United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R05-90/119
December 1989

EPA

Superfund Record of Decision:

Janesville Ash Beds, WI

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA/ROD/R05-90/119	2.	3. Recipient's Accession No.
4. Title and Subtitle SUPERFUND RECORD OF DECISION Janesville Ash Beds, WI First Remedial Action - Final			5. Report Date 12/29/89
7. Author(s)			6. 8. Performing Organization Rept. No.
9. Performing Orgainization Name and Address			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address U.S. Environmental Protection Agency 401 M Street, S.W. Washington, D.C. 20460			13. Type of Report & Period Covered 800/000 14.
15. Supplementary Notes			

16. Abstract (Limit: 200 words)

The Janesville Ash Beds site is being remediated concurrently with the Janesville Old Landfill site and two nearby, non-NPL sites, the Janesville Old Dump and the Janesville New Landfill sites. These four sites comprise the 65-acre Janesville Disposal Facility (JDF) in Janesville, Wisconsin. The Janesville Ash Beds (JAB) site, which is RCRA regulated, operated from 1974 to 1985 and consisted of five ash beds in which industrial liquids and sludges were deposited and allowed to evaporate or dry. Although the JAB site was excavated, closed and capped with clay, it is a source of ground water contamination and possibly surface water contamination in the nearby Rock River. The second NPL site, the 18-acre Janesville Old Landfill site was operated from 1963 to 1978, accepting both municipal and industrial wastes. The site was capped with silty sand and sandy clay at the time of closure in 1978, but was subsequently shown to be contributing to air and ground water contamination. Two other contingent sites are also included as part of this remedy because of their proximity to the two NPL sites. A 1986 Consent Order authorized that the four sites comprising the JDF would be addressed in one remedial investigation under the joint authority of CERCLA and RCRA. The 16-acre Janesville New Landfill site was operated from 1978 to 1985 and accepted municipal and industrial wastes. The site is also a possible source of air and ground water contamination. The second additional site is the 15-acre Janesville Old Dump site which was operated from 1950 to 1963 as a general (Continued on next page)

17. Document Analysis a. Descriptors

Record of Decision - Janesville Ash Beds, WI
First Remedial Action - Final
Contaminated Media: gw, air
Key Contaminants: VOCs (benzene, PCE, TCE), metals (arsenic)

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 95
	20. Security Class (This Page) None	22. Price

(See ANSI-Z39.18)

See Instructions on Reverse

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

16. Abstract (Continued)

refuse dump, accepting unknown types of waste. This site does not significantly contaminate the JDF area. The primary contaminants of concern affecting the ground water and air are VOCs including benzene, PCE, and TCE; and metals including arsenic.

Remedial activities at the JDF site will be implemented at three of the sites and include upgrading the landfill cap, and providing site drainage as needed, at the JAB site; treating the landfill gas by extraction and flaring, upgrading the landfill cap, and air monitoring at the Old Landfill site; and treating the landfill gas by extraction and flaring, upgrading the landfill cap, improving the leachate collection system, and air monitoring at the New Landfill site. No further action will be implemented at the Janesville Old Dump site. Overall, contaminated ground water at the JDF site will be pumped and treated onsite by air stripping, with discharge to Rock River, in conjunction with ground water monitoring. Ground water and land use and deed restrictions will be implemented at each site. The estimated present worth cost for this remedial action is $12,328,000, which includes an annual O&M cost ranging from $163,600 to $408,100.

RECORD OF DECISION
SELECTED REMEDIAL ALTERNATIVE

Site Names and Locations:

Janesville Ashbeds (JAB)
Janesville Old Landfill ("1978")
Janesville Old Dump ("1963")
Janesville New Landfill ("1985")

(Collectively referred to as the Janesville Disposal Facility (JDF), located in Janesville, Wisconsin)

Statement of Basis and Purpose:

This decision document presents the selected remedial action for the Janesville Ashbeds and the Janesville Old Landfill Sites (both sites are on the National Priorities List (NPL), and the contiguous sites, Janesville Old Dump and the Janesville New Landfill Sites (collectively referred to as the Janesville Disposal Facilities or JDF), located in Janesville, Wisconsin. The decision has been developed in accordance with CERCLA, as amended by SARA, and in accordance with RCRA. This decision is based on the Administrative Record for this site. The attached index identifies the items that comprise the Administrative Record, upon which the selection of the remedial action is based.

The State of Wisconsin has concurred with the selected remedy. The letter of concurrence is attached to the Record of Decision (ROD) package.

Description of the Selected Remedy:

The selected remedy addresses the final remedy for all four sites individually; but this ROD treats the four sites as one site, the Janesville Disposal Facility (JDF). The selected remedies for the JDF are as follows:

Janesville Ashbeds or JAB: Access/land use restrictions, containment of subsurface soils by maintaining the present cap and upgrading the present cap and site drainage as needed. RCRA requirements, such as groundwater monitoring, will continue. The ash pile to the south of the JAB will be removed.

Janesville Old Landfill or "1978" site: Access/land use restrictions, recovery and treatment of landfill gas by means of extraction and flaring (the PRPs have the option to test out of the landfill gas extraction and treatment by following Wisconsin's hazardous air contamination test out procedures and by demonstrating that the migration of explosive gases has been prevented), the upgrading of the landfill cap to meet the standards set by Wisconsin Administrative Code (WAC) NR 504.07, and the continued monitoring of the groundwater and air.

Janesville New Landfill or "1985" site: Access/land use restrictions, recovery and treatment of landfill gas by means of extraction and flaring (the "1985" system should be connected to the system installed at the "1978" site, if the PRPs do not test out of the system at the "1978" site, and both should be able to be possibly upgraded to an energy conversion system), the upgrading of the cap to meet the standards set by WAC NR 504.07 (the PRPs were able to show that the WAC NR 504.07 cap, along with the repairs/improvements to the leachate collection system and the installation of the landfill gas extraction and treatment system, will meet or exceed the performance standards of RCRA Subtitle C/WAC NR 181.44 (13)), and the continued monitoring of the groundwater and air, along with the improving of the leachate collection system. The cap of the "1985" site shall be tied into the cap of the "1978" site.

Janesville Old Dump or "1963" site: The no action alternative was chosen for this portion of the JDF, but access/land use restrictions (tied in with the restrictions selected for the JAB site) and groundwater monitoring will need to be continued, along with the other sites within JDF.

Overall JDF groundwater contamination: Groundwater use restrictions for the entire JDF area and the extraction and on-site treatment of the groundwater with the extraction wells placed between the JDF and the Rock River. The groundwater will need to be extracted and treated, as long as the groundwater downgradient of JDF contains contaminants that exceed the WAC NR 140 standards. The groundwater extraction and treatment system may be combined with the system that may be implemented by Parker Pen Co., located immediately downgradient of JDF, to address groundwater contamination problems at their facility. The treated groundwater would be discharged to the Rock River, and must meet ambient surface water quality standards prior to discharge.

Declaration:

The selected remedies are protective of human health and the environment, attain Federal and State requirements that are applicable, or relevant and appropriate, to the remedial action. These remedies utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. The remedies for the JDF do utilize treatment as a principal element of the remedy, as per statutory preference.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted within 5 years after commencement of remedial action, to ensure that the remedy continues to provide adequate protection of human health and the environment.

December 29th, 1989
Date

Valdas V. Adamkus
Regional Administrator

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 7921
Madison, Wisconsin 53707

File Code: 4430

DEC 2 7 1989

Mr. Valdus Adamkus, Regional Administrator
U.S. EPA, Region V
230 S. Dearborn Street
Chicago, Illinois 60604

SUBJECT: Selected Superfund Remedy
Janesville Disposal Facility
Janesville, Wisconsin

Dear Mr. Adamkus:

The Department is providing you with this letter to document our position on the proposed final remedy for the Janesville Disposal Facility (JDF). The proposal as identified in the draft Record of Decision includes the following:

1985 Site A landfill gas and flaring system,
upgrading the cap to NR 500 standards, and
repairing and/or improving the leachate collection system.

Estimated Costs Construction - $2,949,000
Operation and Maintenance - $39,500 to $142,000
30 Year Present Net Worth - $4,521,000

1978 Site A landfill gas and flaring system (or to test out of the need to install the landfill gas system) and
upgrading the cap to NR 500 standards,

Estimated Costs Construction - $3,993,000
Operation and Maintenance - $52,500 to $135,000
30 Year Present Net Worth - $5,331,000

1963 Site No action other than groundwater extraction (see JDF Groundwater) and continued monitoring.

Estimated Costs Monitoring Costs (not quantified)

Mr. Adamkus

JAB Cap Maintenance

Estimated Costs
Construction - $75,000
Operation and Maintenance - $14,100
30-Year Present Net Worth - $ 292,000

JDF Ground Water — Ground water extraction and treatment to address the contaminated ground water.

Estimated Costs
Construction - $504,000
Operation and Maintenance - $57,000 to $117,000
30-Year Present Net Worth - $2,184,000

The total 30-year present net worth for the JDF remedial action is approximately $12,000,000. We understand that if the potentially responsible parties do not agree to fund the remedy, the State of Wisconsin will contribute 50% of the remedial action costs associated with the Janesville National Priority List (NPL) sites.

We also understand that our staff will continue to work in close consultation with your staff during the pre-design, design, and construction phases of this project.

Thank you for your support and cooperation in addressing the contamination problem at JDF. If you have any questions regarding this matter, please contact Mr. Paul Didier, Director of the Bureau of Solid and Hazardous Waste Management, at (608) 266-1327.

Sincerely,

C. D. Besadny

C. D. Besadny, Secretary

CDB:MT

cc: Lyman Wible - AD/5
Linda Wymore - LC/5
Paul Didier - SW/3
Mark Giesfeldt/Sue Bangert - SW/3
Joe Brusca/Mike Schmoller - SOD
Dan Cozza - EPA, Region V

ACRONYM LIST FOR JANESVILLE DISPOSAL FACILITIES JANESVILLE, WISCONSIN

AR	Administrative Record
ARAR	Applicable or Relevant and Appropriate Standards
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
COJ	City of Janesville
FS	Feasibility Study
JDF	Janesville Disposal Facilities
PPC	Parker Pen Company
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
WDNR	Wisconsin Department of Natural Resources

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

JANESVILLE ASHBEDS ("JAB")
JANESVILLE OLD LANDFILL ("1978")
JANESVILLE OLD DUMP ("1963")
JANESVILLE NEW LANDFILL ("1985")
COMBINED TO FORM THE JANESVILLE DISPOSAL FACILITY ("JDF")
LOCATED IN JANESVILLE, WISCONSIN

DECEMBER 1989

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SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

JANESVILLE ASHBEDS (JAB)
JANESVILLE OLD LANDFILL ("1978")
JANESVILLE OLD DUMP ("1963")
JANESVILLE NEW LANDFILL ("1985")
COMBINED TO FORM THE JANESVILLE DISPOSAL FACILITY (JDF)
LOCATED IN JANESVILLE, WISCONSIN

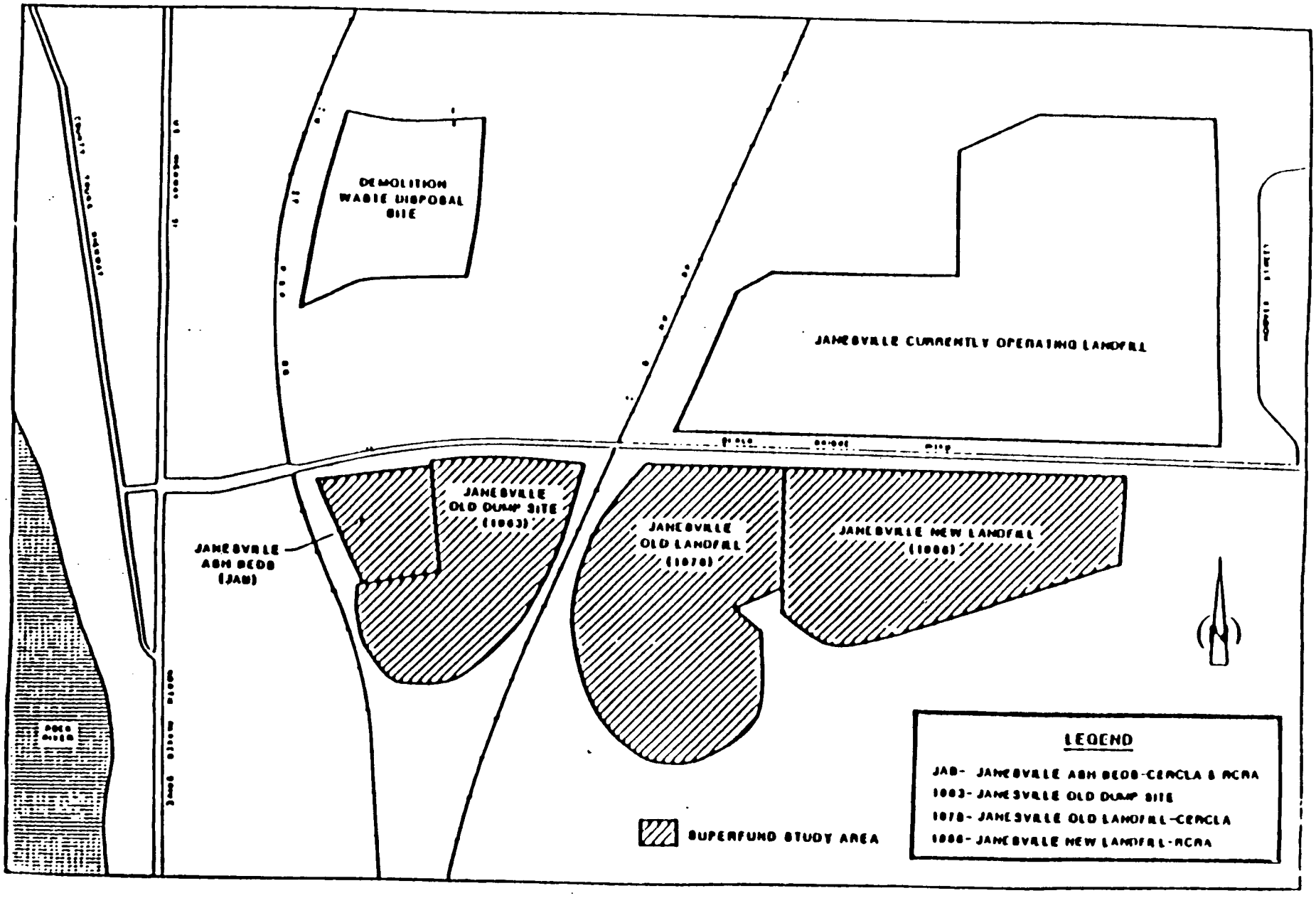
I. SITE LOCATION AND DESCRIPTION

Two sites included on the National Priorities List (NPL), the Janesville Ashbeds ("JAB") and the Janesville Old Landfill (the "1978 site", closed in 1978), have been combined in this Record of Decision (ROD) along with two non-NPL sites, the Janesville Old Dump (the "1963 site", closed in 1963) and the Janesville New Landfill (the "1985 site", closed in 1985). Together, these four sites comprise the Janesville Disposal Facility ("JDF"). The JDF is located in the north west corner of Janesville, Wisconsin (see Figure 1) and occupies a total of approximately 65 acres south of Black Bridge Road and east of the Chicago-Milwaukee Railroad. The Rock River is located approximately 1200 feet to the west of JDF. The Janesville Currently Operating Landfill is located immediately north of JDF was not addressed in the JDF study and is not addressed in this ROD. Individual site locations (see Figure 2) and descriptions are as follows:

A) The Janesville Old Dump Site ("1963 site") operated from 1950 until 1963, occupies approximately 15 acres and is located at the western portion of the JDF. The "1963" site operated as general refuse dump accepting unknown types of wastes. The "1963" site was an abandoned sand and gravel pit. The Janesville Ashbeds are located atop the northwest corner of the "1963" site and a recycling firm now occupies the northeast portion of the site. The "1963" site is not on the NPL, but is included in this ROD because of its proximity to the JAB and because it is a solid waste management unit under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA)/Resource Conservation and Recovery Act (RCRA) Consent Order. The Remedial Investigation (RI) has shown that the "1963" site may be contributing to the groundwater contamination downgradient of the JDF.

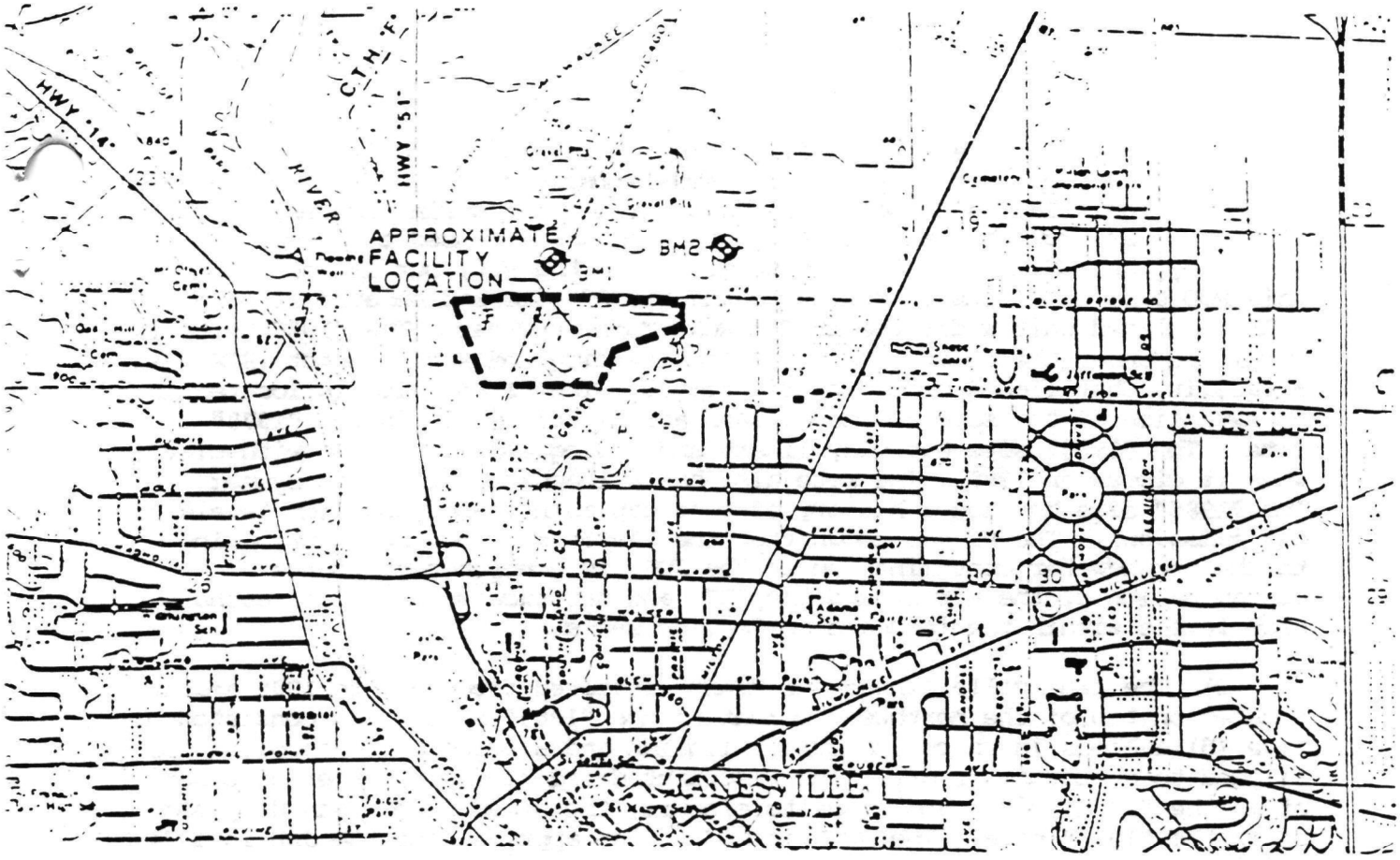
B) The Janesville Old Landfill ("1978 site") operated from 1963 until 1978, occupies approximately 18 acres and is located in the central portion of the JDF. The "1978" site accepted both municipal and industrial wastes, including dried sludges from the Janesville Ashbeds and was licensed by the Wisconsin Department of Natural Resources (WDNR). The "1978" site was an abandoned sand and gravel pit. The "1978" site does not have any bottom or side liners, but was capped with variable soils, including silty sand, sandy clay, and sand and gravel, at the time of its closure in 1978. The "1978" site was listed on the NPL on September 21, 1984 after it was
vn that the groundwater around the site was contaminated with inorganic
organic compounds.

Figure 1



JANESVILLE SITES
SUPERFUND STUDY AREA

Figure 2



REGIONAL TOPOGRAPHY MAP

north

0 2000 4000

SCALE IN FEET

SITE LOCATION MAP

north

LEGEND

BENCH MARK LOCATION AND NUMBER

NOTES

SITE LOCATION MAP DEVELOPED FROM THE 7 1/2 MINUTE U.S.G.S QUADRANGLE MAPS, JANESVILLE WEST & JANESVILLE EAST, WISCONSIN, DATED 1961, PHOTOREVISED 1971 AND 1976.

REFER TO STANDARD U.S.G.S. TOPOGRAPHIC MAP SYMBOLS.

REFER TO DRAWING 13091-68 FOR ADDITIONAL LOCATION INFORMATION FOR INDIVIDUAL FACILITIES.

SITE LOCATION MAP

REMEDIAL INVESTIGATION AND
FEASIBILITY STUDY
JANESVILLE DISPOSAL FACILITIES
PART OF SECTION 24 AND 25, T3N, R12E
CITY OF JANESVILLE, ROCK COUNTY, WI

WARZYN

Drawn JC

Checked AJS

Approved Alan J Schmidt

Date 4/5/89

C) The Janesville New Landfill ("1985 site") operated from 1978 until 1985, occupies approximately 16 acres and is located on the eastern side of the JDF. The "1985" site accepted municipal and industrial wastes including dried sludges from the Janesville Ashbeds and was licensed to accept solid wastes by the WDNR. The "1985" site is not on the NPL, but is included in this ROD because of its proximity to the "1978" site and because it is a RCRA regulated unit under the CERCLA/RCRA Consent Order. The "1985" site is regulated under the federal Resource Conservation and Recovery Act (RCRA) as a facility that closed under interim status. The "1985" site is located in an extension of the same abandoned sand and gravel pit as is the "1978" site. The "1985" site has clay liners and siding and was capped with clay when it closed in 1985. The site also has a leachate collection system. The "1985" site has had a history of poor cap maintenance and high levels of gas emissions. The RI has shown that the "1985" site may be contributing to the groundwater contamination at the JDF, is contributing to the contamination of the air around the JDF, and has excessively high leachate head levels within the leachate collection wells.

D) The Janesville Ashbeds or "JAB", operated from 1974 to 1985 and are located on top of the northwest corner of the "1963" site. JAB consisted of five (5) ashbeds in which industrial liquids and sludges were deposited and allowed to evaporate or dry. The resultant dried sludge was then disposed of in the "1978" site, and upon its closure, the dried sludge was disposed of in the "1985" site. The WDNR issued a plan approval for the JAB in 1974 and it was licensed to accept hazardous wastes by the WDNR in 1983. The site has been RCRA regulated since November 1980. The JAB site was listed on the NPL on September 21, 1984 after it was shown that the groundwater around the site was contaminated with inorganic and organic compounds. Beginning in 1983, portions of the JAB were closed, with the whole site closing in 1985. Closure of the JAB consisted of excavating most of the contaminated soils, backfilling, and capping with clay. Presently, an abandoned ash pile remains on site.

The Rock River (see Figures 1 and 2) is the primary surface water body in the JDF area, flowing from north to south in the vicinity of JDF. The Rock River is considered an effluent stream with groundwater discharge supplying base flow conditions. Other water bodies located near the JDF are the excavations created by the sand and gravel mining. One pond is located immediately south of the "1978" and "1985" sites. These excavation ponds are thought to be in direct contact with the groundwater.

The JDF area is underlain by sand and gravel outwash deposits and groundwater is present under water table conditions. The thickness of the sand and gravel deposits varies from approximately 80 to 350 feet in the immediate vicinity of the JDF. The depth to groundwater varies with topographic elevation, but generally is 80 to 100 feet below ground surface in the upland areas and within 10 feet in the low lying flood plain areas directly adjacent to the river. The groundwater discharges into the Rock River. Groundwater flow direction in the JDF is toward the southwest; toward the Rock River. There are no municipal supply wells in the immediate proximity of the JDF and no private wells exist in the line of the plume

between the JDF and the Rock River. The closest downgradient private well is a high capacity well once used for industrial purposes at the Parker Pen Company, but presently Parker Pen Company is connected to City water and no longer uses the well. Approximately 47 private water supply wells are located north of Black Bridge Road and west of U.S. HWY 51. These wells are considered to be upgradient or somewhat sidegradient of the JDF.

