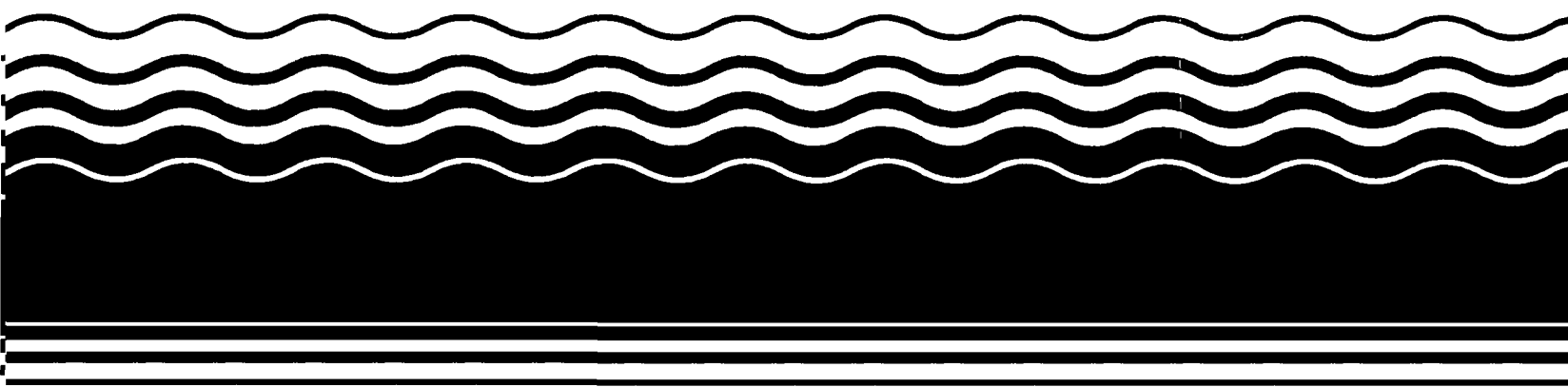


**PB95-964101
EPA/ROD/R05-95/273
January 1996**

EPA Superfund Record of Decision:

**Whiteford Sales and Service/
National Lease, South Bend, IN
9/29/1995**



DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Whiteford Sales and Service, Inc. Site, St. Joseph County, South Bend, Indiana.

STATEMENT OF BASIS

This decision document presents the selected remedial action for the Whiteford Sales and Service, Inc., site, St. Joseph County, Indiana. The selected remedial alternative was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to the extent practicable. The decision is based upon the contents of the administrative record for the site.

DESCRIPTION OF THE SELECTED REMEDY

The remedy selected by U.S. Environmental Protection Agency (EPA) is "No Action."

DECLARATION STATEMENT

The Baseline Risk Assessment completed for the Whiteford Sales and Service, Inc. (WSS), site indicated that the WSS site may pose potentially unacceptable risks to human health and the environment. Specifically, the Baseline Risk Assessment concluded that the noncancer hazard index calculated for exposure to groundwater, and the carcinogenic risks calculated for exposure to soil and groundwater, were potentially unacceptable if there was direct exposure to the soil and groundwater at the WSS site. The determinations in the Baseline Risk Assessment regarding the risks due to exposure to soil were based on a very conservative assumption related to the ability of human skin to absorb the chemicals of concern. Regarding the risks due to exposure to groundwater, the determinations in the Baseline Risk Assessment were based on standardized assumptions related to volume of water ingested and on the assumption that exposure to groundwater from directly beneath or adjacent to the WSS site, rather than to groundwater derived from several different sources that are part of the City of South Bend municipal water system. Based upon concerns regarding risk expressed during the public meeting held during the public comment period on the Proposed Plan, EPA's toxicologist further reviewed the Baseline Risk Assessment and risks due to exposure to soil using a figure for dermal absorption efficiency recommended by the Agency for Toxic Substances and Disease Registry (ATSDR), and determined that none of the risks posed by soil were found to be unacceptable. In addition to this, the property, now owned by St. Joseph County, is currently used as a retention basin for stormwater and surface water run-off from the overpass and surrounding areas, and direct exposure to soil is not highly likely.

EPA also recalculated risks due to exposure to groundwater at and in the vicinity of the site. Based on assumptions which reflect a more realistic groundwater consumption rate, and taking into account the fact that some dilution will occur in the system due to the use of other

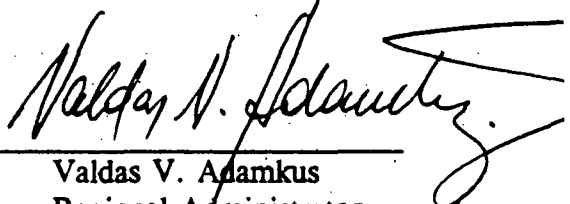
groundwater sources for the municipal water supply, none of the risks posed by groundwater were found to be unacceptable.

As further assurance that human health and the environment will not be subject to unacceptable risks due to either the WSS site or other unidentified sources of contamination in the area, requirements which the City of South Bend is subject to under the Safe Drinking Water Act (SDWA) are summarized here. Under SDWA, the City of South Bend is required by law to sample and analyze water provided to residents who rely on city well fields for drinking water. The City of South Bend submits the results of analyses of samples from each of its well fields to Indiana Department of Environmental Management (IDEM) and EPA on a regular basis. If levels of contaminants in a sample exceed federal standards, known as Maximum Contaminant Levels (MCLs), for safe drinking water, the State of Indiana is required to take action to ensure that water in compliance with MCLs is being provided to the public and that monitoring of the affected well(s) continues. Therefore, requirements under SDWA further ensure that the persons who rely on City of South Bend well fields are receiving water that does not pose a significant current or future risk to human health or the environment.

In summary, based upon EPA's review of the RI report and the Baseline Risk Assessment, actual conditions at the WSS site, and evaluation of the risks posed by the site, EPA has determined that the WSS site does not pose a significant current or future risk to human health or the environment. For these reasons, and given the existence of a statute which specifically provides for monitoring of public water supplies, EPA has concluded that further remedial action at the WSS site is not necessary to ensure protection of human health and the environment and that expenditure of funds under the CERCLA statute are not warranted. In addition to the decision to recommend a "No Action" alternative for the site, EPA has determined that a five-year review of the site pursuant to Section 121 of CERCLA is not required and a five-year review will not be performed at the site. Because EPA has determined that its response at the site is complete and that no remedial action is necessary, the site now qualifies for inclusion on the Construction Completion List.

It is anticipated that the State of Indiana will concur with EPA's recommended alternative for the site.

9/29/95
DATE


Valdas V. Adamkus
Regional Administrator



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live

Evan Bayh
Governor
Kathy Prosser
Commissioner

100 North Senate Avenue
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Indianapolis, Indiana 46206-6015
Telephone 317-232-8603
Environmental Helpline 1-800-451-6027

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OCT 23 1995

U.S. EPA REGION 5
OFFICE OF REGIONAL ADMINISTRATOR

Mr. Valdas Adamkus
Regional Administrator
U.S. EPA, Region V
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Adamkus:

Re: Record of Decision Final Site
Remedy
Whiteford Sales & Service
Superfund Site
South Bend, Indiana

The Indiana Department of Environmental Management has reviewed the U.S. EPA's Record of Decision for the Whiteford Sales & Service Superfund site. IDEM fully concurs with the components of the selected remedy for this site, which includes:

- The remedy selected for this site is "No Action".
- In addition to the decision to recommend a "No Action" alternative for the site, a five-year review of the site, pursuant to Section 121 of CERCLA, is not required and a five-year review will not be performed at the site.
- The site now qualifies for inclusion on the Construction Completion List since no remedial action is necessary.

We also agree that this action attains Federal and State requirements that are applicable or relevant and appropriate to this final site remedy.

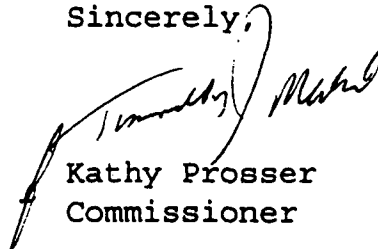
IDEM staff have been working closely with Region V staff in the selection of an appropriate final remedy for the Whiteford Sales and Service site and are satisfied that the selected alternative adequately addresses the risk to human health and the environment posed by the soils and groundwater.

Mr. Valdas Adamkus

Page 2

Please be assured that IDEM is committed to accomplish cleanup of all Indiana sites on the NPL and intends to fulfill all obligations required by law to achieve that goal.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathy Prosser", is written over the typed name and title.

Kathy Prosser
Commissioner

cc: Mary M. Tierney, U.S. EPA RPM
Scott Hansen, IDEM, PM

WHITEFORD SALES AND SERVICE INC.

