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Environmental Protection
Agency

Office of
Emergency and
Remedial Response

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June 1991

EPA

Superfund Record of Decision:

Conrail Railyard Elkhart, IN

50272-101

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SUPERFUND RECORD OF DECISION
Conrail Railyard Elkhart, IN
First Remedial Action

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15. Supplementary Notes

16. Abstract (Limit: 200 words)

The 2,500-acre Conrail Railyard Elkhart site is composed of a 675-acre railroad facility and adjacent areas of contamination to the northeast and northwest in Elkhart County, Indiana. Major surface water bodies in the vicinity are the St. Joseph River, located 1 mile north of the site, and the Baugo Bay located to the west of the site, which have adjacent wetlands and floodplain areas. From 1956 to the present, the site has been used as a classification and distribution point for rail freight cars. Car repair, engine cleaning, and diesel refueling activities were conducted onsite. Reported onsite spills and releases of oil, diesel fuel, hydrochloric acid, caustic soda, and various petroleum-related substances from 1976 to 1986 have occurred onsite. EPA investigations during the mid-1980s detected elevated levels of TCE in ground water downgradient from the railyard, and in the subsurface soil at various points onsite. After initially providing bottled water, in-house carbon filters were provided to 76 residences. This Record of Decision (ROD) provides for the containment of the contaminated ground water plume, as an interim action, and provides for a safe and permanent drinking water supply. A subsequent ROD will address contaminated soil and

(See Attached Page)

17. Document Analysis a. Descriptors
Record of Decision - Conrail Railyard Elkhart, IN
First Remedial Action
Contaminated Medium: gw
Key Contaminants: VOCs (carbon tetrachloride, TCE)

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report): None

20. Security Class (This Page): None

21. No. of Pages: 70

22. Price

(See ANSI-Z39.18) *See Instructions on Reverse*

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

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Conrail Railyard Elkhart, IN
First Remedial Action

Abstract (Continued)

ground water, and set final ground water remediation levels. The primary contaminants of concern affecting the ground water are VOCs including TCE and carbon tetrachloride.

The selected remedial action for this site includes pumping and treatment of ground water using pre filtration and air stripping, and discharging the treated water onsite to the St. Joseph River; treating air emissions, if needed, using carbon adsorption with offsite regeneration and disposal of the spent carbon; conducting treatability studies to determine treatment system design parameters; providing an alternate water supply by extending the municipal distribution system to 505 residences/businesses; monitoring ground water; and implementing institutional controls, including ground water use restrictions, and site access restrictions such as fencing. The estimated present worth cost for this remedial action is $3,969,300, which includes an annual O&M cost of $125,000 for 20 years.

PERFORMANCE STANDARDS OR GOALS: Final soil and ground water performance standards will be addressed during remediation of OU2.

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Conrail Railyard
Elkhart County, Indiana

STATEMENT OF BASIS AND PURPOSE

This decision document represents the selected interim remedial action for the Conrail Railyard site in Elkhart County, Indiana. This action 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 to the extent practicable, with the National Oil and Hazardous Substances Contingency Plan (NCP). The decisions contained herein are based on information contained in the administrative record for this Site.

The State of Indiana concurs on the selected remedy.

ASSESSMENT OF THE REMEDY

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

DESCRIPTION OF THE REMEDY

This groundwater interim action operable unit is the first of two operable units planned for this site. This operable unit addresses the elimination or reduction of public exposure to groundwater contamination associated with the site. Specifically, this interim remedial action involves the provision of a safe, permanent drinking water supply to residents who are potentially at risk, and taking actions to restrict migration of the contamination in the aquifer. The second operable unit will set remediation levels for contaminated site soils, and contaminated groundwater at the site, as well as accompanying air and water monitoring, so as to properly monitor remediation/recovery efforts. This first operable unit works toward the goal of achieving a permanent remedy at the site.

The major components of the selected remedy include:

- Installation of four extraction wells located in positions to adequately contain the migration of contaminants in the groundwater;

- Treatment of groundwaters collected such that the resultant discharge will meet National Pollutant Discharge Elimination

System (NPDES) limitations as imposed by the program administered by the State of Indiana;

- Installation of about 67,000 feet of distribution line, of various sizes, for the distribution of City of Elkhart water to approximately 505 residences/businesses who are potentially at risk from exposure to the contaminated groundwater;

- Groundwater monitoring to ensure the effectiveness of the remedial action; and

- Fencing of property where the groundwater extraction facilities are installed, as well as advisories and possible well abandonment for residences and businesses in the area of groundwater contamination.

STATUTORY DETERMINATIONS

This interim action is protective of human health and the environment, complies with Federal and State applicable or relevant and appropriate requirements for this limited-scope action, and is cost-effective. Although this interim action is not intended to fully address the statutory mandate for permanence and treatment to the maximum extent practicable, this interim action utilizes treatment and thus is in furtherance of that statutory mandate. Because this action does not constitute the final action for the Conrail Railyard site, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principle element, although partially addressed in this remedy, will be addressed by the final response action. Subsequent actions are planned to address fully the threats posed by the conditions at this site.

Because this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted to ensure that the remedy continues to provide adequate protection of human health and the environment within five years after commencement of the remedial action. Because this is an interim action ROD, review of this site will be continuing as EPA continues to develop final remedial alternatives for the site.

June 28, 1991.
Date

Valdas V. Adamkus
Regional Administrator
Region V

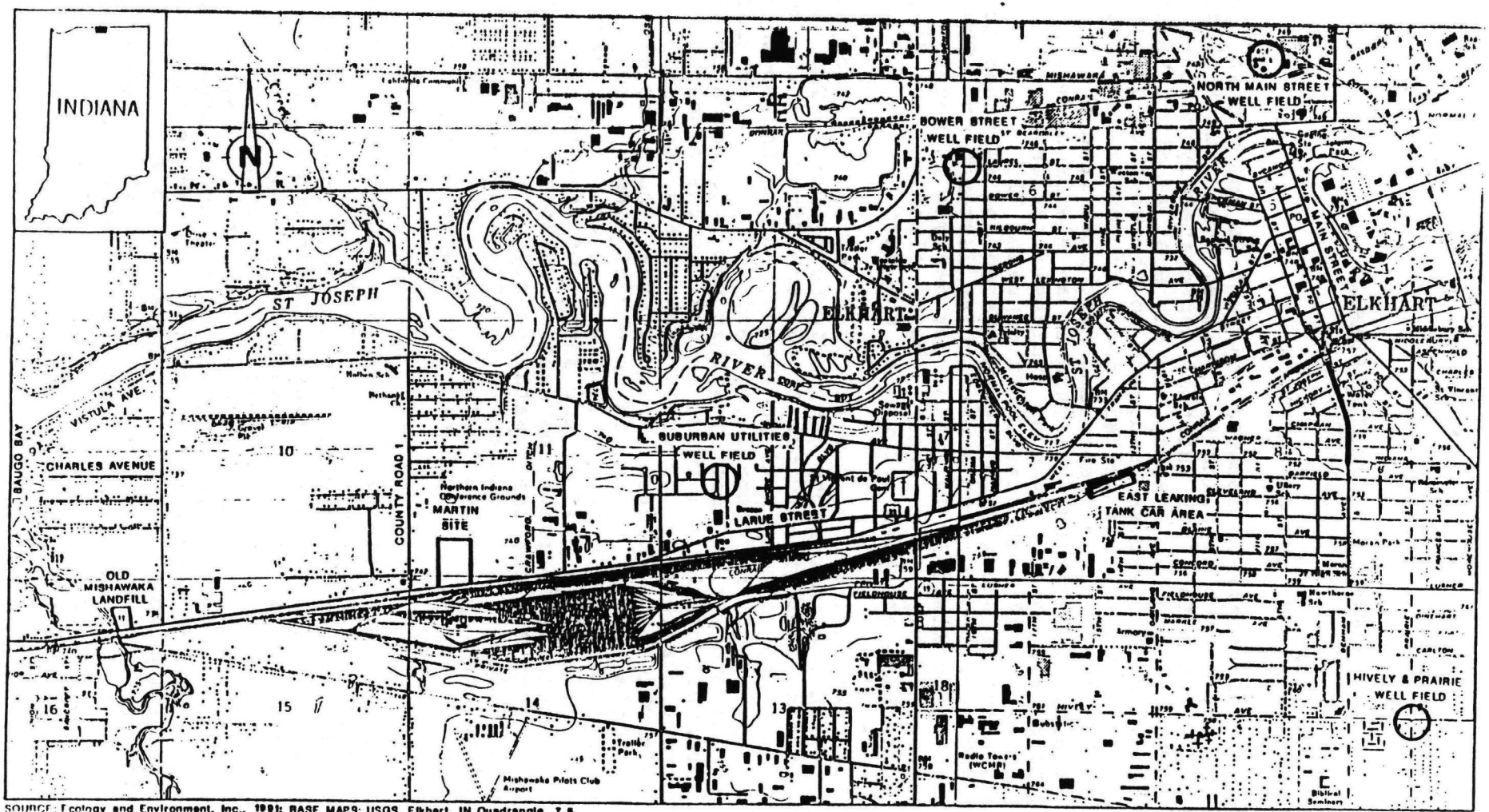
RECORD OF DECISION SUMMARY
CONRAIL

I. SITE NAME, LOCATION, AND DESCRIPTION

The Conrail Railyard site is located adjacent to and within the southwestern city limits of Elkhart, Indiana. The site includes the 675 acre railyard facility which is approximately bounded to the north by US33 (Franklin Street), on the east by State Route 19, to the south by Mishawauka Road, and to the west by State Route 219 (see Figure 1), and certain areas of contamination that extend in two directions, northeast and northwest from the Conrail railyard. The Elkhart railyard is an electronically controlled hump yard which serves as a classification distribution yard for freight cars. It contains 72 classification tracks where cars are separated and switched to a specific track corresponding to a particular destination. The yard processes approximately 74 trains per day via 15 receiving and 14 departure tracks. Car repair, engine cleaning, and diesel refueling facilities are also located at the yard.

The study area, which includes the railyard, encompasses roughly 2,500 acres, with the topography generally being flat. The study area is bounded on the north by the St. Joseph River, on the west by Baugo Bay, on the east by Oakland Avenue, and on the south by the southern border of the Conrail railyard. There are several light industrial properties located within the study area to the north and northwest of the railyard, as well as the numerous light industries surrounding the study area to the east and south. Within the above referenced study area, there are also several residential areas, comprised mainly of single-family homes. Approximately 3,500 people live within this study area, within about a mile and a half of the site. Of this total, about 3,000 of the people use private residential wells for their water supply, and another 300 get their water supply from a private utility, whose well is also located in the study area. The closest downgradient residences to the site are those located directly across US33, just to the north of the railyard (one or two hundred feet away).

In the study area, four episodes of glaciation have left deposits of stratified and unstratified drift, ranging in thickness from 150 to 250 feet, over the bedrock. The surficial geology is characterized by a valley-train outwash deposit consisting primarily of unstratified sand, and sand and gravel. In some parts of the study area, these deposits are interbedded with one or more layers of silt or clay. Although a layer (or layers) of clay seems to exist over a large portion of the study area, the clay layer(s) does not appear to be continuous. Where it exists, investigations found the depth of this layer(s) to vary from 3 to 36 feet below the ground surface, with its thickness ranging from 1 foot to 85 feet. In other areas, no clay layer was found. The glacial deposits are underlain by the Coldwater shale of Mississippian age and the Ellsworth shale of Devonian and



SOURCE: Ecology and Environment, Inc., 1991; BASE MAPS: USGS, Elkhart, IN Quadrangle, 7.5 Minute Series, 1961, Photorevised 1981; USGS, Osceola, IN Quadrangle, 7.5 Minute Series, 1969, Photorevised 1980.

Figure 1

Mississippian age. Both units contain occasional lenses of dolomite or limestone.

Groundwater in the area is generally found at a depth of approximately 5 to 15 feet below ground surface. Groundwater flow direction in the study area is toward the north/northwest, in the direction of the St. Joseph River and Baugo Bay. Groundwater flow data indicate that the St. Joseph River is hydraulically connected to the outwash aquifer in the study area and is a discharge zone for this aquifer. The aquifer is part of the St. Joseph Aquifer System and Tributary Valleys, a federally designated Sole Source Aquifer.

The major surface water bodies in the vicinity of the study area are the St. Joseph River and Baugo Bay. The St. Joseph River flows westward and is located a little over a mile north of the Conrail site. Baugo Bay flows north into the St. Joseph River, and is located immediately to the west of the study area. Crawford ditch originates at the site, and flows intermittently to the St. Joseph River. Floodplains and wetland areas exist along both the St. Joseph River and Baugo Bay.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

Site History

The railyard began operations in 1956 as part of the New York Central Railroad, and continued operations as a subsidiary of the Penn Central Transportation Company until 1976. From 1961 to 1968, numerous citizen complaints regarding oil discharges from the railyard to the St. Joseph River were filed with state and local authorities.

In 1976, operations at the railyard were transferred to the Consolidated Rail Corporation (Conrail). From 1976 to 1986, spills and releases of oil, diesel fuel, hydrochloric acid, caustic soda, and various petroleum-related substances occurred there. Reports also indicate that a track-cleaning substance (the chemical composition of which is unknown) and engine degreasers were used and disposed of at the railyard.

Initial Investigations and Removal Actions

In June 1986, a resident on County Road 1, just to the north of US33, reported to U.S. EPA that his residential well contained elevated levels of volatile organic compounds. On July 2, 1986, U.S. EPA/Technical Assistance Team (TAT) collected and analyzed a water sample from this residential well. Sample analysis indicated the presence of trichloroethylene (TCE) at 800 parts per billion (ppb) and carbon tetrachloride (CCl_4) at 485 ppb. Based on this finding, EPA/TAT initiated a groundwater sampling

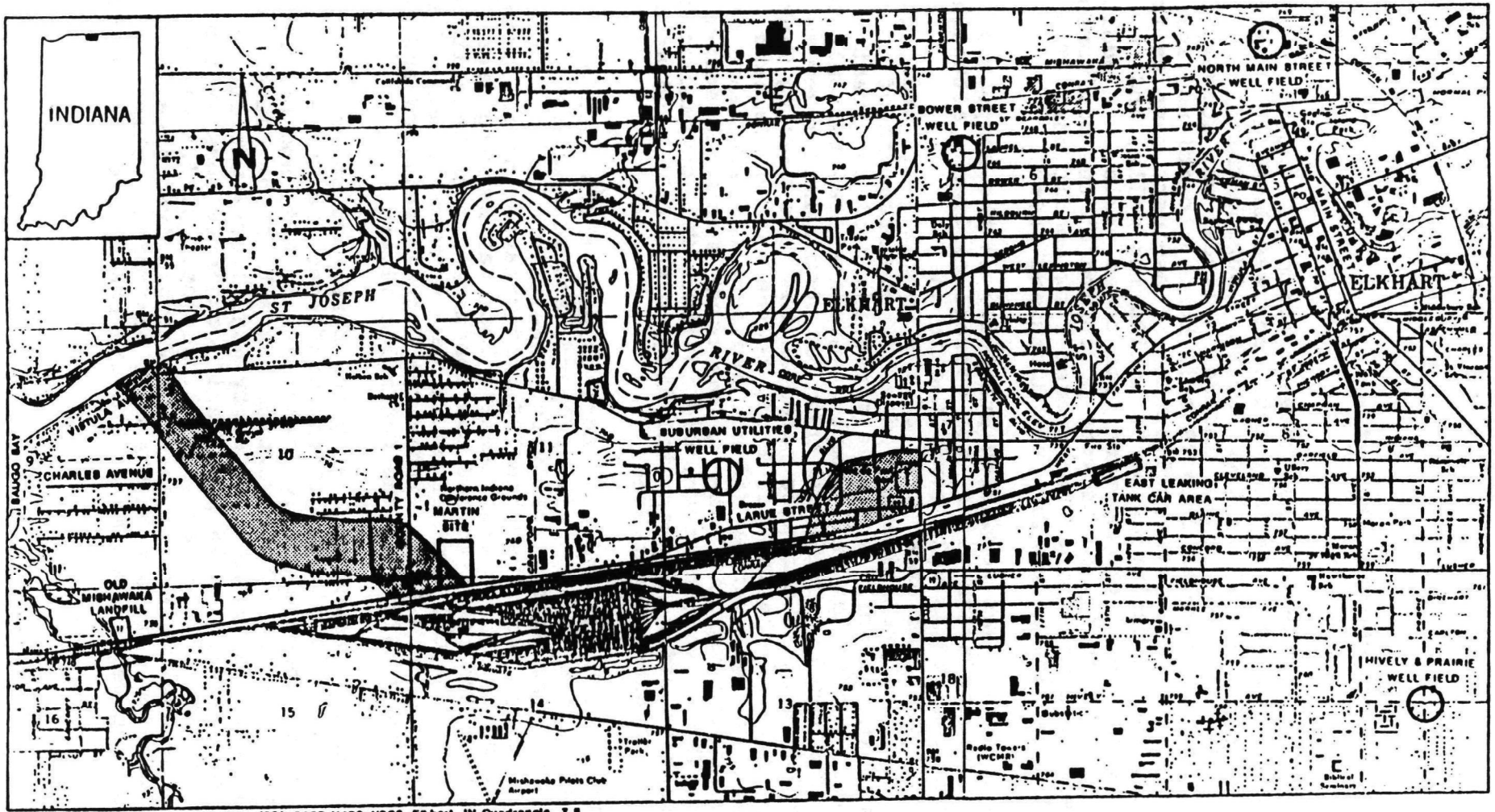
program in the County Road 1 and LaRue Street areas, located to the northwest and northeast of the railyard, respectively. Samples were also taken at residences in the Vistula Avenue area, to the northwest of the County Road 1 area. Groundwater sampling began on July 17, 1986. A total of 88 residential wells were sampled by EPA/TAT. Concurrently, 11 additional residential wells were sampled by individual well owners. TCE, CCl_4, and other volatile organic compounds were detected in many groundwater samples. TCE concentrations as high as 4,870 ppb and CCl_4 concentrations as high as 6,680 ppb were detected. A total of 63 groundwater samples showed detectable levels of TCE, CCL_4, or both. The total of this sampling effort relates to the areas of contamination designated on Figure 2.