II. SITE HISTORY, ENFORCEMENT ACTIVITIES AND SITE STUDIES

A. Site History

1. The "1963" site was closed in 1963 after reaching capacity. The site was an unengineered disposal area with no liner, leachate collection system or cap. Based on information provided by the City of Janesville, closure of the "1963" site consisted of the placement of a final cover over the site. The material used for the cover was obtained from a borrow source near the site and the nature of the materials was not documented.

2. The "1978" site was closed in 1978 after reaching its capacity. It also was constructed without a liner or leachate collection system, but was capped with a 2 foot layer of clayey material.

3. The "1985" site was also closed after reaching its design capacity. The "1985" site was constructed with a 5 foot thick clay liner and leachate collection system. The leachate is collected and discharged to a City of Janesville sanitary sewer. The landfill was capped with 2 feet of clay installed in two 1 foot lifts compacted in place. Final closure activities, in compliance with Wisconsin Administrative Code interim status Chapter NR 181.44(12), were completed by October 19, 1985. Following the final shaping of the site and placement of the clay cover, 6 inches of topsoil, seed, fertilizer and mulch were applied. Facility Closure Documentation Approval was received from the WDNR on November 11, 1986 and the City of Janesville responded to the conditions in the WDNR Closure Approval Letter on April 8, 1987.

4. JAB beds 1 and 2 were closed in 1983 and 1984. Bed 1 was excavated in January 1983 by the City of Janesville and 1,175 tons of the excavated material was placed in the "1985" site. Bed 2 was excavated to a depth approximately 3 feet below the bottom of the waste, in April of 1984. Approximately 3,175 tons of material was loaded into licensed hazardous waste hauling trucks and disposed of at Browning Ferris Inc. (BFI) facility in Winthrop Harbor, Illinois. Miscellaneous rubble material was encountered at the base of the excavations in beds 1 and 2 and the excavated areas were backfilled with sand and gravel to compliment the surrounding grade. Beds 3, 4 and 5 were closed completely in 1985 following a request by the U.S. EPA and the WDNR that no more waste be accepted after the summer of 1985. The remaining wastes in Beds 3, 4 and 5 were removed by backhoe, loaded onto trucks, and disposed of at an off-site licensed hazardous waste disposal site. After analysis of the underlying clay liners, the remaining contaminated material in the three beds were removed. Following this cleanup, each bed was backfilled with on-site sand and gravel to a height consistent with the surrounding contours and capped with 2 feet of clay.

The clay cover was graded, sloped, and covered with 6 inches of top soil and seeded. Final Facility Closure Documentation Approval was received from the WDNR on November 10, 1986 and the City of Janesville responded to the conditions in the closure approval letter on December 9, 1986.

B. Enforcement

Preliminary assessments, site inspection reports and Hazard Ranking System ("HRS") scoring packages, all conducted in 1983, for the JAB and the "1978" sites indicated that there exists actual or potential for releases of hazardous substances into the environment which may pose a risk to humans and/or the environment. The sites' HRS scores were high enough (above the 28.5 cut off) so that both sites were included on the NPL in September 1983.

Notice letters informing 24 potentially responsible parties ("PRPs") (including the sites' owner/operator, waste generators and transporters) of their potential CERCLA liability for the JAB and "1978" sites, and offering them the opportunity to perform the Remedial Investigation/Feasibility Study ("RI/FS"), were mailed via certified mail on November 27, 1985. During the course of the RI/FS negotiations, it was agreed by all parties to combine the four sites that comprise JDF into a single RI/FS under the joint authority of CERCLA and RCRA. The U.S. EPA, WDNR and 15 PRPs signed a Consent Order under the joint authority of CERCLA and RCRA in the fall of 1986, with the effective date of December 8, 1986. The Consent Order sets forth the agreement that the PRPs will conduct an RI/FS at the JDF under the direct guidance of the U.S. EPA and the WDNR. The PRPs hired Warzyn Engineering, Inc. to conduct the RI/FS.

Negotiations for the remedial design/remedial action (RD/RA) with the PRPs will proceed according to U.S. EPA general guidances and policies. The participants in the negotiations will likely include the PRPs, WDNR and CERCLA and RCRA offices of U.S. EPA.

C. Site Studies

The JDF area has been the subject of many independent studies to determine specifics for each of the individual sites. Some of these studies/reports deal with the RCRA requirements of the JAB and the "1985" site. The past studies/reports can be found within the Administrative Record as referenced in the Administrative Record Index attached to this ROD. The RI Report, the FS Report and the Preliminary Health Assessments for JAB and the "1978" sites are also included in the Administrative Record and their results are summarized in this ROD as follows:

1. Preliminary Health Assessments for JAB and "1978" sites:

Preliminary Health Assessments for JAB and the "1978" site were conducted by the Wisconsin Division of Health and prepared for the Agency for Toxic Substance and Disease Registry (ATSDR) as per Section 104(i)(7)(A) of CERLCA. The reports are dated April 14, 1989, but utilized data gathered only through the first round of the RI. The Health Assessments' conclusions

and recommendations state that contaminated groundwater is the main concern at this time, and recommends that the residential wells located to the northwest of JDF be tested. The Assessments also recommended that more work be done to evaluate the potential of air contamination and that more information be obtained regarding the municipal wells. Most, if not all, of ATSDR's concerns were addressed in subsequent RI phases, including the sampling of the residential wells located to the northwest of JDF. The health assessment also recommended that air samples for volatile organics be conducted in residences that lie over the contaminated groundwater plume. This sampling needs to be conducted before or during the design of the groundwater remediation.

2. Remedial Investigation (RI) Report

The RI field work began in September, 1987 and was completed in March, 1989. The RI at the JDF consisted of the installation of groundwater monitoring wells, leachate headwells and gas probes to be combined with the existing wells and probes to enable extensive sampling of the leachate, groundwater and gas at and around the JDF. Surface water and sediments from the pond located immediately south of the "1978" and "1985" site were sampled as well as surface water and sediments from the Rock River. The RI Report, with an Endangerment Assessment ("EA") included, was completed on July 20, 1989. The RI Report as well as the RI work plan and Quality Assurance Project Plan, are part of the Administrative Record.

The RI consisted of five rounds of sampling with the following media and parameters involved: (Sample locations are labeled in Figure 3)

Round I - Sampled select groundwater monitoring wells (14) and leachate wells (7) for the full scan of Target Compound List parameters and indicator parameters to determine if parameters could be deleted from future rounds of sampling. RCRA Appendix IX parameters were also sampled for during Round I. (December 1-5, 1987)

Round II - 44 groundwater monitoring wells and 10 surface water locations within the Rock River and the Pond south of the 1985 and 1978 sites were sampled for Volatile Organic Compounds (VOCs), Semi-volatiles, metals, cyanide and indicator parameters. (April 18-21, 1988)

Round III - 44 groundwater monitoring wells and 10 surface water and six sediment locations within the Rock River and the Pond south of the 1985 and 1978 sites were sampled for VOCs, metals, cyanide and indicator parameters. (July 11-15, 1988)

Round IV - first round of air sampling for VOCs and particulates from leachate wells, gas vents, sewer blower and the ambient air. (September 26 and 27, 1988)

Round V - second round of air sampling for VOCs and particulates from leachate wells, gas vents, sewer blower and the ambient air. (December 8 and 9, 1988)

Figure 3

LEGEND

- —170— EXISTING GROUND CONTOUR
- X 107.3 EXISTING SPOT ELEVATION
- EXISTING BUILDINGS
- EDGE OF WATER
- TREES AND SHRUBS
- UTILITY POLE
- RAILROAD TRACK
- EDGE OF GRAVEL PIT
- DIRT ROAD/GRAVEL ROAD/TRAIL
- APPROXIMATE JANESVILLE DISPOSAL FACILITY LOCATION
- APPROXIMATE JANESVILLE PROPERTY LIMITS
- W11 MONITORING WELL LOCATION AND NUMBER
- SW1 SURFACE WATER SAMPLING LOCATION AND NUMBER
- SD2 SEDIMENT SAMPLING LOCATION AND NUMBER
- SG1 STAFF GAUGE LOCATION AND NUMBER
- GV1 GAS VENT LOCATION AND NUMBER
- LH1 LEACHATE WELL LOCATION AND NUMBER
- TP1 TEST PIT LOCATION AND NUMBER
- GP14 GAS PROBE LOCATION AND NUMBER
- JAB 1 SOIL BORING LOCATION AND NUMBER
- UW3, DW2 AMBIENT AIR SAMPLING LOCATION AND NUMBER. UW3 (UPWIND) DW2 (DOWNWIND)
- LH 1985 LEACHATE MANHOLE AT "1985" SITE

NOTES

1. THE TOPOGRAPHIC BASE MAP IS A COMPOSITE OF AERIAL SURVEYS PROVIDED BY THE CITY OF JANESVILLE. THE AREA WEST OF THE SOO LINE RAILROAD NORTH OF BLACK BRIDGE ROAD AND WEST OF THE CHICAGO AND NORTHWESTERN RAILROAD (C AND NW RR.) PERFORMED BY MARK HURD AERIAL SURVEY, MINNEAPOLIS, MINNESOTA, FLOWN 1975. THE REMAINING AREA WAS PERFORMED BY AERO-METRIC ENGINEERING, INC. SHEBOYGAN, WISCONSIN, FLOWN 4-16-8?
2. CONTOUR INTERVAL IN PROJECT AREA = 2 FT. CONTOURS ARE REFERENCED TO THE CITY OF JANESVILLE DATUM. TO CONVERT TO U.S.G.S. DATUM, ADD 676.58 FEET TO CITY DATUM.
3. HORIZONTAL CONTROL IS WISCONSIN STATE PLANE COORDINATE GRID SYSTEM. THE GRID WAS LOCATED BASED ON INFORMATION PROVIDED BY THE ROCK COUNTY SURVEYOR.
4. PROPERTY LINE LOCATION WAS PROVIDED BY THE CITY OF JANESVILLE AND IS APPROXIMATE IN NATURE.
5. TOPOGRAPHIC REVISION INFORMATION IN AREAS OF "1985" SITE AND "JAB" WAS PROVIDED BY CITY OF JANESVILLE, BASED ON CLOSURE PLAN DOCUMENTS.
6. TOPOGRAPHIC INFORMATION OUTSIDE THE STUDY AREA, NORTH OF BLACK BRIDGE ROAD, RESULTING FROM THE CITY OF JANESVILLE LANDFILL ACTIVITIES AND JANESVILLE SAND AND GRAVEL EXCAVATION, HAS NOT BEEN MODIFIED.

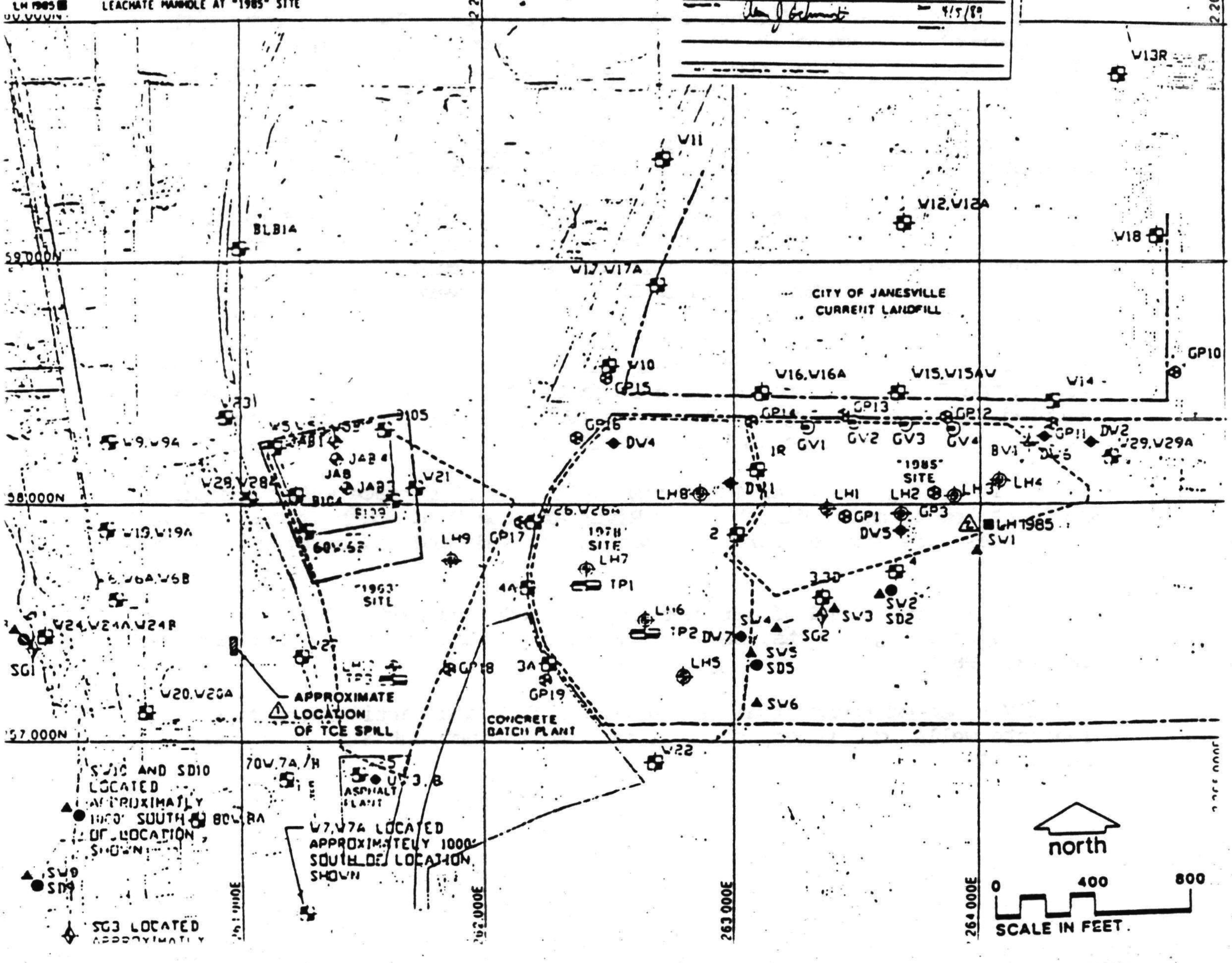
MONITORING LOCATIONS — WARZYN

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
JANESVILLE DISPOSAL FACILITIES
PART OF SECTION 24 AND 25, T3N, R12E
CITY OF JANESVILLE, ROCK COUNTY, WI.

⚠ ADDED NOTE 6/15/89 TD
⚠ ADDED LH 1985 6/15/89 TD

13091 — B9

AJS 9/5/89



Six residential drinking water wells, located to the northwest of the JDF, were sampled for VOCs only by the U.S. EPA on March 27, 1989. The purpose of these samples was to screen the residential wells to determine if the conclusions from the draft RI were correct, and to determine if more investigation may be warranted. No VOCs were detected in these wells that could be attributed to the JDF, but the residential area shall continue to be monitored.

3. Feasibility Study (FS) Report

The FS Report was submitted in draft form by the Respondents to the U.S. EPA on August 7, 1989. Comments were made by the U.S. EPA and the WDNR and the Report was released for public comment on August 21, 1989.

III. COMMUNITY RELATIONS

An RI/FS public meeting was held on August 13, 1987 to inform the local residents of the Superfund process and about the work to be conducted under the RI. Many of the issues raised by the community involved the currently operating landfill north of Black Bridge Road, general health related topics and concern about odors caused by current and past landfill activities.

Two information repositories have been established: at the Janesville Public Library, 316 South Main Street, Janesville, Wisconsin and at the Janesville Municipal Building, 18 North Jackson Street, Janesville, Wisconsin. According to Section 113(k)(1) of CERCLA, the Administrative Record has been made available to the public at the Janesville Public Library.

A public meeting, attended by nearly 40 residents, was held on May 31, 1989 to discuss the findings of the RI. The Wisconsin Department of Health was also present at the meeting and discussed health related issues and the Preliminary Health Assessment.

The draft FS and the Proposed Plan were available for public comment from August 21, through September 15, 1989. A public meeting was held on August 30, 1989 to present the Proposed Plan and the FS Report. Comments received during the public comment period and the U.S. EPA's responses to those comments are included in the attached Responsiveness Summary. The provisions of Sections 113(k)(2)(B)(i) - (v) and 117 of CERCLA have been satisfied.

IV. SCOPE AND ROLE OF THE RESPONSE ACTION

The scope of this response action is to provide a final remedy to address the contamination and potential contamination caused by the waste disposed of in each of the JDF sites. The response action will address the principal threats caused by the sites, such as the groundwater contamination between the JDF and the Rock River and the air contamination at and near the "1978" and "1985" sites. The final remedy will also include cap repair or enhancement for each of the four units within the JDF and since wastes will remain on-site, periodic monitoring will need to be maintained, as well as a

review of conditions after 5 years.

V. SUMMARY OF CURRENT SITE CONDITIONS AND SITE RISKS

The RI/FS Reports have adequately described the current conditions of the four sites within the JDF. Contaminants detected at JDF, their concentrations and the affected media are summarized in Table 1. Contaminants found that can be associated with specific sources or sites and specific media within those sites are listed in Tables 2 through 5.

The RI Report and the EA make the following conclusions:

* Ground water in the area of JDF flows towards the southwest and discharges into the Rock River.
* There are no residential or municipal drinking water wells in the direct line of groundwater flow between the JDF and the Rock River.
* The JAB is contributing to groundwater contamination which exceeds the Federal Maximum Containment Levels ("MCLs") and Wisconsin Enforcement Standards. This contaminant plume is heading away from the site toward the southwest with a small component heading northwest prior to turning towards the southwest. JAB is not believed to be contributing to air contamination in the area of JDF or to the contamination of the Pond but may be contributing to the contamination of the Rock River due to local groundwater discharge into the River.
* The JAB is contributing to the groundwater contamination of the area. The 1963 site is believed to be contributing little or no contamination to the groundwater. The 1963 site is not believed to be contributing to the air contamination of the JDF area except for low concentrations of methane emanating from the site.
* The 1978 site is contributing to groundwater contamination in the area. Concentrations of VOCs and inorganics in the groundwater downgradient from the 1978 site have been found to exceed the State's Enforcement Standards.
* The 1985 site and/or the 1978 site are contributing to the contamination of the groundwater as detected in the monitoring wells located between the two sites.
* Groundwater monitoring wells located in upgradient positions to the JDF have shown some contamination, but this is most likely, especially in the case of the wells nearer to the JAB, caused by mounding effects of the groundwater due to the volume of wastes put into the sites.
* Samples from the gas vents within the 1978 site and the 1985 site and of the ambient air at the sites' borders indicate that these sites are emitting VOCs and methane into the air. Potential cancer risks due to air quality on-site is high but risks off-site are not known since factors to account for atmospheric dispersion were not incorporated into the site's risk potential. Concentrations for methane in gas probes in and near the "1978" and "1985" sites were found to be in the explosive hazard range. The JAB and the "1963" sites have not been shown to be contributing to the air contamination in the JDF area.
* The 1978 site is contributing low levels of organic and inorganic contamination to the pond's (located just southeast of the site) surface water and sediment. The 1985 site may also be the cause of

TABLE 1

CONTAMINANTS DETECTED AT THE JDF

Environmental Medium	Chemical	Chemical Concentration			Number Locations Sampled for Analysis	
		Minimum	Maximum	Geometric Mean	Total	Positive Detection
GROUNDWATER						
	Volatile	ug/L	ug/L	ug/L	42	
	Chloromethane	-	50	-		1
	Vinyl chloride	1	15	5		7
	Chloroethane	1	4	2		3
	Methylene chloride	2	720	10		7
	Acetone	12	2400	73		24
	1,1-Dichloroethene	1	6	3		3
	1,1-Dichloroethane	2	6	4		8
	1,2-Dichloroethene (Total)	2	420	20		14
	Chloroform	1	32	3		8
	2-Butanone	2	8	4		3
	1,1,1-Trichloroethane	9	36	16		6
	Trichloroethene	1	1300	44		16
	Benzene	0.5	3	1.4		7
	Tetrachloroethene	0.7	4000	45		14
	Toluene	1	16	4		2
	Chlorobenzene	-	5	-		1
	Ethylbenzene	-	6	-		1
	Styrene	-	7	-		1
	Xylenes (total)	6	8	7		2
	Semivolatile	ug/L	ug/L	ug/L	42	
	1,4-Dichlorobenzene	-	2	-		1
	Isophorone	0.3	0.8	0.5		2
	2-Methylnaphthalene	-	0.6	-		1
	Diethylphthalate	0.3	3	0.5		15
	Di-n-butylphthalate	-	0.7	-		1
	Butylbenzylphthalate	0.4	43	3		4
	bis (2-Ethylhexyl) phthalate	1	14	5		6
	Di-n-octylphthalate	-	0.9	-		1
	Pesticide/PCB				14	
	None detected					

TABLE 1
(Continued)

Environmental Medium	Chemical	Chemical Concentration Minimum	Maximum	Geometric Mean	Number Locati Sampled for Analysi Total	Positive Detection
	Metal/CN[b]	ug/L	ug/L	ug/L	42	
	Arsenic	2.3	33.5	15.1		9
	Barium	232	529	298		6
	Cadmium	5.4	7.0	6.1		3
	Chromium (total)	-	5.1	-		1
	Lead	5.0	13.3	7.5		11
	Manganese	26	1790	206		23
SURFACE WATER						
Landfill Pond	Volatile	ug/L	ug/L	ug/L	6	
	1,1-Dichloroethane	-	2	-		1
	1,2-Dichoroethene (total)	-	2	-		1
	Trichloroethene	-	1	-		1
	Toluene	0.8	1	0.9		2
	Semivolatile				6	
	None Detected					
	Pesticide/PCB					
	Not Analyzed					
	Metal/CN[b]	ug/L	ug/L	ug/L	6	
	Manganese	42	458	92		4
Rock River	Volatile	ug/L	ug/L	ug/L	4	
	1,2-Dichloroethene (total)	-	2	-		1
	Chloroform	-	1	-		1
	Trichloroethene	4	4	4		2
	Tetrachloroethene	-	0.8	-		1
	Toluene	-	0.8	-		1
	Semivolatile	ug/L	ug/L	ug/L	4	
	Diethylphthalate	-	0.3	-		1

TABLE 1
(Continued)

Environmental Medium	Chemical	Chemical Concentration Minimum	Maximum	Geometric Mean	Number Locations Sampled for Analysis Total	Positive Detection
	Pesticide/PCB					
	Not Analyzed					
	Metal/CN[b]	ug/L	ug/L	ug/L	4	
	Mangenese	57	135	85		4
SEDIMENT						
Landfill Pond	Volatile	ug/kg	ug/kg	ug/kg	2	
	Acetone	61	180	105		2
	2-Butanone	-	4	-		1
	Benzene	-	0.9	-		1
	Semivolatile					
	Not Analyzed					
	Pesticide/PCB					
	Not Analyzed					
	Metal/CN[c]				2	
	None Detected					
Rock River	Volatile	ug/kg	ug/kg	ug/kg	4	
	Acetone	-	87	-		1
	1,2-Dichloroethene (total)	0.9	3	1.6		2
	Chloroform	-	7	-		1
	Trichloroethene	-	5	-		1
	Benzene	-	0.5	-		1
	Tetrachloroethene	-	5	-		1
	Semivolatile					
	Not Analyzed					
	Pesticide/PCB					
	Not Analyzed					

TABLE 1
(Continued)

Environmental Medium	Chemical	Chemical Concentration			Number Locations Sampled for Analysis	
		Minimum	Maximum	Geometric Mean	Total	Positive Detection
	Metal/CNC	mg/kg	mg/kg	mg/kg	4	
	Cadmium	-	1.3	-		1
SUBSURFACE SOIL	Volatile	ug/kg	ug/kg	ug/kg	7	
	Chloroform	6	8	7		2
	Benzene	-	1	-		1
	Tetrachloroethene	-	12	-		1
	Ethylbenzene	-	17	-		1
	Semivolatile	ug/kg	ug/kg	ug/kg	7	
	4-Methylphenol	-	78	-		1
	Naphthalene	-	44	-		1
	Acenaphthene	-	18	-		1
	Phenanthrene	-	270	-		1
	Anthracene	-	40	-		1
	Fluoranthene	-	290	-		1
	Pyrene	-	220	-		1
	Butylbenzylphthalate	160	680	330		2
	Chrysene	-	100	-		1
	Di-n-octylphthalate	-	69	-		1
	Benzo(b)fluoranthene	-	140	-		1
	Pesticide/PCB				7	
	None Detected					
	Metal/CNC	mg/kg	mg/kg	mg/kg	7	
	Cadmium	-	1.7	-		1
AMBIENT AIR	Volatile	mg/m^3	mg/m^3	mg/m^3	6	
	o-Xylene	9.1E-04	2.1E-03	1.4E-03		3
	m,p-Xylene	3.2E-04	4.8E-03	2.2E-03		6
	Isopropylbenzene	9.8E-05	2.8E-04	1.4E-04		4
	Hexane	4.9E-04	3.3E-03	1.7E-03		6
	Heptane	4.5E-04	2.3E-03	1.1E-03		5
	p-Dichlorobenzene	4.1E-04	6.6E-04	5.5E-04		3
	Acetone	2.9E-03	9.0E-03	4.8E-03		3
	Benzene	7.0E-04	8.6E-03	2.9E-03		6
	2-Butanone	2.0E-03	2.9E-03	2.4E-03		3
	Carbon tetrachloride	6.3E-04	1.5E-03	9.4E-04		6
	Chlorodibromomethane	--	6.0E-04	--		1
	Chloroform	2.1E-04	3.2E-04	2.7E-04	6	
	Chloromethane	1.2E-05	5.4E-03	5.8E-04		6
	1,1-Dichloroethane	1.1E-04	8.1E-04	3.0E-04		2

TABLE 1
(Continued)

Environmental Medium	Chemical	Chemical Concentration Minimum	Maximum	Geometric Mean	Number Locations Sampled for Analysis Total	Positive Detection
	1,2-Dichloroethane	--	1.1E-04	--		1
	1,1-Dichloroethene	3.9E-04	4.4E-04	4.0E-04		2
	Ethylbenzene	6.3E-04	4.8E-03	1.3E-03		5
	Methylene chloride	1.4E-02	1.3E+00	7.3E-02		6
	Styrene	2.1E-04	4.1E-04	3.1E-04		3
	Tetrachloroethene	2.4E-04	1.2E-03	7.5E-04		6
	Toluene	1.0E-03	2.0E-02	4.1E-03		6
	1,1,1-Trichloroethane	1.9E-03	9.8E-02	1.1E-02		6
	Trichloroethene	4.3E-04	2.0E-02	2.3E-03		6
	Trichlorofluoromethane	6.2E-03	3.0E-02	1.5E-02		3
	Vinyl chloride	--	1.2E-03	--		1
	Semivolatile					
	Not Analyzed					
	Pesticide/PCB					
	Not Analyzed					
	Metal/CN					
	Not Analyzed					

a Refer to Section 8.3 for data sources and criteria for site contamination characterization. Also, refer to appropriate appendices to determine total chemicals included in each analysis.

b Elements considered as positive detections for groundwater and surface water samples exceeded available State of Wisconsin Groundwater Standards, Preventive Action Limits as described in Chapter NR 140 of the Wisconsin Administrative Code (Table 53).

c Elements considered as positive detections in subsurface soils and sediments exceeded the upper limit of the common concentration range for soils as described by Lindsay, 1979 (Table 53).