ST. JOSEPH COUNTY, INDIANA

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

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DECISION SUMMARY

I. SITE DESCRIPTION

The Whiteford Sales and Service, Inc. (WSS) site consists of a former truck washing facility located in St. Joseph County, Indiana. The site is located southeast of the City of South Bend and is bounded by Sample Street to the north, Garst Street to the south, Grant Street to the east, and Olive Street to the west. The Olive Street overpass forms the site boundary along its north and west sides (see Figure 1 for site location). Currently the site serves as a retention basin for stormwater and surface water run-off from the overpass and surrounding areas.

The closest surface water body to the site is the St. Joseph River which flows southeast to northwest and is located approximately 2 miles northeast of the site. The St. Joseph River, which eventually drains into Lake Michigan, is used for fishing and recreational activities. The WSS site occupies approximately 11 acres, which includes approximately 8.6 acres that comprised the original facility property, purchased by St. Joseph County in 1980, along with an additional 2.4 acres previously owned by the County. Land in the vicinity of the site is primarily commercial and light industrial. Residential areas are located approximately 2,000 feet south of the site, and also north of the site beyond the Olive Street overpass and the Grand Trunk Western Railroad right-of-way. A metal scrap yard is located immediately east of the site across Grant Street, and a trucking depot is located immediately south of the site.

One of the ten City of South Bend municipal well fields, the Olive Street well field, is located approximately 800 feet west of the site (see Figure 2 for location of Olive Street well field). The Olive Street well field contains six municipal wells, one of which is operational, and used for emergency situations only. The municipal system, which supplies over 100,000 residents with drinking water, is referred to as a blended water system due to the fact that water mains from the ten well fields are interconnected and residents may be supplied with water from one or any combination of the ten well fields.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

Whiteford Sales & Service Site History

Whiteford Systems Group was an affiliation of corporations owned and operated by Ronald W. Whiteford of South Bend, Indiana. Two of those corporations, Whiteford Sales and Service, Inc., and Whiteford Leasing Corporation, operated out of a building at 2020 West Sample Street in South Bend, Indiana, between 1967 and 1983. During this period, Whiteford Leasing Corp. operated a truck leasing facility at the site, and Whiteford Sales and Service, Inc., operated a truck washing facility at the site. The property located at 2020 West Sample Street was known as Whiteford Sales and Service from approximately 1960 through 1983, and as Nationalease, Inc., from approximately 1983 through 1987.

St. Joseph County purchased the property on February 19, 1980. Whiteford Sales and Service, Inc., continued operating its truck washing facility at the site from 1980 until St.

Joseph County began construction of the Olive Street overpass in mid-1983 (see Figure 3 for map of former site features). The building which originally housed Whiteford Sales and Service was demolished by St. Joseph County in October 1983 as part of the overpass construction project.

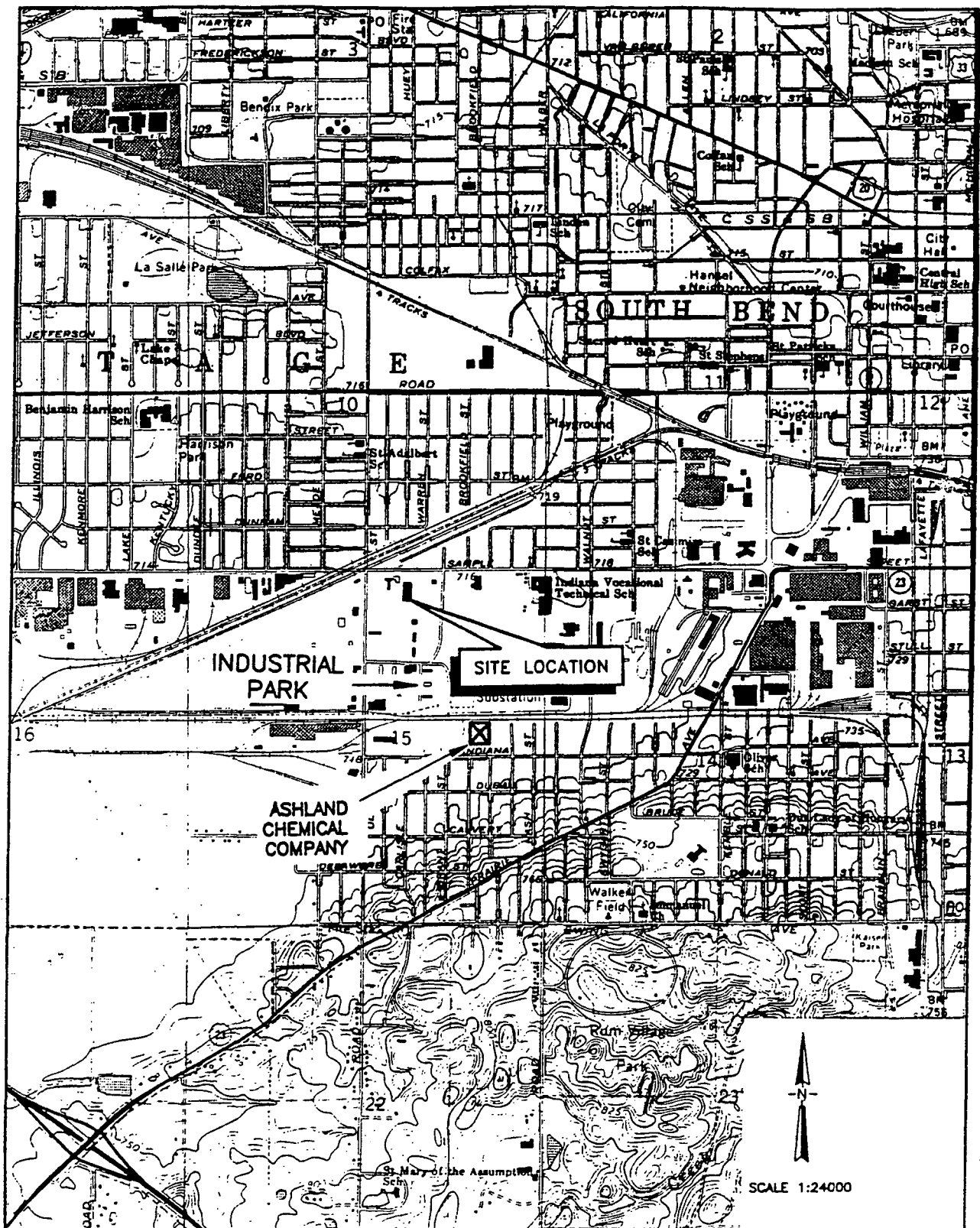
During the time that Whiteford Sales and Service operated at the site, waste water from the truck washing operations was disposed of via facility floor drains that discharged to three dry wells located approximately 20 to 70 feet south of the main building. Each well was constructed of perforated concrete and was approximately 4 feet wide and 6 feet deep. No engineered liners or other materials limiting downward percolation of liquids, or collection systems, were present, and no records of the quantity of waste water generated were maintained. For Hazard Ranking System (HRS) scoring purposes, the volume of waste water generated was estimated to be 396,000 gallons. Types of wastes believed to have been discharged to the dry wells include solvents, degreasers, waste oil, and detergents. Other waste fluids from the vehicles serviced at the facility may also have entered the wells.

In the process of realigning the Olive and Sample Street interchange and constructing the new overpass in 1983, St. Joseph County used soil from the WSS site as fill material. Approximately 200,000 cubic yards of soil from the WSS site were borrowed for construction of the overpass, resulting in an approximate 10-foot deep excavation over nearly 90 percent of the 11-acre site (see Figure 4 for area of soil excavation). In August 1983, St. Joseph County construction contractors uncovered the three dry wells during excavation activities at the site, and the County subsequently retained an environmental consulting firm to test samples of the sludge and soil from the wells. Results from the analysis of the dry well sludge showed that the sludge was a RCRA characteristic waste due to its low flash point. In addition, eight EPA priority pollutants were identified in the sample. County officials were directed by IDEM, then known as the Indiana State Board of Health, Land Pollution Control Division, to not disturb, remove, cover, or flood the area unless proper authorization was obtained. A Consent Decree finalized in June 1987 and signed by Whiteford-Kenworth, Inc., St. Joseph County, and IDEM authorized the cleanup and removal of the dry well material. Removal of the sludge in the dry wells, and sludge and soil extending 4 feet beyond the dry well sides and bottoms, was completed in July 1988. Approximately 210 cubic yards of contaminated soil and sludge were disposed of at the County Line Sanitary Landfill in Fulton County, Indiana.

