wells were affected. No levels of contaminants were
22 found in surface soil sediments. And we didn't find
23 any gas being emitted from the landfill. Nothing
24 that would be harmful to human health or to the
25 environment.

1 We also found that the plant wells being
2 operated by General Tire were significantly impacting
3 the local groundwater. Those wells are essentially
4 reversing the natural groundwater flow. The natural
5 groundwater flow is basically towards the northeast,
6 towards Mayfield Creek. And these wells are
7 basically reversing that groundwater flow and pulling
8 or sucking groundwater towards the plant.
9 Pull up this visual again. Essentially, the
10 flow of groundwater is naturally towards Mayfield
11 Creek, and Mayfield Creek flows towards the north, so
12 the natural groundwater flow is essentially towards
13 the northeast. And as you can see, the facility
14 operates six plant wells located around the north
15 side of the facility. It's creating a very
16 significant depression in the groundwater, and what
17 that does is if there were any contaminants that were
18 escaping or being leached into the groundwater, they
19 would be getting sucked up into the plant wells. And
20 again, we're not finding any contaminants in the
21 plant wells at all.
22 Let me show you what the effects of the plant
23 wells are, essentially. We believe that these plant
24 wells have such a significant effect on the ground
25 water that it's actually sucking water out of

1 Mayfield Creek. It's that significant.
2 That's an important point to note. This is
3 basically one of the reasons why we're proposing what
4 we're proposing tonight is the fact that we're not
5 finding anything in the groundwater and the fact that
6 these plant wells are operating such that if there
7 were anything to be released from the landfill, the
8 plant wells will capture those.
9 And the groundwater is the primary mechanism by
10 which the local population would be affected. The
11 landfill has a cover on it, so there's no direct
12 contact with the waste. So the only way the
13 contaminant can find its way into the community is
14 through the groundwater, is through drinking
15 contaminated groundwater or coming in contact with
16 contaminated groundwater. And because these plants
17 wells are operating and because they're significantly
18 affecting the local groundwater, these contaminants
19 can't escape. They can't escape the power of the
20 wells.
21 Based on the data that we collected during the
22 remedial investigation and the screening of the
23 contaminants that were found in some of the
24 monitoring wells and some of the media that were
25 sampled, we went on and did an estimate of health

1 risks that may pose to the local community and to the
2 environment.
3 There are basically two ways of looking at
4 health risks. There are carcinogenic risks, which
5 are essentially compounds that cause cancer. We
6 looked at the risks of contracting cancer from
7 exposure to those compounds. And we also looked at
8 noncarcinogenic risks, meaning exposure to compounds
9 that do not cause cancer but that are either toxic or
10 have other adverse health effects.
11 We looked at both of those types of health
12 risks, and we found that the carcinogenic health
13 risks are within EPA's acceptable range. It was
14 either below the acceptable range or within it.
15 Thereby, we have concluded that the carcinogenic
16 compounds do not pose a health threat. And we didn't
17 find, also, any health threats associated to
18 noncarcinogens. Those health risks were also below
19 EPA's acceptable limit. Hand in hand with the health
20 risks, we also evaluated the risks to the local
21 environment, and we found that landfill did not pose
22 a risk to the environment or to local wildlife.
23 Based on all that, EPA's proposing tonight to
24 not take any further action at this landfill. We
25 feel that the landfill, as it exists today under

current conditions, does not pose a health threat and does not impact the environment. Again based on the data that we collected and based on the fact that those plant wells are operating, we feel that the plant wells are providing a significant protection against anything that may be released from the landfill. The visual outlines the basis for our decision and pretty much summarizes the results of the remedial investigation.

I think that pretty much covers everything that I want to talk about. Again, EPA's recommendation is no further action. And by that, we mean the way the landfill exists, you know, that the conditions at the site as it currently exists are acceptable. We're not finding any threats to the environment. We feel that the plant wells are providing a significant protection.