13076.50
BJC/jlv/MWK
[jlv-400-39e]

TABLE 2

SUMMARY OF VOCs DETECTED IN GROUNDWATER
"1985 Site"

Compound	Upgradient Wells			Downgradient Wells			
	W-14	W-29	W29-A	1R	2	3	4
Benzene				2			
Toluene				1			
Xylenes				8 2			
Ethylbenzene				6 4			
Vinyl Chloride				1 13	1		
Total 1,2-dichloroethene				10 4	4 10		
1,1-dichloroethene				4 6	2 3		
Chloroethane				4			
Acetone	12 69					17	
2-Butanone				2	10		

First Column is Round 2 data; Second column is Round 3 data.
Concentrations in ug/L; If no value is reported, compound was not detected at contract lab required detection limit.

AJS/sss/NG
[jpl-602-20d]
13091.80

TABLE 2

ROUNDS 2 AND 3 TCL METALS AND CYANIDE CONCENTRATIONS
"1985" SITE

	Upgradient Wells						Downgradient Wells							
	W-14		W-29		W-29A		1R		2		3		4	
Arsenic							7.4	6.4	15.7	15.1				
Barium	60.6	69.1	64	124	46.2	47.8	529		299	183	45.7	49.8	35.1	38.9
Lead	3.4			3.5		4.8								
Iron		52.3				40.5	20,100	12,500	15,300	7,910		31.4		26.0
Manganese	35	27.3		51.7		6.0	1,790	1,160	270	247	48.4	32.4		5.9
Cobalt							7.5	8.1						
Magnesium	36,400	41,000	44,600	60,600	40,200	40,000	67,900	56,900	83,700	72,300	42,400	48,300	36,600	40,900
Potassium	1,060	1,100	1,580	1,110	1,460	1,920	88,800	51,000	17,400	8,300	1,660	1,670	1,460	1,560
Sodium	4,050	3,930	16,500	25,800	5,980	6,800	98,900	56,500	34,100	9,900	5,190	5,610	4,450	4,580
Zinc	22.0	66.4	307	99.1	7.6	184	48.4	23.4	112	45.4	29.8	32.5	34.6	33.2
Aluminum	41.4	40.0						32.1		55.3		31.4		30.2
Calcium	77,200	76,400	96,600	168,000	85,300	83,500	116,000	104,000	114,000	96,600	74,200	77,400	71,400	72,600
Copper		20.7		8.1		11.1		5.3		8.8		8.3		18.3
Cyanide (mg/L)	0.049	0.020	0.038			0.038	0.308	0.334	0.012					

Concentrations are in ug/L unless otherwise noted; if no concentration reported, compound has not detected at contract laboratory required quantitation limits.

3091.60
JS/sss/NG
[ptemp-400-63]

TABLE 2

ROUNDS 2 AND 3 TCL METALS AND CYANIDE CONCENTRATIONS
"1985" SITE

	Upgradient Wells						Downgradient Wells							
	W-14		W-29		W-29A		1R		2		3		4	
rsenic							7.4	6.4	15.7	15.1				
arium	60.6	69.1	64	124	46.2	47.8	529		299	183	45.7	49.8	35.1	38.9
ead	3.4			3.5		4.8								
ron		52.3				40.5	20,100	12,500	15,300	7,910		31.4		26.0
anganese	35	27.3		51.7		6.0	1,790	1,160	270	247	48.4	32.4		5.9
obalt							7.5	8.1						
agnesium	36,400	41,000	44,600	60,600	40,200	40,000	67,900	56,900	83,700	72,300	42,400	48,300	36,600	40,900
otassium	1,060	1,100	1,580	1,110	1,460	1,920	88,800	51,000	17,400	8,300	1,660	1,670	1,460	1,560
odium	4,050	3,930	16,500	25,800	5,980	6,800	98,900	56,500	34,100	9,900	5,190	5,610	4,450	4,580
inc	22.0	66.4	30	99.1	7.6	184	48.4	23.4	112	45.4	29.8	32.5	34.6	33.2
uminum	41.4	40.0						32.1		55.3		31.4		30.2
alcium	77,200	76,400	96,600	168,000	85,300	83,500	116,000	104,000	114,000	96,600	74,200	77,400	71,400	72,600
opper		20.7		8.1		11.1		5.3		8.8		8.3		18.3
yanide (mg/L)	0.049	0.020	0.038			0.038	0.308	0.334	0.012					

oncentrations are in ug/L unless otherwise noted; if no concentration reported, compound as not detected at contract laboratory required quantitation limits.

3091.60
)S/sss/NG
rptemp-400-63]

TABLE 2

ROUNDS 2 AND 3 INDICATOR CONCENTRATIONS
"1985" SITE

Upgradient Wells

	Upgradient Wells					Downgradient Wells						
	W-14		W-29		W-29A	1R		2	3		4	
BOD	4.0				4.0	20	6.0	40	4.0		1.0	2.0
Alkalinity	302	353	529	299	281	909	668	496	323	343	293	267
Chloride	16	42	78	37	39	130	82	28	21	24	18	18
COD					23	107	64					
Total Kjeldahl Nitrogen	0.68	1.12	0.70	0.13	0.78	50.0	31.2	2.62		0.44	0.28	0.29
Ammonia Nitrogen		0.14		0.18		45.5	24.9	1.40		0.36	0.21	0.46
Sulfate	31	36	47	33	37	30	20	18	32	32	31	34
TOC	8.3	4.8	3.3		6.5	68	37	3.4			1.5	
Total Suspended Solids	132	346	166		180	1380	2000	52	76	422	53	108
Nitrate Nitrogen	4.02	6.42	4.90	6.17	6.54	0.28	0.38	0.34	2.49	2.56	4.03	4.52
Total Phosphorus	0.11	0.34	0.18	0.01	0.20	1.22	1.80	0.22	0.05	0.08	0.05	0.07
Total Dissolved Phosphorus	0.02	0.02		0.01	0.01	0.02	0.04					0.02
Total Sulfide												

First column is Round 2 data, second column is Round 3 data
Concentrations are in mg/L, if no concentration is reported, compound was not detected at CRQL except for Wells W-14 and 2 for Round 2 data in which no samples were collected for indicator parameters

SGW2/sss/TJM
[wptemp-412-90]

TABLE 2

SUMMARY OF NR140 EXCEEDANCES

Monitoring Wells - "1985" Site(1)

Parameter	Sample ID	Preventive Action Limit	Enforcement Standard	Concentration in Sample (2)
Arsenic	1R-02(3)	5	50	7.4
	2 -02			14.3
	1R-03			6.4
	2 -03			15.1
Barium	1R-02	200	1000	529
	2 -02			299
Iron	1R-02	150	300	20100
	2 -92			15900
	1R-03			12500
	2 -03			7910
Manganese	1R-02	25	50	1790
	3 -01			55
	2 -02			270
	3 -02			48.4
	1R-03			1160
	2 -03			247
	3 -03			32
Trichloroethene	2 -92	0.18	1.8	1.0
Vinyl Chloride	1R-02	0.0015	0.015	1.0
	2 -02			1.0
	1R-03			13.0
1,2-Dichloroethene	1R-02	10	100	10
	2 -03			10

(1) Downgradient Wells - "1985" Site: 1R, 2, 3, 3D, 4
(2) Units in ug/L unless otherwise noted.
(3) W25-01 indicates Well W-25 Round 1 data; -02 indicates Round 2; 03 indicates Round 3; 92 indicates Round 2 duplicate.

AJS/ndj/TJD
[ndj-401-68P]

TABLE 3
SUMMARY OF VOCs DETECTED IN GROUNDWATER
"1978" Site

	W-10		W-16		3A		4A		W-22		W-26		W-26A	
Benzene						1		0.5		2		1		
Vinyl Chloride											1	7		
Total 1,2-dichloroethene			5	7			5	4			3		7	10
Trichloroethene											2		2	
1,1-dichloroethane							3	2			5	6	2	
Chloroethane											1			
Acetone	400		16	13	280								76	
Methylene chloride	5			4										
2-butanone										8				

First column is Round 2 data; second column is Round 3 data.

Concentrations in ug/L; if no value is reported, compound was not detected at contract lab required quantitation limit.

AJS/sss/NG
[jpl-602-20f]

TABLE 3

ROUNDS 2 AND 3 TCL METALS AND CYANIDE CONCENTRATIONS
"1978" SITE

	Upgradient Wells				Downgradient Wells									
	W-10		W-16		3A		4A		W-22		W-26		W-26A	
Arsenic					26.9	33.5	23.6	28.8	10.6	18.0		20.3		
Barium	79.9	86.5	41.9	45.5	171	190	152	153	171	260	97.2	189	34.6	38.8
Lead	5.2		3.2	3.7				2.9						
Iron		83.5		36.5	6,420	7,430	8,030	8,550	3,410	6,340	4,410	10,500		78.3
Manganese		7.5	15.2	16.8	71.5	87.5	245	262	1,140	661	427	452	26.2	6.6
Cobalt									21.9	8.1				
Magnesium	32,300	32,400	31,400	32,600	49,200	51,400	44,300	50,000	45,000	49,500	34,500	48,800	35,000	38,200
Potassium	985	1,190	1,450	1,450	23,100	23,200	17,800	16,100	19,400	18,400	6,000	11,900	1,890	1,810
Sodium	9,550	11,900	6,900	7,010	64,600	59,800	25,900	23,000	66,600	86,600	13,700	35,000	5,420	5,350
Zinc	55.6	49.3	81.2	34.9	13.2	9.2	18.3	24.5	22.6	21.3	25.0	150	113	114
Nickel										16.7		13.9		
Aluminum		41.4		32.1		34.7		41.7				29.3		
Calcium	139,000	132,000	66,000	64,200	68,400	69,500	77,800	80,200	109,000	107,000	85,000	114,000	74,400	74,100
Copper		13.9				13.1		19.2		15.8		15.1		16.3
Cyanide (mg/L)		0.010			0.025	0.035	0.014	0.014	0.082	0.076	0.018	0.024	0.020	0.007

First column is Round 2 data; second column is Round 3 data.
Concentrations presented in ug/L unless otherwise noted; if no concentration reported, compounds was not detected at contract laboratory required quantitation limit.

13091.60
AJS/sss/NG
[wptemp-400-64]

TABLE 3

ROUNDS 2 AND 3 INDICATOR CONCENTRATIONS
"1978" SITE

	Upgradient Wells		Downgradient Wells							
	W-10		W-16	3A		4A	W-22		W-26		W-26A	
BOD				2.0		1.0	24	17	1.0	4.0	2.0	1.0
Alkalinity			225	423		364	492	539	372	447	288	270
Chloride			34	115		57	94	123	40	60	21	22
COD				36			27	26	30			
Total Kjeldahl Nitrogen			0.92	22.5		8.85	8.2	14.1	4.9	8.94	0.37	0.48
Ammonia Nitrogen				21		8.55	6.0	12.8	4.7	7.95	0.22	0.36
Sulfate			28	26		54	20	12	40	36	33	30
TOC			5.8	8.7		6.1	18	9.6	7.8	7.8		6.8
Total Suspended Solids			192	36		36	616	428	1050	372	332	143
Nitrate Nitrogen			1.77	0.31		0.30	0.88	0.40	0.04	0.41	2.73	2.97
Total Phosphorus			0.11	0.04		0.03	1.0	0.48	0.80	0.40	0.04	0.05
Total Dissolved Phosphorus			0.01	0.04			0.01	0.02	0.03	0.01	0.01	
Total Sulfide												

First column is Round 2 data, second column if Round 3 data
Concentrations are in mg/L, if no concentration is reported, compound was not detected at CRQL, except no samples collected for indicator parameter data. Wells W-10 Rounds 2 and 3; W-16, 3A and 4A Round 2.

SGW^2/skb/TJM
[wptemp-412-90]

TABLE 3

SUMMARY OF NR140 EXCEEDANCES

Monitoring Wells - "1978" Site(1)

Parameter	Sample ID	Preventive Action Limit	Enforcement Standard	Concentration in Sample (2)
Arsenic	3A-02(3)	5	50	26.9
	4A-02			23.6
	W-22-02			10.6
	3A-03			33.5
	4A-03			28.8
	W-22-03			18.0
	W-26-03			20.3
Barium	W-22-01	200	1000	223
	W-22-03			260
Lead	W-10-2	5	50	5.2
Iron	3A-02	150	300	6420
	4A-02			8030
	W-22-02			3410
	W-26-02			4410
	3A-03			7430
	4A-03			8550
	W-22-03			6340
	W-26-03			10500
Manganese	3A-02	25	50	71.5
	4A-02			245
	W-22-02			1140
	3A-03			87.5
	4A-03			262
	W-22-03			661
	W-26-03			452
Trichloroethene	W-26-02	0.18	1.8	2.0
	W-26A-02			2.0
Vinyl Chloride	W-26-02	0.0015	0.015	1.0
Benzene	3A-03	0.067	0.67	1.0
	4A-03			0.5
	W-22-03			2.0
	W-26-03			1.0
1,2-Dichloroethene	W-26A	10	100	10

(1) Downgradient Wells - "1978" Site: W-26, W-26A, 3A, 4A, W-22
(2) Units in ug/L unless otherwise noted.
(3) W-25-01 indicates Well W-25 Round 1 data; -02 indicates Round 2; -03 indicates Round 3; 92 indicates Round 2 duplicate.

AJS/sss/TJD
[dlk-400-48a]

TABLE 4

SUMMARY OF VOCS DETECTED IN GROUNDWATER
"1963 Site"

Compound	Upgradient Wells						Wells Located in or Downgradient of Site											
	W-10		W-26		W-26A		B-105		B-109		W-21		W-25		W-27			
Benzene			1															
Vinyl Chloride			1	7					7	15	4	4	1			8		
1,1-dichloroethene									6	3			3	2				
Total 1,2-dichloroethene			3		7	10			120	100	8	7	23	37				
Trichloroethene			2		2		180	100	49	120	50	29	96	110				
Tetrachloroethene													20	20				
1,1-dichloroethane			5	6	2										4	4		
Chloroethane			1															
Methylene Chloride	5																	
Acetone	400				76		32					19				15		

First column is Round 2 data; second column is Round 3 data.
Concentrations in ug/L; if no value is reported, compound was not detected at contract lab required quantitation limit.

AJS/sss/NEG
[jp1-602-20i]
13091.80

TABLE 4

SUMMARY OF METAL AND CYANIDE DETECTED IN GROUNDWATER
"1963" SITE

	Upgradient Wells						Wells Located In or Downgradient of Site									
	W-10		W-26		W-26A		B-105		B-109		W-21		W-25		W-27	
rsenic				20.3					2.3							
arium	79.9	86.5	97.2	189	34.6	38.8	54.4	53.3	123	94.1	73.4	84	234	260	186	191
ead	5.2										4.4			3.6		7.1
ron		83.5	4,410	10,500		78.3		26	4,230	2,740	1,720	511	1,420	2,180		70.4
anganese		7.5	427	452	26.2	6.6	20.4	8.6	1,100		792	797	1,540	1,590	991	1,310
obalt													9.3	11.9	7.1	8.1
agnesium	32,300	32,400	34,500	48,800	35,000	38,200	40,400	40,000	56,400	55,300	43,900	51,400	61,100	66,600	48,000	51,000
otassium	985	1,190	6,000	11,900	1,890	1,810	1,540	1,450	6,070	3,730	1,780	1,860	13,800	13,500	13,400	13,300
odium	9,550	11,900	13,700	35,000	5,420	5,350	5,850	5,870	45,400	18,900	35,100	9,810	48,700	47,700	18,000	15,800
inc	55.6	49.3	25	150	113	114	151	139	53.6	37.4	16.1	95.3	101	25	71.8	31
ntimony								29.5								
ickel				13.9												
luminum		41.4		29.3								11.1	17.2	15.8	11.4	15.1
alcium	139,000	132,000	85,000	114,000	74,400	74,100	93,700	88,200	144,000	142,000	145,000	148,000	128,000	130,000	128,000	131,000
opper		13.9		15.1		16.3		7.5		5.4		13.2		14.5		8.8
anide (mg/L)		0.010	0.018	0.024	0.020	0.007		0.014	0.030	0.028		0.043	0.083	0.065	0.022	

rst column is Round 2 data; second column is Round 3 data.
ncentrations in ug/L unless stated otherwise; if no value is reported, compound was not detected at contract lab required quantitation limit.

091.60
S/sss/NG
pl-602-20c]

TABLE 4

ROUNDS 2 AND 3 INDICATOR CONCENTRATIONS
"1963" SITE

	Upgradient Wells			Wells located In or Downgradient of site							
	W-10		W-26		W-26A	B-105	B-109	W-21		W-25		W-27	
BOD			4.0		1.0			3.0	2.0	4.0	2.0	3.0	
Alkalinity			447		270	335		487	454	574	552	545	533
Chloride			60		22	29		40	41	88	92	35	32
COD									32		39		36
Total Kjeldahl Nitrogen			8.94		0.48	0.61		2.68	1.78	11	10.2	12.4	10.9
Ammonia Nitrogen			7.95		0.36	0.52		0.28	0.63	8.7	9.81	10.8	9.94
Sulfate			36		30	31		58	50	44	38	48	46
TOC			7.8		6.8			1.5	18.1	51	4.4	7.6	3.6
Total Suspended Solids			372		143	400		54	1000	4280	1550	908	70
Nitrate Nitrogen			0.41		2.97	5.66		1.52	2.83	0.05	0.44	0.31	0.73
Total Phosphorus			0.40		0.05	0.31		0.05	0.36	5.44	1.81	0.74	0.08
Total Dissolved Phosphorus			0.01					0.03		0.06	0.03	0.03	
Total Sulfide													

First column is Round 2 data, second column is Round 3 data.
Concentrations are in mg/L, if no value is reported, compound was not detected at CRQL except no samples were collected for indicator parameter analysis. Wells W-10 and B-109 Rounds 2 and 3; nd Wells W-26, W-26A and B-105, - Round 2.

SGW2/skb/TJM
[wptemp-412-90]

TABLE 4

SUMMARY OF NR140 EXCEEDANCES

Downgradient Wells - "1963" Site(1)

Parameter	Sample ID	Preventive Action Limit	Enforcement Standard	Concentration in Sample (2)
Barium	W-25-01(3)	200	1000	236
	W-27-01			232
	W-25-02			234
	W-25-03			260
Lead	W-25-01	5	50	5
	W-27-03			7.1
Iron	W-25-01	150	300	767
	W-25-02			1420
	W-25-03			2180
Manganese	W-25-01	25	50	1640
	W-27-01			1130
	W-27-02			991
	W-25-03			1590
	W-27-03			1310
Trichloroethene	W-25-02	0.18	1.8	96
	W-25-03			110
Vinyl Chloride	W-25-02	0.0015	0.015	1.0
	W-25-03			8
	W-27-03			8
Tetrachloroethene	W-25-02	0.10	1.0	20
	W-25-03			20
1,1-Dichloroethene	W-25-02	0.024	0.24	3
	W-25-03			2
1,2-Dichloroethene	W-25-02	10	100	23
	W-25-03			37

(1) Downgradient Wells - "1963" Site: W-25 and W-27
(2) Units in ug/L unless otherwise noted.
(3) W-25-01 indicates Well W-25 Round 1 data; -02 indicates Round 2; -03 indicates Round 3; 92 indicates Round 2 duplicate.

AJS/sss/TJD
[dlk-400-48b]

TABLE 5

SUMMARY OF VOCS DETECTED IN GROUNDWATER
JAB

	Upgradient Wells								Downgradient Wells															
Compound	W-10		W-21		B-105		B-109		W-5		W-5A		W-5B		W-28		W-28A		60W		6B		B-104		W-23	
Vinyl Chloride			4	4			7	15																		
1,1-dichloroethene							6	3																		
Total 1,2-dichloroethene			8	7			120	100	87	160					420	280	19	1							2	2
Trichloroethene			50	29	180	100	49	120	190	180					310	210	70	6							130	140
Tetrachloroethene									480	330	0.7				840	480	410	30							46	
1,1,1-trichloroethane										7					10		14	2							24	28
Methylene Chloride	5																								4	4
Acetone	400		19		32					33	370														32	15

First column is Round 2 data; second column is Round 3 data.
Concentrations in ug/L; if no value is reported, compound was not detected at contract lab required quantitation limit.

AJS/dlk/NEG
[dlk-400-36]

TABLE 5

ROUNDS 2 AND 3 ICL METALS AND CYANIDE CONCENTRATIONS
JAB

	Upgradient Wells													Downgradient Wells												
	M-10		B-105		M-21		B-109		60W		68		B-104		M-28		M-28A		M-5		M-5A		M-5B		M-23	
Arsenic							2.3		25.7	26.6			14.2	16.4												
Barium	79.9	86.5	54.4	53.3	73.4	84	123	94.1	270	284	62.9	69.4	85.4	94.1	66.9	62.5	23.2	32.3	79.7	97.1	32.9	33.3	46.7	42.2	79.3	78.9
Iron		83.5		26	1,720	511	4,230	2,740	6,990	7,650	494	144	4,150	5,000								20.8		31.3		47.1
Manganese			20.4	8.6	792	797	1,100		168	104	498	592	80.6	1,320		9.7		7.1		7.1			19.1	12	15.7	38.7
Cobalt									8.6	8.1																
Magnesium	32,300	32,400	40,400	40,000	43,900	51,400	56,400	55,300	70,600	68,100	36,900	42,000	38,200	55,300	40,900	45,400	7,000	41,600	54,400	64,400	39,400	41,700	40,800	41,200	45,200	51,700
Potassium	1,190	985	1,540	1,450	1,780	1,950	6,070	3,730	16,900	17,700	2,370	2,320	3,760	3,730	2,350	2,160	2,850	1,800	1,540	1,600	1,550	1,480	2,120	1,960	1,510	1,350
Sodium	9,550	11,900	5,850	5,870	35,100	9,810	45,400	18,900	92,100	62,500	24,000	4,520	25,700	18,900	55,400	40,700	9,500	4,380	45,400	68,300	3,920	3,310	4,720	4,290	32,800	4,890
Zinc	55	49	151	139	16.1	152	53.6	37.4	121	119	52.4	59.6	37.7	37.4	39.7	35.6	45.1	59.6	47.3	58	7.3	10	22.3	26.9	21.7	28.8
Antimony				29.5										32.3												
Nickel						11.1			30.7	22.3	12.1															
Aluminum		41.4						30.7						30.7												
Calcium	139,000	132,000	93,700	88,200	145,000	148,000	144,000	142,000	145,000	125,000	92,300	94,600	88,800	142,000	138,000	135,000	60,500	78,800	141,000	152,000	74,500	73,300	71,200	72,50	115,000	118,000
Copper		13.9		7.5		13.2		5.4		24.7		17.9		6.9		17.9		20.7	7	6.7			6.7	7.9		14.7
Cyanide (mg/L)		0.01		0.014			0.030	0.028		0.069			0.016		0.026	0.008	0.09	0.02		0.007					0.008	0.011

First column is Round 2 data, second column is round 3 data
Concentrations in ug/L unless otherwise noted; if no concentration reported, compound was not detected at contract laboratory required quantitation limits.