History of Contamination in Olive Street Municipal Well Field

The City of South Bend municipal drinking water system supplies over 100,000 residents with groundwater from ten municipal well fields. Five of the ten well fields are located within a three-mile radius of the WSS site. The Olive Street well field contains six municipal wells, with the nearest well located approximately 800 feet west of the site and the farthest located approximately 1,950 feet southwest of the site. Until 1980 when the well field was shut down, the Olive Street well field had the highest capacity of the ten city well fields.

Volatile organic compounds (VOCs) were detected in the Olive Street well field as early as 1980. In June 1980 the well field was shut down by the City due to the contaminant levels in the wells. A report of an investigation conducted later that year by an environmental



ALTERNATIVE REMEDIAL CONTRACTING STRATEGY

U.S. EPA CONTRACT No. 68-W8-0089

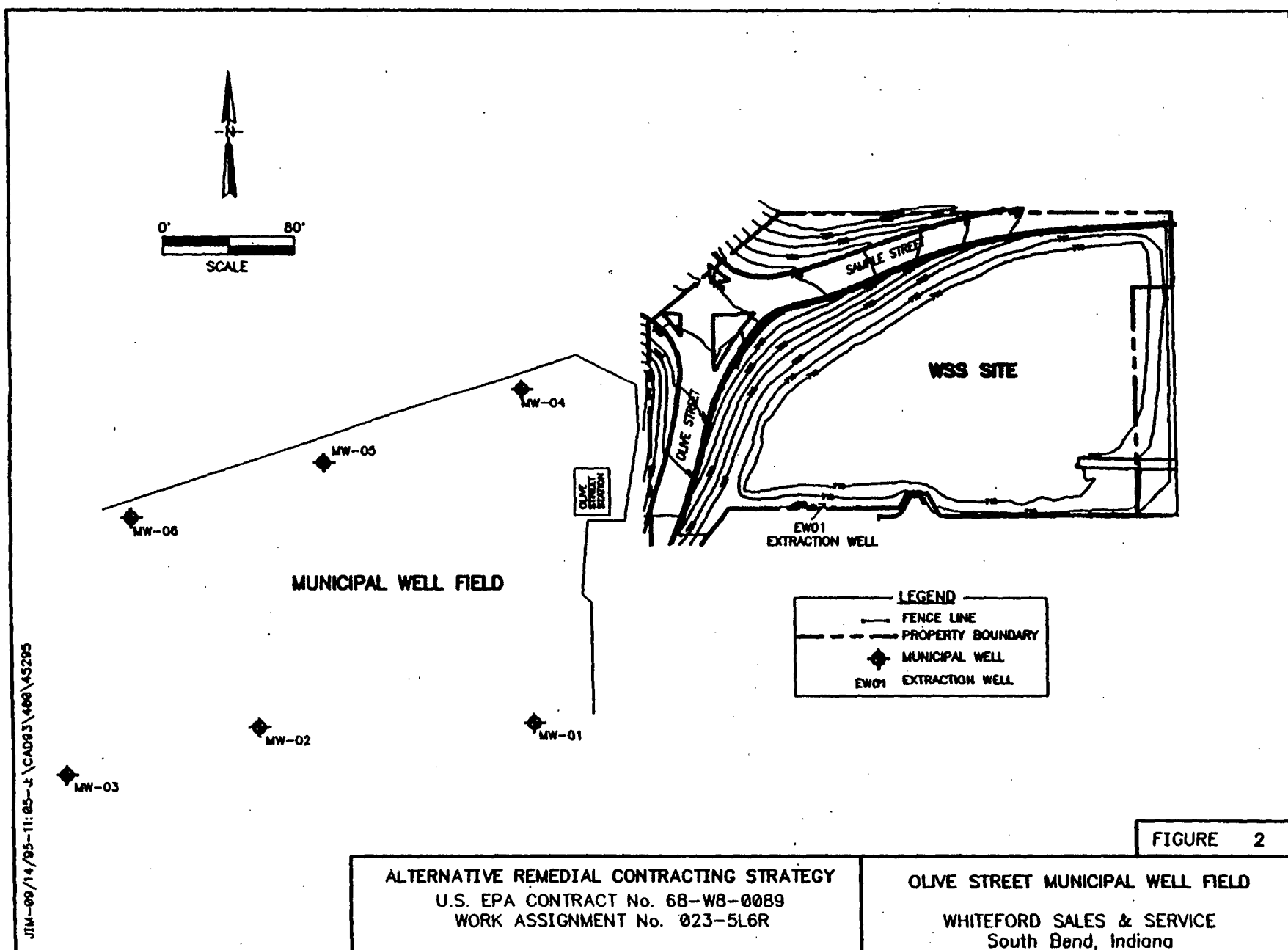
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FIGURE

1

AREA LOCATION MAP

WHITEFORD SALES & SERVICE
South Bend, Indiana



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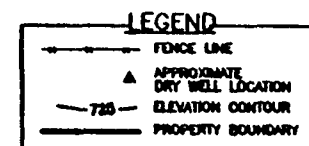
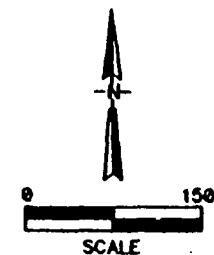
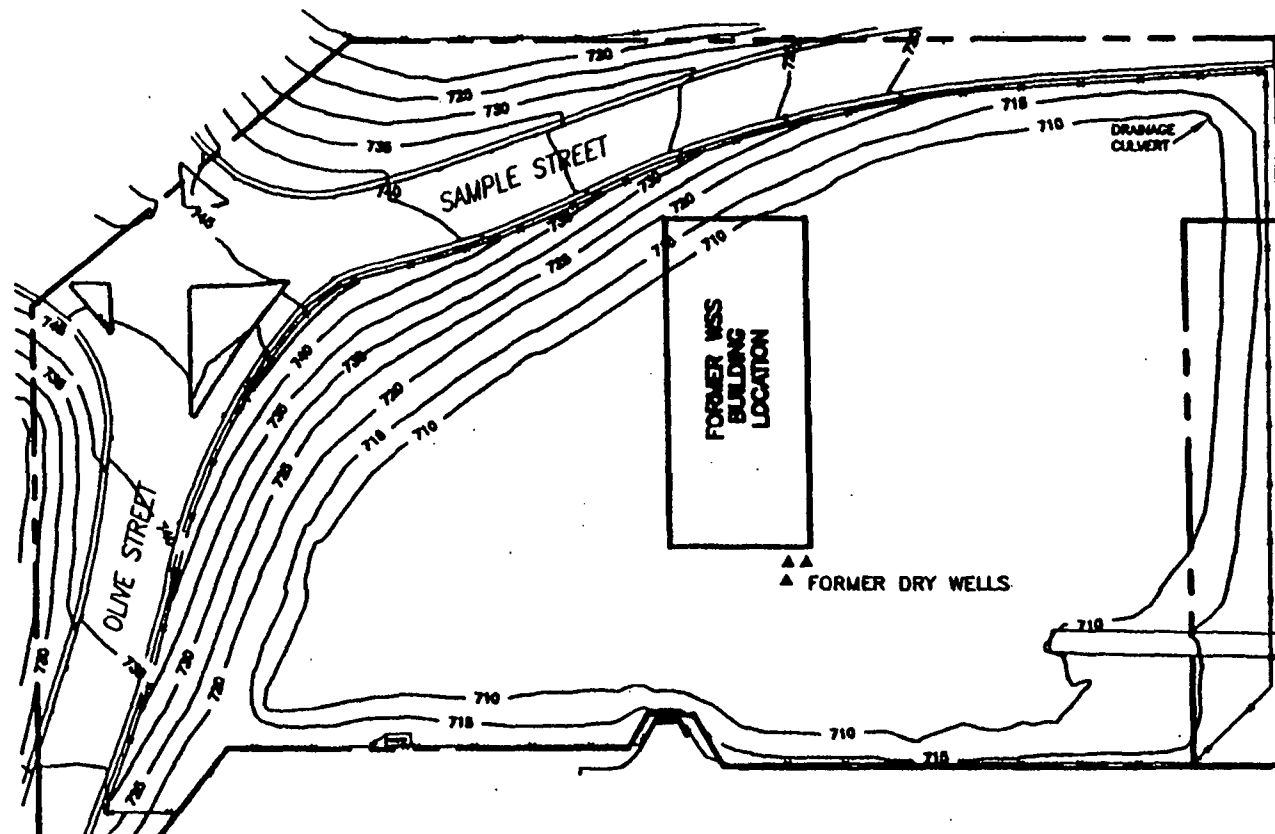


FIGURE 3

ALTERNATIVE REMEDIAL CONTRACTING STRATEGY
U.S. EPA CONTRACT No. 68-W8-0089
WORK ASSIGNMENT No. 023-5L6R

FORMER SITE FEATURES
WHITEFORD SALES & SERVICE
South Bend, Indiana

consulting firm retained by Ashland Chemical Company (Ashland) indicated that Ashland, located approximately 2,000 feet southeast of the WSS site, was the probable source of the groundwater contamination. In 1981 Ashland initiated a study to further define the source of the contaminant plume and installed several extraction wells between its facility and the Olive Street well field to try to prevent contaminated water from continuing to enter the municipal wells, and also excavated and disposed of approximately 10,000 cubic yards of contaminated soil from Ashland property. One of the Ashland extraction wells was installed adjacent to the southern boundary of the WSS site due to a "pocket of contamination"¹ detected in the area. It was not until late in 1983, when the dry wells on the WSS site were uncovered, that it was recognized that this pocket of contamination may have been, at least in part, originating from the WSS site instead of from Ashland, and that contaminants from the WSS operations may have contributed to the contamination in the Olive Street well field.