If you have any questions, I'll be glad to answer them during the question and answer period. Don't be shy. If I can't answer them, I'm sure we can get an answer here for you tonight. And that's it. I want to pass it back to Harold. Or actually, I want to go ahead and let Sue come up. And she's going to talk about what's next in the process. Now that we've pretty much completed the RI/FS, or the

1 Remedial Investigation/Feasibility Study, and have
2 concluded that the landfill doesn't pose a threat,
3 what's next? Where do we go from here? And Sue will
4 answer that question for you.
5 MS. MUNGER: I have just some very brief
6 comments to make. In situations like this where the
7 EPA and the State determine that a site is protective
8 of human health and the environment based on the
9 remedial investigations that have gone on for the
10 past couple of years, further remedial action is not
11 appropriate. In these cases, EPA can delete a site
12 from the National Priorities List if, again, it
13 determines that further response is not required to
14 protect human health.
15 One point I wanted to make especially this
16 evening is that deletion of the site from the
17 National Priorities List will not preclude its
18 eligibility for later fund-financed or PRP-financed
19 action. If it's determined that the site should be
20 returned to the NPL, for example, because we think
21 there may be a threat to human health and the
22 environment in the future, then it can be reinstated
23 on the NPL without ranking again on the Hazard
24 Ranking System.
25 And all that means is, for example, if the plant

1 wells stop pumping sometime in the distant future,
2 the site can be placed back on the National
3 Priorities List in what is essentially an expedited
4 manner. It can get re-ranked very quickly and you
5 don't have to go through what can sometimes be a
6 fairly significant time period before it's back on
7 the NPL. And that is a quick version of what we can
8 expect in the future on the site. Are there any
9 questions about deletion from the NPL or anything
10 related to enforcement activities? I'll take those
11 now or take those later.
12 (No response).
13 Okay. I'll turn it back over to Harold. Thanks.
14 MR. TAYLOR: Again, this is the last part, and
15 we'll get to the question and answer period. I was
16 just going to briefly go over the community relations
17 or participation in the Superfund. Suzanne Durham,
18 who is our Community Relations Coordinator for the
19 site for EPA, is sick tonight, so she was unable to
20 attend. I believe you'll see her name on page 6 of
21 the proposed plan, her name and address. And you'll
22 see that we're now conducting a 30-day public comment
23 period that runs from July the 15th to August the
24 13th. We'll accept public comments or written
25 comments that we receive that are postmarked by

1 August the 13th, 1993. You can send your comments to
2 Suzanne Durham at the address on page 6 of the
3 proposed plan. We're also taking any verbal comments
4 that you have tonight.
5 Another thing I'd like to just point out, the
6 administrative record for the site, which is what EPA
7 based its decision on for the proposed plan, is
8 located in the Graves County Library in Mayfield.
9 It's there. It's, I guess, about eight volumes of
10 documents. Any comments that we receive tonight or
11 in writing by August the 13th we will respond to in a
12 responsiveness summary which will be included in the
13 Record of Decision for the site.
14 With that, I think we'll get to probably what
15 you're here for is the questions and answers. And
16 again, what I'll try to do is take any questions that
17 you may have. Again, please speak loud and state
18 your name so that the court reporter can get an
19 accurate record of your question of concern. Address
20 your concern to me, and I'll either try to answer it
21 or ask someone here tonight to answer your questions.
22 So with that, are there any questions? I think
23 I've talked to just about everybody but a few in the
24 room tonight already. So -- Tony?
25 MR. SMITH: I really don't have a question to