13091.60
AJS/slb/MG
[wptemp-400-65]

TABLE 5

ROUNDS 2 AND 3 INDICATOR CONCENTRATIONS
JAB

	Upgradient Wells				Downgradient Wells									
	W-10	B-105	W-21	B-109	60W	6B	B-104	W-28	W-28A	W-5	W-5B	W-23
BOD			3.0 | 1.0		18	1.0	6.0	1.0 | 1.0	3.0 | 2.0		6.0 | 2.0	
Alkalinity		355	487 | 454		601	323	325	560 | 487	259 | 284	524 | 523	299 | 281	
Chloride		29	40 | 41		100	24	20	30 | 51	16 | 21	86 | 176	14 | 16	
COD			| 32		65				| 23			
Total Kjeldahl Nitrogen		0.61	2.68 | 1.1		14.2	0.33	1.82	5.24 | 0.91	0.15 | 0.41	0.24 | 0.22	1.19 | 0.14	
Ammonia Nitrogen		0.52	0.28 | 0.63		7.75	0.17	1.47	0.21 | 0.23	0.13 | 0.30	0.25 | 0.18		
Sulfate		31	58 | 50		47	40	47	25 | 22	29 | 32	29 | 30	35 | 31	
TOC			1.5 | 18.1		15.9			17 | 6.1			64	
Total Suspended Solids		400	54 | 1000		3540	89	148	1730 | 596	74 | 25	180 | 116	9380 | 50	
Nitrate Nitrogen		5.66	1.52 | 2.83		0.45	2.6		1.64 | 1.76	6.06 | 6.92	2.04 | 2.21	6.16 | 6.92	
Total Phosphorus		0.31	0.05 | 0.29		1.28	0.04	0.14	1.74 | 0.33	0.03 | 0.05	0.07 | 0.07	0.81 | 0.02	
Total Dissolved Phosphorus			0.03					0.02	0.04 | 0.05			
Total Sulfide												

First Column is Round 2 data, second column is Round 3 data.
Concentrations are in mg/L, If no value is reported, compound was not detected at CRQL except no samples were collected for indicator parameter analysis.
Wells W-10, B-109 and W-23, Rounds 2 and 3; and Wells B-105, 60W, 6B, B-104; Round 2.

SGW^2/skb/TJM
[wptemp-412-90]

TABLE 5

SUMMARY OF NR140 EXCEEDANCES

Upgradient Wells - JAB(1)

Parameter	Sample ID	Preventive Action Limit	Enforcement Standard	Concentration in Sample (2)
Iron	W-21-02(3)	150	300	1720
	B-109-02			4230
	W-21-93			892
Lead	W-10-02	5	50	5.2
Manganese	W-21-02	25	50	792
	B-109-02			1100
	W-21-03			797
Trichloroethene	W-21-02	0.18	1.8	50
	B-105-02			180
	B-109-02			49
	W-21-03			29
	B-105-03			100
	B-109-03			120
Vinyl Chloride	W-21-02	0.0015	0.015	4
	B-109-02			7
	W-21-03			4
	B-109-03			15
1,1-Dichloroethene	B-109-02	0.024	0.24	6
	B-109-03			3
1,2-Dichloroethene	B-109-02	10	100	120
	B-109-03			100

(1) Upgradient Wells-JAB: W-10, W-21, B-105, B-109
(2) Units are in ug/L unless otherwise noted.
(3) W-25-01 indicates Well W-25 Round 1 data; -02 indicates Round 2; -03 indicates Round 3; 92 indicates Round 2 duplicate.

AJS/sss/TJD
[dlk-400-48c]

TABLE 5

SUMMARY OF NR140 EXCEEDANCES
Downgradient Wells - JAB[1]

Parameter	Sample ID	Preventive Action Limit	Enforcement Standard	Concentration in Sample (2)
Arsenic	60W-02[3]	5	50	25.7
	B-104-02			14.2
	60W-03			26.6
	B-104-03			16.4
Barium	60W-02	200	1000	270
	60W-03			284
Iron	W-5A-01	150	300	226
	60W-02			6990
	6B-02			494
	B-104-02			4150
	60W-03			7650
	B-104-03			5000
Manganese	60W-02	25	50	168
	6B-02			498
	B-104-02			80.6
	60W-03			104
	6B-03			592
	B-104-03			1320
	W-23-03			
Trichloroethene	W-5-02	0.18	1.8	190
	W-28-02			310
	W-28A-02			70
	W-5-03			180
	W-28-03			210
	W-28A-93			7
	W-23-02			130
	W-23-03			140
Tetrachloroethene	W-5-02	0.10	1.0	480
	W-5A-02			0.7
	W-28-02			840
	W-28A-02			410
	W-5-03			330
	W-28-03			480
	W-28A-03			30
	W-23-02			46
1,2-Dichloroethene	W-28-02	10	100	420
	W-28A-02			19
	W-5-02			87
	W-28-03			280
	W-5-03			160
Chloride	W-5-03	125 mg/L	250 mg/L	176 mg/L

(1) Downgradient Wells-JAB: W-5, W-5A, W-5B, W-23, W-28, W-28A, B-104, 60-W, 6-B
(2) Units in ug/L unless otherwise noted.
(3) W-25-01 indicates Well W-25 Round 1 data; -02 indicates Round 2; -03 indicates Round 3; 92 indicates Round 2 duplicate.

AJS/sss/TJD [jlv-400-39c]

contamination found in the pond.

* The contamination of the groundwater at and near the JDF may be influenced and/or combined with contamination from sources outside of the JDF area. Other potential or actual sources of contamination includes the Parker Pen Facility, located just west of the JDF, the currently operating landfill just north of the JDF, and other potential sources which may be located upstream from JDF, on the Rock River.
* Downgradient Rock River surface water and sediment has shown some contamination with volatile organic and inorganic compounds. The exact source of the contamination can not be determined but the compounds found are similar to those found at the JDF and at the Parker Pen site (located between JDF and the Rock River).
* Parker Pen Co. lies between the JDF and the Rock River. High levels of VOC and chromium contamination were found immediately down gradient from Parker Pen. The high levels are attributed to past releases at the plant including a 1985 spill of TCE and a possible rupture or leak of a sewer line leading from Parker's old plating facility (source of the chromium). The WDNR is conducting a separate investigation of the contamination caused by Parker Pen.

The RI Report contains an Endangerment Assessment which characterizes the nature and estimates the magnitude of potential risks to public health and the environment caused by the contaminants identified at the JDF. The EA, utilizing data obtained from the RI, has identified the following pathways or routes of actual or potential contamination that may reach the population and/or the environment and which need or may need to be addressed through some type of remedial action:

a. Individuals breathing contaminated air, assuming they are exposed to concentrations measured in ambient air on-site;

b. Hypothetical users of private well water, assuming a private well is installed within the contaminated aquifer in the future;

c. Children which may swim in the pond immediately south of the "1985" and "1978" sites; and

d. Environmental damage to the organisms within the Rock River and/or the pond located south of the "1985" and "1978" landfills.

The following indicator chemicals were considered to be representative of site contamination and to pose greatest potential health risk:

* vinyl chloride
* acetone
* 1,2-dichloroethene
* 1,1,1-trichloroethane
* tetrachloroethene
* arsenic
* methylene chloride
* 1,1-dichloroethane
* trichloroethene
* benzene
* bis(2-ethylhexyl)phthalate

The risks associated with each of the potential pathways using the indicator chemicals for the JDF are as follows:

e. Under current site conditions, a potential health risk was identified for individuals exposed to contaminants identified in ambient air on-site via inhalation of volatile contaminants. A calculated carcinogenic risk, using the contaminants methylene chloride, benzene and vinyl chloride, of 7.0E-04 (or seven people out of 10,000) was identified with the assumption that these individuals would be exposed to average contaminant concentrations measured on the landfill property. A higher risk (1.2E-02) would result if it is assumed that the individuals are exposed to only maximum contaminant concentrations. These risk estimates, however, did not incorporate factors which would account for atmospheric dispersion/degradation of the contaminants off-site. Risks to subchronic non-carcinogenic health hazards associated with air contamination at JDF are listed in the FS as low, with a total exposure pathway hazard index of less than a value 0.05 for maximum exposures to both children and adults. Chronic non-carcinogenic health hazards are also low, with a total exposure pathway hazard index of 0.23 with an average concentration of 0.025 (Hazard Index values of over 1 indicate there may be potential health risks associated with exposure to the chemicals evaluated).

f. For groundwater consumption, potential carcinogenic risks ranged from approximately 1.4E-03 from exposure to average site contaminant concentrations to 1.2E-02 from exposure to maximum site contaminant concentrations. Potential risk to the adverse non-carcinogenic effects which may result from a subchronic exposure period for both children and adults, assuming exposure to maximum contaminant concentrations, have been calculated as having the hazard index value of 18 for children and 12 for adults. Average concentration exposures would give subchronic hazard index values of 0.8 for children and 0.57 for adults. Potential risk to non-carcinogenic effects which may result from chronic exposure were calculated for the non-carcinogenic compounds, acetone and 1,1,1-trichloroethane and the total pathway risk was calculated to have a maximum hazard index of 0.82 and an average value of 0.034.

g. Health risks for children which may swim in the landfill pond were determined to be 1.5E-08 (total cancer risk from dermal absorption of contaminants and incidental ingestion of water). The FS states that the landfill pond does not present risks significantly higher than what would be expected from other surface water bodies. Potential risk to non-carcinogenic health effects were estimated only for incidental ingestion of water contaminated with 1,1-dichloroethane and was determined to be very low with a hazard index of 1.2E-07.

h. The EA within the RI Report concludes that the exposure of environmental organisms to contaminants identified from the JDF investigation is very low due to the low concentrations of chemicals identified in the Rock River and in the landfill pond's surface water and sediments. According to the EA, it appears that there is little potential for adverse effects to the aquatic organisms in the Rock River or in the landfill pond ecosystems because the lowest reported toxic concentrations

(Ambient Water Quality Criteria) in any freshwater organism are more than 1000 times greater than what is present in the surface water or sediments near JDF.

The analytical methods used in making the risk calculations are described within the EA portion of the RI Report.

The potential exposure pathways are listed in Figure 4 and in Table 6. Summaries of the cancer and non-carcinogenic (chronic and subchronic) risks associated with the overall JDF are listed in Tables 7 and 8. Table 9 shows state and federal enforcement standards that apply to the indicator chemicals for the JDF site.

VI. FEASIBILITY STUDY: DESCRIPTION OF REMEDIAL ALTERNATIVES

Within the FS Report, several technologies and process options were presented for the sites comprising the JDF. Criteria used to evaluate the alternatives for applicability at these sites and to conduct the initial screening of the alternatives for each of the sites are explained within the FS Report. Summaries of the alternatives retained for final consideration at the four sites comprising JDF and the alternatives to address the overall site problems are listed below. More detailed descriptions can be found within the FS Report.

THE "1985" SITE

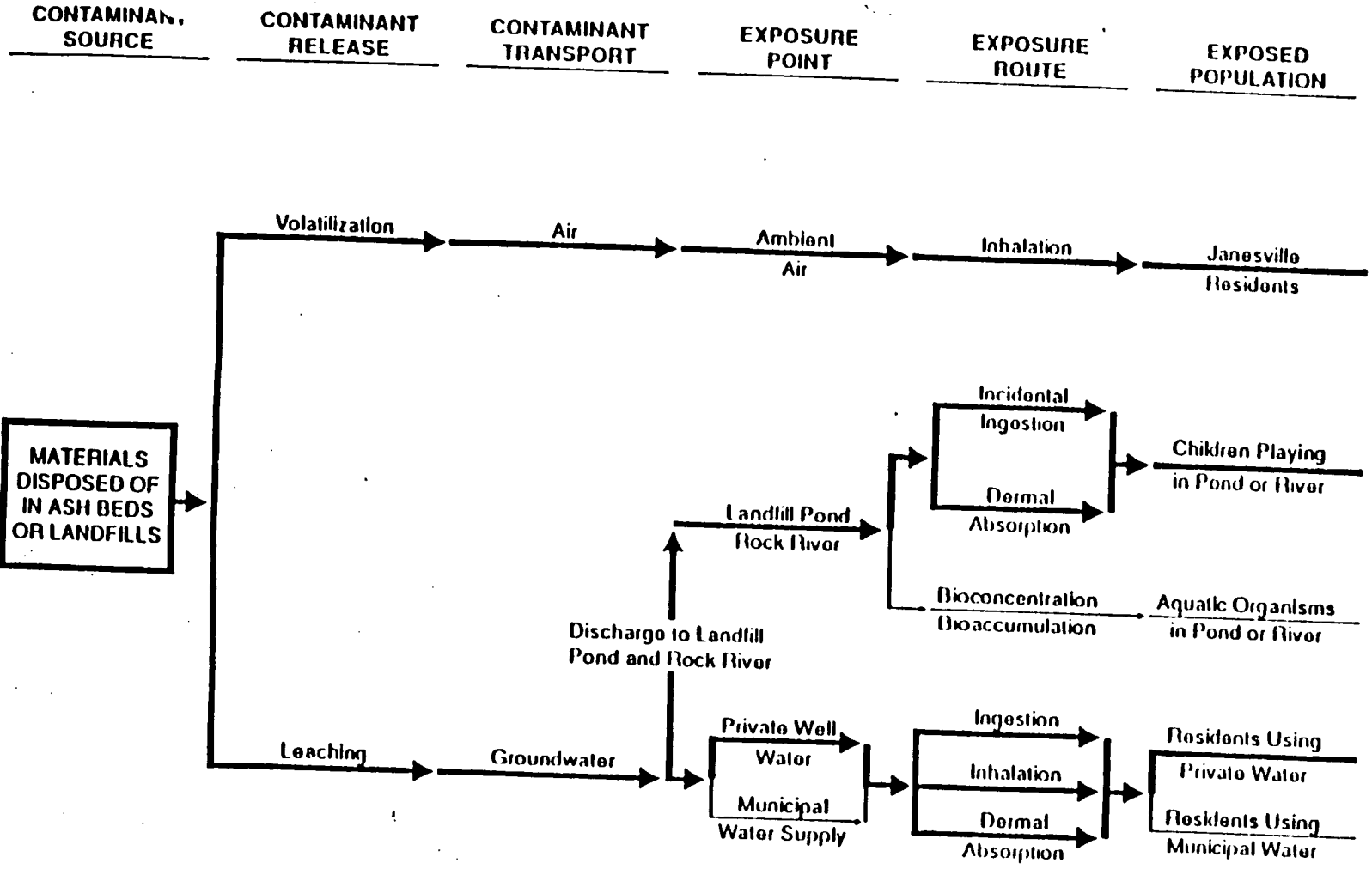
ALTERNATIVE 1 - NO ACTION

Under this alternative, the public health, public welfare and environmental consequences of taking no further action at the "1985" site will be evaluated. ARARs concerning landfill gas ("LFG") emissions and landfill capping will not be met with this alternative.

ALTERNATIVE 2 - ACCESS RESTRICTIONS, CONTAINMENT OF WASTE, RECOVERY OF LANDFILL GAS AND MONITORING

This alternative will involve the use of deed and land use restrictions to assure that future use of this site does not increase the release or potential release of hazardous substances to the environment or become dangerous to the life or health of the people. A fence will be installed either around the entire site or only around the gas vents, to restrict access. This alternative also calls for the extraction and treatment of landfill gas at and near the 1985 site. Gas extraction wells would be installed at various locations within the landfill to recover LFG. The various LFG extraction wells would be connected by a gas header pipe system to a mechanical blower, which will create zones of low pressure within the landfill and induce gas flow into the wells. The landfill gas that is extracted would then be flared off. The landfill gas system may be built to be converted at a later date to an energy conversion system.

The waste containment portion of this alternative calls for the present cap to be evaluated and improved either by cap repair or cap enhancement. Cap repair could consist of site regrading and placement of additional compacted clay to improve drainage and repair cracks. Enhanced capping would consist of either upgrading the existing cap to meet the requirements



athways in bold
e of greatest concern.

FIGURE 4
POTENTIAL EXPOSURE PATHWAYS
JANESVILLE DISPOSAL FACILITIES SITE

TABLE 6

POTENTIAL EXPOSURE PATHWAYS - JDF

Environmental Medium	Exposure Point	Exposed Receptors	Routes Exposure	Pathway Complete?	Exposure Potential	Risk Quantified?
Groundwater	Municipal water supply	Janesville residents	Ingestion, inhalation, dermal absorption	No, municipal wells are not impacted by contaminants identified at the site	None	No
	Private well water	Janesville residents with private wells	Ingestion, inhalation, dermal absorption	Unlikely, although private wells not sampled, data suggests private wells not currently impacted. However, potential for future private well impact exists	Likely None; currently. Moderate; private well users could be exposed in future through contaminant migration or new private well installation.	Yes
Surface water and sediments, Landfill pond and Rock River	Direct contact	Children playing in pond or river	Dermal absorption, incidental ingestion	Yes, children observed playing in pond	Very low, contaminant concentrations low	Yes, for children playing in pond.
		Aquatic organisms, terrestrial wildlife	Bioconcentration, bioaccumulation	Yes	Very low, contaminant concentrations low.	No
Ambient Air	Direct contact, volatilization from landfill	Janesville residents,	Inhalation	Yes	Moderate	Yes

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TABLE 7

HAZARD INDICES FOR NON-CARCINOGENIC EFFECTS FROM SUBCHRONIC EXPOSURE TO MAXIMUM AND AVERAGE CONTAMINANT CONCENTRATIONS

	Groundwater				Surface Water	Ambient Air	
	Child		Adult		Child	Child	Adult
	Ingestion	Inhalation	Ingestion	Inhalation	Ingestion	Inhalation	Inhalation
Methylene chloride							
Maximum	4.8E-01	--	3.5E-01	--	--	--	--
Average	6.7E-03	--	4.8E-03	--	--	--	--
Acetone							
Maximum	9.6E-02	1.2E-02	6.9E-02	4.0E-03	--	4.0E-04	1.4E-04
Average	2.9E-03	3.7E-04	2.1E-03	1.2E-04	--	2.1E-04	7.1E-05
1,1-Dichloroethane							
Maximum	2.0E-04	6.4E-04	1.4E-04	2.1E-04	1.2E-07	8.1E-04	2.6E-04
Average	1.3E-04	4.3E-04	9.2E-05	1.4E-04	--	2.9E-04	9.7E-05
1,1,1-Trichloroethane							
Maximum	1.6E-03	1.8E-03	1.1E-03	5.7E-04	--	4.4E-02	1.5E-02
Average	7.1E-04	7.7E-04	5.1E-04	2.6E-04	--	4.9E-03	1.6E-03
Tetrachloroethene							
Maximum	1.6E+01	--	1.1E+01	--	--	--	--
Average	1.8E-01	--	1.3E-01	--	--	--	--
bis(2-ethylhexyl)phthalate							
Maximum	2.8E-02	--	2.0E-02	--	--	--	--
Average	1.0E-02	--	7.0E-03	--	--	--	--
Arsenic							
Maximum	1.3E+00	--	9.6E-01	--	--	--	--
Average	6.0E-01	--	4.3E-01	--	--	--	--

TABLE 7

HAZARD INDICES FOR NONCARCINOGENIC EFFECTS FROM CHRONIC EXPOSURE TO MAXIMUM AND AVERAGE CONTAMINANT CONCENTRATIONS

	Groundwater		Ambient Air
	Lifetime Average		Lifetime Average
	Ingestion	Inhalation	Inhalation
Acetone			
Maximum	7.4E-01	5.7E-02	1.9E-02
Average	2.3E-02	1.7E-03	1.0E-03
1,1,1-Trichloroethane			
Maximum	1.2E-02	8.3E-03	2.1E-01
Average	5.6E-03	3.3E-03	2.4E-02
Intake Route Total			
Maximum	7.5E-01	6.5E-02	2.3E-01
Average	2.9E-02	5.0E-03	2.5E-02
Exposure Pathway Total			
Maximum		8.2E-01	2.3E-01
Average		3.4E-02	2.5E-02

Since potential cancer effects were considered the most severe health threat from chronic exposure, hazard indices (HI), were calculated for exposure to only non-carcinogens. HIs were calculated from lifetime average concentrations.

U.S. EPA verified reference doses for 1,2-dichloroethene were not available and thus, non-carcinogenic hazard was not quantified.

Since exposure to surface water was defined as a subchronic exposure, calculation of risk to noncarcinogenic effects from chronic exposure was not applicable.

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TABLE 7 (continued)

	Groundwater				Surface Water	Ambient Air	
	Child		Adult		Child	Child	Adult
	Ingestion	Inhalation	Ingestion	Inhalation	Ingestion	Inhalation	Inhalation
Intake Route Total							
Maximum	1.8E+01	1.4E-02	1.2E+01	4.8E-03	1.2E-07	4.5E-02	1.5E-02
Average	8.0E-01	1.6E-03	5.7E-01	5.2E-04	--	5.4E-03	1.8E-03
Exposure Pathway Total							
Maximum	1.8E+01		1.2E+01		1.2E-07	4.5E-02	1.5E-02
Average	8.0E-01		5.7E-01		--	5.4E-03	1.8E-03

Hazard indices were calculated only when Critical Toxicity Values were available (Table 8.6). Therefore, only indicator chemicals with U.S. EPA verified reference doses are shown in this table. AIC values were used as health-protective estimates for AIS values when AIS values were not available.

A subchronic exposure is an indefinite period of time often considered to be in the range of 10% of an individual's lifespan.

(--) indicates that either no reference dose for the exposure route was available (inhalation), or that the compound was not detected in the medium (surface water - ingestion).

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TABLE 8

CANCER RISK FROM EXPOSURE TO MAXIMUM AND AVERAGE CONTAMINANT CONCENTRATIONS

	Groundwater			Surface Water		Ambient Air
	Ingestion	Dermal Absorption	Inhalation	Ingestion	Dermal Absorption	Inhalation
Vinyl chloride						
Max.	1.1E-03	1.3E-06	3.0E-04	-	-	2.3E-04
Ave.	3.7E-04	4.4E-07	1.0E-04	-	-	-
Methylene chloride						
Max.	1.7E-04	3.8E-07	7.0E-04	-	-	1.2E-02
Ave.	2.3E-06	5.3E-09	9.8E-06	-	-	6.3E-04
1,1-Dichloroethane						
Max.	1.7E-05	2.1E-08	3.8E-05	1.3E-08	1.0E-09	4.9E-05
Ave.	1.1E-05	1.4E-08	2.5E-05	-	-	2.5E-09
Trichloroethene						
Max.	4.4E-04	5.4E-07	1.5E-07	7.8E-10	5.9E-11	1.4E-04
Ave.	1.5E-05	1.9E-08	5.3E-09	-	-	2.5E-09
Benzene						
Max.	4.8E-06	5.7E-09	5.5E-06	-	-	1.4E-04
Ave.	2.2E-06	2.8E-09	2.5E-06	-	-	4.8E-05
Tetrachloroethene						
Max.	6.1E-03	7.7E-06	9.2E-04	-	-	2.4E-06
Ave.	7.1E-05	8.7E-08	1.0E-05	-	-	1.6E-06
Bis (2-Ethylhexyl) Phthalate						
Max.	3.6E-076	9.2E-09	NA	-	-	-
Ave.	1.3E-06	3.7E-09	NA	-	-	-
Arsenic						
Max.	1.8E-03	NA	NA	-	-	-
Ave.	8.5E-04	NA	NA	-	-	-
Intake Route Total						
Max.	9.6E-03	1.0E-05	2.03E-03	1.4E-08	1.13-09	1.2E-02
Ave.	1.3E-03	5.7E-07	1.5E-04	-	-	7.0E-04
Exposure Pathway Total						
Max.		1.2E-02			1.5E-08	1.2E-02
Ave.		1.4E-03			-	7.0E-04

Cancer risks were calculated from lifetime average intake for the groundwater and ambient air pathways.