In addition to the release at Ashland, numerous spills and releases from other facilities in the generally commercial and light industrial area of the site have been reported. File searches completed at IDEM central offices in Indianapolis, Indiana, revealed a number of substances, including muriatic acid, waste motor oils, diesel fuel, gasoline, and No. 6 fuel, for which releases have been reported within an approximate 1,500-foot radius of the WSS site. Ashland is currently finalizing a Work Plan for completing a RCRA Facility Investigation (RFI) at its facility. Based on the results of the RFI, corrective action may be required.

Contaminant levels in the Olive Street municipal wells and the Ashland extraction wells continued to be monitored throughout the 1980s. By the late 1980s, data reports showed that levels of contaminants in the wells were decreasing. Two of the six wells in the Olive Street well field were reinstated in the summer of 1987 for use during high demand periods only. Currently, one well in the Olive Street well field is used during periods of high demand.

Enforcement Activities

In June 1988, EPA proposed the WSS site for inclusion on the National Priorities List (NPL). In April 1989, EPA offered Whiteford Nationalease, Inc., a/k/a Whiteford Leasing Corp., Whiteford Kenworth, Inc., St. Joseph County, Ronald W. Whiteford and Florence S. Whiteford the opportunity to conduct the remedial investigation and feasibility study (RI/FS) at the WSS site. In August 1989, EPA provided the parties identified above with copies of a draft administrative order by consent to conduct the RI/FS at the WSS site. In September 1989, the attorney representing all parties advised EPA that the parties were declining the opportunity to conduct the RI/FS. In March 1990, EPA asked St. Joseph County to execute an access agreement to allow EPA to conduct the RI/FS. The WSS site was added to the

¹ The existence of a "pocket of contamination" in the vicinity of the Whiteford Sales and Service site was reported by the environmental consultants (TenEch Environmental Engineers, Inc.(TenEch)) hired by Ashland Chemical Company in the 1980s to investigate the groundwater contaminant plume near the Ashland Chemical Company facility and in the Olive Street well field. This "pocket of contamination" is described in two letters from TenEch to Michael L. Vance, City of South Bend, dated November 12, 1982, and July 6, 1983, and in a report prepared by Converse/TenEch entitled "Analysis of Groundwater Contamination in the Olive-Sample Pumping Station Aquifer" dated December 1980 (p. 4-19).

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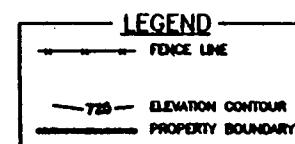
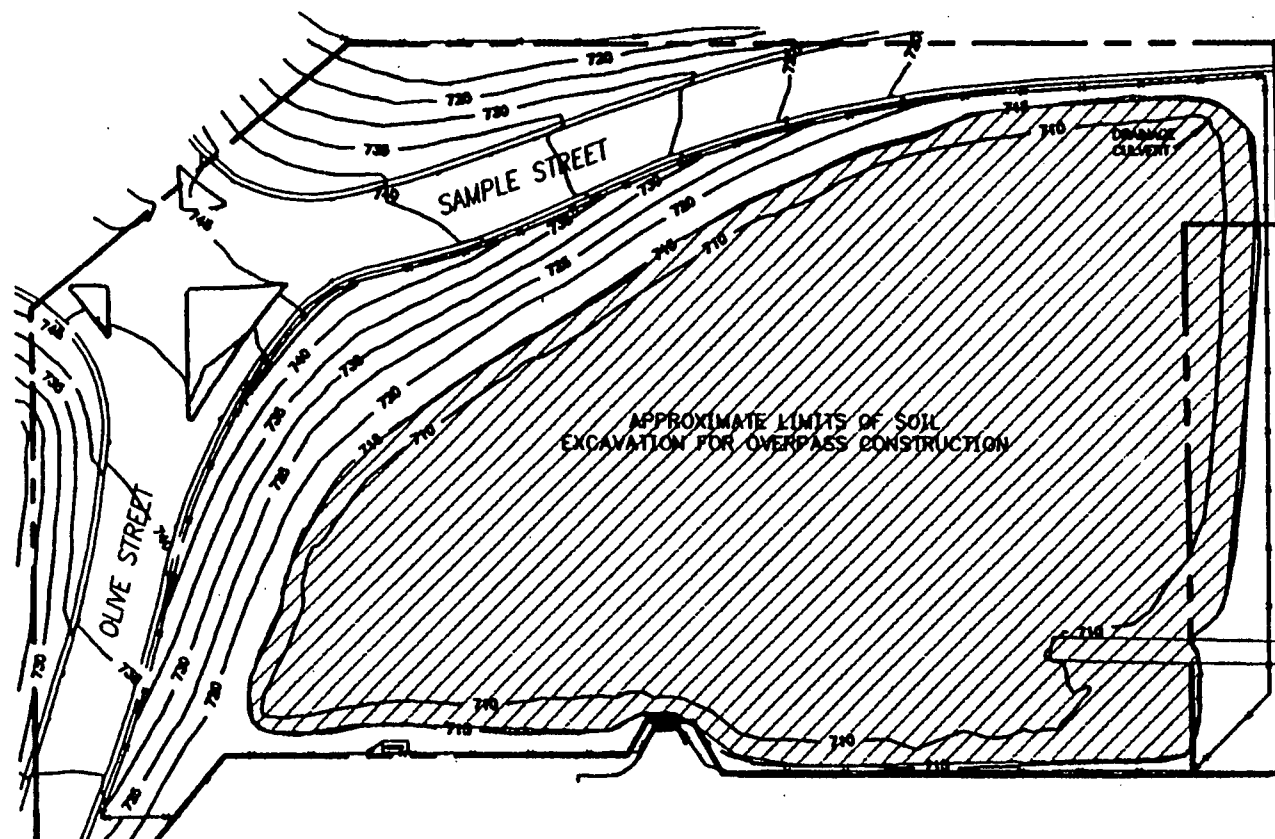


FIGURE 4

ALTERNATIVE REMEDIAL CONTRACTING STRATEGY
U.S. EPA CONTRACT No. 68-W8-0089
WORK ASSIGNMENT No. 023-5L6R

AREA OF SOIL EXCAVATION FOR
OVERPASS CONSTRUCTION
WHITEFORD SALES & SERVICE
South Bend, Indiana

NPL in August 1990. St. Joseph County signed an access agreement in May 1990, and EPA conducted the RI from September 1990 through December 1990. Information requests were sent to various upgradient owners and operators in 1994.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

EPA hosted a public "kick off" meeting on July 26, 1990, at the Western Branch of the St. Joseph County Public Library, South Bend, Indiana. The purpose of the meeting was to inform the local residents of the Superfund process and the work to be conducted as part of the remedial investigation at the WSS site. An information repository containing site information was established in 1990 at the Main Branch of the St. Joseph County Public Library, and in July 1990, an RI fact sheet for the site was issued.

The RI Report and Proposed Plan for the WSS site were released to the public for review in July 1995. A public meeting was held on August 9, 1995, at the Western Branch of the St. Joseph County Public Library to discuss the results of the RI and the Proposed Plan for the site. The meeting was chaired by representatives from the EPA and IDEM and was attended by approximately six citizens. The Proposed Plan for the WSS site was made available for public comment from July 26, 1995, through August 24, 1995.

Advertisements were placed in the South Bend Tribune to announce the July 1990 and August 1995 public meetings, the availability of the RI report and the Proposed Plan for public comment in July 1995, and the availability of the administrative record and updates to the administrative record. The administrative record for the site has been made available to the public at the EPA docket room in Region 5 and at the Main Branch of the St. Joseph County Public Library.

The public participation requirements of CERCLA §113 (k)(2)(i-v) and CERCLA §117 have been met in this remedy selection process. This decision document presents the selected remedial action for the WSS site, which was chosen in accordance with CERCLA, as amended by SARA, and which is, to the extent practicable, consistent with the NCP. The decision for this site is based on the contents of the administrative record.