1 answer or anything. I just want to make a
2 statement. I'm Tony Smith, and I met with you folks,
3 of course, this morning, on the information that you
4 provided for us on this meeting and also tonight. I
5 feel confident that the information that you have
6 provided for us, the work that's been done, I feel
7 good about the site at General Tire. And after
8 listening to the experts, I feel confident that the
9 water supply, of course, is safe, and I don't have
10 any problems. Thank you.
11 MR. TAYLOR: Thank you. Yes, ma'am.
12 MS. AGNEW-THOMAS: Julie Agnew-Thomas. I have
13 one question. Are the wells at the plant being
14 monitored for possible contamination, or is there any
15 continuing monitoring going on? Is that --
16 MR. TAYLOR: Go ahead.
17 MR. YOUNG: No, the plant wells are not
18 currently monitored on a frequent basis. They're not
19 monitored at all. We sampled the wells on two
20 occasions during this investigation and found both
21 times that none of the wells contained any
22 contaminants. So essentially, the wells are pumping
23 clean water.
24 If, however, at some point in the future the
25 wells would pump some contaminated water -- and by

1 "contaminated," I mean basically organic
2 contaminants that would probably be in the water.
3 Like I mentioned before, the water is used as
4 noncontact cooling water, so if the contaminants get
5 into the plant, they will be essentially destroyed by
6 the high temperatures that the water encounters in
7 the plant. And I feel fairly confident that the, you
8 know, that those contaminants would be destroyed
9 within the plant and not discharged into Key Creek.
10 You've got to keep in mind also that the
11 landfill comprises just a very small portion of the
12 total radius of influence of the plant wells, so the
13 plant wells are pumping a lot more clean water than
14 they are any contaminated water. That's one of the
15 reasons why we're not finding anything.
16 Another important point to note is that the
17 plant is supplied by City water. So all the potable
18 water within the facility is supplied by the City and
19 not by the plant wells. The plant wells are strictly
20 used for the manufacturing process and not for
21 drinking. So the employees are not exposed to
22 potentially contaminated water from the plant wells.
23 MR. TAYLOR: The discharge of that water, of
24 course, is discharged under a permit from the State.
25 Of course, they don't monitor all the time for all

constituents, but there is monitoring that goes on of the discharge of the water from the wells.

MR. BYRN: Point of information. I'm Arthur Byrn, Mayor of the City of Mayfield. The water -- the drinking water is provided by Hickory Water District, not by the City of Mayfield.

MR. YOUNG: I stand corrected.

MR. TAYLOR: If there aren't any other questions, I certainly appreciate everyone coming out tonight. And if you do have anything you'd like to talk to us about while we're straightening up the room, we'll be glad to. Thank you very much.

(The hearing was concluded at 7:46 p.m.)

1 C E R T I F I C A T E

2

3 I, ELIZABETH MILLER, Registered Professional
4 Reporter, CM, and Notary Public in and for the State
5 of Kentucky at Large, hereby certify that on the 29th
6 day of July, 1993, I attended and reported the
7 proceedings as set out on page 1 of this transcript,
8 and that the foregoing is a true and correct
9 transcription of my stenographic notes thereof.
10 Dated this 9th day of August, 1993.
11
12
13
14 ELIZABETH MILLER, RPR-CM
15 Notary Public, Kentucky at Large
16 My commission expires January 9, 1996.
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18
19
20
21
22
23
24
25

GENERAL TIRE LANDFILL
SUPERFUND SITE
RECORD OF DECISION

APPENDIX B

COMMONWEALTH OF KENTUCKY
COMMENTS ON THE
THE PROPOSED PLAN FACT SHEET
AND
EPA'S RESPONSE LETTER

PHILLIP J. SHEPHERD
SECRETARY

BRERETON C. JONES
GOVERNOR

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
FRANKFORT OFFICE PARK
14 REILLY ROAD
FRANKFORT KENTUCKY 40601

RECEIVED
AUG 18 1993
EPA — REGION IV
ATLANTA, GA

August 11, 1993

Mr. Nestor Young
North Superfund Remedial Branch
United States Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: General Tire Landfill Superfund Site
Graves County, Kentucky

Dear Mr. Young:

The Commonwealth of Kentucky Division of Waste Management (KDWM) has reviewed the proposed plan of action regarding the subject site. Based upon the investigative work completed to date the Commonwealth takes issue with the Environmental Protection Agency's preliminary decision to require no further action at the General Tire site. Our concerns have been communicated in previous comments on the Remedial Investigation/Feasibility study and the baseline risk assessment. Summarily, our principal concerns are as follows;

1. Site characterization efforts of the landfill were insufficient to provide a basis for a full assessment of the feasibility of source treatment.