Bottled water was provided to residents whose wells were affected by the contamination. A portion of the residents in the LaRue Street area were later connected to a watermain extension from the City of Elkhart. Many of the residences, however, had carbon filter units installed to ensure a safe drinking water supply. Two types of activated carbon filter units were installed in residences: point-of-use units and whole-house units. In all, 20 point-of-use and 56 whole-house units were installed. Although homeowners are ultimately responsible for the operation and maintenance of these units, the Indiana Department of Environmental Management (IDEM) is currently assisting in their operation and maintenance.

EPA/TAT also conducted an inspection of the Conrail site in July and August 1986. Seven water/liquid samples and 21 soil samples were collected at the Conrail site on July 31 and August 1, 1986. The results of the analyses revealed TCE concentrations as high as 5,850 ppb and CCl_4 concentrations as high as 117 ppb in soil samples. Based on these results, the downgradient location of TCE- and CCl_4-contaminated private wells from the railyard, and the history of poor waste handling practices at the railyard, the Conrail site was placed on a roster of sites proposed for inclusion on the National Priorities List (NPL) in June 1988. The site went final on the NPL in August 1990.

Remedial Investigation/Feasibility Study (RI/FS)

On June 27, 1988, U.S. EPA sent a special notice letter to Conrail offering them the opportunity to undertake the RI/FS for the site, including investigations of the groundwater contamination emanating from the site. Although Conrail did express a willingness to undertake a portion of the RI/FS, U.S. EPA determined that Conrail had not presented a "good faith" offer to conduct the entire RI/FS at the Conrail site. Therefore, on September 30, 1988, U.S. EPA entered into a contract to have the RI/FS conducted. The workplan for the RI/FS was approved in July 1989, and actual investigations for the



SOURCE: Ecology and Environment, Inc., 1991; BASE MAPS: USGS, Elkhart, IN Quadrangle, 7.5 Minute Series, 1961, Photorevised 1981; USGS, Osceola, IN Quadrangle, 7.5 Minute Series, 1969, Photorevised 1980.

Figure 2

Conrail site began shortly thereafter.

The first phase of the remedial investigation (RI) was essentially completed in January 1990, and was detailed in the April 1990 Preliminary Evaluation Report. During the RI, various investigations were undertaken, including a soil gas survey, the collection of soil samples from 29 soil boring locations, for chemical/physical tests, the collection of sediment samples from 5 locations, the installation of 36 monitoring wells, and subsequent sampling of groundwater from these wells. In addition to the above activities, tests were performed at the monitoring wells to aid in determining groundwater flow conditions. The results of these investigations are discussed below.

The soil gas survey was conducted primarily in the suspected contaminant source areas within the Conrail railyard, although a limited number of tests were conducted in the residential/industrial area north of the Conrail railyard. This survey was used to preliminarily identify the presence of contaminants in the soil, and as a screening tool to direct future sampling efforts. All samples were analyzed for only TCE and CCl_4. The results indicated that TCE contamination exists in the subsurface soil in the area noted as the East Leaking Tank Car Parking Area of the Conrail Yard, to the west of Oakland Avenue. The soil gas survey did not indicate the existence of TCE or CCl_4 contamination at any of the other suspected source locations. The survey, however, did indicate CCl_4 contamination near the Elkhart Office Machine building on Route 33, and at a single location along Tower Road.

Soil samples were collected from borings near the suspected source areas within the Conrail railyard, and from areas upgradient from the Conrail railyard. Analysis of soil samples from these borings confirmed the TCE contamination noted during the soil gas study in the East Leaking Tank Car Parking Area, with concentrations of 36 to 180 ppb found. Through this limited sampling, no TCE or CCl_4 contamination was detected in any of the other suspected source areas within the Conrail railyard and the area sampled downgradient of the Conrail railyard.

The results of the groundwater sampling performed under this phase of the RI field investigations confirmed the TCE and CCl_4 contamination plumes previously identified by EPA, and provided a preliminary indication of the vertical extent of the plume. TCE in the shallow wells within the County Road 1 area was found in concentrations as high as 96 ppb, while concentrations in the deep wells went as high as at least 2,300 ppb. No TCE was found in the shallow monitoring wells in the Vistula Ave. area, and only 1 ppb was found in one of the deep monitoring wells. Of the shallow and deep wells located around the LaRue Street area, TCE

was found in only one shallow well at a concentration of 6 ppb. TCE was also found in two shallow wells constructed near the car shop (in the Conrail Yard) at concentrations of 2 and 6.7 ppb. With the exception of a concentration of 7 ppb of TCE found in one shallow well just upgradient of the Conrail Yard, no other concentrations of TCE were detected in any of the other upgradient wells.

In terms of the groundwater sampling, CCl_4 in the shallow wells within the County Road 1 area was found in concentrations as high as 150 ppb, and as high as 150 ppb in the deep wells. CCl_4 was found in the shallow wells of the Vistula Avenue area in concentrations as high as 340 ppb, and in the deep wells in concentrations as high as 160 ppb. No CCl_4 was found in either the shallow or deep monitoring wells constructed in the La Rue Street area. CCl_4 was found in two shallow monitoring wells installed near the Car Shop and to the east of the Car Shop (on the Conrail Yard), at concentrations of 230 and 34 ppb, respectively. No CCl_4 was found in any of the monitoring wells installed upgradient of the Conrail Yard.

Other Investigations

In addition to the above investigations performed by U.S. EPA, Groundwater Technologies, Inc. (GTI), acting as a private consultant for Conrail, also performed various soil and groundwater investigations within the Conrail Railyard. These investigations included drilling a total of 24 soil borings, with two samples generally taken from each boring (one just below the ground surface and one at the water table). The investigations also included the installation of a total of 10 monitoring wells, to a depth of 20 feet.

The GTI soil sampling results revealed the presence of TCE at concentrations of 2,900 and 7,500 ppb in the two samples taken from a boring in the southwestern corner of Conrail's main classification yard. In addition, a concentration of 510 ppb of CCl_4 was found in the "water table" soil sample taken from a boring about 400 feet to the east of the above sample (in the south central portion of the main classification yard).

The GTI groundwater sampling results revealed concentrations of 15 and 32 ppb of TCE in two of the monitoring wells, one on the north end of the site near Crawford Ditch, and one just to the northwest of the Car shop. CCl_4 was also found at a concentration of 82 ppb in a monitoring well located to the northwest of the Car Shop.

III. HIGHLIGHTS OF COMMUNITY INVOLVEMENT

U.S. EPA and IDEM have been interacting to varying extents with

the community, in terms of the Conrail site, since contamination was first found in residential wells in 1986. Informal interactions with the community took place during the Removal action, through the sampling of wells and the provision of bottled water, carbon filters, watermain connections, etc. In addition, IDEM has been in contact with residents since that time as a part of its periodic sampling of residential wells, and maintenance of the carbon filter systems.

With respect to the remedial activities, community relations activities began in late 1988, with the development of the Community Relations Plan. In accordance with that plan, various meetings have been held, and facts sheets have been issued. An RI/FS kickoff meeting, held in July 1989, was attended by about 150 people. Availability sessions held in the afternoon and evening of June 26, 1990, to discuss the results of the first phase of investigations, were also widely attended. Four fact sheets have been issued since July 1989.

Community interest is further evidenced by the creation of a local community interest group, which has been extensively involved in the subject project, in part, through verbal and written communications with both U.S. EPA and IDEM. Media coverage has also been fairly extensive throughout the life of the project, including coverage by local newspapers and television stations.

The Proposed Plan for this interim action was released to the public on April 19, 1991, outlining remedial alternatives, and informing residents that the FS and all other documents comprising the Administrative Record for the site, were available at the public information repository at the Elkhart Public Library. The Administrative Record index is included as Appendix A. A public comment period was held from April 19, 1991, to June 18, 1991, and a public meeting was held on May 1, 1991, to discuss the proposed remedial action with the residents. The public meeting was attended by about 150 people, with numerous questions asked, and seven oral comments received. These comments, as well as written comments received, and U.S. EPA's response to the comments are included as Appendix B, the Responsiveness Summary.

IV. SCOPE AND ROLE OF OPERABLE UNIT WITHIN SITE STRATEGY

The scope of this interim remedial action is to provide a clean water supply to residences affected by risks in and around the site, including the County Road 1, LaRue Street, Vistula Avenue, and Charles Avenue areas (see Figure 3). In addition, this interim remedial action is also being undertaken to control groundwater contamination and expansion of the groundwater plume. Investigations have not provided sufficient information to allow the initiation of the complete remedial action at this point in

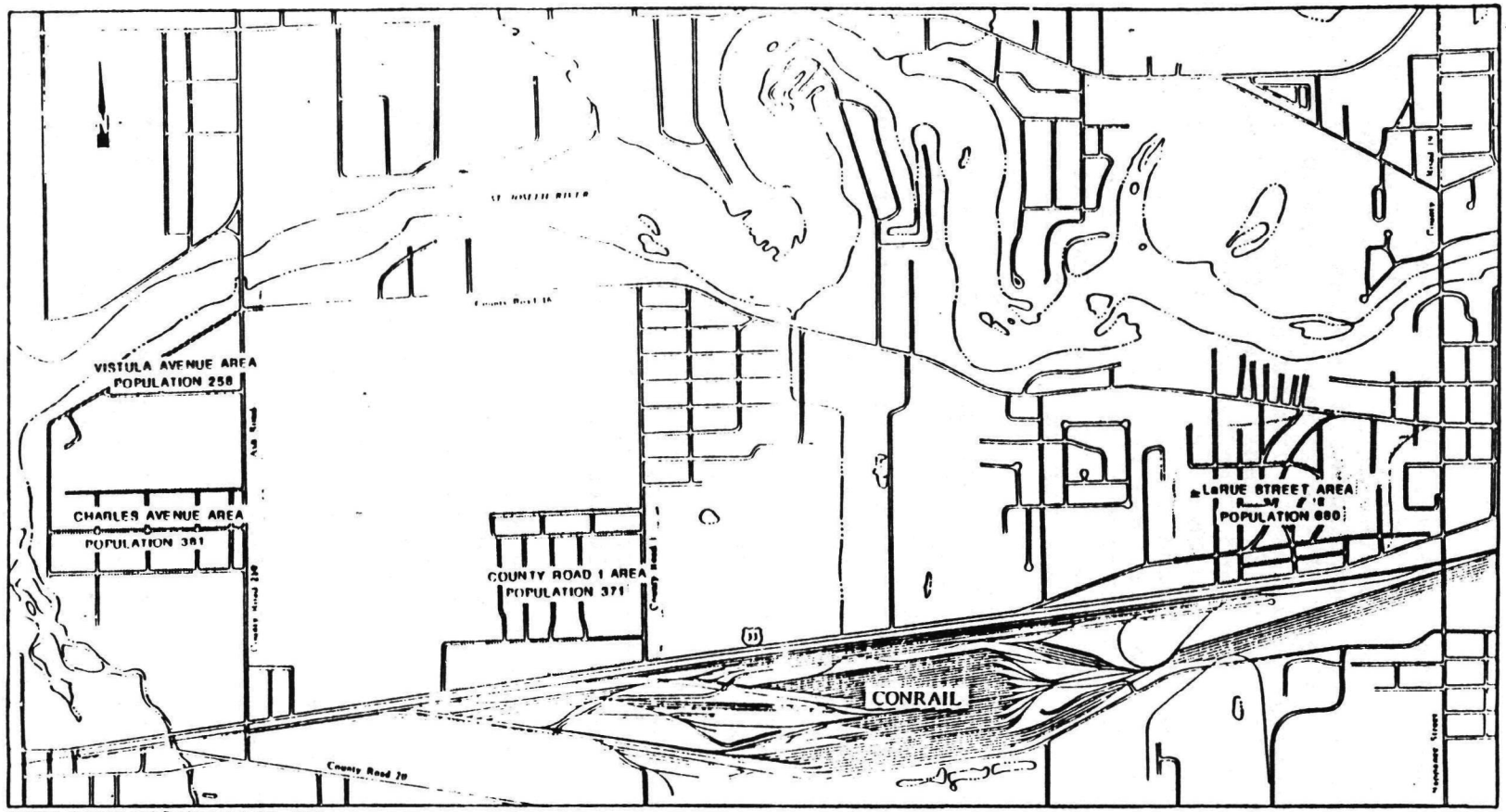


Figure 3

POTENTIALLY IMPACTED AREAS AND POPULATION

time. Additional investigations will be conducted: 1) to identify the source areas within the Conrail railyard, as well as any other source(s) off-site of the Conrail railyard, which are contributing to the TCE/CCl_4 contamination plumes; 2) to further determine the vertical extent of the areas of contamination, both within and off the Conrail railyard, including each of the previously designated residential areas (i.e., County Road 1, LaRue Street, Vistula Avenue, and Charles Avenue); and 3) to further define the link between the County Road 1 contamination area, and the contamination found in the Vistula Avenue and Charles Avenue areas. Once U.S. EPA completes this investigation, U.S. EPA will arrive at a final decision as to the ultimate remediation of the groundwater, including the anticipated remediation timeframe for the groundwater.

Information has pointed to the need for an interim remedial action to provide a clean water supply to residences affected by potential risks in and around the site, and to control the migration of groundwater contamination in the study area. Specifically, there is a need to institute an interim remedial action that will eliminate or reduce the health risk posed to humans by exposure to contaminated groundwater. This need is based on contaminant levels present in the potable water supply for some of the residences, and the potential for other residences in the area to be impacted by the contaminated groundwater, due to movement of the contaminated groundwater. The interim action is necessary or appropriate to prevent further groundwater degradation and to reduce threats to human health and the environment. The interim action will be monitored and maintained to ensure its effectiveness until the final remedy is implemented.

The interim action is consistent with the final remedy. Even if aquifer cleanup actions can be initiated within a few years, it will take several years to ensure that risks associated with exposure to the groundwater will be eliminated. Therefore, addressing exposure to the groundwater at this time, through the provision of a potable water supply, is a necessary and natural part of the overall remedy. This interim action will not exacerbate the site problem.