IV. SITE CHARACTERISTICS

The RI involved sampling and analysis of groundwater, surface soil, and subsurface soil to determine site conditions. Groundwater samples were collected from on- and off-site monitoring wells, from the Olive Street municipal wells, and from the Ashland extraction well adjacent to the site. Area and site geology, site characteristics, and groundwater flow patterns were also examined. The following sections describe some of the findings of the RI regarding geology and topography, hydrogeology, and contamination in the area of the site.

1. Geology and Topography

The area surrounding the WSS site is naturally relatively flat with areas of subtle relief. The elevations of the adjacent land area range between 710 and 720 feet mean sea level (MSL).

The WSS site was altered significantly during the 1983 overpass construction project, when it was converted to its current use as a stormwater retention basin. As a result, the topographic relief of the site is significantly greater than that of the surrounding area. The elevation of the ground surface around the edges of the site, which is similar to the elevation of the site prior to the 1983 construction, is approximately 717 feet MSL. The elevation within the stormwater retention basin (approximately 90 percent of the current site) averages 706 feet MSL.

The area of the site is generally characterized by glacial sand and gravel deposits from episodic late Wisconsinan glacial retreats. Glacial materials underlying the WSS site consist of unconsolidated valley train deposits extending nearly 200 feet below ground surface (bgs). This unconsolidated material is underlain by the Ellsworth Shale Formation which generally dips to the east toward the WSS site.

Although the material underlying the site generally consists of sand and gravel units, many clay seams were observed. A clayey silt layer was also present in one soil boring. Areas with clay seams and areas of clayey silt would be expected to exhibit reduced permeability.

2. Hydrogeology

Logs from on-site soil borings, drilling records for several of the Olive Street municipal wells, and the drilling log for the adjacent Ashland extraction well indicate that a clay layer exists at approximately 655 feet MSL. Because of the apparent areal extent of this clay unit, it may be classified as a potential aquitard. Although this clay layer could potentially act as an aquitard between two portions of the shallow aquifer, based on monitoring well sample results and the lack of complete information on the clay layer, it must be assumed that the two portions are hydraulically connected. To take into account this lack of certainty about the hydraulic connection of the two portions of the shallow aquifer, the two systems are referred to as the "upper portion" and "lower portion" of the shallow aquifer; however, both terms refer to groundwater within the unconsolidated sand and gravel deposits overlying bedrock.

- a. The upper portion of the shallow aquifer was monitored with wells that were screened at an average depth of 30 feet bgs. The depth to the top of the upper portion of the shallow aquifer was less than 2 feet at some locations on the site. Groundwater in the upper portion of the aquifer appears to have a natural flow direction to the north; however, when the Olive Street well field is operating the flow direction shifts to the west, and when the Ashland extraction well is operating the flow shifts to the southwest.
- b. As indicated previously, a clay layer was encountered in several borings at approximately 30 to 35 feet bgs. The lower portion of the shallow aquifer is considered to be the portion of the sand and gravel water-bearing unit which extends from approximately 35 to 150 feet bgs and is located below the clay seams but above the Ellsworth Shale bedrock formation. The monitoring wells installed to monitor groundwater quality in this portion of the aquifer are generally screened at a depth of 40 feet bgs. All of the wells in the Olive Street well field draw from the lower

portion of the shallow aquifer. Groundwater flow directions in the lower portion of the shallow aquifer are the same as in the upper portion.

- c. The Ellsworth Shale Formation is the bedrock layer underlying the unconsolidated sand and gravel unit. This formation is encountered at a depth of approximately 165 to 170 bgs in the area of the site. In several of the drilling logs for the Olive Street wells, a clay unit was encountered at approximately 165 feet bgs, prior to the bedrock formation. This clay layer may act as an aquitard. However, wells screened in the Ellsworth Shale Formation were not installed as part of the WSS RI, so the characteristics of a deep bedrock aquifer that may exist in the site area were not defined. It is assumed that any groundwater present in bedrock would have a northwesterly regional flow direction towards Lake Michigan.

3. Contamination

a. Source Area

The source of contamination at the WSS site was the contaminated soil and sludge in the area of the former dry wells. Although the majority of the contaminated soil and sludge was excavated and disposed of as part of the 1988 removal action, some residual contamination remains on the site. Contamination from the former dry well area is believed to have contributed to area groundwater contamination; however, other sources of contamination in the area have also been documented.

b. Areas of Contamination and Affected Media

Based on information from the RI completed at the site, available aerial photographs, reports on previous technical work done at and in the vicinity of the site, and available file information, the areas and media of contamination at the WSS site are designated as follows:

- ▶ Area of former dry wells - Area located from 20 to 70 feet south of the former main facility building. The greatest number of polyaromatic hydrocarbons (PAHs) were detected in soil from this area, and, in general, the highest on-site concentrations of VOCs in groundwater were detected in wells at this location.
- ▶ Overpass embankment - Portion of overpass which was constructed using fill from the WSS site. Low levels of VOCs and SVOCs were detected in soil samples from this area.
- ▶ Stormwater discharge point - Location in the northeast corner of the WSS site where a culvert discharges stormwater collected from the overpass and surrounding areas. A groundwater sample collected from a well located in this area contained the highest concentration of arsenic of all the groundwater samples collected.
- ▶ Site groundwater - Groundwater collected from on-site wells.
- ▶ Olive Street groundwater - Groundwater collected from the six municipal wells in the Olive Street well field.

c. Soil

At the WSS site, site soils contained VOCs in concentrations ranging from 27 J $\mu\text{g/kg}$ (2-propanol) to 400 J $\mu\text{g/kg}$ (acetone) and SVOCs ranging from 7 J $\mu\text{g/kg}$ (benzo(a)pyrene) to 720 J $\mu\text{g/kg}$ (fluoranthene). The majority of the VOCs and SVOCs detected in site soil samples were found in subsurface soils. Several SVOCs were detected in the soil samples collected from the overpass embankment in concentrations ranging from 71 J $\mu\text{g/kg}$ (benzo(a)anthracene) to 700 J $\mu\text{g/kg}$ (4-chloroaniline). Metals detected in on-site soils included arsenic (6.4 mg/kg), antimony (28.2 mg/kg), lead (83 J mg/kg), and silver (2.8 J mg/kg) (see Figure 5 for soil sampling locations).

d. Groundwater

VOCs detected in on-site groundwater included chloroethane (0.9 J to 4 $\mu\text{g/kg}$), 1,1-dichloroethene (0.7 J to 2 $\mu\text{g/kg}$), 1,1-dichloroethane (0.7 to 60 $\mu\text{g/kg}$), 1,2-dichloroethene (total) (1 to 68 $\mu\text{g/kg}$), 1,1,1-trichloroethane (0.6 J to 30 $\mu\text{g/kg}$), trichloroethene (1 to 17 $\mu\text{g/kg}$), tetrachloroethene (7 to 18 $\mu\text{g/kg}$), and vinyl chloride (0.7 J to 2 $\mu\text{g/kg}$). VOCs detected in the Olive Street wells included methylene chloride (0.5 J to 0.6 J $\mu\text{g/kg}$), 1,1-dichloroethane (0.7 to 0.9 $\mu\text{g/kg}$), 1,2-dichloroethene (total) (2 $\mu\text{g/kg}$), 1,1,1-trichloroethane (3 $\mu\text{g/kg}$), trichloroethene (2 to 3 $\mu\text{g/kg}$), and tetrachloroethene (0.7 to 9 $\mu\text{g/kg}$). The concentrations and types of VOCs detected in the Ashland extraction well were similar to those in the on-site wells.

Several chlorinated benzene SVOCs were detected in on-site wells in concentrations ranging from 0.9 to 4 $\mu\text{g/L}$. Both the on-site wells and the municipal wells contained trace amounts of SVOC phthalate compounds. Metals detected in the on- and off-site wells and in the municipal wells included arsenic (8.7 J to 78.9 $\mu\text{g/L}$), barium (55.5 to 268 $\mu\text{g/L}$), cadmium (0.96 J to 8.3 J $\mu\text{g/L}$), lead (6.3 J to 147 $\mu\text{g/L}$), selenium (2.3 to 13.3 $\mu\text{g/L}$), thallium (4.6 J $\mu\text{g/L}$), and zinc (30.1 to 473 $\mu\text{g/L}$) (see Figure 6 for groundwater sampling locations).

e. Surface Water and Sediment

Because no surface water body exists in the immediate vicinity of the WSS site, surface water and sediment samples were not collected.