2. The occupational, recreational and environmental effects of withdrawing groundwater from beneath the fill and discharging to Key Creek were largely discounted in the risk assessment.

3. Cessation of plant production will lead to migration of contaminated groundwater off-site. This would be a totally unacceptable situation, particularly since the cone of groundwater influence of the Hickory Water District wells may encompass the landfill.

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The KDWM strongly recommends a reconsideration of EPA's no action proposal. We are committed to working with EPA in resolving our concerns in this matter and wish to express our willingness to dedicate our resources to the maximum extent practicable in this regard. We feel it plausible to explore the possibility of the EPA acquiring a commitment from General Tire to address plant closure or any possible sustained production well shut down scenario and a continued surface and groundwater monitoring plan.

Again we urge EPA to reconsider it's "no action" proposal and reiterate our willingness to contribute in any way we can. Should EPA find a reconsideration not workable, the KDWM finds it necessary to take the position of nonconcurrence. As always, we will be glad to discuss the issues with you should you desire.

Sincerely,

David W. Morgan for

C. Patrick Haight, Director
Kentucky Division of Waste Management

CPH/JP/pkb

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET NE
ATLANTA GEORGIA 30365

August 24, 1993

C. Patrick Haight, Director
Division of Waste Management
Kentucky Department for
Environmental Protection
Frankfort Office Park
18 Reilly Road
Frankfort, Kentucky 40601

RE: General Tire Landfill Superfund Site
Mayfield, Graves County, Kentucky

Dear Ms. Haight:

This letter is in response to your correspondence concerning EPA's proposed plan for the General Tire Landfill Superfund Site. EPA has made it's recommendation of "no action" after careful consideration of the data collected during the remedial investigation, and based on the risk assessment performed. It has never been EPA's position that the site should not be monitored long term to make certain that the landfill would not adversely impact human health and the environment in the future -- especially when the plant wells cease operating. This concern is clearly stated in the proposed plan fact sheet, which was sent to the Kentucky Division of Waste Management (KDWM) and to the local community.

EPA believes very strongly that the site does not currently pose a threat to the public or to the environment. Since the waste lies below the ground surface in trenches, and your agency previously required a two foot soil cover over the waste, the only exposure pathway to the public or to the environment that may reasonably cause an unacceptable risk would be via the groundwater. The only conclusion that could be reached, based on the results of the investigation, is that the plant wells are, and have been, mitigating any groundwater problems that may have been produced by the landfill. The investigation shows that the groundwater poses no unacceptable risk to the public or to the environment.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) allows EPA to take any necessary action consistent with the National Contingency Plan (NCP) to protect the public health or welfare, or environment from any hazardous substance release or substantial threat of a release. There is

currently no evidence to show that a potential for a future release from the landfill when the plant wells shut down may endanger the public or the environment. Therefore, since there exists no current or future substantial endangerment to the public or environment, from any release or threatened release, the EPA has no authority (under CERCLA) to enforce a remedial action at this site.

This complicated issue was brought to your staff's attention over a year ago, when the first draft of the remedial investigation report and baseline risk assessment was submitted for review. At that time EPA acknowledged a concern for the future of the site, but based on the results of the investigation, and specifically the baseline risk assessment, EPA could not enforce an action to protect the public health without a basis for implementing such an action. EPA believes that the long term monitoring of the site would be more appropriately addressed through the Commonwealth of Kentucky solid waste regulations, particularly since the landfill has not yet been granted final closure by your agency.