V. SUMMARY OF SITE CHARACTERISTICS

Site Geology and Hydrogeology

As previously noted, four episodes of glaciation have left deposits of stratified and unstratified drift, ranging in thickness from 150 to 250 feet, over the bedrock. The surficial geology is characterized by a valley-train outwash deposit consisting primarily of unstratified sand, and sand and gravel. In some parts of the study area, these deposits are interbedded

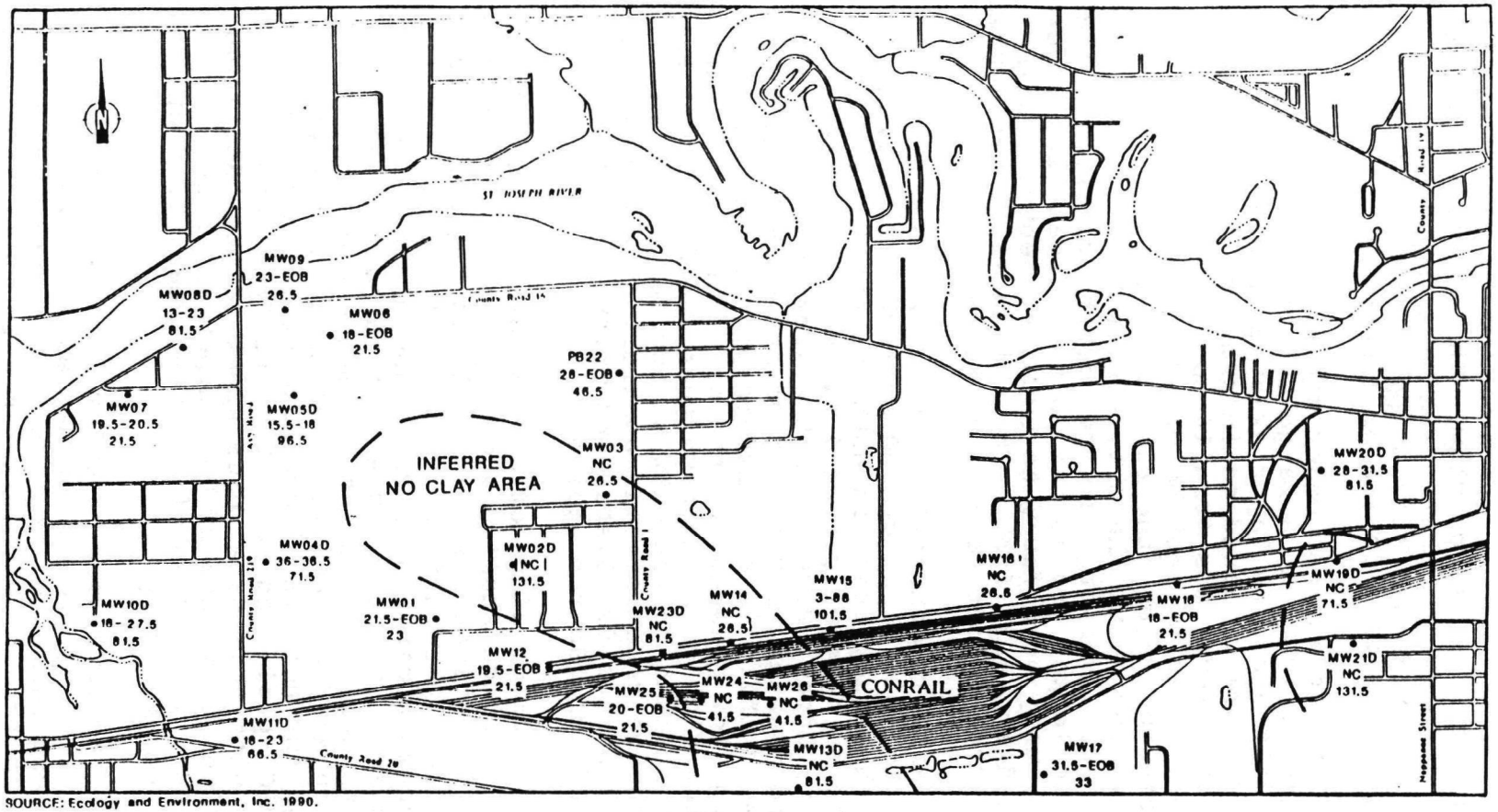
with one or more layers of silt or clay. The glacial deposits are underlain by the Coldwater shale of Mississippian age and the Ellsworth shale of Devonian and Mississippian age. Both units contain occasional lenses of dolomite or limestone.

The first phase of investigations under the RI/FS focused on the upper 80 feet of the aquifer, to a large extent due to the perception that a silt and clay layer existed throughout a majority of the study area. Based on information from USGS, it was presumed that this layer was from 16 to 20 feet thick, and was at approximately 40 to 60 feet below grade in the study area. Rather than a continuous layer, the results of the first phase of investigations have found that the clay appears to be present in a series of clay lenses, varying in size, depth, thickness, and lateral extent. The lenses are absent in some areas (see Figure 4). Where present, they were found to occur at depths ranging from 3 feet, to as deep as 36 feet. The thickness of the lenses were found to vary from 1 foot to as much as 85 feet.

Groundwater in the area is generally found at a depth of approximately 5 to 15 feet below ground surface. Groundwater flow direction in the study area (in both the shallow and deep wells) was found to be generally toward the north, in the direction of the St. Joseph River. In the western portion of the study area, the groundwater flow direction has been found to tend toward the northwest, while in the eastern portion of the study area, it appears to flow somewhat to the northeast (see Figures 5 and 6). Groundwater flow data indicate that the St. Joseph River is hydraulically connected to the outwash aquifer in the study area and is a discharge zone for this aquifer. The aquifer is part of the St. Joseph Aquifer System and Tributary Valleys, a federally designated Sole Source Aquifer.

A horizontal groundwater gradient of approximately 0.0017 ft/ft was calculated for both the shallow and deep zones studied during the first phase of investigations. For calculating horizontal groundwater velocities, permeability values calculated from slug test results conducted during the first phase of investigations were utilized. Based on these calculations, a horizontal velocity of 32 feet/year was calculated. Because of the variability in calculated permeability values using different methods of testing, the horizontal groundwater velocity was also calculated using USGS-published data obtained from pump tests in the Elkhart area. With this data, USGS upper range, USGS lower range, and a logarithmic average of USGS upper and lower limits, resulted in calculated velocities of 900 feet/year, 72 feet/year, and 252 feet/year, respectively.

Vertical hydraulic gradients were calculated for all of the nested monitoring wells. (Five of the nested wells were installed in locations where one or more clay layer(s) were encountered in the borings.) The data indicate that there is a



SOURCE: Ecology and Environment, Inc. 1990.

SCALE: 1"=1500'

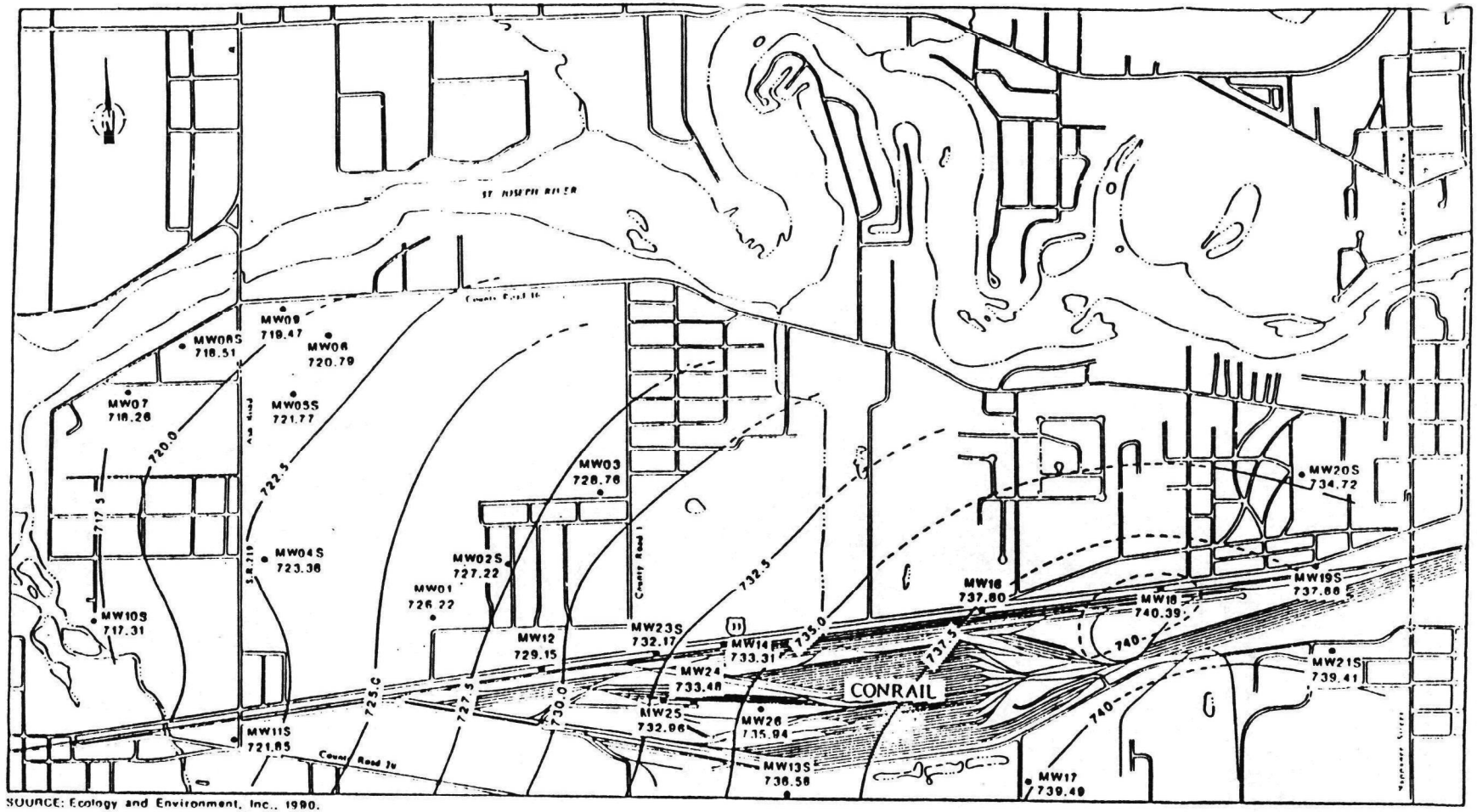
0 1,000 2,000 3,000 4,000 5,000 FEET

LEGEND

MW00	BORING NUMBER
20-25	INTERVAL OF FIRST OCCURRENCE OF CLAY
81.5	BORING DEPTH
NC	NO CLAY ENCOUNTERED
EOB	END OF BORING

CLAY INTERVALS

Figure 4



SOURCE: Ecology and Environment, Inc., 1980.

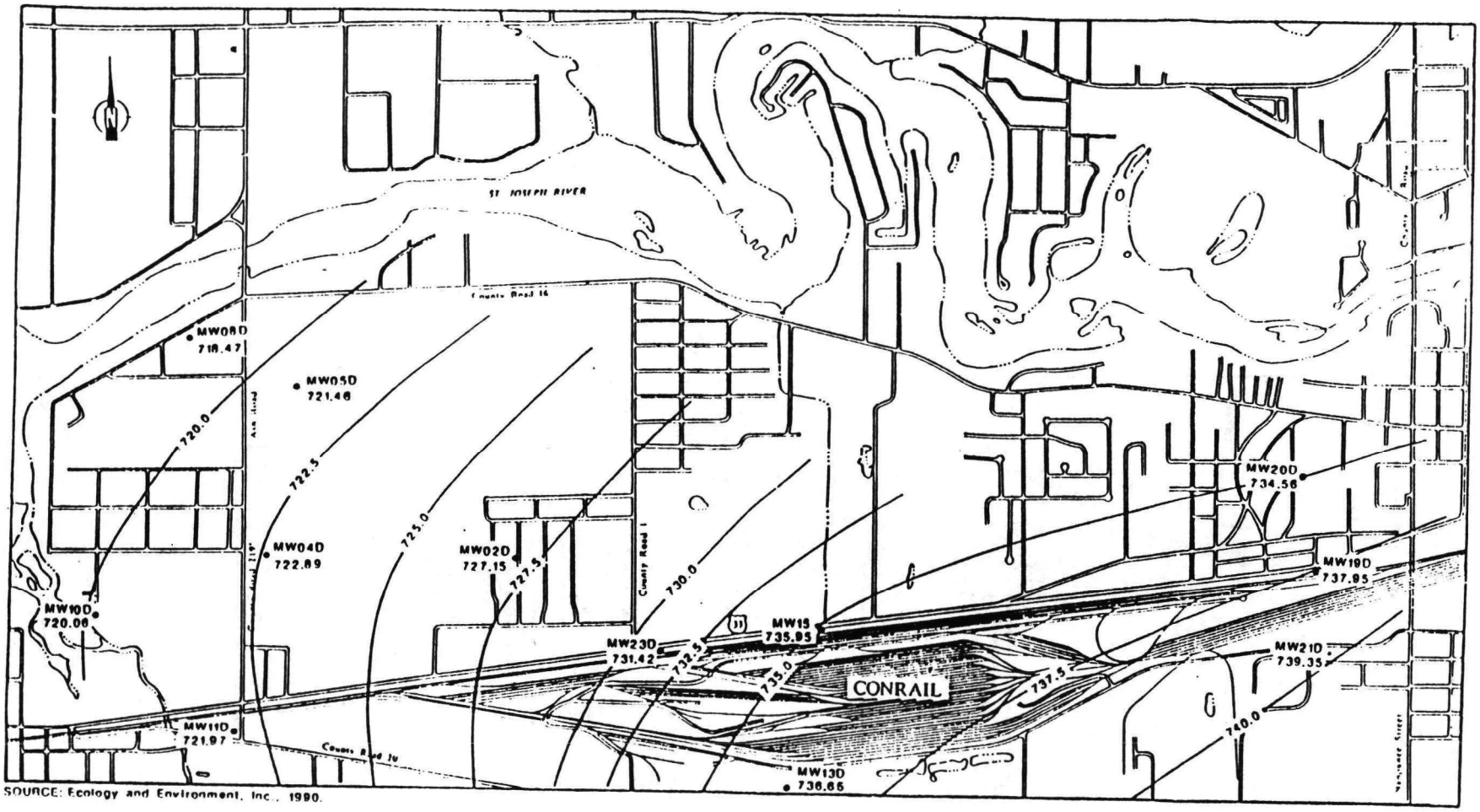
SCALE: 1"=1500'

0 1,000 2,000 3,000 4,000 5,000 FEET

CONTOUR INTERVAL 2.5 FEET, DATUM MSL.

Figure 5

WATER TABLE SURFACE MAP, DECEMBER 4, 1989



SOURCE: Ecology and Environment, Inc., 1990.

Figure 6

POTENTIOMETRIC SURFACE MAP, DECEMBER 4, 1989

downward flow component in areas distant from the St. Joseph River, and an upward flow component in areas near the River. Comparison of the horizontal and vertical hydraulic gradients in the area where no clay was encountered (assuming equal horizontal and vertical permeabilities) indicates that the resultant flow direction is predominantly downward in this area.

Nature and Extent of Contamination

The scope of the RI at the Conrail site included studies for all media that may be contaminated, including soils in and around the Conrail railyard, sediments in Crawford ditch and other areas of standing water, and groundwater on and around the site. Results of investigations performed to date have shown that groundwater on and around the site has been contaminated with volatile organic compounds (VOCs). In the residential areas, the principal VOCs have been found to be TCE and CCl_4, both of which have a Maximum Contaminant Level (MCL) of 5 ppb.

No concentrated continuing source area(s) has been found to date, although soil contamination has been found on the Conrail railyard. Potential source(s) of contamination do exist on the railyard, however, including facilities where engine and railcar maintenance take place. Another potential source relates to a purported tank car spill of CCl_4 which took place about twenty years ago, in the area of Track 69 in the southern end of the main classification yard of the Conrail railyard. Several light industries around the Conrail railyard could also prove to be potential contributing sources of the groundwater contamination.

Investigations undertaken at the four residential areas, where contamination of the groundwater is of concern, are discussed below:

County Road 1: In residential well sampling undertaken between 1986 and 1989, MCLs were exceeded for TCE in 28 of the 58 wells sampled, and for CCL_4 in 27 of the 58 wells sampled. Concentrations, for TCE, found through the residential well sampling, ranged from 0.1 ppb to 7,350 ppb. For CCl_4, concentrations found through the residential well sampling ranged from 1 ppb to 27,500 ppb. During the first phase of the RI, four monitoring wells (two shallow and two deep) were installed in this area and sampled. Results of sampling at these monitoring wells revealed that the MCL for TCE was exceeded for all four wells, with the highest level found being at least 2,500 ppb. The MCL for CCl_4 was exceeded in samples taken from three of the four monitoring wells, with the highest concentration found to be 150 ppb. This area is immediately downgradient of the Conrail Railyard.