To provide a health-protective assessment, risks via the dermal absorption route were estimated using the highest available cancer potency factor derived for either the oral or inhalation exposure routes. Also, the oral cancer potency factor for 1,1-dichloroethane was used to estimate risk from inhalation.

Cancer risks calculated from surface water exposure (assumed to be a subchronic exposure) are likely conservative estimates since cancer potency factors are based on chronic exposure conditions.

NA - Not applicable to exposure route
(-) Indicates that the compound was not detected in the environmental medium.

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[jlv-400-39s]

TABLE 9

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS
FOR PROTECTION OF HUMAN HEALTH

Indicator Chemical	Safe Drinking[a] Water Act MCL (ug/L)	Safe Drinking[a] Water Act MCLG (ug/L)	EPA Drinking Water[b] Health Advisory (mg/L)	Wisconsin Groundwater[c] Standards Enforcement Standard (ug/L)	Wisconsin Groundwater[c] Standards Preventive Action Limit (ug/L)
Vinyl chloride	2.0	0	1-day/child: 2.6 10-day/child: 2.6 Longer term/child: 0.013 Longer term/adult: 0.046	0.015	0.0015
Methylene Chloride	-	-	1-day/child: 13.3 10-day/child: 1.5	150	15
Acetone	-	-	-	-	-
1,1-Dichloroethane	-	-	-	850	85
Trichloroethene	5.0	0	-	1.8	0.18
1,1,1 Trichloroethane	200	200	1-day/child: 140 10-day/child: 35 Longer term/child: 35 Longer term/adult: 125 Lifetime: 1.0	200	40
Benzene	5.0	0	1-day/child: 233 10-day/child: 0.233	0.67	0.067
Tetrachloroethene	-	0	10-day/child: 34 Longer term/child: 1.94 Longer term/adult: 6.80	1.0	0.1
bis (2-Ethylhexyl) phthalate	-	-	-	-	-
1,2-Dichloroethene	70	-	1-day/child: 4.0 10-day/child: 1.0 Longer term/child: 1.0 Longer term/adult: 3.5 Lifetime: 0.35	100	20
Arsenic	50	50	1-day/child: 0.05 10-day/child: 0.05 Longer term/child: 0.05 Longer term/adult: 0.05	50	5

a Maximum Contaminant Levels (MCL) are enforceable standards defined under the Safe Drinking Water Act, to determine safe levels of a given contaminant in the public drinking water supply. The MCL is defined as the allowable lifetime (70 yr) exposure (2 L/d) to a given contaminant for an average adult (70 kg) not to be exceeded without risk to health. Factors involved in its determination include gastrointestinal absorption, a safety factor to protect potentially sensitive populations and the economic and technical feasibility of clean-up.

Maximum Contaminant Level Goals (MCLG) are the non-enforceable health guidelines for a contaminant level in drinking water which would cause no known or potential adverse effect. MCLG, which are always less than or equal to MCLs, do not consider factors related to clean-up.

b Health Advisories (HA) are non-enforceable standards provided by the EPA Office of Drinking Water which represent concentrations of contaminants in drinking water which are not anticipated to cause adverse health effects. The HAs were determined from toxicity data describing non-carcinogenic endpoints only and are calculated for acute (1 day), subchronic (10 day) and longer term (months to years) exposure scenarios. In their derivation, it is assumed a 10 kg child (infant) consumes one liter of water per day and that a 70 kg adult consumes 2 liters of water per day. Since the cis isomer of DCE usually prodominates in environmental samples, values are for cis-DCE.

c Chapter NR 140 of the Wisconsin Administrative Code defines standards for state groundwater quality. "Enforcement Standards" and "Preventative Action Limits" are health-based concentration of contaminants which when attained or exceeded require appropriate mitigative actions.

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of a Wisconsin Administrative Code (WAC) NR 504.07 cap or upgrading the existing cap to meet the requirements of a RCRA Subtitle C/WAC NR 181.44(12) cap for RCRA interim status facilities or RCRA Subtitle C/WAC NR 181.44(13) cap for RCRA licensed facilities (see Figures 5 and 6 for typical cap designs). The WAC NR 504.07 cap is more stringent than the cap that is applicable to this site, the RCRA Subtitle C/WAC NR 181.44(12) cap for interim status facilities, since the WAC NR 504.07 cap requires an extra soil layer to account for frost line protection.

The monitoring portion of this alternative calls for the continued monitoring of the groundwater and air, and the long-term maintenance of the cap in accordance with the appropriate Wisconsin Administrative Codes. ARARs regarding LFG emissions and landfill capping will be addressed by this alternative. Estimated costs are based on ranges depending on what type of capping is selected.

Estimated Construction Cost: $1,141,000 - $5,278,000
Estimated Annual O&M Cost: $39,000 - $142,000
Estimated 30 Year Present Net Worth: $2,713,000 - $6,850,000

THE "1978" SITE

ALTERNATIVE 3 - NO ACTION

Under this alternative, the public health, public welfare and environmental consequences of taking no further action at the "1978" site will be evaluated. ARARs concerning LFG emissions and landfill capping will not be met with this alternative.

ALTERNATIVE 4 - ACCESS RESTRICTIONS, CONTAINMENT OF WASTES AND SUBSURFACE SOILS, AND THE RECOVERY OF LANDFILL GAS

The access restrictions and landfill gas recovery/treatment portions of this alternative are the same as within Alternative 2 for the "1985" site. The containment of wastes and subsurface soils includes evaluating the present cap, and upgrading it to meet either the requirements of WAC NR 504.07 or meet the requirements of RCRA Subtitle C/WAC NR 181.44(13). Groundwater and air monitoring will continue as well as the long-term maintenance of the cap. ARARs regarding LFG emissions and landfill capping will be addressed by this alternative. Estimated costs are based on ranges depending on what type of capping is selected.

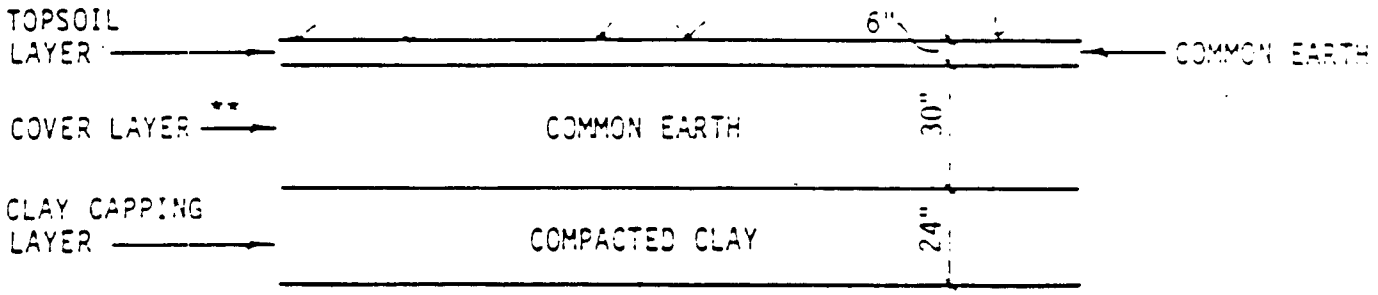
Estimated Construction Cost: $3,993,000 - $6,617,000
Estimated Annual O&M Cost: $52,500 - $135,000
Estimated 30 Year Present Net Worth: $5,331,000 - $7,956,000

THE "1963" SITE

ALTERNATIVE 5 - NO ACTION

Under this alternative, the public health, public welfare and environmental consequences of taking no further action at the "1963" site will be evaluated. There are no ARARs that need to be complied with regarding the capping of the "1963" site.

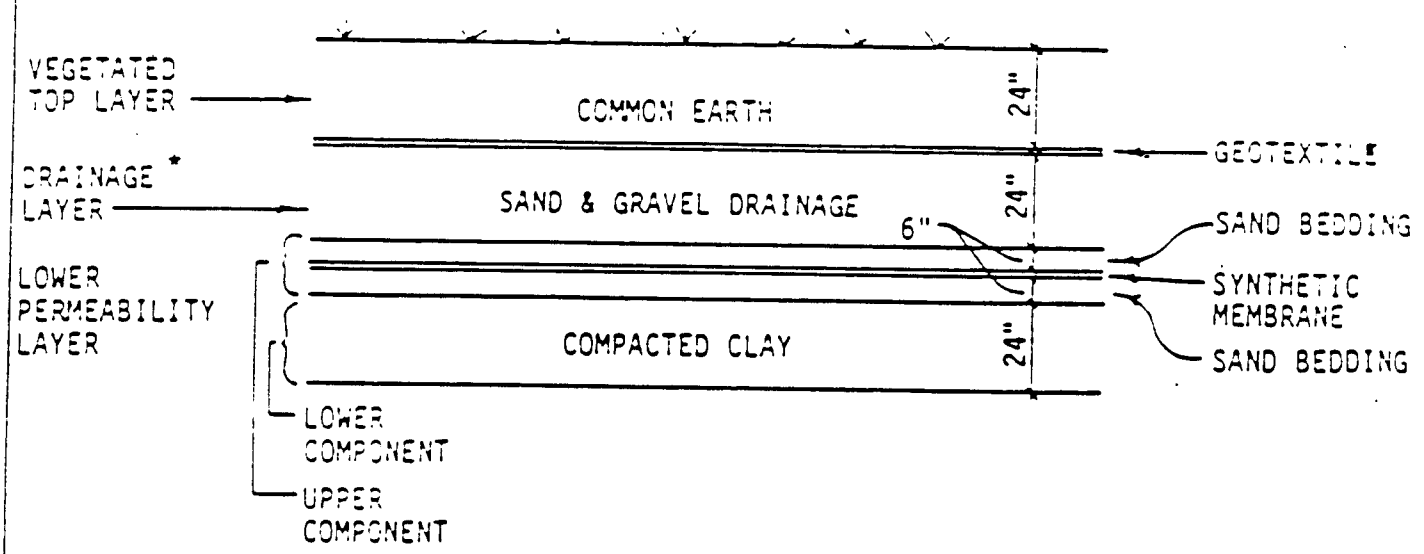
Figure 5



** THE COVER LAYER WAS SPECIFIED AT 30 IN. AS A WORST CASE SCENARIO TO ADDRESS THE CONCERNS OF NR 504.07 (5).

		SCALE: 1" = 4'	WARZYN	STRUCTURE OF SUBTITLE D CAP (NR 500) PER NR 504.07	
DWN JC	APP'D AJS	DATE 8-4-89	13091 A43	REMEDIAL INVESTIGATION AND FEASIBILITY STUDY JANESVILLE DISPOSAL FACILITY	

Figure 6



* THE DRAINAGE LAYER WAS SPECIFIED AT 24 IN. TO MEET THE REQUIREMENT THAT THE UPPER COMPONENT OF THE LOW PERMEABILITY LAYER BE LOCATED AT LEAST 12 IN. BELOW THE MAXIMUM RECORDED DEPTH OF FROST WHICH WAS ESTIMATED TO BE 36 IN.

SCALE: 1" = 4'

DWN JC	APP'D AJS	DATE 8-4-89	13091	A42

WARZYN

STRUCTURE OF SUBTITLE C CAP (NR 18. PER NR 181.44 (13)

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
JANESVILLE DISPOSAL FACILITY

ALTERNATIVE 6 - ACCESS RESTRICTIONS, AND CONTAINMENT OF WASTES AND SUBSURFACE SOILS

Access restrictions will include deed and land use restrictions for the property comprising the 1963 site for the purpose of assuring that future use of the site does not increase the release or potential release of hazardous substances to the environment or become a threat to public health. The containment of wastes and subsurface soils is to be accomplished by first evaluating the present cap, and by upgrading the landfill cap to obtain a consistent two feet of fine-grained soil cover over the entire landfill or to meet the standards set by RCRA Subtitle D/WAC NR 500 regulations. Continued groundwater monitoring will be part of this alternative to evaluate the effectiveness of the landfill cap and long-term maintenance of the cap will continue. Estimate costs are based on ranges depending on what type of capping is selected.

Estimated Construction Cost: $1,902,000 - $2,840,000
Estimated Annual O&M Cost: $27,200
Estimated 30 Year Present Net Worth: $2,321,000 - $3,259,000

THE JAB SITE

ALTERNATIVE 7 - NO ACTION

Under this alternative, the public health, public welfare and environmental consequences of taking no further action at the JAB will be evaluated. ARARs regarding this site will not be addressed.

ALTERNATIVE 8 - ACCESS RESTRICTIONS, CONTAINMENT OF SUBSURFACE SOILS AND MONITORING

The access restrictions will be similar to those applied by Alternative 6 for the 1963 site. This alternative also calls for the containment of the wastes (which have already been substantially removed) and the subsurface soils. Containment options include evaluating the present cap, and upgrading it to meet either WAC NR 504.07 standards or RCRA Subtitle C/WAC NR 181 standards. The monitoring of the groundwater and air emissions, and the maintenance of the cap will continue. Estimated costs are based on ranges depending on what type of capping is selected.

Estimated Construction Cost: $75,000 - $1,160,000
Estimated Annual O&M Cost: $14,100
Estimated 30 Year Present Net Worth: $292,000 - $1,377,000

THE JDF GROUNDWATER, ADDRESSING OFF-SITE GROUNDWATER CONTAMINATION

ALTERNATIVE 9 - NO ACTION

Under this alternative, the public health, public welfare and environmental consequences of taking no further action at the overall JDF site pertaining to groundwater will be evaluated. ARARs regarding groundwater contamination will not be addressed by this alternative.

ALTERNATIVE 10 - GROUNDWATER USE RESTRICTIONS

This alternative will promote the use of deed and groundwater use restrictions for the area within the groundwater plume, and between the JDF and the Rock River. Groundwater monitoring will need to be continued. ARARs regarding groundwater contamination will not be addressed by this

alternative. Costs associated with this Alternative are related to the costs of continued groundwater monitoring utilizing the monitoring wells already in place.

Estimated Construction Cost: May be some repair costs associated with the monitoring wells, such as re-development costs.
Estimated Annual O&M Cost: $55,000
Estimated 30 Year Present Net Worth: No Estimate Available

ALTERNATIVE 11 - GROUNDWATER EXTRACTION AND TREATMENT
This alternative calls for the installation of groundwater extraction wells to intercept the groundwater contamination plume. The groundwater would then be sent through a groundwater treatment system consisting of an air stripper designed to reduce the concentration of VOCs prior to discharge to the Rock River. If appreciable amounts of chromium or other inorganics are detected in the recovered groundwater, additional treatment for the removal of these inorganics will be required prior to discharge. Consideration will need to be given to the contamination being caused by the Parker Pen Site located immediately downgradient of JDF, whereby if Parker Pen agrees to combine resources with the JDF remedial action, then the groundwater extraction wells can be placed down gradient from Parker Pen and ARARs will be obtained. If Parker Pen decides not to combine resources with the JDF remedial action, then the groundwater extraction wells called for by this alternative may be placed downgradient of JDF but upgradient of Parker Pen. ARARs will be addressed downgradient of JDF with regard to groundwater contaminants.

Estimated Construction Cost: $504,000
Estimated Annual O&M Cost: $71,900 - $146,000
Estimated 30 Year Present Net Worth: $2,184,000

ALTERNATIVE 12 - GROUNDWATER IN-SITU TREATMENT
This alternative involves the in-situ treatment of the groundwater by means of extracting the groundwater, supplementing it with nutrients and oxygen and recharging it back into the aquifer to enhance biodegradation of the groundwater contaminants in place or in-situ. A portion of the extracted groundwater would still need to be treated by air stripping, as in Alternative 11, and discharged to the Rock River, to enable the in-situ treatment to maintain a "closed-loop" injection-recapture system.

Estimated Construction Cost: $1,426,000
Estimated Annual O&M Cost: $69,400 - $240,000
Estimated 30 Year Present Net Worth: $4,797,000

VII. PROPOSED PLAN

The U.S. EPA's Proposed Plan was released for public comment from August 21 through September 15, 1989 and the PRPs, through their Steering Committee, requested and received an extension to the comment period giving them until September 20, 1989 to submit their comments. In the Proposed Plan the U.S. EPA stated that the preferred alternatives were as follows:

"1985" Site: Preferred Alternative: Compliance with the applicable requirements of RCRA which will include the components of Alternative 2; access restrictions, recovery and treatment of landfill gas, and RCRA Subtitle C/current state capping requirements which may be met by WAC NR 181.44(13) closure, along with the enhancement of the leachate collection system. Groundwater and air monitoring will also be continued, (all applicable RCRA requirements will still apply to this site. The remedy proposed for the "1985" site does not conflict with the applicable RCRA requirements);

"1978" Site: Preferred Alternative: Alternative 4; access restrictions, recovery and treatment of landfill gas, and the containment of wastes and subsurface soils complying with the standards of WAC NR 504.07;

"1963" Site: Preferred Alternative: Compliance with the applicable requirements of RCRA which will include the components of Alternative 6; access restrictions, and the containment of wastes and subsurface soils by maintaining and upgrading the present cap and site drainage as needed;

"JAB": Preferred Alternative: Alternative 8; access restrictions, containment of subsurface soils by maintaining and upgrading the present cap and site drainage as needed, and continued groundwater monitoring. (All applicable RCRA requirements will still apply to this site. The remedy proposed for the JAB does not conflict with the applicable RCRA requirements). The ash pile remaining onsite will also be removed; and

JDF GROUNDWATER: Preferred Alternatives: Alternatives 10 and 11; groundwater use restrictions and groundwater extraction with on-site treatment with discharge to the Rock River.

VIII. DOCUMENTATION OF SIGNIFICANT CHANGES TO THE PROPOSED PLAN

After the public comment period and comments from the Community and the PRPs were received, a 60 day technical negotiation was conducted between the U.S. EPA, WDNR and the PRPs, pursuant to Section XXVI of the RI/FS Consent Order. The following significant changes were warranted after all comments and the results of the technical negotiation were evaluated. Specific responses to comments from the public and the PRPs are addressed in the attached Responsiveness Summary.

The "1985" Site: The preferred remedy will still comply with the applicable requirements of RCRA, which include the components of Alternative 2, as previously stated, but the capping requirements for the "1985" site may be met by WAC NR 504.07. This cap, along with the improvements to the leachate collection system and the extraction and treatment of landfill gas, can meet or exceed the performance standards obtained by a RCRA Subtitle C/WAC NR 181.44 (12) or (13) cap. The WAC NR 504.07 cap is more stringent than the cap that is applicable for this site, the RCRA Subtitle C/WAC NR 181.44(12) cap for interim status facilities, since the WAC NR 504.07 cap requires an extra soil layer to account for frost line protection. The NR 504.07 cap in conjunction with the improvements to the leachate collection system, will be able to maintain a leachate head level of one foot or less

above the site liner. All applicable RCRA requirements will still apply to this site and to the remedy selected.

The "1978" Site: The preferred remedy will still consist of the elements within Alternative 4, except that the PRPs have the option to either implement the landfill gas extraction and treatment portion of the alternative or to test out of the need to implement the landfill gas extraction and treatment by 1) installing additional gas probes to verify that the requirements of WAC NR 506.07(3) are met, and (2) following the hazardous air contaminant test out procedures specified by the WDNR, as allowed by WAC NR 506.08(6).

The "1963" Site: Based on comments and further review of the data, the no action alternative was proposed, along with the deed and land use restrictions and continued monitoring. Alternative 5 is now the preferred alternative for the "1963" site.

The "JAB" Site: No changes. Alternative 8 is still the preferred alternative.

JDF Groundwater: No significant changes. Alternatives 10 and 11 are still the preferred alternatives. The PRPs raised the issue of utilizing alternative concentration limits ("ACLs") instead of using the federal maximum concentration limits ("MCLs)/Wisconsin Enforcement Standards as guidelines on when groundwater extraction and treatment is necessary. The U.S. EPA, in consultation with the WDNR denied this request because of RCRA requirements for corrective action and due to WAC NR 181 and WAC NR 140 standards.

Another issue regarding the groundwater extraction and treatment is that the system be combined, therefore avoiding unnecessary duplication of efforts with the extraction and treatment system that may be installed by Parker Pen, immediately downgradient of JDF. The U.S. EPA and the WDNR agree that duplication should be avoided and will agree to this request as long as the performance standards are met between JDF and the Rock River and if assurances can be given that once Parker Pen has met its cleanup goals, the system will still be operated as long as is needed to meet the performance standards for the JDF as stated in this ROD.

Comments received during the public comment period are presented along with the U.S. EPA response to each, in the attached Responsiveness Summary.

IX. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The alternatives for the "1978" site, JAB, the "1985" site, the "1963" site and the overall JDF groundwater remedy have been evaluated within the FS using nine criteria. The nine criteria are summarized as follows:

OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

COMPLIANCE WITH ARARS (APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS) addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes and/or provide grounds for invoking a waiver.

LONG-TERM EFFECTIVENESS AND PERMANENCE refers to the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

REDUCTION OF TOXICITY, MOBILITY, OR VOLUME is the anticipated performance of the treatment technologies a remedy may employ.

SHORT-TERM EFFECTIVENESS addresses the period of time needed to achieve protection, and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

IMPLEMENTABILITY is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

COST includes estimated capital and operation and maintenance costs, and net present worth costs.

STATE ACCEPTANCE indicates whether, based on its review of the RI/FS and Proposed Plan, the State concurs in, opposes, or has no comment on the preferred alternatives at the present time. The State's acceptance is addressed later within this ROD.

COMMUNITY ACCEPTANCE will be addressed later within this ROD.

Seven of the nine evaluation criteria (excluding state acceptance and community acceptance) are summarized in Table 10. State and community acceptance will be discussed later in this ROD.

The following briefly describes how the proposed alternatives for the 1985, 1978, 1963 and JAB sites and the JDF Groundwater compare to the other alternatives and how they stand up to six of the eight criteria (community and state acceptance criteria are discussed later within this ROD).

OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT: The proposed alternatives will provide significant protection of human health and the environment. This combination of alternatives will eliminate the potential and future threats caused by the contamination to the groundwater and to the air by restricting access to the sites or portions of the sites, by extracting and treating the groundwater and by extracting and flaring the contaminated landfill gas prior to its migration off-site. Proper closure of the sites, including improvements or upgrading of the caps such as; a landfill cap at the "1985" site meeting the standards of WAC NR 504.07 in conjunction with leachate collection repairs and/or improvements for the 1985 site, which will then meet or exceed the standards of a RCRA Subtitle C

Table 10

[illegible]	[illegible]	Alternative 2	Alternative 3	Alternative 4	[illegible]	Alternative 6
1. [illegible]						
Effectiveness						
· Protection of Community during remedial actions	Waste - minimal risk for contact; Landfill pond - minimal risk; Ground-water - risk discussed in Alt. 9-12. Ambient air on-site - carcinogenic risks of 7.0E-04 to 1.2E-2	Increase in dust if enhanced capping occurs and during installation of LFG system. Adequate controls can be implemented.	Waste and Subsurface soils - minimal risk for contact; Landfill pond - minimal risk; Groundwater-risk is discussed in Alt. 9-12; ambient air on-site - carcinogenic risks of 7.0E-04 to 1.2E-02.	Increase in dust during construction of enhanced cap and LFG system. Adequate controls can be implemented.	Waste and subsurface soils - minimal risk for contact; Groundwater risk is discussed in Alt. 9-12. Ambient Air - "1963" site not considered a source because waste was burned.	Increase in dust during construction of enhanced cap. Adequate controls can be implemented.
· Protection of workers during remedial actions	Not applicable. No actions taken.	Protection required against dust and VOC emissions during capping, and dust, VOCs and combustible gases during installation of LFG system.	Not applicable. No actions taken.	Protection required against dust and VOC emissions during capping, and dust, VOCs and combustible gases during installation of LFG system.	Not applicable. No actions taken.	Protection required against dust during enhanced capping.
· Time until protection is achieved	Potential risk from ambient air inhalation continues as long as LFG emissions occur at substantial levels which may last for the next 16 years.	Enhanced capping could take 2 years allowing for design, bidding, construction and down time during winter. A LFG system could take take 1 year with treatment of LFG emissions, ambient air quality would be improved almost immediately. Fencing could take several weeks.	Potential risk for ambient air inhalation continues as long as LFG emissions occur at substantial levels which may last for the next 9 years.	Enhanced capping could take 2 years allowing for design, bidding, construction and down time during winter. A LFG system could take 1 year. With treatment of LFG emissions, ambient air quality would be improved almost immediately. Fencing could take several weeks.	Not applicable. Air unlikely contributor. Groundwater is discussed in Alt. 9-12.	Enhanced capping could take 2 years allowing for design, bidding, construction and down time during winter. Fencing could take several weeks.
2. Long-Term Effectiveness						
· Magnitude of residual risk	Substantial risk remains from ambient air contamination which will likely occur as long as LFG is generated. Risk related to groundwater is discussed in Alt. 9-12	Risk is substantially reduced due to LFG system. Risk related to groundwater is discussed in Alt. 9-12.	Substantial risk remains from ambient air contamination which will likely occur as long as LFG is generated. Risk related to groundwater is discussed in Alt. 9-12.	Risk is substantially reduced due to LFG system. Risk related to groundwater is discussed in Alt. 9-12.	Relatively low risks exist presently. Risk related to groundwater is discussed in Alt. 9-12.	Risk related to efficiency of cap to reduce infiltration of precipitation is unknown. Risk related to groundwater is discussed in Alt. 9-12.
· Effectiveness of controls.	Not applicable. No engineering controls implemented.	Fencing, Cap repair and enhanced capping and LFG are well established technologies. Regular inspections and maintenance is required for each technology.	Not applicable. No engineering controls implemented.	Fencing, enhanced capping and LFG are well established technologies. Regular inspection and maintenance is required for each technology.	Fencing, enhanced capping and LFG are well established technologies. Regular inspection and maintenance is required for each technology.	Fencing and enhanced capping are well established technologies. Regular inspection and maintenance is required for each technology.
· Reliability of Controls	Not Applicable. No engineering controls implemented.	Likelihood of failure is small as long as regular O & M is performed.	Not Applicable. No engineering controls implemented.	Likelihood of failure is small as long as regular O & M is performed.	Not Applicable. No engineering controls implemented.	Likelihood of failure is small as long as regular O & M is performed.
3. Reduction of Toxicity, Mobility or Volume	No reduction in toxicity, mobility or volume.	Substantial reduction in toxicity, mobility and volume of LFG. No reduction in mobility of soil contaminants, but may reduce the migration potential due to cap repair or enhanced capping.	No reduction in toxicity, mobility or volume.	Substantial reduction in toxicity, mobility and volume of LFG. No reduction in mobility of soil contaminants, but may reduce the migration potential due to enhanced capping.	No reduction in toxicity, mobility or volume.	Will not result in a reduction in toxicity, mobility or volume, but may reduce the migration potential of contaminants due to enhanced ca

Table 10 cont.