Prior to the proposed plan public meeting on July 29, 1993, EPA, and Mr. Rick Hogan and Mr. Larry Moscoe of KDWM met with representatives of General Tire. During this meeting General Tire verbally agreed to implementing a long term monitoring plan that would be acceptable to KDWM. General Tire committed to submitting this plan to your staff in the near future.

On several occasions during the development of the RI Report and Risk Assessment Report, EPA and your staff have discussed the Commonwealth's concerns, and on one occasion your staff had an opportunity to communicate these concerns directly to General Tire and their consultant. EPA believes that most of these issues have been adequately addressed in the submittal documents, and perhaps a better understanding of the issues from EPA's perspective may bring us closer to an agreement about the proposed plan. The following narrative is provided to specifically address your principal concerns, enumerated in your letter:

1. *Site characterization efforts of the landfill were insufficient to provide a basis for a full assessment of the feasibility of source treatment.*

   EPA response: Site characterization typically involves collecting environmental samples from every media that may be impacted by the site to develop an understanding of the problems associated with the site, and subsequently develop appropriate remedial alternatives. At the General Tire Landfill, every environmental media was sampled except for subsurface soils. Since a complete inventory of the waste placed in the landfill was provided by General Tire, the need for a subsurface soil sample was not necessary.

Knowing the types and quantities of hazardous substances disposed of was sufficient to determine the potential environmental problems attributable to those constituents and determine possible treatment alternatives to be considered in the feasibility study. Additionally, monitoring wells positioned around the landfill were used to determine the "leachability" of the waste or migration of contaminants through the groundwater.

Contamination of subsurface soils at this site would have been likely caused by lateral migration of the contaminants through the side walls of the trenches. If we assume that this scenario has occurred, the consequences of leaving contaminated subsurface soil in place would not be worse than the consequences of leaving the waste in place, since the exposure pathway (groundwater) is the same in both instances. The fact that the soils surrounding the waste may be contaminated is not a concern as long as there is no exposure pathway associated with those contaminants. Therefore, there is no informational value gained by sampling subsurface soils in this case.

EPA believes that a complete site characterization of the site was conducted, and that the data gathered is sufficient to formulate our decision.

2. *The occupational, recreational and environmental effects of withdrawing groundwater from beneath the fill and discharging to Key Creek were largely discounted in the risk assessment.*

EPA response: Groundwater is pumped by six plant wells into the General Tire facility, where it is used as non-contact water for the cooling and hydraulic system, and as boiler make-up for the powerhouse. After the water is utilized in the facility it is discharged into Key Creek through six approved KYPDES outfalls. Key Creek is an intermittent stream that flows mainly in response to the General Tire discharge. Key Creek then discharges into Mayfield Creek. The following points should clarify your evaluation of the risks associated with exposure to groundwater being pumped into the facility and subsequently discharged into Key Creek.

i) Occupational Exposure

The only time employees of the facility would be exposed to the extracted groundwater is when maintenance is being performed on the closed loop system containing the water. Potable water at the facility is provided by the Hickory Water District municipal wells -- not the plant wells.

The plant wells were sampled on two separate occasions during the investigation. Both sets of results for each well indicates that none of the constituents of interest are present in groundwater being pumped to the plant. Therefore, under current site conditions, the occupational exposure scenario is not considered to be reasonable (since there are no contaminants to be exposed to). However, since some constituents of interest were present in the shallow aquifer and since these contaminants would be captured by the wells, a future dermal exposure pathway was nonetheless considered in the risk assessment.