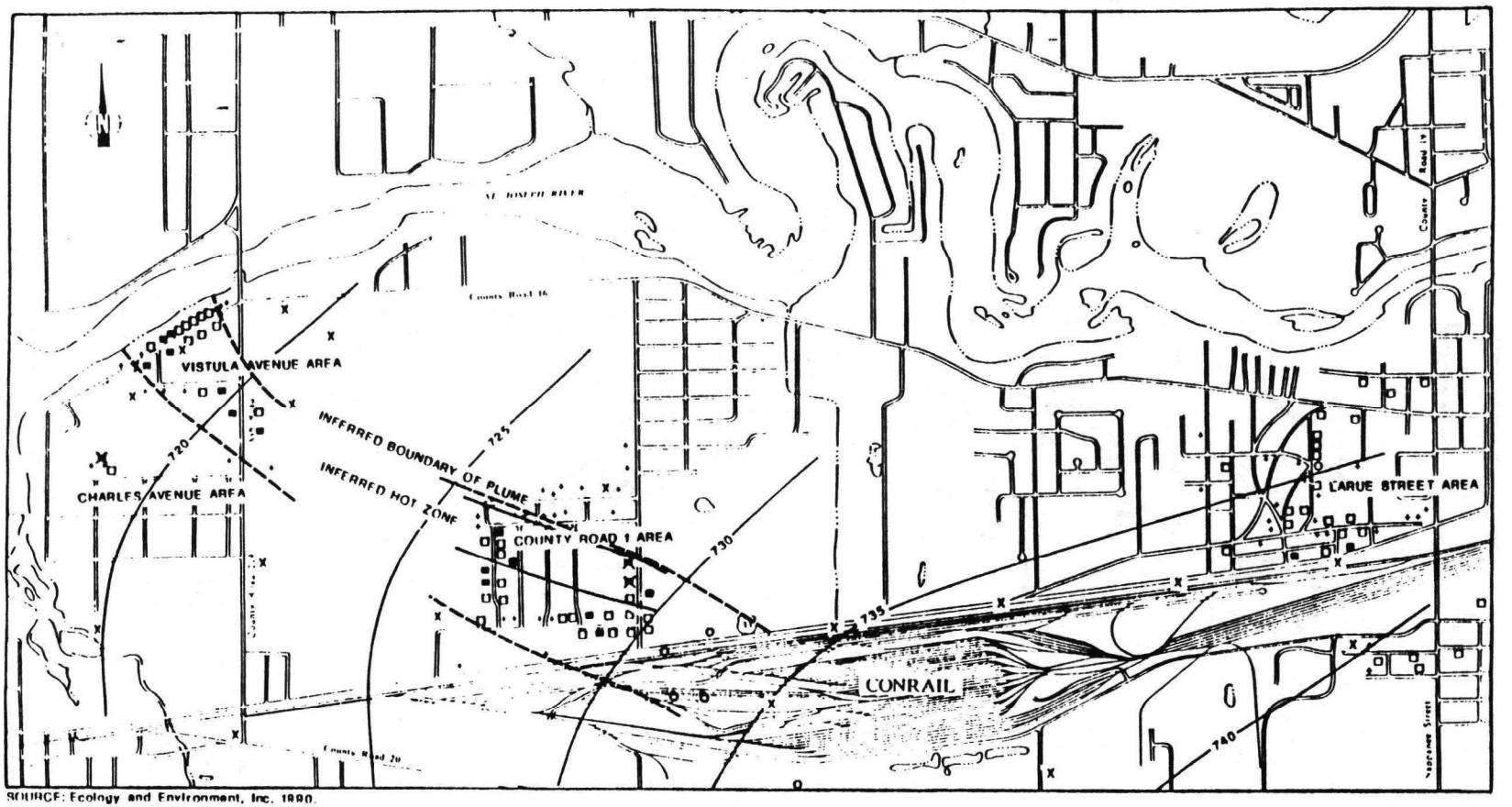
Vistula Avenue: In residential well sampling undertaken between

1986 and 1989, MCLs were exceeded for TCE in 16 of the 25 wells sampled, and for CCl_4 in 17 of the 25 wells sampled. Concentrations for TCE found through the residential well sampling, ranged from 1 ppb to 377 ppb. For CCl_4, concentrations found through the residential well sampling ranged from 2 ppb to 630 ppb. During the first phase of the RI, five monitoring wells (three shallow and two deep) were installed in the general area, and the groundwater was sampled. Results of sampling at these wells indicated the presence of TCE in only one well, at a level below the MCL. CCl_4 was found in three of the monitoring wells, with the MCL being exceeded in two of those wells, and the highest concentration found to be 340 ppb. The similarity of contaminants of concern, and the groundwater flows (as is shown on Figures 5 and 6), indicates an apparent relationship between these two contamination areas.

LaRue Street: In residential well sampling undertaken between 1986 and 1989, MCLs were exceeded for TCE in 10 of the 35 wells sampled, and for CCl_4 in 3 of the 35 wells sampled. Concentrations for TCE found through the residential well sampling, ranged from 0.1 ppb to 300 ppb. For CCl_4, concentrations found through the residential well sampling ranged from 0.4 ppb to 150 ppb. During the first phase of the RI, four monitoring wells (two shallow and two deep) were installed in the general area, and the groundwater was sampled. Results of sampling at these wells indicated the presence of TCE in only one of the wells, at a concentration of 6 ppb, which is above the MCL. No CCl_4 was found in sampling at any of these four monitoring wells. This area is immediately downgradient of the Conrail railyard.

Charles Avenue: In residential well sampling undertaken in 1990, no TCE or CCl_4 was detected in any of the samples taken. In addition, no monitoring wells were installed in this general area as a part of the first phase of the RI. However, as can be seen from the groundwater flow patterns (see Figures 5 and 6), this area is downgradient from the area of contamination found in the County Road 1 area. This area was studied, however, by Peerless-Midwest, Inc., which installed six monitoring wells, both shallow (i.e., less than 30 feet) and deep (i.e., greater than 110 feet). Groundwater samples taken from the shallow wells were clean, but TCE and CCl_4 were found in the deep wells at maximum concentrations of 2,495 ppb and 388 ppb, respectively.

Results from the residential well sampling, and the sampling from the first phase of the RI, are presented in total in Figures 7 and 8, with these figures representing TCE and CCl_4 results, respectively. Also presented in these figures are the estimated boundaries of the County Road 1 and Vistula Avenue TCE and CCl_4 contamination areas. Within the defined areas of TCE and CCl_4 contamination, areas have also been delineated where



SOURCE: Ecology and Environment, Inc. 1990.

SCALE: 1" = 1500'

0 1,000 2,000 3,000 4,000 5,000 FEET

LEGEND

RESIDENTIAL WELL (IDEM Average Values)	MONITORING WELL (Phase I RI)
• NONE DETECTED	x NONE DETECTED
□ 0-100 ppb	o 0-100 ppb
■ 100-1,000 ppb	● 100-1,000 ppb
✕ >1,000 ppb	● >1,000 ppb

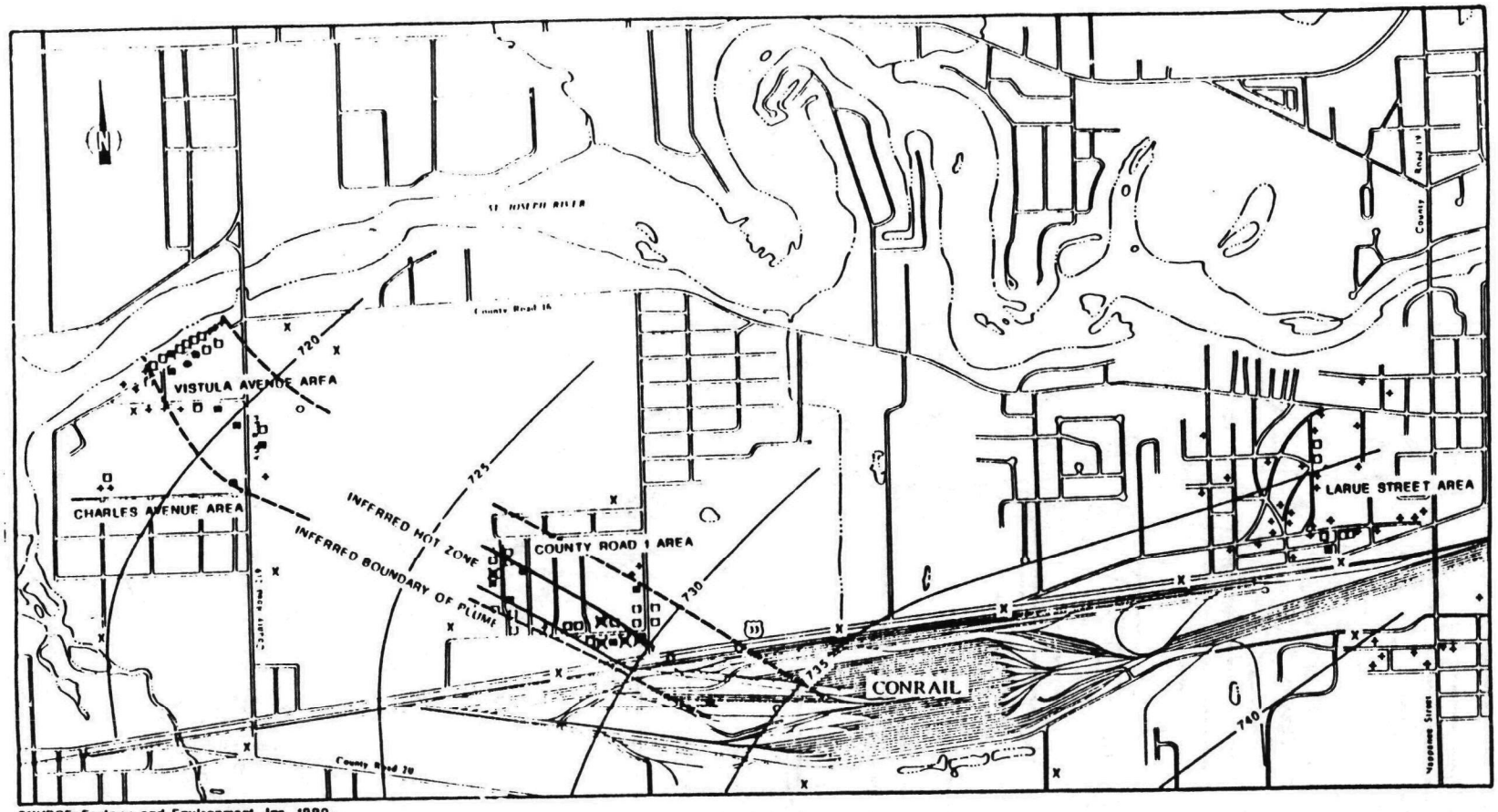
—— POTENTIOMETRIC CONTOUR, DEEP ZONE

– – – INFERRED BOUNDARY OF PLUME BASED ON IDEM AND PHASE I SAMPLING RESULTS

Figure 7

DETECTED LEVELS OF TRICHLOROETHENE

Figure 8



SOURCE: Ecology and Environment, Inc. 1990.

SCALE: 1"=1500'

0 1,000 2,000 3,000 4,000 5,000 FEET

LEGEND

RESIDENTIAL WELL (IDEM Average Values)		MONITORING WELL (Phase I RI)	
+	NONE DETECTED	X	NONE DETECTED
□	0-100 ppb	○	0-100 ppb
■	100-1,000 ppb	●	100-1,000 ppb
⧓	>1,000 ppb	●	>1,000 ppb

—— POTENTIOMETRIC CONTOUR, DEEP ZONE

– – – INFERRED BOUNDARY OF PLUME BASED ON IDEM AND PHASE I SAMPLING RESULTS

DETECTED LEVELS OF CARBON TETRACHLORIDE

contamination levels above 1,000 ppb have been identified. On Figures 7 and 8, these areas of higher contamination have been designated as the "hot" contamination zone.

VI. SUMMARY OF SITE RISKS

As a part of the feasibility study for this interim action, a preliminary risk assessment was prepared to evaluate the need for implementation of an interim remedial measure designed to immediately reduce or eliminate public exposure to contaminated groundwater. This risk assessment, as is indicated by its title, is preliminary in nature, with more specific findings of the baseline risk assessment to be included in the subsequent final action Record of Decision (ROD), and the ultimate cleanup objectives for the groundwater remediation, and for the site.

Relative to this interim remedial action, many residences in the area rely on this groundwater as their domestic water supply source. Residents using the groundwater can be exposed to the contaminants it contains. The most significant exposures generally result from direct consumption of the water itself and beverages made with the water, and through dermal contact with the water and inhalation of vapors from the water while bathing.

U.S. EPA calculated an unacceptable public health risk for exposure to the contaminants of concern (i.e., TCE and CCl_4) based on the exposure required for one additional person in a million to contract cancer if exposed to TCE or CCl_4 over a lifetime. (Note: These risks are in addition to normal risk of cancer posed in everyday life.) For a one in a million lifetime health risk, U.S. EPA determined that if an individual is exposed to greater than 1.23 ppb of TCE or 0.152 ppb of CCl_4, then that person would be at risk of contacting cancer.

Also, another standard developed by U.S. EPA's Office of Drinking Water was utilized, specifically the National Primary Drinking Water Standards MCLs for certain substances in drinking water. These standards are set at levels as close to the level at which no known or anticipated adverse health effects would occur, allowing an adequate margin of safety, as can be feasibly achieved using best available technology. For both TCE and CCl_4, the MCL is 5 ppb.

As can be seen from the above figures and the figures provided in the previous section (regarding contamination levels found in the groundwater), if residents with point of entry filters were to drink untreated water or if they used untreated water for regular household purposes such as showering, they could be exposed to contaminant levels much higher than the estimated baseline risk levels and the MCLs. In addition, the residents within the

impacted area who are using private well supplies not equipped with filter systems as their sole source of potable water are potentially at risk. The basis for this determination is that: 1) stage fluctuations in the St. Joseph River make the groundwater flow regimes susceptible to changes, which may result in the mixing of groundwater and further expansion of the currently identified boundaries of contamination; 2) the current in-house filter program is restricted in terms of who is eligible for obtaining such filters, and is open-ended in terms of the longevity of IDEM's current monitoring program; and 3) IDEM's monitoring program indicates that groundwater contamination levels are increasing in some of the residential wells in the County Road 1 and Vistula Avenue areas. Therefore, there are four general areas which are considered to be potentially at risk based on the above scenario: the County Road 1, Vistula Ave., Charles Ave., and LaRue St. areas. There are a total of approximately 505 residences/businesses which would be affected in these areas.

Releases of hazardous substances from the site, through exposure to the groundwater, if not addressed by the preferred alternative or one of the other measures discussed in this plan, may present an imminent and substantial endangerment to public health, welfare, and the environment.

VII. DESCRIPTION OF ALTERNATIVES

Based on the findings discussed above, the following primary remedial action objectives were developed for this interim remedial action at the Conrail site:

- Providing a safe, permanent drinking water supply to residents who are potentially at risk; and

- Preventing exposure to the contaminated groundwater.

The secondary objectives for implementing an interim remedial action for the Conrail site include:

- Minimizing further expansion of contamination in the aquifer and further migration of the contaminants to surface water (i.e., St. Joseph River and Baugo Bay); and

- Reducing contaminant concentrations in the groundwater within the study area.

A feasibility study was conducted to develop and evaluate remedial alternatives for this interim remedial action at the Conrail site which, at a minimum, satisfy the primary objectives specified above. Remedial alternatives were assembled from applicable remedial technology process options and were initially evaluated for effectiveness, implementability, and cost. The

alternatives meeting these criteria were then evaluated and compared to nine criteria required by the National Contingency Plan (NCP). In addition to the remedial alternatives, the NCP requires that a no-action alternative be considered at every site. The no-action alternative serves primarily as a point of comparison for other alternatives.

Except for the no-action alternative, which includes groundwater monitoring only, each alternative includes the following common elements:

Groundwater Monitoring. A groundwater monitoring program shall be designed to detect changes/increases in the chemical concentration of the groundwaters at and adjacent to the site, and to evaluate the effectiveness of the Remedial Action. Groundwater monitoring shall include collection and laboratory analysis of samples from monitoring wells installed under the first phase of investigations, as well as those planned for installation during the second phase of investigations. Monitoring wells to be sampled will be determined during the Remedial Design, with the basis of selection being to ensure adequate monitoring of the horizontal and vertical migration of the groundwater contamination. Based on the extent of the contamination, the location of the monitoring wells, and the depth to which they are screened, it is assumed that approximately 25 monitoring wells will need to be included for sampling in this monitoring effort. Each monitoring well shall be sampled semiannually. Laboratory analysis to be performed shall include at a minimum the volatile organic compounds (VOCs) listed in Table 1.

Table 1
Sampling Parameters

Trichloroethylene	1,1-Dichloroethene
Carbon Tetrachloride	Dibromochloromethane
1,1,1 -Trichloroethane	Chloromethane
Benzene	1,2-Dichloroethene
Chloroform	Vinyl Chloride

If additional information indicates that the groundwater monitoring program is inadequate, the location/number of groundwater monitoring wells, and/or type/number of laboratory analysis, will be evaluated and adjusted as necessary.

Institutional Controls. Warning signs and fencing will be utilized to limit exposure to the contaminated groundwater within the area where the groundwater extraction and treatment system is housed. Restrictive covenants may be implemented on the Railyard and the property where the groundwater extraction facilities and monitoring wells are installed, pursuant to Indiana Code (IC) 13-

7-8.7-12. In addition, advisories will be issued to users and owners of water wells within the area of contamination. It is expected that water wells within the area of contamination will be abandoned pursuant to IC 13-7-26-7.

Alternative 1 - No Action with Groundwater Monitoring

The "no action" alternative is included to establish a baseline for comparison. Under a no-action alternative, actions taken to reduce the potential for exposure should not be included as a component of the alternative. As such, this alternative would evaluate the situation at the site with none of the residences having individual carbon filter units.

Taking no action at the site would result in leaving contaminated groundwater in the aquifer, and would increase exposure to the contaminated groundwater, since operation and maintenance of the existing filter systems could not be guaranteed.

The no-action alternative would, however, include the monitoring of the groundwater as discussed above.

The present worth cost for Alternative 1 would be $147,300. Since the groundwater monitoring will be done without the installation of any new monitoring wells, no capital costs will be incurred. However, operation and maintenance (O&M) costs are estimated to be $15,000/year for the groundwater monitoring.

Alternative 2 - Distribution of Water to be Supplied from a New Central Well; Groundwater Extraction System; and Groundwater Monitoring.

This alternative includes the installation of a groundwater extraction, collection, treatment, and discharge system ("groundwater extraction system") which captures and removes contaminated groundwater from within the area of groundwater contamination which extends through the County Road 1 area, to the northwest (or the western contamination area shown on Figure 2). The extraction system would consist of a network of approximately four wells designed to prevent the further migration of contaminants, by capturing and removing contaminated groundwater downgradient of the source area, through the withdrawal of approximately 500 gallons per minute (GPM) of groundwater. Intercepted groundwater would then be pumped to the groundwater treatment system for treatment.