V. SUMMARY OF SITE RISKS

The Baseline Risk Assessment for the WSS site was originally drafted in 1991 and was updated and finalized in July 1995. Based on conservative assumptions, the Baseline Risk Assessment for the site indicated that regular exposure to site soils over a number of years might increase an individual's risk of developing cancer by a factor of slightly over one in 1,000,000. The Baseline Risk Assessment also concluded, using standardized assumptions, that a person obtaining drinking water directly from the Olive Street well field would be subject to unacceptable noncarcinogenic and carcinogenic risks due to exposure to groundwater.

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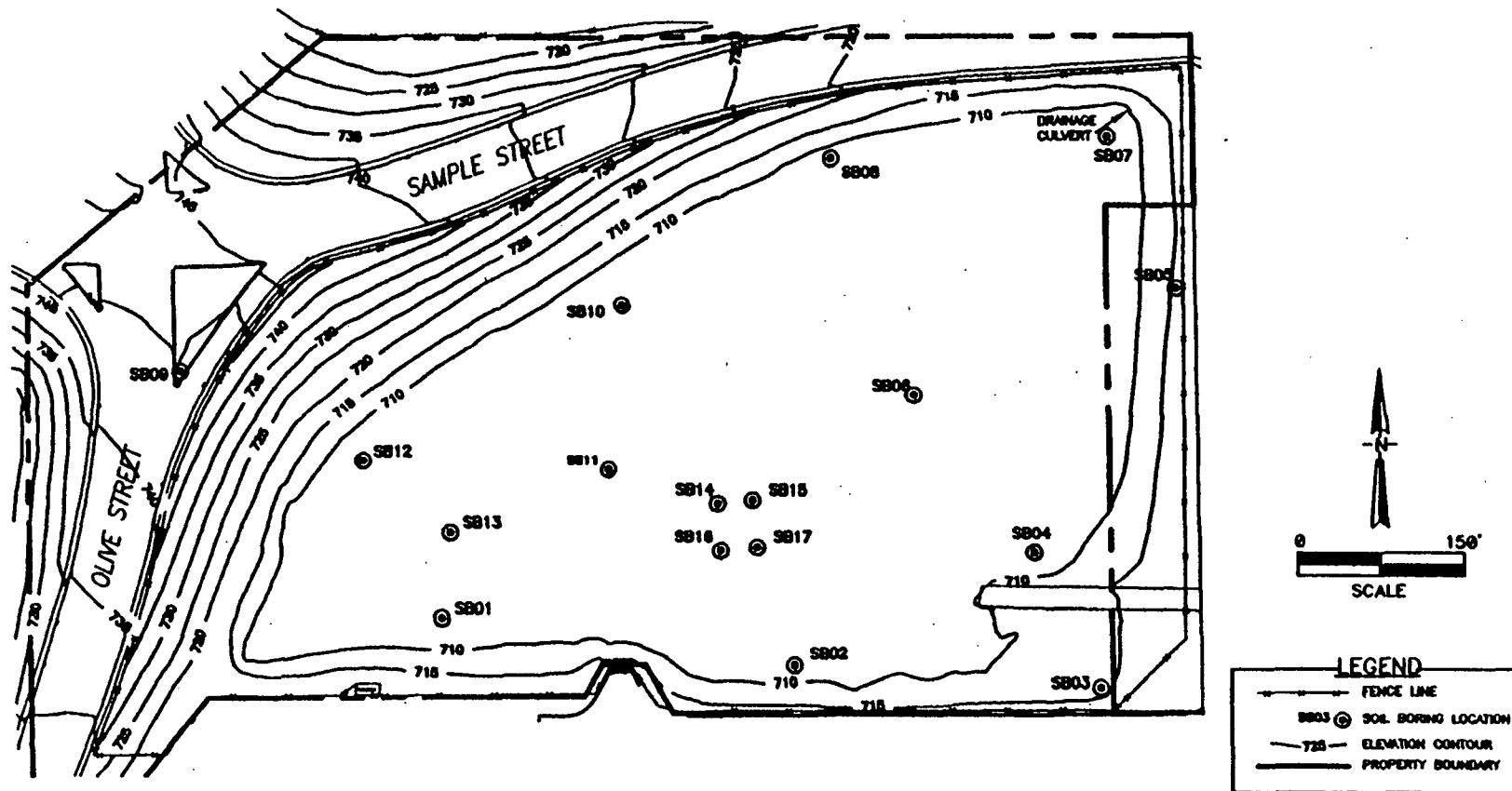


FIGURE 5

ALTERNATIVE REMEDIAL CONTRACTING STRATEGY
U.S. EPA CONTRACT No. 68-W8-0089
WORK ASSIGNMENT No. 023-5L6R

SOIL SAMPLING LOCATIONS
WHITEFORD SALES & SERVICE
South Bend, Indiana

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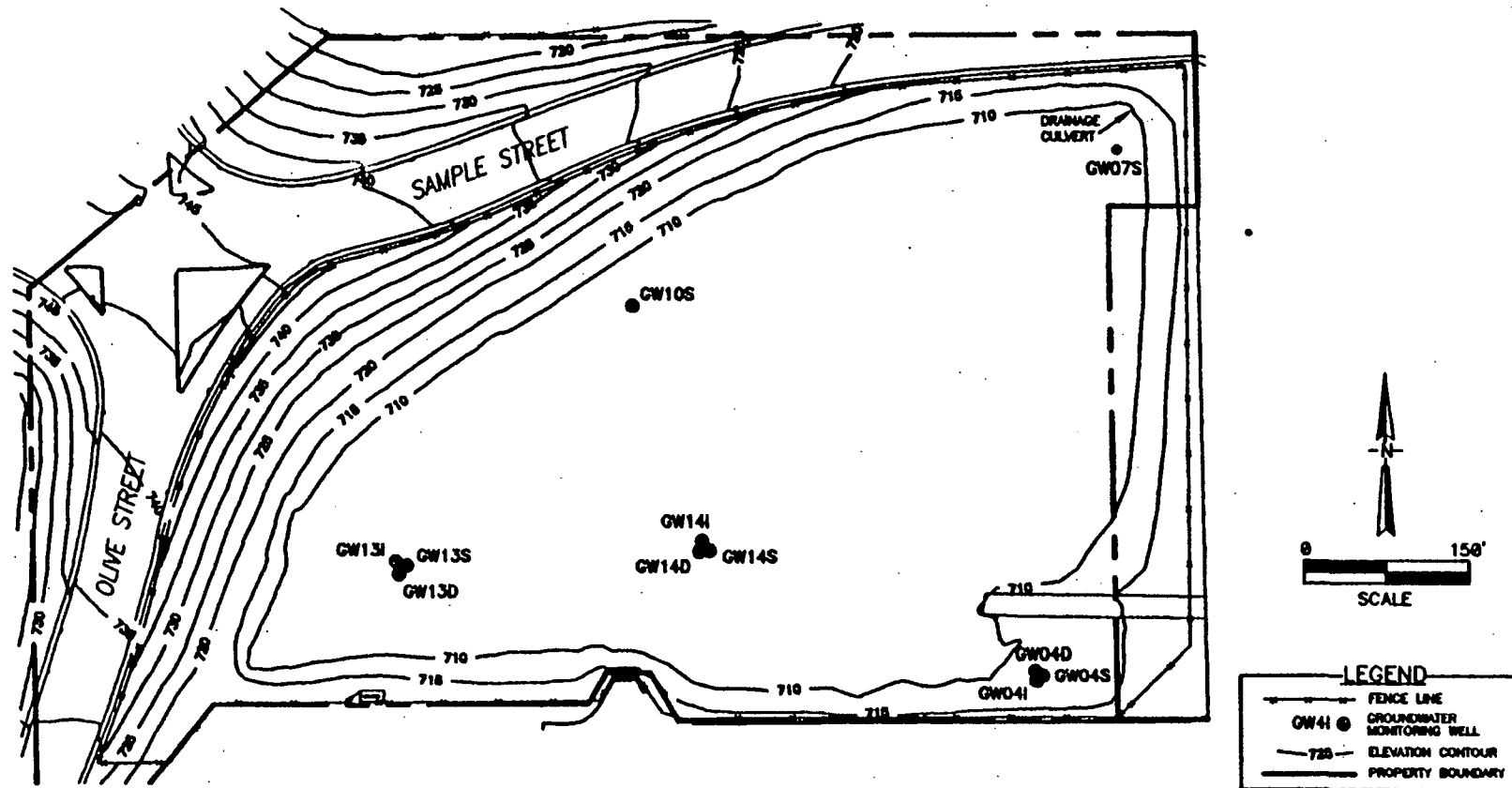


FIGURE 6

ALTERNATIVE REMEDIAL CONTRACTING STRATEGY
U.S. EPA CONTRACT No. 68-W8-0089
WORK ASSIGNMENT No. 023-5L6R

GROUNDWATER SAMPLING LOCATIONS
WHITEFORD SALES & SERVICE
South Bend, Indiana

However, based on a review of the RI report and the Baseline Risk Assessment completed for the WSS site and on additional evaluation of risks prepared by EPA's toxicologist, EPA believes that the risks calculated in the Baseline Risk Assessment are overestimated and that the WSS site does not pose an unacceptable risk to human health or the environment. A summary of site risks as determined in the Baseline Risk Assessment completed for the site are presented below along with the EPA recalculated risks. For a more in-depth discussion of site risks, the Baseline Risk Assessment and EPA memorandums dated July 17, 1995 and September 8, 1995 should be consulted.