ii) Recreational and Environmental Exposure

Although recreational use of Key Creek was not specifically addressed, current use and future no action scenarios for recreational use of Mayfield Creek was considered in the risk assessment. Additionally, an aquatic assessment was conducted on Mayfield Creek where it was expected that ecological impacts would have been observed. Sample locations up-gradient and down-gradient of the confluence of Mayfield and Key Creeks were used. Since Key Creek is an intermittent stream, which flows mainly because of General Tire's discharge, it is not reasonable to assume that the creek would be used recreationally or that it would support the types of organisms needed to determine chronic toxicity effects. Moreover, as mentioned above, analytical results of the groundwater entering the facility did not show the presence of any contaminants of interest -- the results were all below detectable limits.

iii) Hydrology

The plant wells are producing a significant hydraulic gradient encompassing the entire landfill area. This gradient is so significant that both Mayfield and Key Creeks are recharging the shallow aquifer, and the plant wells have reversed the natural groundwater flow direction in the surrounding area. The plant wells extract groundwater from the deeper Tallahatta aquifer, which was found to contain very few contaminants of interest (no organic compounds).

As mentioned before, water samples from each of the six plant wells were collected and analyzed. The results showed no detectable concentrations of any contaminants of interest. This result is not surprising since the data shows that the Tallahatta aquifer beneath the landfill has not been significantly impacted, and since the influence of the plant wells extends radially outward in all directions and therefore captures proportionately more "clean water" than "contaminated water".

In summary, the risks associated with exposure to groundwater being pumped to the facility and discharged to Key Creek are insignificant since there are no contaminants in the water from the landfill to be exposed to.

3. *Cessation of plant production will lead to migration of contaminated groundwater off-site. This would be a totally unacceptable situation, particularly since the cone of groundwater influence of the Hickory Water District wells may encompass the landfill.*

   EPA Response: The future condition of the groundwater at the site when the plant wells shut down is an issue that also concerns EPA. However, there is currently no way to determine if there would be a groundwater problem in the future or that the health and environmental risks would be unacceptable. At this time EPA can only recommend that a future evaluation of the groundwater be conducted when the plant wells cease operating. If and when new information indicates that the site poses an unacceptable risk to the public or to the environment, EPA is committed to re-evaluating the site for possible actions under the authority of CERCLA and the NCP. According to the NCP (40 CFR §300.425(e)(3)) "All releases deleted from the NPL are eligible for further Fund-financed remedial actions should future conditions warrant such action. Whenever, there is a significant release from a site deleted from the NPL, the site shall be restored to the NPL without application of the HRS."

Finally, your suggestion to acquire a commitment from General Tire to shut down the plant wells for period of time to study the groundwater under that scenario is not feasible for numerous practical reasons. For instance, shutting down the plant wells will effectively shut down the plant, and it is estimated that it would take a substantial period of time for the groundwater to reach it's natural equilibrium state. As mentioned previously, General Tire has committed to implementing a long term monitoring plan and address groundwater issues when the plant wells are shut down in the future. EPA has strongly encouraged General Tire to cooperate with KDWM and address these long term concerns. EPA believes that KDWM is in a better position to enforce long term monitoring of the site since final closure of the landfill has not been granted, and as stated earlier, EPA has no authority under CERCLA to issue an enforcement action at this site.

Regretfully, I must advise you that EPA's position has not changed. Our "no action" proposal is not motivated by a lack of willingness to implement a long term solution, but rather, it is a position we must accept based on our understanding of the conditions at the site. EPA cannot recommend a remedial action for future site conditions without supporting data to indicate that such actions are warranted.

After your careful review of this letter, we would like to suggest a meeting with you and your staff to discuss these issues further and hopefully reach an agreement or develop a better understanding of our respective positions. We are currently completing the first draft of the Record of Decision. Our intention is to issue a decision document that would in no way inhibit your agency from initiating any enforcement action in the future.

Please call me at your earliest convenience to schedule the meeting if you feel it would be beneficial. We would be glad to meet in Frankfort at your office.

Sincerely,

Nestor Young
Remedial Project Manager
Kentucky/Tennessee Section
North Superfund Remedial Branch

pc: Harold Taylor, EPA
Rick Hogan, KDWM