Evaluation Factor	Alternative 8	Alternative 9	Alternative 10	Alternative 11	Alternative 12
1. Short-term Effectiveness					
• Protection of Community during remedial actions	Waste - Most, if not all removed; Subsurface soils - Most, if not all contaminated soils removed, minimal risk for contact; Groundwater - Risk related to ground-water is discussed in Alt. 9-12; Ambient air - JAB not considered a source because waste removed.	Increase in dust during construction of enhanced cap. Adequate controls can be implemented.	Short-term risks due to groundwater are presently low.	Short-term risks due to groundwater are presently low.	Minimal risks to community during implementation. Adequate controls would be implemented to control hazardous emissions.	Minimal risks to community during implementation. Adequate controls would be implemented to control hazardous emissions.
• Protection of workers during remedial actions	Not applicable. No actions taken.	Protection required against dust during enhanced capping.	Not applicable since no remedial actions would be taken.	Not applicable since no remedial actions would be taken.	Low risks assuming adequate personal protection for workers is provided.	Low risks assuming adequate personal protection for workers is provided.
• Time until protection is achieved	Not applicable. Air unlikely contributor. Groundwater is discussed in Alt. 9-12.	Enhanced capping could take 2 years allowing for design, bidding, construction and down time during winter. Fencing could take several weeks.	No protection would be achieved over the short-term.	Protection would be achieved while groundwater use restrictions are enforced.	Groundwater target concentration levels for contaminants of concern may be achieved within approximately 10 years.	Groundwater target concentration levels for contaminants of concern may be achieved within approximately 23 years.
2. Long-Term Effectiveness						
• Magnitude of residual risk	Risk due to contact with waste is minimal since most, if not all waste removed. Some risk related to efficiency of cap to reduce infiltration of precipitation to potentially remaining contaminated sub-surface soils. Risk related to ground-water is discussed in Alt. 9-12.	Risk due contact with waste is minimal since most, if not all waste removed. Some risk related to efficiency of cap to reduce infiltration of precipitation to potentially remaining contaminated sub-surface soils. Risk related to ground-water is discussed in Alt. 9-12.	Potential future risks to area residents would still exist due to contaminant migration.	Potential risks would be low as long as exposure to contaminated groundwater is controlled by enforcement of use restrictions.	Risks would be low since groundwater extraction and treatment is provided	Risks would be low since both in-situ and direct groundwater treatment is provided.
• Effectiveness of controls.	Not applicable. Air unlikely contributor and groundwater is discussed in Alt. 9-12.	Fencing, cap repair and enhanced capping are well established technologies. Regular inspection and maintenance is required for each technology.	Not applicable, since no action taken.	Effectiveness would depend upon the ability to enforce groundwater use restrictions both on- and off-site.	Methods employed are generally conventional and effective.	Methods employed are effective, although in-situ groundwater treatment is somewhat less conventional than direct methods.
• Reliability of Controls	Not applicable. No direct engineering controls implemented.	Likelihood of failure is small as long as regular O & M is performed.	Not applicable since no action taken.	Reliability dependant upon the ability to enforce groundwater use restrictions both on- and off-site.	Methods employed are generally reliable with a low probability of failure.	Methods employed are generally reliable with a low probability of failure.
3. Reduction of Toxicity, Mobility Volume	No reduction in toxicity, mobility or volume.	Will not result in a reduction in toxicity, mobility or volume, but may reduce the migration potential of contaminants due to cap repair or enhanced capping.	No reduction in toxicity, mobility or volume of groundwater contaminants would be achieved.	No reduction in toxicity, mobility or volume of groundwater contaminants would be achieved.	No reductions in toxicity, mobility or volume of contaminants would be achieved. However, aquifer clean-up would be achieved by groundwater extraction.	Some reduction in toxicity and volume of groundwater contaminants would be provided by in-situ bioreclamation.

Table 10 cont.

[illegible]	[illegible]	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
4. [illegible]						
· Technical Feasibility	Not applicable. No engineering controls implemented.	Fence and LFG system are relatively easy to implement. Implementing a NR 181 type cap may be difficult due to steep slopes.	Not applicable. No engineering controls implemented.	Fence and LFG system are relatively easy to implement. NR 181 type cap may be difficult to implement due to steep slopes.	Not applicable. No engineering controls implemented.	Fence is easy to implement. Cap is difficult to implement due to numerous trees and existing structures on-site.
· Administrative Feasibility	Generally administratively feasible if Agency will accept residual risks.	LFG system requires approval for electrical, supplemental fuel connection and discharge of condensate/leachate to existing leachate collection system.	Generally administratively feasible if Agency will accept residual risks.	LFG system requires approval for electrical, supplemental fuel connection and discharge of condensate to existing leachate collection system. Enhanced cap may extend beyond property boundaries on south side, so access permission is required.	Generally administratively feasible if agency will accept residual risks.	A substantial part of the construction activities would occur outside property limits, so access permission is required.
· Availability of Services and Materials	Not applicable. No services or materials required.	Services and materials available. Materials to construct cap are assumed to be available locally.	Not applicable. No services or materials required.	Services and materials available. Materials to construct cap are assumed to be available locally.	Not applicable. No services or materials required.	Services and materials available. Materials to construct cap are assumed to be available locally.
5. Compliance with ARARs						
· Chemical-Specific	Emission rate levels would not likely comply with NR 445. ARARs related to groundwater are discussed in Alt. 9-12.	Particulate emissions can be controlled to meet requirements. ARARs related to groundwater are discussed in Alt. 9-12	Emission rates would not likely comply with NR 445. ARARs related to groundwater are discussed in Alt. 9-12.	Particulate and emissions can be controlled to meet requirements. ARARs related to groundwater are discussed in Alt. 9-12	LFG not considered a problem so would likely comply with NR 145. ARARs related to groundwater are discussed in Alt. 9-12.	Particulate emissions can be controlled to meet standards. Emission rate levels likely to c[illegible]as LFG not considered problem. ARARs re[illegible] to ground-water are discussed in Alt. 9-12.
· Location-Specific	None identified.	None identified	None identified.	None identified	None identified.	None identified.
· Action-Specific	Some groundwater monitoring is currently being provided. Some closure and long-term care is currently provided. Probable ARARs related to LFG emissions would not be met. The existing cap does not meet NR 181 or NR 500 design standards.	RCRA requirements per 40 CFR 261, 262 and 263 could be met. Some closure and long-term care is currently provided and additional activities can be provided. The existing cap does not meet NR 181 or NR 500 design standards but design standards can be met.	Some groundwater monitoring is currently required, however may not meet NR 500 requirements. Site closed prior to NR 181 or NR 500 so long-term care requirements may not be met. The existing cap does not meet NR 500 or NR 181 design standards. ARARs related to LFG emissions would not be met.	RCRA requirements per 40 CFR 261, 262 and 263 could be met. Current closure standards likely not met by the existing cover but design standards can be met (except NR 181 slope requirements). NR 400 requirements can be met.	ARARs related to groundwater monitoring would not be met. Site closed prior to NR 500, so closure and long-term care requirements would not be met. The existing cover does not meet NR 500 design standards.	RCRA requirements per 40 CFR 261, 262 and 263 could be met. Current closure standards not likely met by the existing cover but design standards can be met (except NR 181 slope requirements). NR 400 requirements can be met.
· Appropriateness of waiver	May be justifiable for capping ARARs.	Not required. May be justifiable for capping ARARs.	Not required.	Not required.	Not required.	Not required.
6. Protection of Human Health and the Environment	Risk to human health from LFG emissions is not controlled. Risk to human health from direct contact with waste is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from VOCs in LFG emissions will be substantially reduced. Risk to human health from direct contact with waste is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from LFG emissions is not controlled. Risk to human health from direct contact with waste or subsurface soils is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from VOCs in LFG emissions will be substantially reduced. Risk to human health from direct contact with waste and subsurface soil is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from LFG emission is minimal. Risk to human health from direct contact with waste and subsurface soil is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from LFG emission is minimal. Risk to human health from direct contact with waste and subsurface soil is minimal. Risk to human health and the environment from groundwater contamination is [illegible]ed in Alt. 9-12.

Table 10 cont.

Evaluation Factor	[illegible]	[illegible]	[illegible]	[illegible]	Alternative 11	Alternative 12
4. Implementability						
· Technical Feasibility	Not applicable. No engineering controls implemented.	Fencing and cap repair or enhanced capping are easy to implement.	Not applicable. No engineering controls implemented.	Not applicable. No engineering controls implemented.	Technically feasible. Alternative employs conventional, reliable technologies.	Technically feasible. Although, in-situ treatment of groundwater is somewhat less conventional than direct treatment methods.
· Administrative Feasibility	Generally administratively feasible if agency will accept residual risks.	A portion of the cap may extend beyond the property boundaries on the west. Access permission would be required.	Generally administratively feasible if agency will accept remaining risks.	Generally administratively feasible. However, obtaining deed restrictions on privately-owned property may be difficult and time-consuming.	Administratively feasible. However, obtaining permits and easements for off-site construction may be difficult and time-consuming.	Administratively feasible. However, obtaining permits for injection wells and easements for off-site construction may present some difficulties.
· Availability of Services and Materials	Not applicable. No services or materials required.	Services and materials available. Materials to construct cap are assumed to be available locally.	Not applicable. No services or materials requested.	Not applicable. No services or materials requested.	Services and materials are readily available.	Services and materials are readily available.
5. Compliance with ARARs						
· Chemical-Specific	LFG not considered a problem so likely comply with NR 445. ARARs related to groundwater are discussed in Alt. 9-12.	Particulate emissions can be controlled to meet standards. Emission rate levels likely to comply as LFG not considered a problem. ARARs related to groundwater are discussed in Alt. 9-12.	State and Federal groundwater quality standards would not be met.	State and Federal groundwater quality standards would not be met.	State and Federal standards pertaining to surface water, groundwater and air quality should be met.	State and Federal standards pertaining to surface water, groundwater and air quality should be met.
· Location-Specific	None identified.	None identified.	None identified	None identified	No problems anticipated meeting location-specific ARARs.	No problems anticipated meeting location-specific ARARs.
· Action-Specific	Some groundwater monitoring is currently being provided. Some closure and long-term care is currently provided. The existing cap does not meet current NR 181 or NR 500 design standards.	RCRA requirements per 40 CFR 261, 262 and 263 could be met. Some groundwater monitoring is currently being provided. Some closure and long-term care is currently provided. The existing cap does not meet NR 181 or NR 500 design standards.	None identified.	State groundwater monitoring requirements should be met.	State and Federal requirements pertaining to surface water discharge, and handling and disposal of hazardous treatment process residuals should be met.	State and Federal requirements pertaining to surface water discharge, and handling and disposal of hazardous treatment process residuals should be met.
· Appropriateness of waiver	May be justifiable for capping ARARs.	May be justifiable for capping ARARs.	Not appropriate.	Not appropriate.	Not required.	A waiver may be required to allow use of injection wells for in-situ bioreclamation of groundwater.
6. Protection of Human Health and the Environment	Risk to human health from direct contact with subsurface soil is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from direct contact with subsurface soil is minimal. Risk to human health and the environment from groundwater contamination is discussed in Alt. 9-12.	Risk to human health from exposure to contaminated groundwater is currently low. However, potential off-site migration of contaminants in the future could result in substantially increased risks to human health.	Risk to human health from exposure to contaminated groundwater would be controlled as long as on- and off-site groundwater use restrictions can be enforced.	Risk to human health and the environment would be substantially reduced since groundwater extraction and treatment would be provided.	Risk to human health and the environment would be substantially reduced since groundwater extraction and in-situ bioreclamation would be implemented.

Table 10 cont.

Evaluation Factor	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
7. Cost						
• Capital	$0	Cap Repair- $1,141,000 NR 500 - $2,969,000 NR 181 - $5,278,000	$0	NR 500 - $3,993,000 NR 181 - $6,617,000	$0	Positive Drainage - $1,900,000 NR 500 - $2,640,000
•Annual O & M	$0	$39,000 to $142,000	$0	$52,500 to $135,000	$0	$27,200
• Present net worth (30-yr @ 5%)	$0	Cap Repair- $2,713,000 NR 500 - $4,521,000 NR 181 - $6,820,000	$0	NR 500 - $5,331,000 NR 181 - $7,956,000	$0	Positive Drainage - $2,331,000 NR 500 - $3,259,000
8. State Acceptance	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the RO after agency review of th FS.
9. Community Acceptance	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the RO after public comments on the FS are received.

NOTES:

Alternative 1: "1985" Site - No Action.

Alternative 2: "1985" Site - Access Restrictions, Containment of Waste, Recovery and Treatment of Landfill Gas (LFG) and Monitoring.

Alternative 3: "1978" Site - No Action.

Alternative 4: "1978" Site - Access Restrictions, Containment of Wastes and Subsurface Soils, and Recovery and Treatment of Landfill Gas (LFG).

Alternative 5: "1961" Site - No Action.

Alternative 6: "1961" Site - Access Restrictions and Containment of Wastes and Subsurface Soils.

Alternative 7: JAB - No Action.

Alternative 8: JAB - Access Restrictions, Containment of Subsurface Soils and Monitoring.

Alternative 9: JDF Groundwater - No Action.

Alternative 10: JDF Groundwater - Use Restrictions.

Alternative 11: JDF Groundwater - Extraction and Treatment.

Alternative 12: JDF Groundwater - In-situ Treatment.

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Table 10 cont.

[illegible]	[illegible]	Alternative 5	Alternative 6	[illegible]	[illegible]	[illegible]
7. Cost						
• Capital	$0	Cap Repair - $75,000 NR 500 - $532,000 NR 181 - $1,160,000	$0	No direct monetary costs. However, some administrative costs may be associated with implementing [illegible] use restrictions. Some groundwater monitoring costs may also be incurred.	$504,000	$1,426,000
•Annual O & M	$0	$14,100	$0		$71,900 to $146,000	$69,400 to $240,000
• Present net worth (30-yr @ 5%)	$0	Cap Repair - $292,000 NR 500 - $749,000 NR 181 - $1,377,000	$0		$2,184,000	$4,797,000
8. State Acceptance	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.	To be addressed in the ROD after agency review of the FS.
9. Community Acceptance	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.	To be addressed in the ROD after public comments on the FS are received.

cap, meeting WAC NR 504.07 standards for the 1978 site, and the upgrading of the JAB cap to assure proper maintenance and drainage, will help to reduce the amount of contaminants by reducing leachate generation and causing a reduction in the movement of contamination from the site area into off-site locations. Capping improvements were not deemed necessary at this time for the "1963" site since the site is contributing little or no contamination to the groundwater. The no action alternatives, (Alternatives 1, 3, 7 and 9), will not provide any additional protection to human health or the environment as will the proposed alternatives since the contamination (groundwater and air) will not be treated and access to the sites would remain unrestricted. Groundwater extraction with on-site treatment, Alternative 11, is comparable with regard to overall protection with the groundwater in-situ treatment alternative, Alternative 12, but Alternative 11 is more feasible and economical than is Alternative 12. The landfill caps not proposed do not obtain ARARs for the particular landfill, are not as protective as the capping alternative chosen, or are overly protective and therefore deemed impractical and infeasible for the particular landfill.

COMPLIANCE WITH ARARS: The combination of proposed alternatives will meet all State and Federal ARARs including the compliance with RCRA interim status and corrective action requirements for the 1985 site, the upgrading and/or enhancement of the caps at the JAB and "1978" sites, and the treatment of contaminated air and groundwater throughout the JDF. By extracting and treating the contaminated groundwater downgradient of the JDF, but prior to its discharge into the Rock River, the groundwater contamination exceeding the Federal MCLs/Wisconsin Enforcement Standards will be addressed and will meet ARARs. The no action alternatives (Alternatives 1, 3, 7, and 9), will not meet ARARs for site closure nor will they properly address the ARARs for contamination in the air and/or groundwater. The in-situ groundwater treatment alternative, Alternative 12, would address the ARARs for the contamination found in the groundwater but the proposed alternative utilizing on-site treatment is more practicable and feasible because of site conditions. For the groundwater treatment alternatives, any discharges to the Rock River will need to comply with ARARs.

LONG-TERM EFFECTIVENESS AND PERMANENCE: The combination of proposed alternatives will provide reliable protection of human health and the environment over time. The capping options afforded by the proposed alternatives, including the actions to be taken to comply with RCRA corrective action at the "1985" site, and the upgrading of the cap at the "1978" site, will maintain or improve the protectiveness with regard to direct contact with onsite contaminants in soil and landfill contents and will reduce the amount of contamination reaching the groundwater by reducing leachate generation. The caps, including the present cap at the JAB, will need to be maintained to ensure their effectiveness. Groundwater and landfill gas extraction and treatment options afforded by the proposed alternatives will effectively prevent the spread of contamination and will continue to reduce the levels of contamination. Groundwater and landfill gas extraction and treatment will require monitoring and inspection to ensure effectiveness. With proper maintenance, both the capping alternatives and the extraction and treatment alternatives (groundwater and

landfill gas) will be reliable. The no action alternatives (Alternatives 1, 3, 7 and 9) would not offer any long-term effectiveness at all since contaminants would continue to be released to the environment. Capping and groundwater extraction and treatment options not chosen would provide varying degrees of long-term effectiveness and permanence (in some instances the capping alternatives may provide more permanence) but the proposed alternatives are deemed more practicable and feasible to address site conditions. Alternatives to address site contamination, such as solidification, incineration or other more permanent measures, were not evaluated for the JDF since no "hot spots" of contamination were found within the JDF area, and to remove all the waste from the JDF would be deemed extremely impractical and infeasible.

REDUCTION OF TOXICITY, MOBILITY, OR VOLUME: Proposed Alternative 2 for the "1985" site and Alternative 4 for the "1978" site including LFG recovery and flaring, will reduce the toxicity and the mobility of the contamination in the air at and around the site. The LFG extraction and flaring alternatives will effectively reduce the toxicity of the contaminants that are or may be migrating off-site and will also severely restrict the mobility of the contaminants by collecting and treating them. The groundwater extraction and treatment alternative chosen, Alternative 11, will not reduce the toxicity, mobility or volume of the contaminants since the contaminants are simply being transferred from the water to the air. However, if deemed necessary, a treatment system such as an air scrubber may be installed. Alternatives not proposed either do not reduce the toxicity, mobility or volume of the contaminants at the site or are not as practicable or feasible for the site conditions as are the proposed alternatives. None of the landfill cap alternatives, selected or not selected, will reduce the toxicity, mobility or volume of the contaminants at the JDF. However, the capping alternatives selected will aid in restricting releases from occurring from the sites.

SHORT-TERM EFFECTIVENESS: The proposed alternatives will provide some degree of short-term effectiveness. The access restriction portions of the proposed alternatives will offer immediate protection to the nearby population with little or no implementation time required. The capping and collection and treatment portions of the proposed alternatives will require more time to be implemented and become effective. No adverse impacts to the neighboring community or environment are anticipated during the implementation of any of the proposed alternatives. The alternatives not proposed for this site either do not afford any protection and therefore have no short-term effectiveness (no action alternatives) or have similar implementation times and effectiveness as the proposed alternatives.

IMPLEMENTABILITY: The alternatives within the proposed alternatives include differing degrees of implementability. The access restrictions portions of the proposed alternatives, will be easily implemented since the City of Janesville owns the JDF Site and governs the area impacted by the contamination. Some coordination between local agencies will be required to implement the deed restrictions on and near the JDF Sites. The capping portions of the proposed alternatives will be somewhat more difficult to implement than some of the capping options not chosen, such as the no action

alternatives (except for the "1963" site), but the proposed alternatives offer greater reduction in leachate generation and attain ARARS. The portions of the proposed alternatives regarding landfill gas and groundwater extraction and treatment may require more studies to aid in design. The technology is available and proven for the extraction and treatment of landfill gas and the groundwater called for by the proposed alternatives. The groundwater in-situ treatment alternative, Alternative 12, would be more difficult to implement than the proposed alternative, Alternative 11, since in-situ treatment requires the introduction of nutrients and oxygen into the groundwater and its results would not be as definite as those produced by the proposed alternative.

COST: The proposed alternatives are compared to each other with regard to the criteria listed above and then when two or more remedies achieve the same goal (ie., achieve ARARS), cost can become a determining factor. However, because the remedy(ies) at the JDF are to satisfy RCRA as well as CERCLA, cost as an evaluation factor has been given less emphasis with respect to sites which will be addressed using RCRA authorities. Construction costs and operation and maintenance (O&M) costs for each alternative are summarized in Table 10 and within the FS. The alternatives proposed are believed to be the most cost-effective remedies to meet the objectives of CERCLA and RCRA.

X. THE SELECTED REMEDY

Based on the findings of the RI/FS and the documents within the Administrative Record and the results of the public comment period, the selected remedy for each of the JDF components is as follows:

THE "1985" SITE: Compliance with the applicable requirements of RCRA which will include the components of Alternative 2. Since the "1985" site is not an NPL site, compliance with this remedial decision will be achieved through RCRA authorities. Alternative 2 components to be implemented include the following:

* Access restrictions which will promote the use of deed and land use restrictions to assure that future use of this site does not increase the release or potential release of hazardous substances to the environment or become dangerous to the life or health of people; a fence will need to be installed around the machinery used to gather the landfill gas, both for the protection of the people and of the machinery. A fence may need to be installed around the landfill gas collection wells, but this can not be determined until after the system is designed.

* An LFG extraction and flaring system that may later be converted into an energy converting system will be installed. The landfill gas extraction and flaring system will be designed during the Remedial Design stage, but may involve a number of LFG extraction wells which will be connected by a gas header pipe system to a mechanical blower, which in turn will create zones of low pressure within the landfill and induce gas flow into the wells.

* Improvements to the landfill cap including the upgrading of the cap to meet the requirements of WAC NR 504.07. (The PRPs have shown that with the WAC NR 504.07 cap, along with the improvements of the leachate collection system and the extraction and treatment of LFG, the performance standards of the WAC NR 504.07 landfill cap will meet or exceed the performance standards for the RCRA Subtitle C/WAC NR 181.44 (13) cap.) The cap for the 1985 site should be tied into the cap for the 1978 site.

* Continued monitoring including the monitoring of the groundwater and air, according to RCRA, and the long-term maintenance of the landfill cap.

* The repairing and/or the improving of the leachate collection system, as required by RCRA/WAC to assure that no more than one (1) foot of leachate exists above the bottom liner.