Testing would need to be performed prior to the design of the groundwater extraction system network to assist in the determination of the optimum pumping rate to contain the plume. The groundwater extraction system would be designed to ensure that extraction well placement will be sufficient to

hydraulically contain the contaminant plume (preliminarily identified on Figure 2), and extract contaminated groundwater for treatment. A collection and piping system would be used to transport extracted groundwater to the treatment system for chemical removal. The groundwater extraction system would be designed to operate year-around.

In addition to controlling the movement of the plume, this system would also serve as the potable water supply source for the affected residences. As such, the extracted groundwater would be treated to levels necessary to allow it to be used as the source of drinking water for the residences. After collection in an influent storage tank, the groundwater would be treated to decrease concentrations of VOCs. Such treatment processes would include the following: (1) a pretreatment system for filtering out suspended solids, (2) an air stripping system for the removal of VOCs, and (3) treatment of air emissions from the air stripper, as necessary, to meet the standards as stated within Section 326 of the Indiana Administrative Code (IAC). Treatability testing would need to be performed to determine the design parameters of the treatment system in order to meet Safe Drinking Water Act (SDWA) requirements.

Treatment process residuals would be handled in accordance with all applicable or relevant and appropriate requirements pertaining to the site. Spent carbon from air treatment systems would need to be handled as a RCRA waste and either disposed of in a RCRA-compliant facility in accordance with Land Disposal Restrictions or regenerated off-site.

The extraction system would be operated indefinitely, since it would serve as the water supply source for the residents in the area. The system's performance would be monitored on a regular basis, with adjustments to the system made, as necessary, based on the performance data collected during operation. Examples of adjustments which could be required are additional groundwater extraction wells, increased pumping rates, and/or changes in treatment (e.g., due to changes in contaminant concentrations).

This alternative would also include a water distribution system which would be sized to convey both the fire flow demand and the peak hourly potable demand. The system would be designed to serve approximately 505 units, within the four areas, and would include the installation of about 67,000 feet of distribution line.

Treated water in excess of domestic requirements would be discharged to the St. Joseph River. This alternative would also include groundwater monitoring, as discussed above.

Present worth costs for Alternative 2 would be approximately $5,123,600. Of this amount, the capital costs would be

$2,998,000, with annual O&M costs of $216,500.

Alternative 3 - Individual Point-of-Entry Treatment Units; Groundwater Extraction System; and Groundwater Monitoring.

This alternative would include the groundwater extraction and treatment system detailed in Alternative 2. However, under this alternative, all of the groundwater that is extracted and treated would be discharged to the St. Joseph River. Therefore, under this alternative, the amount of treatment that is needed, would be dependent upon what is necessary to satisfy National Pollutant Discharge Elimination System (NPDES) discharge criteria prior to discharge to the River. The discharge criteria would be determined by the U.S. EPA, in consultation with the IDEM. Such discharge criteria would need to satisfy best available technology requirements and any more stringent limits necessary to satisfy water-quality based standards. If treatment was deemed necessary to decrease concentrations of VOCs, such treatment processes would be essentially the same as those described under Alternative 2. The extraction system would be operated until it is determined what final groundwater remediation measures would be necessary, and such measures were initiated. The system's performance would be monitored as is discussed under Alternative 2, with adjustments made as necessary.

A permanent, safe drinking water supply would be provided through the installation of point-of-entry (POE) carbon filter units in homes and businesses in the affected or potentially affected area. For this alternative, about 450 homes or businesses not currently using POE systems, including those currently having point-of-use systems would be provided with POE systems. Periodic sampling, as well as filter, prefilter, and flow meter replacement, would also be necessary under this alternative.

This alternative would also include the groundwater monitoring discussed above. The institutional controls discussed above, would be slightly different for Alternative 3, since the residences would continue to use their own wells for their drinking water supply. Specifically, the drinking water wells would not be abandoned pursuant to IC 13-7-26-7.

Present worth costs for Alternative 3 would be approximately $4,450,900. This figure includes capital costs of $937,000, and annual O&M costs of $357,900.

Alternative 4 - Provision of Separate Water Supplies for the Charles Ave./Vistula Ave. area, and the County Road 1/LaRue Street area; Groundwater Extraction System; and Groundwater Monitoring.

Under this alternative, the source of the potable water supply for the affected residents would be dependent upon the County in which the area is located. In the County Road 1 and LaRue Street areas (which are both located in Elkhart County), the installation of a water distribution system would extend from the existing City of Elkhart water supply system. Such a distribution system would service about 304 units, and would entail the installation of approximately 43,000 feet of distribution line.

For the Vistula Ave. and Charles Ave. areas (which are both located in St. Joseph County), this alternative would include two options. The first option, is to connect the approximately 201 residences in these areas to a municipal water supply being planned for the Town of Osceola. There are uncertainties involved, however, both in terms of whether such a system will actually be developed, and the timing involved in the development of such a system. Therefore, another option for servicing this area involves the use of treated groundwater from the groundwater extraction system. Under both of these options, around 20,000 feet of distribution lines will need to be installed.

The groundwater extraction and treatment system described under Alternative 2 would be a part of this alternative. Treatment of the groundwater would depend upon whether any part of the groundwater is to be used as a drinking water supply source. If the areas in St. Joseph County were to use the extracted groundwater as their source of drinking water, treatment of the groundwater would be as described under Alternative 2. If, however, the areas in St. Joseph County were to obtain drinking water from the Town of Osceola, treatment of the groundwater would follow the scenario set up under Alternative 3, with treatment dictated by NPDES discharge limitations. As mentioned previously, any treated groundwater in excess of domestic requirements would be discharged to the St. Joseph River. This alternative is similar to the previous alternatives, in that it would include the groundwater monitoring.

Present worth costs for Alternative 4 would be approximately $4,613,600. Included in this total are $2,488,000 in capital costs, and annual O&M costs of $216,500.

<u>Alternative 5</u> - Extension of the City of Elkhart's Municipal Waterworks to Serve all Four Affected Areas; Groundwater Extraction System; and Groundwater Monitoring.

This alternative is similar to Alternatives 2, 3 and 4, in that it includes groundwater monitoring to help ensure that this alternative is effectively meeting the remedial action goals. In addition, this alternative would also include the groundwater extraction system detailed in Alternative 2. Under this

alternative, all of the groundwater that is extracted, would be treated, as under Alternative 3, to meet requirements for discharge to the St. Joseph River.

The potable water supply under this alternative would serve all four of the affected areas, through the installation of a water distribution system extending from the existing City of Elkhart water supply system. Such a distribution system would service all 505 of the estimated units in the affected areas, and would entail the installation of approximately 67,000 feet of distribution line.

Present worth costs for Alternative 5 would be approximately $3,969,300. This total reflects annual O&M costs of $125,000, and capital costs of $2,736,000.

VIII. SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

The NCP requires that the alternatives be evaluated on the basis of the following nine evaluation criteria: (1) Overall protection of human health and the environment; (2) Compliance with applicable or relevant and appropriate requirements (ARARs); (3) Long-term effectiveness and permanence; (4) Reduction of toxicity, mobility, or volume through treatment; (5) Short-term effectiveness; (6) Implementability; (7) Cost; (8) State acceptance; and (9) Community acceptance. This section compares to the alternatives with regard to these nine evaluation criteria.

Threshold Criteria

1. Overall Protection of Human Health and the Environment

With the exception of the no-action alternative, all of the alternatives provide good protection of human health and the environment with respect to exposure to contaminated groundwater. The no-action alternative provides no such protection. Alternatives 5 provides a somewhat higher degree of protection than Alternatives 2 and 3, since Alternative 5 eliminates the exposure to the affected residences, through connection to a different water supply source. Alternatives 2 and 3 do provide good protection, however, since the extracted groundwater will be treated to at least MCLs. The level of protection provided by Alternative 4 will depend upon the option selected for providing potable water to the affected areas of St. Joseph County. If a tie-in to the Town of Osceola is possible, the level of protection will be comparable to Alternative 5. If, however, the extracted, treated groundwater is to be used as the water supply for the affected areas of St. Joseph County, the level of protection afforded by Alternative 4 will be comparable to that

provided under Alternatives 2 and 3.

2. Compliance with ARARs

All of the Alternatives should meet the identified ARARs.

The alternate water supply will meet MCLs set under the SDWA (40 CFR Parts 141 and 143). The groundwater extraction system portion of Alternatives 2, 3, 4, and 5, will meet NPDES permitting/discharge requirements (40 CFR Parts 122, 125, 131, and 136; and IAC 327), and will utilize the best available demonstrated control technology for treatment and discharge of the groundwater to surface water. For air stripping facilities, IAC 326 establishes permitting requirements for emissions of VOCs, requiring Best Available Control Technology (BACT) for new sources with potential emissions exceeding a specified threshold value. U.S.EPA's OSWER Directive 9355.0-28, relating to the control of air emissions at Superfund groundwater sites will also be considered to the extent that it is suitable to VOC air emissions for the groundwater treatment process. In addition, if off-site landfilling of residuals is considered, all Federal (40 CFR Part 268) and State (329 IAC) requirements for landfilling hazardous wastes must be met. For off-site disposal of spent carbon to an approved regeneration facility, the manifest requirements under the Resource Conservation and Recovery Act (40 CFR Part 262) and the Indiana Administrative Code (Section 329) are applicable.

MCLs and MCL Goals (MCLGs) will not be ARARs for groundwater in the aquifer because they are beyond the purpose and scope of this interim action. Aquifer cleanup ARARs will be determined and addressed by a later measure when a final decision is made on cleanup of the groundwater.

Primary Balancing Criteria

3. Long-Term Effectiveness and Permanence

With respect to the long-term effectiveness and permanence of the water supply, Alternative 5 will provide the highest degree of long-term effectiveness and permanence since it involves the provision of a water supply from a source other than the contaminated groundwater at the site. This degree may not be much higher, however, since groundwater from the City of Elkhart's Main Street Well Field (which would probably be the source of water for this area) is also contaminated with TCE, although it is treated through the use of air strippers. Nevertheless, the Main Street Well Field system is an established system, with better O&M capabilities.

The long-term effectiveness and permanence of Alternative 4, with respect to the water supply will depend upon the option chosen

for servicing of the St. Joseph County area. If this area ties in to the Town of Osceola, then the degree of permanence for Alternative 4 will be the same as that for Alternative 5, or possibly higher, assuming the water supply source is cleaner, and treatment is equally as effective. If, however, treated groundwater is utilized as the source of the drinking water for the St. Joseph County areas, the long-term effectiveness and permanence will be somewhat less since potential changes in contaminant concentrations could effect the effectiveness of the treatment system, and thereby potentially effect the permanence of Alternative 4.

As with Alternative 4, since Alternative 2 involves the provision of treated groundwater to affected residences, long-term effectiveness and permanence of the water supply, although still being adequate, is not as good as Alternatives 4 and 5. Alternative 3 provides a below average degree of long-term effectiveness and permanence, partly because of the potential for changes in the contaminant concentrations to impact the effectiveness of the filters, and because these changes could impact each of the 505 filters differently. Finally, the no-action alternative has no long-term effectiveness, since it will not reliably protect human health and the environment.

In terms of the overall long-term effectiveness and permanence of the various alternatives, with respect to protection of human health and the environment from the groundwater contamination at the site, such long-term effectiveness and permanence may not be achieved. The groundwater extraction system, which is a part of Alternatives 2, 3, 4, and 5, will, however, be effective in the short term in preventing further degradation of the groundwater.

4. Reduction of Toxicity, Mobility, or Volume Through Treatment

Since Alternatives 2, 3, 4, and 5 all include groundwater extraction, treatment, and disposal, they all provide for at least an adequate reduction of toxicity, mobility, and/or volume of the groundwater contamination. Specifically, all of the alternatives result in the reduction of toxicity in the extracted groundwater, through treatment for VOCs using air stripping. Mobility of the groundwater contamination will be reduced through control of the groundwater extraction (e.g., the rate of extraction, the location of the extraction wells, etc.). Volume will also be reduced through the extraction process. Alternatives 2 and 4 may provide a slightly higher degree of reduction, since the extracted groundwater will be used as the water supply and will hence need to be treated to a potentially higher level.

5. Short-Term Effectiveness

Alternative 3 provides the highest degree of short-term effectiveness, since the home carbon units are readily available, and can be installed more quickly than a waterworks system. In addition, there will be little or no adverse effects to human health and the environment during the implementation period for Alternative 3. The short-term effectiveness for Alternatives 2, 4, and 5 will also be good, but will be lower than that for Alternative 3, since the time period for implementation of these alternatives will be longer, and will result in some disruption during the period of construction. Alternative 5 will provide a somewhat higher degree of short-term effectiveness (over Alternatives 2 and 4), if connection to the City of Elkhart's system can be agreed to quickly.

6. Implementability

Alternative 3 will be the easiest to implement, since the filters are easily available, can be easily and quickly installed, and will simply require agreement by the individual homeowners to begin implementation. The implementability of Alternative 5 is good in terms of technical feasibility, since it involves materials and services which are readily available. The administrative feasibility of Alternative 5, however, will be dependent upon being able to expeditiously work out an agreement for long-term operation and maintenance of the water distribution system with the City of Elkhart and other parties. As with Alternative 5, the implementability of Alternative 4 is also good in terms of technical feasibility, since it involves materials and services which are readily available. The administrative feasibility of Alternative 4 depends upon the availability of connecting to the proposed Town of Osceola water system. Alternative 2 is adequate in terms of implementability, being technically feasible in terms of materials and services being readily available. Coordination among the affected governmental bodies will be essential for most of these alternatives. In addition, all of the above alternatives will include some permitting requirements which may affect the administrative feasibility of the alternatives, such as the discharge of treated groundwater and the use of air strippers.

7. Cost

The costs of the various alternatives are presented above. Alternatives 3, 4, and 5 all cost about the same. Alternative 2 is slightly more expensive.

Modifying Criteria

8. State Acceptance

IDEM has been involved throughout the investigation of the

Conrail site and supports the selected remedy.

9. Community Acceptance

Community acceptance of the selected remedy is discussed in the Responsiveness Summary, which is attached as Appendix B.

IX. THE SELECTED REMEDY

Based on the information collected and developed in the Phase I RI/FS, and using the comparative analysis of alternatives described above, U.S. EPA and IDEM have selected Alternative 5 as the most appropriate interim action for addressing exposure to contaminated groundwater at the Conrail site. This remedy is made up of the following components:

Institutional Controls - This alternative may include restrictive covenants pursuant to IC 13-7-8.7-12, for the Railyard and property where the groundwater extraction facilities and monitoring wells are located. In addition, advisories will be issued to users and owners of water wells within the area of contamination. It is also expected that water wells within the area of contamination will be abandoned pursuant to IC 13-7-26-7. In addition, warning signs and fencing will be utilized to limit exposure to the contaminated groundwater within the area where the groundwater extraction and treatment system is housed.

Groundwater Monitoring - A groundwater monitoring program, designed to detect changes/increases in the chemical concentration of the groundwaters at and adjacent to the site, and to evaluate the effectiveness of the Remedial Action is included in the selected remedy. Groundwater monitoring shall include semiannual sampling at approximately 25 monitoring wells selected on the basis of ensuring adequate monitoring of the horizontal and vertical migration of the groundwater contamination. Laboratory analysis to be performed shall include, at a minimum, the volatile organic compounds (VOCs) listed in Table 1. If information ever indicates that the groundwater monitoring program is inadequate, the location/number of groundwater monitoring wells, and/or type/number of laboratory analysis, will be evaluated and adjusted as necessary.

Groundwater Extraction System - This alternative includes the installation of a groundwater extraction, collection, treatment, and discharge system ("groundwater extraction system") which will capture and remove contaminated groundwater from within the area of groundwater contamination which extends through the County Road 1 area, to the northwest (or the western contamination area shown on Figure 2). The extraction system will consist of a network of approximately four wells designed to prevent the further migration of contaminants, by capturing and removing contaminated groundwater downgradient of the source area. Three

of the wells would be located along the centerline of the contamination area within the County Road 1 area (see Figure 9), and would be designed to pump initially at approximately 100 GPM. The fourth well, with the capacity to pump initially at 200 GPM, would be located along the approximate centerline of the contamination in the Vistula Ave. area where it crosses County Road 219. Intercepted groundwater shall then be pumped to the groundwater treatment system for treatment, prior to discharge to the St. Joseph River.

Testing shall be performed prior to the design of the groundwater extraction system network to assist in the determination of the optimum pumping rate to contain the plume. The groundwater extraction system shall be designed to ensure that extraction well placement will be sufficient to hydraulically contain the contaminant plume, and extract contaminated groundwater for treatment. A collection and piping system shall be used to transport extracted groundwater to the treatment system for chemical removal. The groundwater extraction system shall be designed to operate year-around.