Carcinogenic Risks Due to Soil Exposure Pathway²

Current and future potential carcinogenic risks to a site trespasser, for the reasonable maximum exposure (RME) scenario, due to ingestion and dermal absorption of site soil, were calculated to be $2.8\text{E-}06$. This number is slightly greater than 1 in a million. The corresponding representative average exposure (RAE) carcinogenic risk was calculated to be $4.3\text{E-}07$. The compounds detected in site soils contributing to nearly 100% of the $2.8\text{E-}06$ carcinogenic risk were several PAHs. Risk due to ingestion of soil accounted for only 4% of the total carcinogenic risk calculated, with dermal absorption of PAHs from soil accounting for the remainder of the risk.

Skin absorption of PAH contaminants from a medium such as soil is limited due to the strong physicochemical bonding characteristic of most PAHs. In the Baseline Risk Assessment, a PAH dermal absorption efficiency of 10%, which is considered to be very conservative, was used to calculate risks from site soil.

Recalculated Carcinogenic Risks Due to Soil Exposure Pathway

Using a dermal absorption efficiency factor of 3% for PAHs, which is the figure recommended by the Agency for Toxic Substances and Disease Registry (ATSDR), resulted in a recalculated carcinogenic risk due to exposure to soil of $9.1\text{E-}08$, which is within the range considered to be acceptable.

Groundwater Exposure Pathway

Potentially unacceptable carcinogenic and noncarcinogenic risks were calculated for exposure to groundwater from the Olive Street well field via three exposure routes: ingestion, dermal absorption, and inhalation of vapors. Levels of contaminants detected in the Olive Street well field were used in calculating the risks for the current scenario. For the future scenario, it was assumed that the levels of the contaminants detected in groundwater beneath the WSS site would migrate to the Olive Street well field without undergoing any dilution or transformation.

² Noncarcinogenic risks calculated for exposure to site soils were all within the range considered to be acceptable.

Noncarcinogenic Risks Due to Groundwater Exposure Pathway

The noncarcinogenic risks associated with site groundwater were calculated for both current and future scenarios. Although total Hazard Indices were calculated for three exposure routes, the ingestion route accounted for 90 to 100 percent of the calculated risk. The assumption used for the adult RME scenario were that 2 liters of water would be ingested every day of the year over a 30-year period. For all calculations, it was assumed that a resident would be obtaining water solely from the Olive Street well field.

For the current scenario for noncarcinogenic risks, the Hazard Index calculated for the RME value for an adult was 2.6. The corresponding RAE for an adult was 0.41. For the future scenario, the noncarcinogenic risk calculated for an adult at the RME was 6.8. For the RAE adult, the calculated Hazard Index was 1.0. The majority of the compounds that contributed to the adult RME noncarcinogenic risk were the following heavy metals: antimony (8%); arsenic (3%); manganese (13%); silver (42%); and thallium (31%). For the child RME scenario, heavy metals again accounted for over 99% of the calculated noncarcinogenic risk with the following metals contributing to the majority of the risk: manganese (13%), silver (42%), and thallium (32%).

For the future scenario it was assumed that contaminants detected on site would migrate to the Olive Street well field without undergoing dilution or transformation and, as with the current scenario, that residents would obtain water solely from the Olive Street well field. For both the adult and child RME scenarios, inorganic contaminants accounted for the majority (approximately 87%) of the potential future noncarcinogenic risk posed by groundwater. For the adult case, the following heavy metals contributed to the total noncarcinogenic risk: arsenic (11%), manganese (14%), silver (12%), and thallium (28%). For the child case, the same metals at approximately the same percentages were again the primary contributors to the calculated risk.

Recalculated Noncarcinogenic Risks Due to Groundwater Exposure Pathway

Using more realistic assumptions regarding rate of groundwater consumption, and taking into account the fact that groundwater will be diluted to some degree due to the multiple sources used by the City of South Bend for its municipal water system, the recalculated noncarcinogenic risks due to this pathway for the current scenario were within the acceptable range, i.e., the Hazard Indices were less than one. Future noncarcinogenic risks posed by exposure to groundwater were less than one for an adult and equal to one for a child.

Carcinogenic Risks Due to Groundwater Exposure Pathway

Carcinogenic risks associated with site groundwater that were calculated for current and future scenarios were based on the same assumptions used in the noncarcinogenic risk calculations. For the current scenario for carcinogenic risks, the value calculated for the RME adult was $6.9\text{E-}05$, with a corresponding RAE value of $7.4\text{E-}06$. For the future scenario for carcinogenic risks, the risk value for an RME adult was calculated to be $8.7\text{E-}04$, with a corresponding RAE value of $6.3\text{E-}05$.

For the current scenario, carcinogenic risks were calculated based on exposure to contaminants detected in the Olive Street well field during the RI. In all cases, ingestion of groundwater was responsible for at least 93% of the calculated risk. The heavy metal arsenic accounted for between 88% and 90% of the adult and child RME carcinogenic risks. The only organic compound that posed a risk exceeding the $1.0\text{E-}06$ threshold level was tetrachloroethylene (PCE). PCE exceeded this threshold level for both the RME child and RME adult scenarios.

For the future scenario, it was again assumed that contaminants detected on site would migrate to the Olive Street well field without undergoing dilution or transformation and would be ingested by residents prior to blending the water. Ingestion of groundwater was responsible for over 80% of the calculated risk. For both the adult and child RME scenarios, inorganic contaminants accounted for approximately 70% of the potential future carcinogenic risk posed by groundwater. For the adult case, the following compounds contributed to the total risk: arsenic (61%), beryllium (11%), vinyl chloride (15%), 1,1-dichloroethene (7%) and PCE (4%). For a child, the primary contributors to the risk were: arsenic (61%), beryllium (11%), vinyl chloride (14%), 1,1-dichloroethene (10%) and PCE (4%).

Recalculated Carcinogenic Risks Due to Groundwater Exposure Pathway

Based on more realistic assumptions regarding consumption rate of groundwater, and taking into account the fact that groundwater will to some degree be diluted due to the multiple-source municipal water system used by the City of South Bend, carcinogenic risks due to this pathway were recalculated to be $4.0\text{E-}06$ for the current scenario and $2.6\text{E-}05$ for the future scenario, both of which are within the acceptable range.

Ecological Risks Posed by the Site

Based on the RI and the Baseline Risk Assessment, EPA has determined that the potential for impacts to the food chain are low and that it is not probable that terrestrial, aquatic, and avian wildlife species would receive unacceptable exposures to compounds from the WSS site. Therefore, EPA did not perform an Ecological Assessment at the WSS site.

EPA Conclusions Regarding Risk Posed by the WSS Site

Based upon EPA's review of the RI report, the Baseline Risk Assessment, actual conditions at the WSS site, and the additional evaluation of site risks using modified assumptions, EPA has determined that the WSS site does not pose a significant current or future risk to human health or the environment. The risks described in the Baseline Risk Assessment were based upon actual exposure to soil and groundwater at the WSS site and upon several assumptions that EPA has determined to be insupportable. The property, which is now owned by St. Joseph County, is currently used as a stormwater retention basin, and stormwater and surface water run-off from the overpass and surrounding areas are discharged to the site. Given this current use of the site, it is unlikely that direct exposure to site soil would occur. However, even if exposure to site soil were to occur, EPA recalculations showed that risks due to soil were within the range which is considered acceptable.

Recalculations of risks associated with exposure to groundwater showed that due to the multiple-source municipal water system that is in place and based on realistic consumption rates for drinking water, current and future risks posed by exposure to groundwater are within the range which is considered to be acceptable.

As an additional measure of assurance, the City of South Bend is subject to a number of requirements under the Safe Drinking Water Act (SDWA). Under SDWA, the City of South Bend is required by law to sample and analyze water provided to residents who rely on city well fields for drinking water. The City of South Bend submits the results of analyses of samples from each of its well fields to Indiana Department of Environmental Management (IDEM) and EPA on a regular basis. If levels of contaminants in a sample exceed federal standards, known as Maximum Contaminant Levels (MCLs), for safe drinking water, the State of Indiana is required to take actions to ensure that water in compliance with MCLs is provided to the public and that monitoring of the affected well(s) continues. Therefore, there is an existing check in place to ensure that the persons who rely on City of South Bend well fields for their drinking water are receiving water that does not pose a significant current or future risk to human health or the environment.