* "1985" site clean-up goals or standards:
  - meet the closure performance standards as stated within WAC NR 504.07,
  - meet RCRA requirements for post-closure and corrective action,
  - eliminate the risk caused by on-site and off-site breathing of contaminated air caused by the emissions of landfill gas, meeting the requirements of WAC NR 400 standards; and
  - repair and/or improve the leachate collection system to eliminate excessive head levels, (head levels will be no more than 1 foot above the bottom liner).

* Estimated Costs:

Estimated Construction Cost:	$2,949,000
Estimated Annual O&M Cost:	$39,500 - $142,000
Estimated 30 Year Present Net Worth:	$4,521,000

THE "1978" SITE: The selected remedy will include components of Alternative 4, including the following:

* Access restrictions which will promote the use of deed and land use restrictions to assure that future use of this site does not increase the release or potential release of hazardous substances to the environment or become dangerous to the life or health of people; a fence will need to be installed around the machinery used to gather the landfill gas, both for the protection of the people and of the machinery. A fence may need to be installed around the landfill gas collection wells, but this can not be determined until after the system is designed or until after the PRPs exercise their option to test out of the requirement to extract and treat the LFG as allowed by WAC NR 506.08(6) and address the potential for explosive gas migration.

* An LFG extraction and flaring system that may later be converted into an energy converting system. The landfill gas extraction and flaring system will be designed during the Remedial Design stage, but may involve a number of LFG extraction wells which will be connected by a gas header pipe system to a mechanical blower, which in turn will create zones of low pressure within the landfill and induce gas flow into the wells. The LFG system for the "1978" site may be tied into the system being recommended for the "1985" site and may also eventually be tied into a system which may be developed for the currently operating landfill across Black Bridge Road to the north. The PRPs have the option to test out of the requirement of implementing the LFG extraction and treatment system by demonstrating the performance criteria of NR 504.04(4) can be achieved, as allowed by WAC NR 506.08(6), and by demonstrating that the migration of explosive gases has been prevented. The test out procedures, if opted, will be conducted after the new cap is in place.

* Containment of the wastes and subsurface soils by upgrading the landfill cover to comply with the standards of WAC NR 504.07. The landfill cap for the 1978 site should be tied into the cap for the 1985 site.

* Continued groundwater and air monitoring.

* "1978" clean-up goals or standards:
  - meet WAC NR 504.07 capping/cover requirements,
  - eliminate the risks caused by the on-site and off-site breathing of contaminated air caused by the emissions of landfill gas by implementing the LFG extraction and treatment system or succeeding with the hazardous air contaminant test out procedures.

* Estimated Costs:
  Estimated Construction Cost: $3,993,000
  Estimated Annual O&M Cost: $52,500 - $135,000
  Estimated 30 Year Present Net Worth: $5,331,000
  (Estimated costs are assuming that the LFG extraction and treatment system will be implemented. The cost of the hazardous air contaminant test out procedures has not been estimated)

THE "1963" SITE: The selected remedy will include components of Alternative 5, the no action alternative. However, the following will still need to be implemented: (Since the "1963" site is not on the NPL, these requirements and any others which may arise in the future, are expected to be achieved through RCRA authorities.)

* Access restrictions which will promote the use of deed and land use restrictions to assure that future use of this site does not increase the release or potential release of hazardous substances

to the environment or become dangerous to the life or health of people.

* Continued groundwater monitoring.

* "1963" clean-up goals or standards:
  - None

* Estimated Costs:
  Estimated Construction Cost: Will have some costs
  Estimated Annual O&M Cost: associated with the
  Estimated 30 Year Present Net Worth: continued monitoring

THE JAB SITE: The selected remedy will include components of Alternative 8, including the following:

* Access restrictions which will promote the use of deed and land use restrictions to assure that future use of this site does not increase the release or potential release of hazardous substances to the environment or become dangerous to the life or health of people.

* The containment of wastes and subsurface soils by maintaining the present cap and upgrading the present cap and site drainage, as needed.

* Continue groundwater monitoring.

* Comply with all applicable RCRA requirements.

* Remove and properly dispose of the remaining ash pile located to the south of the JAB as per WAC NR 500 - 520. The ash is regulated as a solid waste as defined by Wis. Stats. 144.01(15)

* JAB clean-up goals or standards:
  - comply with RCRA post-closure and corrective action requirements,
  - assure cap is properly maintained and assure proper site drainage.

* Estimated Costs:
  Estimated Construction Cost: $75,000
  Estimated Annual O&M Cost: $14,100
  Estimated 30 Year Present Net Worth: $292,000

JDF GROUNDWATER: The selected remedy will include the components of Alternative 10 and components of Alternative 11, including the following:

* The provisions of Alternative 10 will promote the use of deed and groundwater use restrictions for the area between the JDF and the Rock River.

* The installation of groundwater extraction wells to intercept the groundwater contamination prior to it reaching the Rock River. The groundwater pump and treat system shall be constructed to allow sufficient pumpage to intercept groundwater from as far south as the Well 25 area and as far north as the Well 9/9A area.

* The development of a groundwater treatment system that will treat the VOCs in the groundwater by means of an air stripper or other approved technology, if needed. Air emissions from the treatment system will need to meet the standards of WAC NR 400 - 499. The groundwater extraction and treatment system will be designed during the Remedial Design stage and will take into account the system that may be installed immediately downgradient of the JDF, at the Parker Pen site. The groundwater may need to be treated for inorganics as well, if sampling determines that inorganics within the pumped groundwater exceeds federal or state standards. The treated water will then be discharged into the Rock River. The groundwater will need to be extracted and treated as long as the groundwater within, at, and downgradient of the JDF contains contaminants that exceed the WAC NR 140 standards. The treated groundwater will be required to meet the water quality standards or WAC NR 102, NR 104, NR 105, NR 106, NR 207, and the WPDES permit requirements of NR 200 and NR 220 prior to discharge into the Rock River.

* Continued groundwater monitoring.

* JDF Groundwater clean-up goals or standards:
  - Provide a groundwater extraction system that is as effective or more effective than the system proposed in the August 1989 Feasibility Study;
  - pump and treat the groundwater until no federal MCLs/WAC NR 140 exceedances exist between JDF and the Rock River;
  - prevent contaminated groundwater from reaching the Rock River,
  - eliminate the health risks associated with the contaminated groundwater, ie. contaminants over the federal MCLs/Wisconsin Enforcement Standards;
  - comply with RCRA post-closure and corrective action requirements;
  - meet surface water quality standards as per WAC NR 102, NR 104, NR 105, NR 106, NR 200, NR 208, and NR 220, with regards to the discharge of the treated groundwater into the Rock River; and
  - meet air quality standards as per WAC NR 400 - 499 with regards to the emissions associated with the treating of the contaminated groundwater.

* Estimated Costs:

Estimated Construction Cost:	$504,000
Estimated Annual O&M Cost:	$57,000 - $117,000
Estimated 30 Year Present Net Worth:	$2,184,000

XI. COMMUNITY ACCEPTANCE

No significant issues were raised during the public meeting to alter the components of the Preferred Alternatives. Changes to the preferred alternatives as stated in the Proposed Plan presented to the public, based on comments received from the public and the PRPs during the comment period and during the 60 day technical negotiation are discussed in Section VIII of this document. Individual comments and letters are summarized within Attachment 1, the Responsiveness Summary, attached to this document.

XII. STATE ACCEPTANCE

The letter stating the WDNR's acceptance of the U.S. EPA's Selected Remedial Action Alternatives is found as Attachment 2 to this document.

XIII. STATUTORY DETERMINATIONS

The selected alternatives for the Janesville Disposal Facility, as listed in Section VIII of this ROD, meet the statutory requirements in that they are protective of human health and the environment, attain ARARs, utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable and have a preference for treatment as a principal element, as described below:

Protection of Human Health and the Environment;

The selected remedy, a combination of alternatives addressing each individual site within the JDF, will be protective of human health and the environment through the use of land and groundwater use restrictions, containment of wastes and subsurface soils, and by the extraction and treatment of contaminated landfill gas and the extraction and treatment of the contaminated groundwater.

Protectiveness will be achieved by the upgrading of the caps for the "1985" and "1978" sites and by assuring the proper maintenance and drainage control for the JAB. (Based on the findings of the RI, a cap upgrade was not deemed necessary at this time for the "1963" site). Cap upgrades and proper maintenance practices are reliable methods to alleviate the direct contact threat from the site's contents and will also help in reducing leachate generation, thereby reducing the amount of contamination reaching the groundwater. Since untreated wastes will remain within the sites, the groundwater will continue to be monitored to ensure the protectiveness of the selected remedies.

Protectiveness will also be achieved by the extraction and treatment of the contaminated landfill gas at the "1985" and "1978" sites (the PRPs may exercise their option and elect to try to test out of the need to implement the LFG extraction and treatment at the "1978" site by following the hazardous air contaminant procedures as allowed by WAC NR 506.08(6) and by demonstrating that the migration of explosive gases has been prevented) and of extraction and treatment of the contaminated groundwater downgradient of

JDF, between JDF and the Rock River. By treating the landfill gas and the groundwater, the risks associated with the respective contamination will be greatly reduced, if not eliminated. The extraction and treatment remedies are reliable methods to assure the protectiveness of human health and the environment.

The access/land use restrictions and the groundwater use restrictions implemented by the selected alternatives will aid in achieving the protectiveness of human health and the environment. The restrictions will reduce the likelihood of activities occurring on-site that may damage the sites' caps and will prohibit the installation of water supply wells in the area occupied by the JDF and between the JDF and the Rock River.

There will be no unacceptable short-term risks or cross-media impacts caused by the implementation of the selected remedies.

Attainment of ARARs;

The selected remedies will be designed to meet all the applicable, or relevant and appropriate requirements (ARARs) of Federal and more stringent State environmental laws. A list of the probable ARARs for the JDF sites is listed within the FS. The primary ARARs that will be achieved by each of the selected alternatives for the individual sites are as follows. Each ARAR is designated as either applicable or relevant and appropriate.

Closure Requirements:

"1985" Site;

* capping requirements as stated in WAC NR 504.07. (U.S. EPA, in consultation with the WDNR, determined that the WAC NR 504.07 cap in conjunction with the improvements to the leachate collection system and the extraction and treatment of LFG, the ARARs of RCRA Subtitle C will be obtained.)
* monitoring, long-term care and closure requirements as required under RCRA/WAC NR 181,
* are all applicable to the "1985" site.

"1978" Site;

* capping requirements as stated WAC NR 504.07,
* monitoring and proper cap maintenance will follow standards stated in WAC NR 508 and WAC NR 514,
* are applicable to the "1978" site.

"1963" Site;

* there are no capping ARARs for the "1963" site, but cap improvements as called for by RCRA corrective action for solid waste management units as determined by 40 CFR 264 may be applicable.

JAB Site;

* capping requirements with proper cap maintenance as stated in WAC NR 181 are applicable.

Contaminated Air Concerns:

"1985" Site;

* National Primary and Secondary Ambient Air Quality Standards as referred to by 40 CFR 50, regarding the particulate standards that apply to dust generating construction activities,
* WAC NR 400 series regulations covering the range of Wisconsin air quality requirements,
* Performance standards regarding the control of landfill gas emissions as stated in WAC NR 504.04(4)(e) and (f) and the design criteria as outlined in WAC NR 504.05(7) and (8),
* landfill closure requirements as stated in WAC NR 506.08(6) requiring landfill gas control/treatment system in landfills with more that 500,000 cu yds of waste, and
* the gas monitoring requirements as stated in WAC NR 508.04(2), requiring landfill gas monitoring to assess gas migration and the effectiveness of any landfill gas control system,
* are applicable.

"1978" Site;

* same as for the "1985" site.

JDF Groundwater;

* Control of hazardous pollutants as stated in WAC NR 445, which establishes hourly or annual emission rate limits for specific substances.
* is applicable

Contaminated Groundwater concerns:

JDF Groundwater;

* MCLs as called for by the Safe Drinking Water Act, to be met within and at the JDF and between the JDF sites and the Rock River,
* Enforceable limits for substances in groundwater released from a solid waste management unit permitted under RCRA, as stated in 40 CFR 264.94,
* Groundwater quality standards as stated in WAC NR 140, and
* Groundwater monitoring to be conducted at all the sites as per RCRA closure and corrective action requirements, as stated in 40 CFR 264 requirements and within WAC NR 140/141 and NR 508, are applicable to the groundwater contamination found at the JDF.

Surface Water Concerns:

JDF;

* Surface water quality standards set forth in WAC NR 102 for the discharged treated groundwater,

* WAC NR 104, 105 and 106 standards regarding criteria for acceptable discharge limits as well as the limits set forth in WAC NR 217/220, and
* Federal NPDES Regulations as stated in 40 CFR 122, 125 and 131,
* are applicable to the discharge of the treated groundwater from the JDF sites.

Cost Effectiveness;

Since the JDF contains two RCRA regulated facilities, and the other two sites within the JDF are RCRA solid waste management units, cost effectiveness is not of major concern in choosing remedial actions for portions of the JDF covered under RCRA authorities. However, the selected remedies for the JDF are considered cost effective when compared to alternatives not chosen, which may have had a similar or greater degree of protectiveness to the environment and to public health. For instance, Alternative 12, in-situ groundwater treatment, yields results similar to Alternative 11, groundwater extraction and treatment, but Alternative 11 was chosen because it is estimated to be half as costly as Alternative 12. Also, the maximum cap upgrades were not chosen for any of the JDF units, while the performance standards will still be achieved, so the selected alternatives are certainly more cost effective than some of the capping alternatives not selected. The total cost for the selected remedies at the JDF are estimated for a 30 year present net worth at nearly $12 million dollars. The costs, however, will cover the remedies for all four sites within the JDF and will address the groundwater and air contamination problems caused by the JDF site.

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

The alternatives chosen represent the best balance of alternatives evaluated to address the contamination problems found at the JDF. By extracting and treating the landfill gas at the "1978" and the "1985" sites, the potential health threats to neighboring residents will be drastically reduced, if not totally eliminated, and the extraction and treatment of the groundwater between JDF and the Rock River will offer added protection to public health and the environment. The capping alternatives chosen are not permanent remedies, and will require appropriate amounts of monitoring and maintenance to assure the effectiveness of the cap. The land use and groundwater use restrictions implemented by the selected remedies will further assure added protection to the public health and the environment. The selected remedies represent the maximum extent to which permanent solutions and treatment can be practicably utilized for this action. Due to the large quantities of waste within the JDF units, (except for the JAB, in which most of the wastes have been removed), and the discovery of no "hot spots" within the landfills, alternatives involving the treatment or removal of the wastes were deemed impracticable and were not carried forward.

Preference for Treatment as a Principal Element;

The contamination of the air by the landfill gas and the contamination of the groundwater were identified in the Remedial Investigation as being the principal threats posed by the JDF site. The selected alternatives give preference to treatment in that both the groundwater and the landfill gas contamination problems will be addressed via treatment technologies. The groundwater will be extracted and treated by air stripping (Alternative 11) and the landfill gas will be extracted and treated by flaring (Alternatives 2 and 4).

XIV. SUMMARY

The presence of groundwater contamination and the emission of contaminants via landfill gas at and around the Janesville Disposal Facilities, requires that remedial actions be implemented to reduce the risk to public health and the environment. The U.S. EPA believes, based on the RI/FS and the Administrative Record, that the selected alternatives provide the best balance of trade-offs among alternatives with respect to the criteria used to evaluate the remedies. Based on the information available at this time, the U.S. EPA believes that the selected remedy will be protective of human health and the environment, will attain ARARs and will utilize permanent solutions and alternative treatment technologies of resource recovery technologies to the maximum extent practicable.

The total estimated costs for the Remedial Action at the four sites that comprise the JDF are as follows:

"1985" costs, Alternative 2:
- Estimated Construction Cost: $2,949,000
- Estimated Annual O&M Cost: $39,500 - $142,000
- Estimated 30 Year Present Net Worth: $4,521,000

"1978" costs, Alternative 4:
- Estimated Construction Cost: $3,993,000
- Estimated Annual O&M Cost: $52,500 - $135,000
- Estimated 30 Year Present Net Worth: $5,331,000

"1963" costs, Alternative 5:
- Estimated Construction Cost:
- Estimated Annual O&M Cost:
- Estimated 30 Year Present Net Worth:

Will have some costs associated with the continued groundwater monitoring.

JAB costs, Alternative 8:
- Estimated Construction Cost: $75,000
- Estimated Annual O&M Cost: $14,100
- Estimated 30 Year Present Net Worth: $292,000

JDF Groundwater, Alternatives 10 and 11:
- Estimated Construction Cost: $504,000
- Estimated Annual O&M Cost: $57,000 - $117,000
- Estimated 30 Year Present Net Worth: $2,184,000

Total Estimated costs of the Selected Alternatives:

Total Estimated Cost for RCRA (non-CERCLA/NPL) selected alternatives (Includes Alternative 2 for the "1985" site, and Alternative 5 for the "1963" site):

Estimated Construction Cost: $2,949,000
Estimated Annual O&M Cost: $39,500 - $142,000
Estimated 30 Year Present Net Worth: $4,521,000

Total for CERCLA/NPL selected alternatives (Includes Alternative 4 for the "1978" site, Alternative 8 for the JAB, and Alternatives 10 and 11 for the JDF groundwater contamination):

Estimated Construction Cost: $4,572,000
Estimated Annual O&M Cost: $124,100 - $266,100
Estimated 30 Year Present Net Worth: $7,807,000

Total for all JDF selected alternatives (including Alternative 4 for the "1978" site, Alternative 8 for the JAB, Alternatives 10 and 11 for the JDF Groundwater and Alternative 2 for the "1985" site and Alternative 5 for the "1963" site):

Total Estimated Construction Costs: $7,521,000
Total Estimated Annual O&M Costs: $163,600 - $408,100
Total Estimated 30 Year Present Net Worth: $12,328,000

ATTACHMENT 1

RESPONSIVENESS SUMMARY

JANESVILLE DISPOSAL FACILITY
(INCLUDING THE JANESVILLE ASH BEDS AND THE OLD JANESVILLE LANDFILL)
JANESVILLE, WISCONSIN

The U.S. Environmental Protection Agency (U.S. EPA) has gathered information on the types and extent of contamination found, evaluated remedial measures, and has recommended remedial actions to address the contamination found at and near the Janesville Disposal Facility. The Janesville Disposal Facility consists of two sites included on the National Priorities List (NPL), the Janesville Ash Beds and the Old Janesville Landfill and two contingent sites, the Janesville Old Dump and the New Janesville Landfill. The Janesville Ash Beds site and the New Janesville Landfill are also regulated under the Resource Conservation and Recovery Act (RCRA). As part of the remedial action selection process, a public meeting was held on August 30, 1989 to explain the intent of the project, to describe the results of the Remedial Investigation and Feasibility Study, and to receive comments from the public.

Public participation in Superfund projects is required by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Comments received from the public are considered in the selection of the remedial action for the site. The Responsiveness Summary serves two purposes: to provide the U.S. EPA with information about community preferences and concerns regarding the remedial alternatives and to show members of the community how their comments were incorporated into the decision-making process. Comments regarding information specifically contained in the Remedial Investigation/ Feasibility Study (RI/FS) are not addressed in this Responsiveness Summary as this information is contained in the reports available in the Janesville Library and at the Janesville Municipal Building. Also, comments not directly related to the selection of the remedial alternatives have not been addressed within the Responsiveness Summary.

This document summarizes the oral comments received at the public meeting held on August 30, 1989, and the written comments received during the public comment period running from August 21 through September 15, 1989. The Steering Committee, representing the concerns of the Potentially Responsible Parties (PRPs), requested an additional 5 days to complete and review its comments and concerns, and the extension was granted. Please refer to Appendix A for a complete list of commentors.

The comments have been summarized and are as follows:

Comment 1: The Rock County Health Department did a risk assessment regarding groundwater protection in the county and this [the Janesville Sites] is one of the higher risks, in the top five, but underground storage tanks was the highest risk in the county. I believe that if money is to be spent, it should be spent to eliminate the highest risk, to prevent more of these problems from occurring in the future.

Response 1: The U.S. EPA agrees that preventing further contamination, such as that which is caused by leaking underground storage tanks, is a priority and the U.S. EPA and many states, including the State of Wisconsin, have set up programs to deal with these issues. Superfund was created to address contamination from much larger sources, such as the JDF, that can have a greater impact on public health and the environment than the impact that may result from a smaller source such as underground storage tanks. Superfund is set up in such a way that those who are responsible for the contamination are those that pay for the remedial action to address the contamination. Only when no responsible parties are available, are government funds expended on the remedial action. The money used for Superfund actions is derived from a separate taxing revenue than the funds that are used to address non-Superfund issues such as leaking underground storage tanks.

Comment 2: I would like to comment that given the things that have been dumped into these facilities over the years, I think it's a given that we were going to end up with polluted groundwater and air now. We've got to clean it up. I live up here, and I'm concerned about it. I'm glad I'm not a responsible party, but maybe I am in my own little way. I think we all are and we should clean it up. I strongly recommend the alternatives your office is recommending namely; "1985 site" Alt. 2, "1978 site" Alt. 4, "1963 site" Alt. 6, "JAB site" Alt. 8 and "JDF Ground Water" Alt. 10 & 11. We cannot pick less than the best method when we are trying to clean up our water, soil and air. Alternative 11 of the "JDF Ground Water" bothers me concerning the air contamination from the water treatment process. We don't need any added contamination to the air in our neighborhood.

Response 2: Thank you for your support. On the issue of air contamination, Alternative 11 will involve the extraction and treatment of the contaminated groundwater between the JDF and the Rock River. By treating the groundwater, the organic contaminants are transferred from the groundwater to the air. The emissions are expected to be low, but will be monitored. If the levels emitted are causing a risk to the public health or the environment, additional control measures will be taken such as adding an air scrubber or other source of adsorption to the treatment system. As a note, the alternative chosen for the "1963" site was changed to Alternative 5, the no action alternative for reasons described within the ROD document.

Comment 3: One of the things that bothered me when I was reading through all the literature on this is that I didn't see much emphasis on costs or risk benefit analysis. I don't think we should squander our resources, whether they be natural resources, human resources or financial resources. We need to make the best of these resources and I'm not sure that what has been proposed is the best use. I'm not condemning it. I don't know enough about it yet. The groundwater clean-up should be done in a cost-effective manner, and it ought to be monitored, and not done when it is unnecessary. I question as to whether the landfill gas flare or recovery is necessary in order to meet air quality for the surrounding area. I believe more air quality monitoring be done before any decision is made either to go ahead with the proposal for recovery/flaring or to not go ahead. And with regard to the proposals to replace substantially and at great expense, the caps at

the various sites, I think it might be money better spent in monitoring to see if, in fact, any problem is being generated and to only maintain the existing caps. If there is a problem, do something about it but spend the money wisely and if there is no problem, don't fix it.

Response 3: See Response for Comment #4

Comment 4:

A) We believe that the air and water hazards as a result of the sites have not been proven at this point, and further investigative work remains to be done before considering actions as drastic and expensive as those in the fact sheet and discussed at the August 30 meeting. We recommend getting the most effective treatment of the problem, without investing money on minimal return areas which are not a significant problem or threat to the public health. While it is recognized that the EPA guidelines for alternative selection does not place emphasis on cost, any rational analysis must weigh cost versus benefit prior to making final choices. We recommend to base treatment on actual monitoring of concentration of contaminants migrating off site, while allowing natural processes to degrade the material on site.

B) With regards to the treatment of groundwater, decisions should be based on the results of on-going tests, and taking into account the actual and likely uses of the water, the groundwater should be treated when and if required, such as when the contamination is reaching the Rock River in sufficient volume to exceed surface water quality standards. If the concentration of the contaminants in the groundwater shows a steady increase with time, then we should start with the treatment of the groundwater. Likewise, when the time trends show a downward trend, treatment should cease, thereby treating only when needed. Since we are dealing with natural processes of decay and dissipation of a large volume of material, the time periods in which we can observe any trends or changes of significance are long. Monitoring should be done quarterly, but the data needs to be viewed in terms of 1 to 5 year intervals to observe trends, and to accurately predict when natural processes have slowed to a normal or background level, and no further precautions are needed. A panel made up of representatives from industry, residential, county and state groups can all participate to view the data that is collected.

C) With regard to the air quality issues, more work needs to be done, such as determining "what is the volume or mass of material being emitted versus time?" and "what is the concentration offsite?." If this further work shows no significant health hazard is likely to occur offsite, and the access to the site itself is properly restricted, there would appear to be no immediate justification for any action beyond periodic monitoring. If it is shown that a significant health quality issue is at hand for persons offsite, and that access restrictions will not provide adequate safety measures, then the gas vents should be evaluated in order of their severity, and be flared or burned at a raised vent cap or burner site. If it can be shown that there is a real and significant hazard to populated areas beyond the JDF site boundaries from the landfill gas in the near term, then further action on gas recovery or flaring would be initiated. In reviewing the

various reports, we were not able to establish a correlation between the data and any significant health risks from landfill gas beyond the overall site boundaries. Obviously, it is important that the actual measurements be taken prior to any decisions on treatment.