The degree of treatment that is needed will be dependent upon what is necessary to satisfy NPDES discharge criteria prior to discharge to the River. The discharge criteria shall be determined by the U.S. EPA, in consultation with the IDEM. Such discharge criteria shall satisfy best available technology requirements and any more stringent limits necessary to satisfy water-quality based standards. After collection in an influent storage tank, the groundwater shall be treated, if needed, to decrease concentrations of VOCs. Such treatment processes shall include the following: (1) a pretreatment system for filtering out suspended solids, (2) an air stripping system for the removal of VOCs, and (3) treatment of air emissions from the air stripper, as necessary, to meet the standards as stated within Section 326 of the IAC. Treatability testing shall be performed to determine the design parameters of the treatment system in order to meet discharge requirements.

Treatment process residuals shall be handled in accordance with all applicable or relevant and appropriate requirements pertaining to the site. Spent carbon from air treatment systems must be handled as a RCRA waste and either disposed of in a RCRA-compliant facility in accordance with Land Disposal Restrictions or regenerated off-site.

The extraction system shall be operated until it is determined what final groundwater remediation measures will be necessary, and such measures are initiated. The system's performance will be monitored on a regular basis, and adjustments to the system may be warranted by the performance data collected during operation. Examples of adjustments which may be necessary, are additional groundwater extraction wells, increased pumping rates,

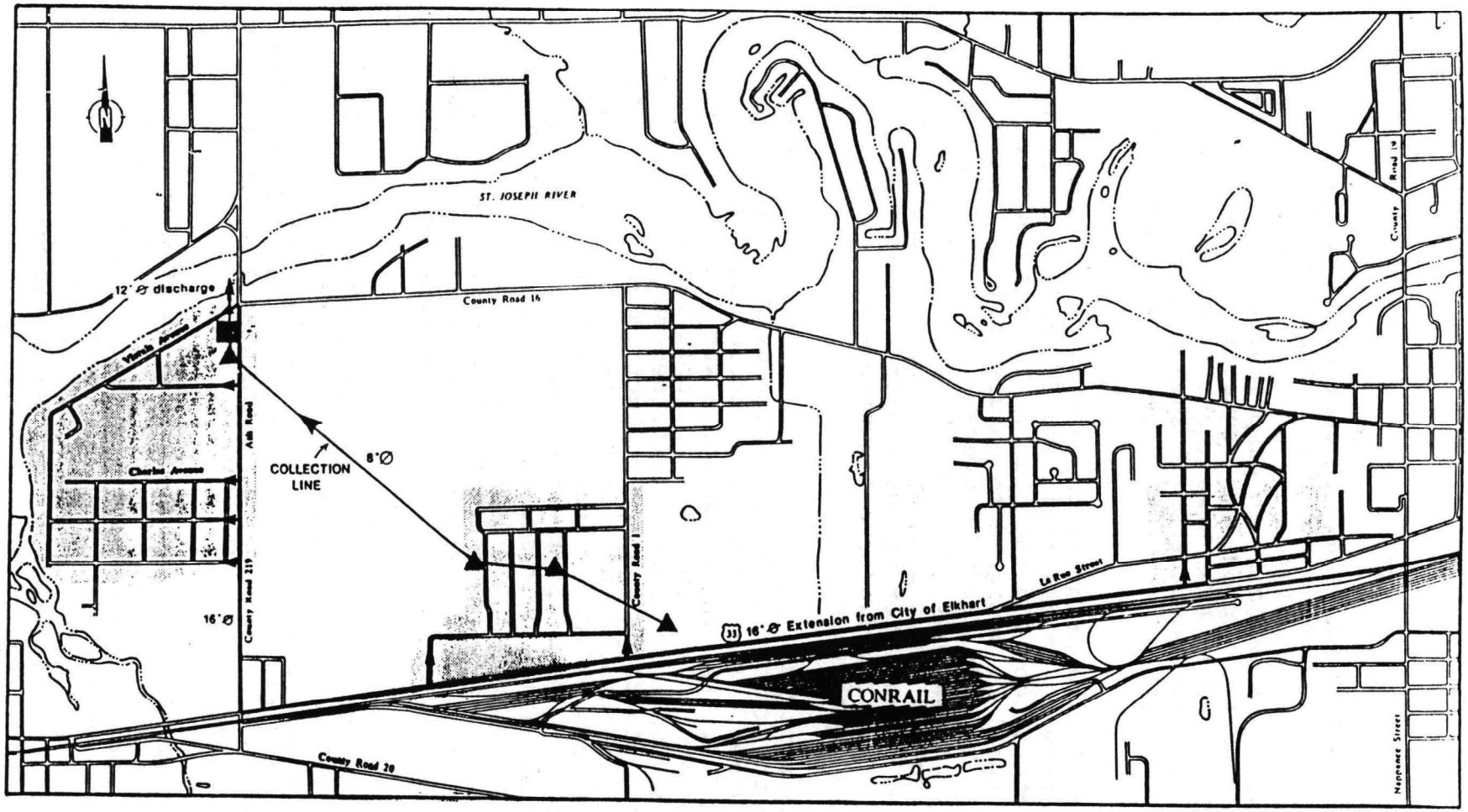

ST. JOSEPH RIVER
12" ⌀ discharge
County Road 16
Ash Road
County Road 219
COLLECTION LINE
8"∅
16"⌀
County Road 1
33 16"⌀ Extension from City of Elkhart
CONRAIL
County Road 20
LEGEND
EXTRACTION WELL
TREATMENT PLANT
POTENTIALLY IMPACTED AREAS
SCALE: 1"=1500'
0 1,000 2,000 3,000 4,000 5,000 FEET

Figure 9

and/or changes in treatment (e.g., due to changes in contaminant concentrations).

Alternate Water Supply - The selected remedy includes the tie-in of all four of the affected areas to the existing City of Elkhart municipal water supply system. The water distribution system will include the installation of about 67,000 feet of distribution line of various sizes. The system will be designed to serve approximately 505 units, within the four areas. In developing the alternatives, it was assumed that three people occupy each residential unit, with an equivalent of eight people use for each of the commercial units. Water usage was assumed to be an average daily rate of 100 gallons per day per person. The distribution system was sized to convey both the fire fighting demand flow of 500 GPM for two hours from storage while providing potable water service to all dwellings at the maximum daily demand flow rate. Standard local distribution lines are six inches in diameter. All lines in excess of six inches were sized based on a computer program from the City of Elkhart waterworks.

This alternative will reduce the risks posed by exposure to the contaminated groundwater. Once the alternate water supply system is installed, those residents who are at risk or potentially at risk with respect to contact with the contaminated groundwater, will have available water meeting SDWA MCLs. Once the groundwater extraction system is installed, a large portion of the area of groundwater contamination will be contained to at least its current position. This remedial action will be monitored carefully to ensure that hydraulic control of the contaminated plume is maintained. In addition, data collected during this remedial action, relative to aquifer and contaminant response to the subject remedial measures, will be used in conjunction with data collected during further RI investigations, to determine the ultimate level of remediation for the groundwater contamination. A final groundwater remediation ROD, which specifies the ultimate goal, remedy, and anticipated time-frame, will then be prepared. The subject interim system may be incorporated into the design of the site remedy specified in the final action ROD.

The total present worth cost for the selected remedy is estimated at $3,969,300. This total reflects capital costs of $2,736,000, and present worth O&M costs of $1,233,300. These present worth O&M costs are based on annual O&M costs of $125,000, discounted over the 20-year duration with a 10% interest rate.

X. STATUTORY DETERMINATIONS

EPA's primary responsibility at Superfund sites is to select remedial actions that are protective of human health and the environment. CERCLA also requires that the selected remedial action for the site comply with applicable or relevant and

appropriate environmental standards established under Federal and State environmental laws, unless a waiver is granted. The selected remedy must also be cost-effective and utilize permanent treatment technologies or resource recovery technologies to the maximum extent practicable. The statute also contains a preference for remedies that include treatment as a principle element. The following section discusses how the selected remedy for interim groundwater remediation at the Conrail site meets these statutory requirements.

Protection of Human Health and the Environment

As previously indicated, residents using the groundwater can be exposed to the contaminants it contains. The most significant exposures generally result from direct consumption of the water itself and beverages made with the water, and through dermal contact with the water and inhalation of vapors from the water while bathing. Under Alternative 5, provision of an alternate water supply to residents downgradient of the site, extraction and treatment of contaminated groundwater, and imposition of access restrictions to contaminated groundwater until aquifer remediation is attained will address risks from groundwater.

Use of emissions controls, if necessary, will protect against short term exposure to contaminants during the remedial action. No environmental impacts due to site contamination have been identified to date, and discharge of water to the St. Joseph River will be regulated by NPDES to ensure that the remedial action does not affect aquatic life.

Compliance with ARARs

The selected remedial action will meet all identified applicable, or relevant and appropriate Federal and more stringent State requirements. ARARs for the selected remedy are listed below.

Chemical Specific

- SDWA National Primary Drinking Water Standards (40 CFR Part 141), and Indiana Drinking Water Quality Standards (327 IAC 2) - (The alternate water supply must meet these requirements. However, MCLs/MCLGs will not be ARARs for the groundwater because they are beyond the scope of this interim action.)

- CAA National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 61)

- Clean Air Act (CAA) National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50)

- Indiana Regulations for Establishing Emission Levels for

VOCs (326 IAC 2, and 326 IAC 8)

Action Specific

- Clean Water Act (CWA) NPDES Permit Regulations (40 CFR Parts 122 and 125)
- CWA State Enforcement Jurisdiction (40 CFR Part 131)
- CWA Sample Preservation Procedures (40 CFR Part 136)
- RCRA Definition and Identification of Hazardous Waste (40 CFR Part 261)
- RCRA Standards for Generators of Hazardous Waste (40 CFR Part 262)
- RCRA Standards for Transporters of Hazardous Waste (40 CFR Part 263)
- RCRA Land Disposal Restrictions (LDRs) (40 CFR Part 268)
- Occupational Safety and Health Act (OSHA) Regulations for Workers Involved in Hazardous Waste Operations (29 CFR Part 1910)
- Indiana Regulations for the Treatment and Disposal of Hazardous Waste (329 IAC 3)
- Indiana Regulations For Permitting of Air Strippers (326 IAC 2, and 326 IAC 8)
- Indiana Regulations for Construction Permits for Water Treatment Facilities (327 IAC 3)
- Indiana NPDES Permit Regulations (327 IAC 5)
- Indiana Regulations for the Registration of Groundwater Extraction Wells Which Have a Combined Capability of Pumping Greater Than 70 Gallons per Minute (Indiana Code 13-2-6.1)

Location Specific

- Construction within 100-year Floodplain (40 CFR Part 264)
- U.S. EPA's Statement of Procedures on Floodplain Management and Wetlands Protection (40 CFR Part 6, Appendix A)
- Indiana Regulations Governing Construction in a Floodway (Indiana Code 13-2-22)

To Be Considered Criteria

- U.S. EPA's OSWER Directive 9355.0-28 - Control of Air Emissions from Superfund Air Strippers

- Elkhart County Groundwater Protection Ordinance

Cost Effectiveness

U.S. EPA believes that the selected remedy is cost-effective in mitigating the risk posed by contact with contaminated groundwater, within a reasonable period of time. Section 300.430(f)(ii)(D) of the NCP requires U.S. EPA to evaluate cost-effectiveness by comparing all the alternatives which meet the threshold criteria: protection of human health and the environment; and compliance with ARARs, against three additional balancing criteria: long-term effectiveness and permanence; reduction of toxicity, mobility or volume through treatment; and short-term effectiveness. The selected remedy meets these criteria and provides for overall effectiveness in proportion to its cost. The estimated cost for the selected remedy is $3,969,300.

Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

U.S. EPA and IDEM believe that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner for the interim action being undertaken at the Conrail site. Of those alternatives that are protective of human health and the environment and comply with ARARs, U.S. EPA and IDEM have determined that the selected remedy provides the best balance of trade-offs in terms of long-term effectiveness; reduction in toxicity, mobility or volume achieved through treatment; short-term effectiveness; implementability; and cost, taking into consideration the statutory preference for treatment as a principal element and considering State and community acceptance.

Preference for Treatment as a Principal Element

Since the selected remedy relates to an interim action to contain groundwater contamination, and does not address the source or complete removal of the contamination, it does not therefore address the principal threat. Therefore, satisfaction of this preference will be addressed in a subsequent ROD on the Conrail site, when a final decision for the site is made concerning remediation of source areas and the groundwater.

APPENDIX A

ADMINISTRATIVE RECORD INDEX

ADMINISTRATIVE RECORD INDEX
UPDATE #1
CONRAIL RAILYARD SITE
ELKHART, INDIANA

FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
	6	90/06/00	Progress Report, Conrail Railyard Site	USEPA		Fact Sheets	1
	4	91/03/00	Fact Sheet on Conrail Rail Yard Superfund Site	USEPA		Fact Sheets	2
	10	91/04/00	Proposed Plan for Interim Remedial Action	USEPA		Fact Sheets	3
	65	90/04/00	Preliminary Evaluation of Phase I RI Results and Interim Remedial Alternatives for Conrail/County Road 1 Remedial Investigation/ Feasibility Study	Ecology & Environment, Inc.	D. Dalga, USEPA	Reports/Studies	4
	62	91/02/05	Work Plan for the Phase II Remedial Investigation and Phased Feasibility Study	Ecology & Environment, Inc.	USEPA	Reports/Studies	5
	14	91/04/00	Proposed Plan	Dennis Dalga, USEPA		Reports/Studies	6
	170	91/04/00	Phased Feasibility Study Report	Ecology & Environment, Inc.	USEPA	Reports/Studies	7

GUIDANCE DOCUMENTS INDEX, UPDATE #1
CONRAIL RAILYARD SITE
Guidance Documents are available for review at
USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Discharge of Wastewater from CERCLA Sites into Publicly Owned Treatment Works (POTWs)	USEPA	86/04/15
Superfund Risk Assessment Information Directory	USEPA	86/11/00
Superfund Federal-Lead Remedial Project Management Handbook	USEPA	86/12/00
Data Quality Objectives for Remedial Response Activities: Development Process (Volume 1)	USEPA	87/03/00
Data Quality Objectives for Remedial Response Activities: Example Scenario: RI/FS Activities at a Site with Contaminated Soils and Ground Water (Volume 2)	USEPA	87/03/00
Data Quality Objectives for Remedial Response Activities: Volumes 1 & 2	USEPA	87/03/00
A Compendium of Superfund Field Operations	USEPA	87/12/01
Guidance on Providing Alternative Water Supplies	USEPA	88/03/01
Superfund Exposure Assessment Manual	USEPA	88/04/00
Community Relations in Superfund: A Handbook (Interim Guidance)	USEPA	88/06/00
CERCLA Compliance with Other Laws Manual:	USEPA	88/08/00

GUIDANCE DOCUMENTS INDEX, UPDATE #1
CONRAIL RAILYARD SITE
Guidance Documents are available for review at
USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Overview of Applicable or Relevant and Appropriate Requirements (ARARs) - Focus on ARAR Waivers		
Field Screening Methods Catalog	USEPA	88/08/00
Superfund Analytical Data Review and Oversight	USEPA	88/08/18
Guidance for Conducting Remedial Investigations and Feasibility Studies (RI/FS) Under CERCLA	USEPA	88/10/00
User's Guide to Contract Laboratory Program	USEPA	88/12/00
Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites	USEPA	88/12/01
Risk Assessment Guidance for Superfund, Volume II: Environmental Evaluation Manual	USEPA	89/03/00
A Guide on Remedial Actions for Contaminated Ground Water	USEPA	89/04/00
Policy for Superfund Compliance with the RCRA Land Disposal Restrictions	USEPA	89/04/17
Applicable or Relevant and Appropriate Requirements (ARARs) Qs & As	USEPA	89/05/00
Results of FY-88 Record of Decision	USEPA	89/05/01

GUIDANCE DOCUMENTS INDEX, UPDATE #1
CONRAIL RAILYARD SITE
Guidance Documents are available for review at
USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Analysis		
Control of Air Emissions from Superfund Air Strippers at Superfund Ground Water Sites	USEPA	89/06/15
CERCLA Compliance with Other Laws Manual, Part II: Clean Air Act and other Environmental Statutes and State Requirements	USEPA	89/08/00
Evaluation of Ground Water Extraction Remedies, Volume 1: Summary Report	USEPA	89/09/00
CERCLA Compliance with Other Laws Manual: Guide to Manual	USEPA	89/09/00
Evaluation of Ground Water Extraction Remedies, Volume 2: Case Studies 1-19 (Interim Final)	USEPA	89/10/00
CERCLA Compliance with Other Laws Manual: RCRA (Resource Conservation and Recovery Act) ARARs (Applicable or Relevant and Appropriate Requirements) Focus on Closure Requirements	USEPA	89/10/00
Getting Ready: Scoping the RI/FS	USEPA	89/11/00
A Guide to Developing Superfund Proposed Plans	USEPA	89/11/00
A Guide to Developing Superfund Records of	USEPA	89/11/00