Based upon EPA's review of the RI report and the Baseline Risk Assessment, actual conditions at the WSS site, and the lack of a realistic risk posed by the site, EPA has determined that the WSS site does not pose a significant current or future risk to human health or the environment and has concluded that no further remedial action is necessary to ensure protection of human health and the environment.

VI. EXPLANATION OF SIGNIFICANT CHANGES

There are no significant changes from the recommended alternative described in the Proposed Plan.

VII. STATE CONCURRENCE

EPA anticipates that the State of Indiana will concur with the proposed remedial alternative.

**RESPONSIVENESS SUMMARY TO PUBLIC COMMENTS
RECORD OF DECISION FOR WHITEFORD SALES AND SERVICE SITE
SOUTH BEND, INDIANA**

The United States Environmental Protection Agency (EPA), undertook a remedial investigation (RI) to determine the nature and extent of contamination at the Whiteford Sales and Service, Inc., (WSS) site in order to determine what action(s) would be required to ensure that human health and the environment were not subject to unacceptable risks due to the site. A Proposed Plan was finalized by EPA, in consultation with Indiana Department of Environmental Management (IDEM), recommending "No Action" as the remedial alternative for the site.

The Proposed Plan was released for public review in July 1995, and a 30-day public comment period was conducted from July 26, 1995, to August 24, 1995, to allow citizens and interested parties the opportunity to comment on the Proposed Plan and the RI. On August 9, 1995, EPA presented its Proposed Plan at a public meeting in South Bend, Indiana. Although EPA did not receive any written comments during the public comment period, during the August 9, 1995 public meeting several people in attendance made comments related to the Proposed Plan. The purpose of this responsiveness summary is to document these comments and EPA's responses to them. All of the comments summarized in this document were considered prior to EPA's final decision for the WSS site, as embodied in the WSS Record of Decision.

The responsiveness summary is divided into the following sections:

- I. Responsiveness Summary Overview - This section briefly outlines the recommended remedial alternative for the WSS site as presented in the Proposed Plan; and
- II. Summary of Public Comments Received During the Public Comment Period and EPA Responses

I. Responsiveness Summary Overview

On July 26, 1995, EPA submitted the RI report and the Proposed Plan for the WSS site to the public for review and comment. The WSS site was formerly the location of a truck washing and leasing facility in South Bend, Indiana, which operated from 1967 to 1983. Currently, the site serves as a stormwater retention basin for the adjacent street overpass and surrounding areas. The source of the contamination at the WSS site were three on-site dry wells used by the truck washing facility to dispose of waste water containing solvents and degreasers that was generated by its operation. Contaminated soil and sludge from the dry wells were excavated and disposed of in 1988 under an Administrative Order by Consent signed in June 1987 by IDEM, Whiteford-Kenworth, Inc., and St. Joseph County. The 1990 remedial investigation of the site conducted by EPA showed that some residual contamination existed at the site; however, based on EPA risk calculations, the site poses no unacceptable risks to human health or the environment. Based on this lack of risk posed by the site and

on the current use of the site as a stormwater retention basin, EPA has recommended "No Action" as the appropriate remedial alternative for the site.

II. Summary of Public Comments Received During the Public Comment Period and EPA Responses

A general concern expressed during the public hearing related to the risk posed by the site.

Based upon this concern, EPA decided to further evaluate the risk identified in the Baseline Risk Assessment. The Baseline Risk Assessment's conclusions were based upon conservative assumptions related to the ability of human skin to absorb the chemicals of concern, the volume of water ingested, and on exposure to groundwater from directly beneath or adjacent to the WSS site rather than to exposure to groundwater derived from several different sources that are part of the City of South Bend, Indiana, municipal water system. EPA's toxicologist, Tracy Howell, recalculated the carcinogenic risks and noncarcinogenic Hazard Indices using assumptions reflecting actual site conditions for the exposure scenarios determined to produce significant risk to human health; specifically, risks were recalculated for current and future scenarios for dermal exposure to site soil and for current and future scenarios for ingestion of drinking water contaminated by groundwater from the site. These risks were reevaluated for both the child and adult exposure cases. The recalculated risk evaluation is summarized in a September 8, 1995 memo included in the administrative record for this site.

One commenter stated that the decision to take No Action at the site could have been made based on information known about the site in the 1980s.

EPA response: Information available to EPA in the 1980s was helpful in establishing an approach to the remedial investigation at the WSS site. However, because it was not clear from data available at that time what contamination the WSS site may have been contributing to the groundwater contamination in the Olive Street well field, an investigation was warranted. In addition, information available at the time regarding potential future contamination that could migrate from the site into the Olive Street well field was far from complete. As one example of the lack of completeness of the data, approximately 200,000 cubic yards of soil, for which no comprehensive analytical data existed, were removed from the site in 1983 and for use in the construction of the Olive Street overpass.

Two commenters believed that the assumption for the amount of incidentally ingested soil used to calculate risks due to exposure to site soil was not realistic or reasonable.

EPA response: EPA recognizes that the assumption that an adult might ingest 100 mg of soil per day while at a site is difficult to imagine and that, in general, assumptions used by EPA to prepare a Baseline Risk Assessment for a Superfund site are conservative. Conservative assumptions are used in evaluating potential risks posed by a site in order to ensure that EPA fulfills its mission of protecting human health and the environment.

As a conservative estimate, however, EPA believes that the assumption that an adult at a hazardous waste site would ingest 100 mg of soil per day is both appropriate and scientifically based. First, it should be kept in mind that soil ingestion refers to incidental ingestion of both outdoor soil and indoor dust that may have been transported inside a residence or building on articles of clothing, and that a significant amount of soil, dust, and dirt can be ingested by eating food while at, or after leaving, the site. Secondly, this figure, which represents an upper-bound value, was arrived at and has been confirmed by a number of laboratory studies, including studies conducted by Calabrese, et al. (1989); Calabrese, et al. (1990a, 1990b); Davis, et al. (1990); and Van Wijnen, et al. (1990). Based on these and other studies, EPA believes that an estimate of 100 mg per day is a reasonable upper-bound value for incidental soil ingestion by an adult.

One commenter stated that the volume of waste water generated at the WSS site used in the Hazard Ranking System (HRS) scoring process to evaluate whether the site should be placed on the National Priorities List (NPL) was inaccurately high.

EPA response: Initially, a waste volume of 1,560,000 gallons was proposed for use in the HRS scoring package for the WSS site. However, based on public comments received in 1988 from representatives of Whiteford-Kenworth, Inc., and the St. Joseph County Health Department, EPA used 396,000 gallons as the waste volume in the HRS scoring package, per the commenters' recommendations. This figure was based on an estimate of 6,000 gallons of degreasing agent in addition to 390,000 gallons of water. Considering that the truck washing facility operated for at least 15 years, and assuming 260 working days in a year, this volume would be equivalent to approximately 100 gallons of waste water per day. EPA believes that this volume of waste water generated per day is a reasonable estimate.

In general, the presence of a municipal well field in close proximity to a hazardous waste site, especially a well field that is part of a municipal water system supplying a large number of people, contributes significantly to an HRS score. And, if fact, using a substantially smaller estimate for the volume of waste water generated by the WSS site during its period of operation would still have resulted in an HRS score which would have qualified the site for inclusion on the NPL.

One commenter commented that because the general area of the site is industrial and commercial, the contamination in the Olive Street well field could have come from a number of different sources.

EPA response: EPA was aware of the nature of the area surrounding the site and of past releases and spills that have been reported in the area. Data from the remedial investigation were evaluated with these factors in mind, and careful attention was paid to the possibility of upgradient sources of contamination.

One commenter stated that it is unlikely that trespassers would enter the site since the site is fenced.

EPA response: Although the presence of a fence surrounding a site could deter some trespassers from entering the site, unless it is a high-security fence that is well-maintained, EPA does not assume it will effectively keep out all potential trespassers. During a 1995 inspection of the WSS site by an EPA representative, the approximate four foot high fence surrounding the site was observed to be in general disrepair; at several locations, openings along the bottom of the fence were observed, and, at one location, the fence was bent down so that it was nearly level with the ground.

As stated previously, when evaluating potential risks to human health and environment posed by a site, EPA generally uses a conservative approach. Consistent with this approach, for the WSS site, it was assumed that trespassers could potentially enter the site and become exposed to contaminants present at the site.

One commenter recommended that the site be delisted from the NPL.

EPA response: EPA is reviewing the recommendation for delisting.