GUIDANCE DOCUMENTS INDEX, UPDATE #1
CONRAIL RAILYARD SITE
Guidance Documents are available for review at
USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Decision		
The Feasibility Study: Development and Screening of Remedial Action Alternatives	USEPA	89/11/00
Guidelines for Effective Management of the Contract Laboratory Program, Part 1: Contract Award. Part 2: Contract Administration	USEPA	89/11/00
The Remedial Investigation: Site Characterization and Treatibility Studies	USEPA	89/11/00
Guide for Conducting Treatability Studies Under CERCLA (Interim Final)	USEPA	89/12/00
Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Part A	USEPA	89/12/00
CERCLA Compliance with Other Laws Manual: CERCLA Compliance with State Requirements	USEPA	89/12/00
CERCLA Compliance with Other Laws Manual: CERCLA Compliance with the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA)	USEPA	90/02/00
The Feasibility Study: Detailed Analysis of Remedial Action Alternatives	USEPA	90/03/00
Results of FY-89 Record of Decision Analysis	USEPA	90/03/30

GUIDANCE DOCUMENTS INDEX, UPDATE #1
CONRAIL RAILYARD SITE
Guidance Documents are available for review at
USEPA Region V-Chicago IL

TITLE	AUTHOR	DATE
Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Part A	USEPA	90/04/00
A Guide to Selecting Superfund Remedial Actions	USEPA	90/04/00
CERCLA Compliance with Other Laws Manual, Summary of Part II: CAA, TSCA, and Other Statutes	USEPA	90/04/00
ARARs Qs & As: Compliance with the Toxicity Characteristics Rule: Part 1	USEPA	90/05/00
ARARs Qs & As: Compliance with Federal Water Quality Criteria	USEPA	90/06/00
Basics of Pump and Treat Ground Water Remediation Technology	USEPA	90/09/00
CERCLA Site Discharges to POTWs: Guidance Manual	USEPA	90/09/00
Evaluation of Ground Water Extraction Remedies, Volume 3: General Site Data, Data Base Reports (Interim Final)	USEPA	90/10/00

ACRONYM GUIDE for the Administrative Record
Conrail Railyard Site, Update #1
Elkhart, Indiana

ACRONYM	DEFINITION
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CWA	Clean Water Act
POTWs	Publicly Owned Treatment Works
RI	Remedial Investigation
RI/FS	Remedial Investigation/ Feasibility Study
SDWA	Safe Drinking Water Act
USEPA	United States Environmental Protection Agency

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ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
1	1	00/00/00	Letter (form) Re: Potential Groundwater Contamination	Stan Reedy, M.D. - ECHD	See Document	Correspondence	1
1	1	86/06/17	Letter Re: the sample of water taken home on June 13, 1986	D.Steinke - RAL, Inc.	M.Fitch	Correspondence	2
1	1	86/07/25	Letter Re: well water contamination	Stan Reedy, M.D. - ECHD	Local residents	Correspondence	3
1	1	86/07/31	Letter Re: analytical report for water samples collected on July 26, 1986	D.Steinke - RAL, Inc.	C.Byers	Correspondence	4
1	1	86/07/31	Letter Re: analytical report for water samples collected on July 30, 1986	D.Steinke - RAL, Inc.	D.Spangle	Correspondence	5
1	1	86/07/31	Letter Re: analytical report for the water sample collected on July 30, 1986	D.Steinke - RAL, Inc.	M.Hancock	Correspondence	6
2	2	86/09/30	Letter Re: questions concerning the recently discovered ground water contamination problem west of Elkhart, Indiana	Valdas V. Adamkus - USEPA	J.Hiler - House of Reps.	Correspondence	7
1	1	86/10/01	Letter	K.Theisen - USEPA	G.Ganser	Correspondence	8

ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

E/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
			Re: USEPA sampling of resident's well water				
1		86/10/01	Letter Re: USEPA sampling of resident's well water	K.Theisen - USEPA	J.Waidelich	Correspondence	9
1		86/10/07	Letter Re: USEPA sampling of resident's well water	K.Theisen - USEPA	E.River	Correspondence	10
1		86/10/07	Letter Re: USEPA sampling of resident's well water	K.Theisen - USEPA	M.Henderson	Correspondence	11
1		86/10/10	Letter Re: USEPA sampling of resident's well water	K.Theisen - USEPA	G.Montgomery	Correspondence	12
1		86/10/10	Letter Re: USEPA sampling of resident's well water	K.Theisen - USEPA	J.Hopper	Correspondence	13
1		86/10/10	Letter Re: USEPA sampling of resident's well water	K.Theisen - USEPA	L.Clark	Correspondence	14
1		86/10/14	Letter Re: USEPA	K.Theisen - USEPA	H.Jennings	Correspondence	15

ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

E/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
			sampling of resident's well water				
	2	87/02/13	Letter Re: inquiry on possible ground water contamination in the area of a proposed housing development in St. Joseph County	K.Theisen - USEPA	M.Danch-St.Joseph County	Correspondence	16
	2	87/02/20	Letter Re: USEPA groundwater contamination information	K.Theisen - USEPA	G.Bhagavan	Correspondence	17
	3	88/06/27	Letter serving as Special Notice of Potential Liability towards Consolidated Rail Corporation	M.Gade - USEPA	Consolidated Rail Corp.	Correspondence	18
	10	88/08/30	Letter responding to USEPA's Special Notice of Potential Liability as given under CERCLA Section 122 (e) (1) for Consolidated Rail Corporation's (Conrail) with enclosed attachments	R.Kuntz - W.E.A. & D.	M.Gade - USEPA	Correspondence	19
	1	88/09/19	Letter acknowledging the receipt of a proposal dated August 30, 1988, which was submitted on behalf of Consolidated Rail Corporation (Conrail)	B.Constantelos - USEPA	R.Kuntz-W.E.A. & D.	Correspondence	20

ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

B/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
9		89/12/21	Letter commenting on the USEPA Work Plan for the Conrail/ Country Road 1 Project (attachments included)	T.P. Pendergast - Conrail	D.Dalga - USEPA	Correspondence	21
8		89/07/00	USEPA Fact Sheet Conrail Railyard Site Elkhart, Indiana	USEPA		Fact Sheet	22
1		86/07/00	Fact Sheet Elkhart, Indiana County Road 1 Area			Fact Sheets	23
3		89/11/03	Memo to document approval of minor changes in the RI/FS related to field sampling activities	D.Dalga - USEPA	B.Horenziak - E & E, Inc.	Memorandum	24
16		89/11/16	Technical Memo Re: Soil Gas Sampling at the Conrail/ County Road 1 Site with attached cover letter and map	M.Geraminegad-E & E, Inc.	D.Dalga - USEPA	Memorandum	25
5		90/01/10	Technical Memo Re: Aquifer Characteristic Tests at the Conrail/County Road 1 Site with accompanying letter	M.Geraminegad-E & E, Inc.	D.Dalga - USEPA	Memorandum	26
26		90/04/10	Technical Memorandum of Groundwater Monitoring and Sampling	Mehdi Geraminegad-E&E,Inc.	Dennis Dalga - USEPA	Memorandum	27

ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

B/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
			at the Conrail/County Road 1 Site with cover letter				
	2	00/00/00	Water Service Connections, Group 12			Other	28
	5	00/00/00	County Road One Master Well List	Stan Reedy, M.D. - ECHD		Other	29
	5	00/00/00	Results of water well samples collected by USEPA	USEPA		Other	30
	6	87/00/00	List of Residences receiving Point of Use Filtration Units			Other	31
	1	86/07/14	Press Release Re: an additional area of groundwater contamination located in the northwestern portion of Elkhart County	Stan Reedy, M.D. - ECHD		Press Release	32
	2	86/07/25	Press Release Re: the results of the drinking water analysis performed by USEPA	Stan Reedy, M.D. - ECHD		Press Release	33
	1	86/08/25	Press Release Re: the results of the investigation into the contamination in Elkhart County	Stan Reedy, M.D. - ECHD		Press Release	34

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ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
	1	86/08/28	Press Release Re: groundwater contamination in the County Road area of Elkhart County and water sampling conducted by USEPA in the area	Stan Reedy, M.D. - ECHD		Press Release	35
	15	00/00/00	The Coordination of Local, State, and Federal Agencies' Response to Groundwater Contamination Episodes with appendices	ECHD		Reports/Studies	36
	1	86/06/22	Drinking Water Quality Analysis: Fitch new residence (Elkhart) well water	S.Liggett - WLS, Inc.	M.Fitch	Reports/Studies	37
	1	86/08/05	Drinking Water Quality Analysis	R.S.Liggett - WLS, Inc.	A.Johnson	Reports/Studies	38
	1	86/08/12	Volatile Organic Compound (VOC) Analysis Report	EIS Enviro. Engin., Inc.	E.Marvel, Jr.	Reports/Studies	39
	1	86/08/14	Drinking Water Quality Analysis: Jablonsky residence well water	S.Liggett - WLS, Inc.	M.Jablonsky	Reports/Studies	40
	133	86/09/00	Regional Ground Water Investigation of Volatile Organic Contamination in Elkhart, Indiana	Weston-Sper	USEPA	Reports/Studies	41
	71	86/10/00	Site Assessment For	Weston-Sper	USEPA	Reports/Studies	42

ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

E/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
			Conrail Railyard Elkhart, Indiana				
	35	86/11/26	Supplement to the Conrail Site Assessment Report	Weston-Sper	Michael Strimbu - USEPA	Reports/Studies	43
	8	86/12/31	Water Sample Identification Sheets	DNPC/GS	ECHD	Reports/Studies	44
	21	88/03/10	On-Scene Coordinator's Report CERCLA Immediate Removal Action Main Street Well Field, East Jackson Area Elkhart, Indiana	Kenneth Theisen - USEPA		Reports/Studies	45
	9	89/03/00	Preliminary Health Assessment for Conrail Railyard	Indiana State Health Dept		Reports/Studies	46
	23	89/05/00	Community Relations Plan For Conrail/County Road 1 Elkhart, Indiana	Ecology and Environment	USEPA	Reports/Studies	47
	111	89/07/00	Conrail/ County Road 1 Project Remedial Investigation And Feasibility Study (RI/FS) Work Plan	Ecology and Environment	USEPA	Reports/Studies	48
	288	89/07/00	Conrail/County Road 1 Project Remedial Investigation And Feasibility Study (RI/FS) Sampling and Analysis Plan Work Assignment (WA) 01-5L7Y	Ecology And Environment	USEPA	Reports/Studies	49

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ADMINISTRATIVE RECORD INDEX - ORIGINAL
CONRAIL RAILYARD SUPERFUND SITE
ELKHART, INDIANA

/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCNUMBER
	692	89/11/10	Subsurface Investigation For The Conrail Elkhart Railyard Elkhart, Indiana	Groundwater Technology	Consolidated Rail Corp.	Reports/Studies	50

ADMINISTRATIVE RECORD SAMPLING/DATA INDEX
Conrail Railyard Superfund Site
DOCUMENTS NOT COPIED, MAY BE REVIEWED AT THE
USEPA REGION V OFFICES, CHICAGO, ILLINOIS.

DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE
89/00/00	Various Sampling Data: Chemical data of groundwater, surface water, subsurface material, soil boring, and sediment samples (32 pages)	Unknown	USEPA	Sampling Data

ACRONYM GUIDE for the Administrative Record
Conrail Railyard Superfund Site
Elkhart, Indiana

ACRONYM	DEFINITION
CERCLA	Comprhensive Environmental Response, Compensation, and Liability Act of 1980
Conrail	Consolidated Rail Corporation
DWPC/GS	Division of Water Pollution Control Groundwater Section
E & E, Inc.	Ecology and Environment, Inc.
ECHD	Elkhart County Health Department
EIS Enviro.	EIS Environmental Engineers, Inc.
RAL, Inc.	Regional Analytical Laboratory, Inc.
RI/FS	Remedial Investigation And Feasibility Study
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
W.H.A. & D	Wildman, Harrold, Allen & Dixon
WA	Work Assignment
WLS, Inc.	Williams

ACRONYM GUIDE for the Administrative Record
Conrail Railyard Superfund Site
Elkhart, Indiana

ACRONYM	DEFINITION
	Laboratory Services, Inc.

APPENDIX B

RESPONSIVENESS SUMMARY
CONRAIL RAILYARD SITE
ELKHART COUNTY, INDIANA

The United States Environmental Protection Agency (U.S. EPA) has recently completed a first phase of Remedial Investigations (RI), and prepared a Phased Feasibility Study (PFS) regarding the Conrail Railyard site located in Elkhart County, Indiana. During the RI and PFS, information was collected on the nature and extent of contamination at the Conrail site, and alternatives for addressing interim groundwater remediation were developed and evaluated. At the conclusion of the PFS, a Proposed Plan was finalized by U.S. EPA which identified the preferred remedial alternative for the Conrail site. U.S. EPA held a public comment period from April 19, 1991 to June 18, 1991, for interested parties to comment on the U.S. EPA's April 1991 Phased Feasibility Study Report and the Proposed Plan. U.S. EPA and the Indiana Department of Environmental Management (IDEM) presented the Proposed Plan to the public at a May 1, 1991, public meeting, where questions were answered and comments accepted from the public.

The purpose of this Responsiveness Summary is to document the comments received during the public comment period and U.S. EPA's responses to these comments. All of the comments summarized in this document were considered in U.S. EPA's final decision for this interim remedial action at the Conrail Railyard site.

I. RESPONSIVENESS SUMMARY OVERVIEW

The phased feasibility study identified and evaluated alternative remedial actions for interim groundwater remediation at the Conrail Railyard site. Five detailed alternatives were evaluated based on the nine criteria analysis as described in the Summary of the Comparative Analysis of Alternatives. Based upon this detailed evaluation, available information, and public comments, the U.S. EPA and IDEM have determined that the most appropriate interim remedy for the Conrail Railyard site is Alternative 5: Groundwater Extraction System, and a Waterline Extension from the City of Elkhart.

The major components of the selected remedy include:

- Installation of four extraction wells located in positions to adequately contain the migration of contaminants in the groundwater;

- Providing for adequate treatment of groundwaters thus collected such that the resultant discharge will meet National Pollutant Discharge Elimination System (NPDES) limitations as imposed by the program administered by the State of Indiana;

- Installation of about 67,000 feet of distribution line, of various sizes, for the distribution of City of Elkhart water to approximately 505 residences/businesses who are potentially at risk from exposure to the contaminated groundwater;

- Conducting groundwater monitoring to ensure the effectiveness of the remedial action; and

- Fencing the groundwater extraction facilities, as well as advisories and well abandonment for residences and businesses in the area of groundwater contamination.

II. BACKGROUND ON COMMUNITY INVOLVEMENT

U.S. EPA and IDEM have been interacting to varying extents with the community, in terms of the Conrail Railyard site, since contamination was first found in residential wells in 1986. Informal interactions with the community took place during the Removal action, through the sampling of wells and the provision of bottled water, carbon filters, watermain connections, etc. In addition, IDEM has been in contact with residents since that time as a part of its periodic sampling of residential wells, and maintenance of the carbon filter systems.

With respect to the remedial activities, community relations activities began in late 1988, with the development of the Community Relations Plan. In accordance with that plan, various meetings have been held, and facts sheets have been issued. An RI/FS kickoff meeting, held in July 1989, was attended by about 150 people. Availability sessions held in the afternoon and evening of June 26, 1990, to discuss the results of the first phase of investigations were also widely attended. Four fact sheets have been issued since July 1989.

Through these meetings, and other interactions with the public, various concerns were voiced by residents of the area, and others. In particular, the potential health effects from the use of contaminated groundwater has been a major concern. Specifically, questions were raised about the effects of exposure to the contaminants of concern, at the levels found. In addition, concerns were raised relative to the effectiveness of the carbon filters, particularly the point-of-use filters, and the lack of such filters at some residences. Residents are also concerned about the apparent decline in property value of their homes, as a result of the impacts from a Superfund site. Residents have also expressed frustration at the length of time it has taken to study the site, prior to cleanup.

Community interest is further evidenced by the creation of a local community interest group, which has been extensively involved in the subject project, in part, through verbal and

written communications with both U.S. EPA and IDEM. Media coverage has also been fairly extensive throughout the life of the project, including coverage by local newspapers and television stations.

The Proposed Plan for this interim action was released to the public on April 19, 1991, outlining remedial alternatives, and informing residents that the PFS and all other documents comprising the Administrative Record for the site, were available at the public information repository at the Elkhart Public Library. A public comment period was held from April 19, 1991, to June 18, 1991, and a public meeting was held on May 1, 1991, to discuss the proposed remedial action with the residents. The public meeting was attended by about 150 people, with numerous questions asked, and seven oral comments received.

III. SUMMARY OF SIGNIFICANT COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND U.S. EPA RESPONSES

Comments raised during the Conrail railyard comment period are summarized below. The comments are paraphrased in order to effectively summarize them in this document. The reader is referred to the public meeting transcript and written comments available at the public repository for further information.

Comment 1: A number of residences commented that the residential area which receives its drinking water through a private utility, Suburban Utilities, should also be connected to the municipal water system. A couple of the residents said that their water looks, smells, and/or tastes bad, adding that little, if anything, has been done to check the quality of the water. In addition, it was noted that this area is located within the study area, downgradient of the Conrail Railyard, and between the LaRue Street and County Road 1 contamination areas, with the contamination of their groundwater essentially being inevitable. The commentors advocated connecting the Suburban Utility area as a part of this action, rather than monitoring the situation until the contamination does reach the area. Finally, the commentors noted that since a line from the City of Elkhart system already runs to the Suburban Utility system, to serve as a backup, it would be easy and inexpensive to connect the Suburban Utility serviced area, as a part of this interim action.

Response: The Suburban Utilities Well Field is located in an area between the LaRue Street and County Road 1 areas of contamination (as can be seen in Figure 2 of the ROD). Samples of water drawn by the well field have been taken, and have not been found to contain any of the contaminants of concern with respect to this project. In addition, residences serviced by the Suburban Utilities have been sampled, with the same results. To the east of Suburban Utilities (in the LaRue Street area), the nearest residential wells, in which contamination has been found,

are about half a mile away. To the west of Suburban Utilities, the nearest residential well found to have contaminated groundwater, was over a mile away (in the County Road 1 area). Finally, no contamination was found in either of the monitoring wells located between the Suburban Utility Well Field and the Conrail Railyard (upgradient of the Well Field). In addition, based on what we know, at this time, relative to the extent of the groundwater contamination and the direction of groundwater flow, there does not appear to be migration from the areas of known contamination, to the Suburban Utility Well Field.

Accordingly, since the contamination has not been found to have migrated to the area of the Suburban Utilities Well Field, nor is it likely to migrate to that area in the immediate future, U.S. EPA is not taking any action to provide this area with an alternate water supply, as a part of the interim groundwater actions pursuant to the ROD. Without this basis, there is no need to evaluate other factors such as ease of connection.

Residents who are not connected to the Elkhart water supply system, through this action, will also be protected from migration of the contaminants, to some extent, by the groundwater extraction system, which will be drawing contaminated water out of the aquifer. In addition, the selected remedy will include monitoring of the groundwater contamination, to ascertain if the contamination is spreading. However, if, at any time, it is revealed that there is a threat to the public health from the use of this well field as a result of contamination from the site, action will be taken to supply those affected residences with an alternate supply of potable water.

Comment 2: The State of Indiana's Office of Utility Consumer Counselor also recommended in a comment that the Suburban Utilities area be connected to the proposed water supply system. The Office of Utility Consumer Counselor made some of the same points as the residents, as addressed under Comment 1. In addition, the Office of Utility Consumer Councelor commented that Suburban Utilities draws its water from the same aquifer that has been determined to be contaminated, and noted that Suburban's wells are closer to the Superfund site than at least two of the other included areas.

Response: Although the Suburban Utility wells may be in the same aquifer where the groundwater contamination has been found, no contamination has specifically been found in the Suburban Utilities area, nor does it appear that the Suburban Utilities area is at risk. Although Suburban Utilities may be closer to the Conrail Railyard than the Vistula and Charles Avenue areas, no contamination has been found in the Suburban Utilities area, whereas it has been found in both the Vistula and Charles Avenue areas. Also, based on what we know, at this time, relative to the direction of groundwater flow, there does not appear to be

migration from the areas of known contamination, to the Suburban Utility Well Field.

Comment 3: A couple of residents had comments relative to if and when the individual carbon units, installed during U.S. EPA's Removal Action, would be removed.

Response: When the carbon filtration units were installed in the residences, these units were given to the residents, with the understanding that the system is their property and their responsibility. Therefore, once residents are connected to the City of Elkhart water supply system, they may do what they wish with the units. It is expected, however, that wells will be abandoned in the area of groundwater contamination.

Comment 4: A few residents agreed that Alternative 5, the selected remedy, is the most logical course of action to address the groundwater contamination problem associated with the site.

Response: No response is necessary.

Comment 5: One resident said that since information provided by employees of Conrail has indicated that Conrail has been cleaning engines, and otherwise using chemicals such as TCE, controls should be placed on Conrail to have them cease and desist these activities.

Response: As with anyone who uses chemicals, Conrail is required to follow specific guidelines, such as those specified in RCRA, relative to the storage, treatment, and/or disposal of such chemicals. Any such controls, as suggested above, fall under the purview of these requirements, and are not something which needs to be addressed as a part of the specific actions taken to be taken under this ROD.

Comment 6: A couple of residents noted that the people who are responsible for the contamination problem should be held accountable, and should be forced to take care of the problem.

Response: U.S. EPA and IDEM intend to pursue enforcement options against parties responsible for the contamination at the Conrail Railyard site. The United States has already filed a civil action against Consolidated Rail Corporation in Cause No. S90-56 in U.S. District Court of Indiana, South Bend Division for past costs and for future costs incurred at the site by the United States.

Comment 7: One resident was concerned that water which had backed up in his basement, from Crawford Ditch, is contaminated.

Response: Samples taken in Crawford Ditch, as a part of the first phase of the remedial investigations, showed no

contamination.

Comment 8: One resident expressed a preference for Alternative 2 - Groundwater Extraction System, and Distribution of the Extracted and Treated Groundwater to Affected Residents. This individual stated that this preference is based on his perception that Alternative 2 offers a higher degree of protection than Alternative 5, since the Elkhart Water System has a contaminated well field and is currently using air strippers. In addition, he said that Alternative 2 would assure a higher degree of reduction of toxicity and mobility. Finally, he added that bringing in the City of Elkhart could only bring in more problems for the residents of the affected areas. He said that bringing in the City will cause more delays. He also said that he does not want to live in the City limits, and if connected to the City water supply, he fears that the City will find it very tempting to annex the area.

Response: As is discussed in the ROD, it is U.S. EPA's and IDEM's belief that Alternative 5 provides a somewhat higher degree of protection than Alternative 2. It is true that the water supplied from the City of Elkhart will probably come from the Main Street Well Field, which itself is contaminated with TCE. However, TCE is the only contaminant of concern in the Main Street Well Field, whereas there are two contaminants of concern in the aquifer of the Conrail site. In addition, only a portion of the Main Street Well Field is contaminated, with this contaminated groundwater treated with the air strippers, and then diluted with the clean water extracted, thereby providing an even cleaner water supply than is provided with the air strippers. Finally the Main Street Well Field is an established system, with better demonstrated O&M capabilities than with the establishment of a new system. All of the alternatives that include the groundwater extraction and treatment system provide for essentially the same degree of reduction in toxicity in the extracted groundwater, while mobility of the groundwater contamination will be reduced through the extraction system. Alternative 2 may provide a slightly higher degree of reduction, since the extracted groundwater will be used as the water supply, although treatment levels for discharge to the St. Joseph River may dictate an equivalent level of treatment. Taking into account these criteria, and all of the other criteria discussed in the Decision Summary, U.S. EPA and IDEM believe that Alternative 5 provides the best balance of those alternatives which meet the threshold criteria of being protective of human health.

Based upon discussions with City of Elkhart officials, U.S. EPA and IDEM do not believe that connection to the City of Elkhart water supply will create more problems than the other alternatives. The City has been quite cooperative to date in working with us to develop the various alternatives, and has

expressed a willingness to continue to work with U.S. EPA and IDEM to ensure that the selected remedy is implemented. With respect to concerns about annexation, City of Elkhart officials have stated to us that annexation is not a necessary prerequisite to connection to the City of Elkhart's water supply.

Comment 9: Another resident suggested using a combination of Alternatives 2 and 5. Specifically, the resident suggested connecting the residents in the LaRue Street area to City of Elkhart water, while providing all of the other affected areas to a new water supply created from the groundwater extraction system. The reason for suggesting the connection of the LaRue Street residents to the City of Elkhart, was based on the ease of this connection. Many of this resident's reasons for preferring Alternative 2, for a majority of the area, were the same as those expressed above under Comment 8. The resident also commented that he hoped that our plan includes fire hydrants, free of charge, with one such hydrant near the school in the area.

Response: For the reasons specified in the ROD, and reemphasized in the response to Comment 8, U.S. EPA and IDEM believe that connecting all affected residents to the City of Elkhart water supply system, as is provided for under Alternative 5, provides the best balance of those alternatives which meet the threshhold criteria of being protective of human health. With respect to the fire hydrants, the water distribution system, as proposed, includes such fire fighting capabilities. Although the exact location of fire hydrants will not be determined until the design, locating such a hydrant near the school will be kept under consideration. Although the hydrants will be provided free of charge, maintenance of the hydrants will be the responsibility of those who will maintain control over them.

Comment 10: One resident expressed concern about whether the air stripper would put the contaminants into the air for them to breath.

Response: Emissions controls will be used, if necessary, to protect against exposure to contaminants during the remedial action.

Comment 11: A resident expressed concern over the size of the groundwater extraction and treatment system, and whether the system will be designed to fit in with a residential area. A concern is that such a system, in the middle of a residential area, might cause property values to go down.

Response: The actual design and placement of the extraction wells and treatment system will take this concern into account during the remedial design phase of the project. The containment of the groundwater contamination, however, will be the primary consideration in locating the system.

Comment 12: A couple of residents expressed concern over the effect that the groundwater extraction system might have on wells in the area. In one instance, a resident noted that he wanted to be able to continue to use his outside well for watering.

Response: Prior to, and during, the operation of the groundwater extraction system, various things will be done to ensure that the impact on wells, which remain active, is minimized. During the design, modeling of the groundwater, and field testing of the pumping systems is planned. Once operation begins, the system will be monitored and modified, as necessary, to minimize the impact by the system on active wells.

It should be noted, however, that the selected remedy will include the capping of wells at those residences/businesses who are connected to the water supply extension. This is a necessary step in ensuring that individuals are not exposed to the contaminated groundwater.

Comment 13: Conrail stated that it is their belief that providing an alternate water supply for the Charles Avenue area is excessive, and an inappropriate interim remedial action, since there is no factual information regarding actual or likely threats of groundwater contamination in the Charles Avenue area. They went on to state that this belief is based on the lack of water quality information for the area, and the fact that there is no information to indicate that any of the residential wells in the Charles Avenue area are contaminated. Conrail also added that no contamination has been detected in the EPA installed monitoring wells upgradient of the Charles Avenue area, ncr is there any information that there is upgradient contamination which would reach the Charles Avenue area before the RI/FS and final remedy selection can be completed.

Response: U.S. EPA and IDEM believe that the residents in the Charles Avenue area are potentially at risk to exposure to contaminated groundwater based upon the close proximity of upgradient groundwater contamination to this area and the direction and velocity of groundwater flow. Thus, the provision of an alternate water supply to this area is therefore justified and necessary. Although no contamination has been found in any of the residential wells samples to date, groundwater contamination has been found in the Charles Avenue area in close proximity to the Charles Avenue residences to be supplied, as is discussed in the ROD. This contamination, which was found at concentrations of 2,495 ppb and 388 ppb, for TCE and CCl_4, respectively, was found in wells installed by Peerless-Midwest, Inc. in the northwest portion of the Charles Avenue area. The RI and PFS show that the groundwater is flowing in a northwesterly direction in the Charles Avenue area. Groundwater contamination exists in wells that are downgradient of a majority of the

Charles Avenue area, which itself is downgradient of the County Road 1 area. The groundwater flow direction, groundwater velocity, and the similar contaminants, show that it is likely that the groundwater in the Charles Avenue area is or may be contaminated in the near future, and that the residents of the area are potentially at risk with respect to exposure to the contaminated groundwater.

Comment 14: Conrail stated that it is their belief that, based on the general lack of contamination detected in the Blaine and Wolf Avenue areas, that a public water supply is not necessary for this portion of the County Road 1 area. They noted that there has been only one well in this portion of the County Road 1 area which has had any reported contamination for the quarterly sampling events which have occurred between 1986 and 1989.

Response: U.S. EPA and IDEM believe that the RI and PFS contain sufficient information for the agencies to a make a decision that the residences in the Blaine and Wolf Avenue areas are at risk or potentially at risk with respect to exposure to the contaminated groundwater, and should therefore remain a part of the County Road 1 area to be connected to the proposed water supply system. As you mentioned, one of the residences on Blaine Avenue was found to have CCl_4 in its well, at a level above the MCL. In addition, these areas are in close proximity to other residences with contamination, which, with possible changes in groundwater flow patterns, makes them susceptible to possible exposure to contaminated groundwater, and therefore makes them potentially at risk relative to exposure to contaminated groundwater.

Comment 15: Conrail stated that the proposed extraction, treatment, and discharge system is based on assumptions that are inconsistent with known site conditions, is likely to have a negative effect on identification of contaminant sources and selection of a final remedy, and is an excessive and unnecessary interim remedial action. Conrail further expanded upon this comment as detailed below:

> **Comment 15a:** Conrail stated that the proposed extraction system is based on assumptions which are inconsistent with known site conditions. Specifically, Conrail noted that the system is based on the assumption that contaminated groundwater in the County Road 1 area represents a single contaminant plume, while the data indicates that the contaminated groundwater is the result of at least two different sources and there is more than one contaminant plume in the area. Therefore, Conrail says that it is impossible to identify the center line of the plume in the County Road 1 area, for placement of the extraction wells, as is proposed. They further added that installation of the proposed extraction system will cause mixing of the existing

contamination from multiple plumes in the County Road 1 area, thereby altering both hydraulic and concentration gradients. As a result, Conrail said that the proposed Phase II, and subsequent investigations, which require identification and interpretation of existing hydraulic and contaminant gradients to locate contaminant source areas and evaluate continuity between contaminant plumes, will be ineffective and the objectives of the RI/FS will not be met.

Response: The groundwater extraction system is intended to be designed to best control the migration of the area of contamination, and it was with this in mind that the PFS proposed placing the extraction wells within the center of the area of contamination. More data gathering will occur during the Phase II investigations, and during the Remedial Design to further assist in optimizing the design of the proposed extraction system. The Phase II investigations should begin and be completed prior to completion of the design of the extraction system. Therefore, there does not appear to be a reason for concern relative to the effect of the operation of this extraction system on the ability to meet the objectives of the RI/FS, including the proposed Phase II investigations.

Comment 15b: Conrail contends that the data is incomplete relative to the vertical distribution of contamination, and hydraulic characteristics of the hydrogeologic units within which the contamination is located. They added that if the proposed interim remedy is implemented prior to completion of the remedial investigation studies, then the design of the interim remedy extraction well system will have to be completed before the critical information necessary for system design has been collected.

Response: U.S. EPA and IDEM believe that the RI and PFS contain sufficient information for the agencies to make a decision with regard to the selection of the interim groundwater remedy for the Conrail Railyard site. The information gathered is for this decision-making purpose and is not necessarily sufficiently detailed enough to base the actual design upon. U.S. EPA and IDEM agree that more data needs to be gathered in order to fully delineate the groundwater contamination. This data gathering is now beginning as a part of the second phase of remedial investigations. It is also agreed that more data needs to be gathered to support the design of the interim groundwater remediation. It is anticipated, however, that this data will be gathered during the Remedial Design for the interim groundwater remediation.

Comment 15c: Conrail stated that the proposed extraction system will have a negative effect on identification of

contaminant sources and thus the selection of a final remedy. They noted that the proposed extraction system is located in an area where the nature and extent of contamination is not characterized, the rate of migration has not been determined, and the sources of the contamination have not been identified. Conrail said that given the likelihood that the investigations necessary to address these points could take many years, the proposed extraction system would have an undesired effect on completing the Phase II investigations, as well as subsequent investigations. It was also stated that implementation of the proposed extraction system as an interim remedy may have a negative effect on the selection of a final remedy. Conrail said that until the necessary information has been collected, it cannot be known whether an extraction system is necessary as a final remedy and, if so, whether the proposed interim extraction system would be consistent with the final remedy.

Response: U.S. EPA and IDEM agree that more data needs to be gathered in order to fully delineate the groundwater contamination, to further locate the source(s) of contamination, and to further characterize the source(s) of contamination. This data gathering is now beginning as a part of the second phase of remedial investigations. U.S. EPA and IDEM see no reason why such investigations should not be completed prior to completion of the design of the extraction system. With this in mind, and with the information presented in the RI and PFS, U.S. EPA and IDEM believe that the proposed interim action will not have a negative effect on any final remedy, and that the proposed interim extraction system will be consistent with the final remedy.

Comment 15d: Conrail stated that the proposed extraction system is an excessive and unnecessary interim remedial action. They added that the proposed extraction system does not address either of the two primary objectives of the interim remedial action. Specifically, Conrail said that if a public water supply is, in fact, provided to the necessary affected residential areas, then the proposed extraction system is not necessary because it neither provides a safe, permanent water supply to the affected residents, nor prevents exposure to the contaminated groundwater.

Response: The U.S. EPA and IDEM believe that the proposed extraction system is neither excessive or unnecessary. The PFS states that the selected remedy for the interim remedial action should, at a minimum, satisfy the primary objectives mentioned by Conrail in its comment. The PFS also includes secondary objectives for consideration, including minimizing further expansion of contamination, and reduction of

contaminant concentrations in the groundwater within the study area. Although the water supply system will address the needs of those who are currently or potentially at risk, there is still the potential for the groundwater contamination to migrate. The proposed groundwater extraction system assists in preventing exposure of additional residences, through controlling the migration of the contamination, through the removal of contaminated groundwater.