D) Unless the off-site landfill gas hazard can be proven immediately, we strongly urge that the recommendations within this letter be adopted, establishing monitoring stations prior to any action on flaring of landfill gases, and providing a groundwater monitoring-driven approach to groundwater treatment.

E) Specifically, for each of the sites within JDF, we recommend the following:

OVERALL SITE: Restrict access through use of a combination of physical barriers and "no trespassing - hazardous area" signs at all points of convenient entry, as well as enforcement as required by local law enforcement. Groundwater-use restrictions should be continued as discussed in the EPA's Preferred Alternative. These restrictions should remain in force as long as water quality does not meet the applicable standards.

1963 Site - No action beyond that already proposed under "overall site". this area is already becoming a less active site through natural processes. Monitoring condition, restricting access, and maintaining the cap as required to prevent serious deterioration are the main components of this action.

JAB SITE: - No action beyond that already proposed under "overall site". The existing business at this site must continue to comply with regulations and not take any actions which would worsen the situation. Need to monitor condition and restrict access.

1978 SITE: - No action beyond that already proposed including monitoring condition and restrict access.

1985 SITE: - No action beyond that already proposed under "overall site". Maintain existing devices for controlling pollution in working order, and monitor condition and restrict access.

Response 4:

A) The U.S. EPA believes that the Remedial Investigation (RI) conducted at the site over the last several years along with the other documents comprising the Administrative Record, provides the necessary data to initiate the remedial actions called for in the Proposed Plan and subsequently in the Record of Decision. Some changes have been made to the alternatives as presented within the Proposed Plan as a result of the comment period. These changes are documented within the ROD.

Cost is an evaluation factor, even though it was given somewhat less emphasis in this case with respect to units being addressed through RCRA authorities, throughout the Remedial Alternative selection process. Cost is

a factor only when two or more alternatives provide similar results, then the more cost-effective approach is chosen. With regards to weighing costs compared to the benefits that are achieved with a certain remedial alternative; this is not considered an evaluation criteria as to whether or not to address a contamination problem that exceeds state and/or federal standards. In the case of the Janesville Disposal Facility, state and federal standards are exceeded with regards to groundwater contamination and landfill gas emissions. Therefore, these problems must be addressed, as they are addressed at all landfills, regardless of cost/benefit ratios. CERCLA expresses a preference for remedies that employ treatment that permanently and significantly reduces the mobility, toxicity, or volume of hazardous substances as a principal element. Emphasis is placed on destruction or detoxification of hazardous materials rather than on protection strictly through prevention of exposure or monitoring.

B) Based on the results of the RI Report, the U.S. EPA has concluded that the contamination in the groundwater must be addressed. Even though the affected groundwater is not currently being utilized for drinking water, the aquifer is designated as an aquifer potentially available for supplying drinking water, and therefore, contamination must be addressed in order to meet ARARs (Applicable or Relevant and Appropriate Regulations). If several remedial alternatives achieve the standards set by the ARARs, then the most cost-effective approach, while still achieving ARARs, will be selected. With regard to the continued monitoring of the groundwater, it is required that if waste materials remain onsite, with or without groundwater extraction and treatment, monitoring must continue to keep track of the contamination emanating from the site.

C) Based on the results of the RI Report, the U.S. EPA has concluded that the contamination caused by the release of contaminated landfill gas from the "1985" site and the "1978" site, needs to be addressed by recovery and treatment methods. The Endangerment Assessment within the RI Report has stated that the health risks associated with the release of contaminants along with the landfill gas are above levels considered safe for humans to breathe if onsite near the source. The PRPs do have the option available to them to try to test out of the landfill gas extraction and treatment requirements at the "1978" site, after the new landfill cap is in place, by following Wisconsin's hazardous air contamination test-out procedures. As stated above in part A of this response, CERCLA expresses a preference for remedies which employ treatment that permanently and significantly reduces the mobility, toxicity, or volume of hazardous substances as a principal element. Emphasis is placed on destruction or detoxification of hazardous materials rather than on protection strictly through prevention of exposure. More work is required prior to the actual implementation of the landfill gas extraction and flaring system, but this work will be conducted during the design phase of the system and will determine aspects such as the flow rates of gas and contaminants out of the vents, percentage of methane, and if additional fuel sources will be required. With regard to determining the actual risk to people breathing the air immediately offsite or in the adjacent neighborhoods, continued monitoring is still required since the source of the contamination is remaining onsite. Also, by eliminating the high risks associated with the on-site air contamination, any risks offsite

will also be eliminated. Sampling the air away from the source area and determining an accurate health risk is difficult, since air never travels in a straight path, so additional sampling offsite at the present time may not provide any significant additional data to support or refute the decision to recover and treat the landfill gas at the source.

D) Refer to responses in parts A, B, and C of this response.

E) Overall Site: U.S. EPA agrees that access/land use and groundwater use restrictions are needed for the protection of human health and welfare. U.S. EPA also believes that groundwater extraction and treatment is warranted for the reasons stated above.

1963 Site: U.S. EPA's selected remedy is similar to the one mentioned in this comment. After the comment period, the preferred alternative for the "1963" site was changed from Alternative 6 to Alternative 5, the no action alternative, for reasons as stated within the ROD. Continued monitoring and access/land use restrictions will still apply to this site as with the entire JDF site.

JAB Site: U.S. EPA's preferred remedy is similar to the one mentioned in this comment. Combining site restrictions with the continued compliance with the applicable RCRA requirements. In addition, the preferred remedy calls for the removal of the existing ash pile located to the south of the JAB along with the continued maintenance of the JAB cap.

1978 Site: Based on the results of the RI, the U.S. EPA still insists that the present cap on the 1978 Site needs to be upgraded to meet the relevant and appropriate requirements of Wisconsin Administrative Code (WAC) NR 504.07 (the regulations governing the capping and closing of landfills).

1985 Site: Based on comments received during the comment period and the ability of the potentially responsible parties (PRPs) to show that the WAC NR 504.07 cap, along with the repairs and improvements to the leachate collection system and the installation of the landfill gas extraction and treatment system, can meet or exceed the standards called for by RCRA Subtitle C/WAC NR 181.44 (13) (the regulations governing the capping and closing of landfills, but more strict than the WAC NR 504.07 regulations), the selected alternative has changed from the alternative presented within the Proposed Plan. The WAC NR 504.07 cap, however, is more stringent than the RCRA Subtitle C/WAC NR 181.44(12) cap for interim status facilities, in that it provides for a frost protection soil layer. Refer to the ROD, Section VIII for an explanation of these changes.

Comment 5: Many letters (see Appendix A) contained concerns relating to the amount of money to be spent to either satisfy some regulation or to be spent without a proper cost/benefit ratio. They asked how can EPA enforce these regulations, costing up to $17 million, even when the sites were legally operated and closed under the regulations existing at that time? Why not monitor the situation and implement a remedy later if it is shown to

be endangering human health or the environment?

Response 5: Aspects of this comment are covered within the response above for Comment 4, dealing with the reasoning behind the selection of the preferred remedies involving treatment of wastes and the addressing of the cost/benefit issue. With regards to the overall cost and the burden that may be felt by the citizens of Janesville, the U.S. EPA feels that the cost estimate is just that, an estimate, and most likely the actual cost will be somewhat lower. After the proposed alternatives were revised based on comments received and discussions with the PRPs, the implementation of the selected remedies will cost an estimated $12 million. In addition, the estimated cost is carried over the estimated time period of 30 years, including the implementation and operation and maintenance of the selected remedies. Another point to make is that this cost is covering not one site, but is addressing the concerns of four separate sites, while the overall groundwater issue can even be considered as a fifth site. While it is true that the City of Janesville is considered a PRP in this matter, (under the CERCLA statute, owners/operators along with generators and transporters of hazardous substances are held liable for the release or potential release of hazardous substances into the environment) the total financial burden of the remedial action will not fall solely on the citizens of Janesville. It is uncertain as to how the PRPs will plan on dividing the costs, but as with the RI/FS, there were 15 parties cooperating in financing the investigation.

Due in part to the number of letters with the concerns of over spending with little benefit and to a provision in an agreement between the U.S. EPA, WDNR and the PRPs, these issues were discussed with the PRP Steering Committee during a 60-day period prior to the signing to the ROD. The remedies as stated in the ROD have been revised somewhat to reflect these concerns. Please refer to Section VIII of the ROD for further details.

Comment 6: We agree with the preferred alternatives selected for the JDF except for the alternative presented for the 1985 landfill, a RCRA-regulated unit which is subject to RCRA corrective action. Specifically, we do not agree that a 40 CFR Part 264 cap (RCRA Subtitle C requirements as mentioned in the Code of Federal Regulations) is appropriate or required for this site. We believe that the groundwater monitoring and corrective action requirements of Part 264 apply to this facility, but we do not agree that the Part 264 capping requirements should be required for this site. Under Part 264 corrective action, we believe that upgrading the cap to meet WAC NR 504 requirements, enhanced leachate collection and possibly groundwater extraction, will remedy the problem of high leachate levels in the landfill and mitigate potential groundwater impacts from this unit.

Response 6: As a result of the 60-day period used to discuss the remedial action options between the U.S. EPA, WDNR and the PRP Steering Committee, this issue was addressed. U.S. EPA stated that the Part 264 cap is not an ARAR but may still be required as part of RCRA corrective action. It was determined that if it can be shown, by the PRPs, that the WAC NR 504 cap and the leachate collection system improvements combined will achieve similar or better results than the cap as per Part 264, then the U.S. EPA will agree with your comment.

Comment 7: For the reasons cited below, the EPA's preferred remedies for the 1985 site, the 1963 site, and the groundwater remediation are inappropriate, impractical and overprotective. In addition, the EPA has improperly de-emphasized cost as a factor to be considered in its selection of preferred alternatives. For these reasons, the Committee disagrees with the Agency's selection of preferred remedies for these sites and requests that the Agency modify its alternative selections in light of the following comments. In connection with each of its comments, the Steering Committee will propose an alternative remedial action which is appropriate, practical, cost effective and protective of human health and the environment.

A) "1985" SITE: The EPA's preferred remedy of a new cap for the 1985 site is inappropriate, impracticable, not required by law and not cost effective. The preferred remedy identified in the Proposed Plan for the 1985 Site is the installation of a new cap conforming to Wisconsin WAC NR 181.44(13). This proposed remedy is not required to protect human health and the environment, is not practicable, is not an applicable requirement under RCRA or CERCLA, and is not cost effective for the site conditions. For the following reasons the EPA's preferred remedy is not justified and should be modified.

1) There is no evidence that the 1985 site is a source of contamination sufficient to justify a corrective action consisting of a totally new RCRA closure cap on the site. There are three bodies of evidence in the RI/FS which indicate that the 1985 site is not the source of the contamination. First, there is evidence that wastes are mixed with the soils between the 1978 and the 1985 sites. The valley between the 1978 and 1985 sites received clean fill during site operations. However, waste may have blown or eroded from the sites and mixed with fill in the valley. Soil sampling while installing well 1R has indicated this. Groundwater quality at well 1R could be affected by infiltration of rainfall through the waste present in the soils or by the unlined 1978 site. Therefore, well 1R is likely not monitoring the effectiveness of existing engineering controls at the 1985 site. A new NR 181.44(13) cap over the 1985 site would not have any effect on minimizing contamination from waste which is outside the limits of the 1985 site. A more appropriate remedy for this condition would be to tie the 1978 site cap into the 1985 cap to cover the area between the two sites.

2) A comparison of VOCs detected at well 1R and VOCs detected in leachate from the 1985 site indicates the 1985 site is probably not the source of the well 1R contaminants. Benzene, ethylbenzene, xylene, toluene and 1,2,-Dichloroethene were detected in well 1R and in leachate from the 1978 site. They were not detected in leachate from the 1985 site. This is strong evidence that any contamination in well 1R is due to the 1978 site and not the 1985 site. A new cap on the 1985 site would not help to remediate these contaminants.

3) Groundwater quality at wells 3 and 4, located south and downgradient of the 1985 site was similar to groundwater quality upgradient of the site at wells W14, W29 and W29A. This indicates that groundwater quality problems between the 1978 and 1985 sites are localized and not related to the 1985 site. The extent and source of any groundwater contamination between the two sites should be established before a decision

is made that a new cap on the 1985 site is necessary. Again, tying the 1978 cap to the 1985 cap as part of the repair would remediate this localized problem.

The evidence from the RI/FS leads to the conclusion that the well 1R contamination was most likely due to the unlined 1978 site which is adjacent to well 1R. While the proximity of the 1978 and 1985 sites makes it virtually impossible to confirm that a particular contaminant originated from a specific disposal area, common sense as well as the expert opinion of Warzyn Engineering clearly indicates that the 1978 site or the waste mixed with the soils between the two sites is the most likely source of the well 1R contaminants. Thus, the available evidence does not support the selection of an NR 181.44(13) cap as the appropriate corrective action for the 1985 site. The appropriate action for the 1985 site is the inspection and maintenance of the existing NR 181.44(12) cap.

4) The EPA's preferred remedy is not practicable and would not be a reliable long term remedy for the 1895 site because of the site conditions. NR 181.44(13) requires that the vegetated top cover have slopes no steeper than 25%. Slopes on the southern sides of the site are greater than 33%. Slopes on the western side of the site are greater than 25% and range to greater than 33%. As a result, cover soils are likely to slide off of or erode from the synthetic liner. Regrading is impractical. Again, the appropriate and practical remedy would be to repair the existing cap and extend the cap to cover the area between the 1978 and 1985 sites.

5) The existing cap meets or exceeds State and Federal landfill closure regulations as set out in 40 CFR 265.10 and WAC NR 181.44(12). The federal regulations for a cap on a RCRA facility require that the cap have a permeability equal to or less than the permeability of the liner of the facility. The existing cap meets these requirements. WAC NR 181.44(12) requires a cap for interim status RCRA facilities to be at least 2 feet of compacted clay with a vegetative cover. The existing cap also meets or exceeds these requirements. The site was closed as a waste disposal facility in 1985 under an approved closure plan, approved by the WDNR in 1986. Therefore, neither the EPA nor the WDNR can require a new closure at this time in the absence of a showing of non-compliance with the existing closure plan or further use of the site as a placement or disposal facility. A new cap on the site is neither appropriate nor required.

6) The EPA improperly failed to consider cost in the selection of its preferred remedy. As EPA states in the Proposed Plan, cost will become a determining factor for RCRA remedial actions when two or more alternatives achieve the same goal. Neither the EPA nor the WDNR cite any evidence that the existing cap after repair would not achieve the same goal as an NR 181.44(13) cap. The EPA's choice of the NR 181.44(13) cap seems to be based on the "more is better" theory rather than on any technical justification. In the absence of a demonstrated difference in the ability of one cap over another to achieve the required goals, cost must be considered.

7) Caissons are not needed to remediate the leachate collection system. The RI suggested that more than one foot of leachate is present on the liner at the 1985 site. The Proposed Plan therefore recommends leachate be removed using caissons. Leachate withdrawal could be accomplished without installing caissons. Thirteen landfill gas extraction wells are included in the conceptual design for the landfill gas extraction system and

these wells could be utilized as wells to withdraw leachate in conjunction with the already-present leachate collection system. Both leachate and landfill gas could be removed using this system. This would effectively reduce the potential for environmental degradation by: 1) reducing leachate head on the liner and therefore, the potential for leakage through the liner; 2) reducing the volume of landfill gas contaminants released to ambient air; and 3) reducing the concentrations of VOCs in waste and leachate by withdrawing VOCs along with the landfill gas.

B. "1963" SITE: The EPA's preferred remedy for the 1963 site is impractical and inappropriate for the site conditions. Although it is unclear from the language of the Proposed Plan exactly what type of cap upgrade the EPA prefers for the site, it would appear from the cost estimates in the Proposed Plan that the EPA prefers upgrading the cover to NR 500 landfill closure standards. The proposed remedies are not appropriate and impractical for the following reasons:

1) An upgraded cap at the 1963 site is inappropriate because of the nature of the wastes remaining at the site. Primarily municipal wastes were disposed of at the site and combustible wastes were burned before burial. The wastes have been buried at the site for over 25 years. There is no documentation that hazardous wastes were ever disposed of at the site, and for the reasons stated above, it is concluded that the concentrations of any contaminants in the remaining waste are very low. Leachate was not present in either leachate well onsite. Soil samples collected beneath the site at both locations did not show detectable TCL (Target Compound List) organics. This demonstrates that the potential for groundwater contamination from the site is negligible.

The JAB occupies approximately 4 acres of the 1963 site and is already capped under WDNR approved closure plan. The available evidence indicates that any contamination coming from the 1963 site area is due to the operation of the JAB, which ceased in 1985. Adding a new cap over the 1963 site would have no effect on this residual contamination. Since a new or enhanced cap would destroy current site usage, and since there is no evidence that the 1963 site is the source of on-going contamination, the EPA's preferred remedy is inappropriate for the site and would not be an effective remedy.

2) An upgraded cap on the 1963 site is impractical due to current site conditions. JAB occupies approximately 4 acres of the 1963 site and is already capped. The remainder of the site is privately owned by a commercial recycling facility with approximately 4.5 acres of the facility's property being heavily wooded and approximately 6 acres being used for recycling operations. Another 2 acres of the site is covered with recyclable asphalt. Upgrading the cap would require the destruction of the wooded area and demolition of the recycling facility which would inflict financial costs on the present owner. The nature of the existing conditions at the site make construction of an upgraded cap over the entire site impracticable.

The appropriate remedial action for the 1963 site would be careful evaluation of the existing cover and improvement of drainage conditions as needed. A drainage system for the area could be designed which would

improve surface water drainage without destroying the existing land uses. A requirement that a full new cap be added to the site is impractical and inappropriate.

C. GROUNDWATER REMEDIATION: The proposed pump and treat system is unwarranted given the lack of risk associated with the groundwater. The Agency's proposed plan for addressing groundwater contamination at the JDF calls for both institutional controls on the use of groundwater downgradient of the JDF and groundwater extraction and treatment. We find the use of a pump and treat solution at this site is unnecessary given the absence of risk associated with the potential use of this groundwater and the data upon which this proposed remedy is based. We list the following reasons why the Agency's proposed remedy is unwarranted:

1) CERCLA and RCRA require that a site remedy be based on the risk presented to human health and the environment. This is the principal reason for performing the detailed endangerment assessment within the RI/FS. By knowing what risks need to be reduced, a remedy can be crafted that appropriately addresses these risks, if any. Failure to tailor the remedy to the risks presented at a site can result in remedies that are either underprotective or, as in this case, remedies that are clearly overprotective.

The requirement that the Agency use a risk-based remedy selection process is clearly set forth in the 1986 amendments to CERCLA. The statutory language repeatedly refers to the selection of a remedy that is based on the "short- and long-term potential for adverse health effects from human exposure" and is "protective of human health and the environment." Moreover, in selecting a remedy, the statute again incorporates a risk-based standard by specifically requiring that the cleanup shall "assure [] protection of human health and the environment" and that the remedial actions be "relevant and appropriate under the circumstances." Indeed, in selecting applicable or relevant and appropriate cleanup requirements, the proposed NCP (National Contingency Plan) recognizes that several criteria must be weighed, including the characteristics of the site and circumstances of the release. Finally, EPA's draft guidance documents state that, in selecting a remedy that is "protective" of the environment under CERCLA Section 121, EPA's approach involves a "risk assessment" that "includes consideration of site-specific factors such as ....potential for exposure..."

With respect to groundwater remediation, the Agency, under CERCLA, is specifically allowed to develop alternate groundwater concentration limits where, inter alia, institutional controls prohibit the use of groundwater for drinking-water purposes, and the discharge of the groundwater has an insignificant effect on a nearby water body. By incorporating this concept into the cleanup standard section of the statute, Congress clearly intended groundwater remedies to be particularly sensitive to risk or lack thereof associated with the contamination. The proposed NCP recognizes this intent by setting forth (i) a groundwater classification scheme, (ii) restoration time periods and (iii) technologies to achieve groundwater cleanup based, inter alia, on the use of the groundwater, the potential for human exposure and the effectiveness of institutional controls. In addition, in the Interim Final Guidance on Remedial Actions for Contaminated Groundwater at

Superfund Sites, the Agency recognizes that natural attenuation "may be the most practicable response" where the contamination will attenuate to health-based levels within a relatively short distance.

Similarly, the corrective action standards under RCRA also require a risk-based remedy. The statute requires corrective action where it is "necessary to protect human health or the environment." With respect to groundwater protection, the regulations applicable to the owners and operators of hazardous waste treatment, storage and disposal facilities allow EPA to exclude a hazardous constituent "is not capable of posing a substantial present or potential hazard to human health or the environment." This determination is to be based, in part, on the proximity and withdrawal rates of users, current and future uses of the groundwater, and the potential for health risks caused by human exposure.

2) The proposed remedy is unnecessary because the groundwater migrating from the JDF presents no risk to human health and the environment. In the present case, the data and the endangerment assessment for the JDF do not warrant the use of a pump and treat system for removing the level of groundwater contamination found at the JDF. As described in the RI, the horizontal and vertical extent of contaminant migration is limited because groundwater discharges to the Rock River, located approximately 1000-1200 feet downgradient of the JDF. Thus, the existing information suggests that there is no potential for the contaminated groundwater to flow under the Rock River or deeper into the aquifer. In addition, groundwater quality is expected to improve with time because the primary source of contamination, JAB, no longer contains waste. Comparison of water-quality data collected during May, 1989 by Parker Pen suggests some improvements have already occurred since the RI data was collected in July, 1988. There also are no present or future users of groundwater, since the City provides drinking water to all facilities downgradient of the JDF and prohibits the future installation of private drinking-water wells in this area. Therefore, there is no present or future risk associated with the groundwater. Not only is the risk to human health and the environment negligible, but the contamination which was found will naturally dissipate as it discharges into the nearby Rock River. The additional loading to the Rock River will be minimal, at most. The concentrations detected at the river did not exceed WAC NR 105 (Wisconsin's surface water regulations) Human Threshold Criteria and Human Cancer Criteria for surface water quality. Contaminant concentrations in the river were much lower than ambient water quality criteria for fresh water organisms. With the proposed remedial work undertaken on the remaining portions of the JDF, no new contamination will be introduced into the groundwater. As such, the groundwater will be naturally cleaned without the need to undertake an expensive pump and treat system.

Finally, in the comments made at the public meeting, reference was made to combining the JDF groundwater plan with that designed for the contaminant plume associated with Parker Pen. However, we have been informed by Parker Pen that based on its separate hydrogeological study, it will recommend to the Agency that it undertake a groundwater remediation program separate and distinct from the Superfund program. Given that decision by Parker Pen, installing a pump and treat system for the groundwater contamination

associated with the JDF becomes even more questionable. Not only is the system unnecessary in order to remove any risk to human health and the environment -- no risk presently exists -- but will make what is already a cost-intensive program even less cost effective.

3) The Wisconsin groundwater protection law does not require groundwater pump and treat. The WDNR adopted WAC NR 140 (Wisconsin's groundwater quality regulation) to enable the state agency to respond in a flexible and appropriate manner to groundwater contamination situations. In the purpose section of the regulation, it specifically states that NR 140 is to be used to develop a "range of responses the Department may require if a groundwater standard is attained or exceeded. Given this intent, NR 140 is aimed at developing cost-effective remedies that appropriately minimize the risk to human health and the environment. While NR 140 establishes certain numerical groundwater standards (known as "enforcement standards"), it does not mandate a particular response to a groundwater problem nor does it mandate immediate cleanup action. Rather, the rule establishes a range of responses which may include a relatively simple change in operations, the closure of a facility or active remedial action. In numerous cases, WDNR has not required immediate remedial action but has been willing to allow natural attenuation to occur and resolve the contamination. For this site, the Agency has proposed appropriate remedial action through capping activities at the JDF. This work will prevent any further addition of contaminants to the groundwater. When this work is combined with the natural attenuation of the groundwater (which is recognized will occur), the groundwater will achieve the appropriate groundwater levels without the need to undertake an expensive pump and treat program.

4) The Proposed pump and treat system is not cost effective. CERCLA requires the Agency to consider the "cost effectiveness" of the selected remedy. Thus, the proposed NCP states that EPA is required "to evaluate closely the costs required to implement and maintain a remedy and to select protective remedies whose costs are proportionate to their overall effectiveness". In the present circumstances, if the Agency proceeds with a groundwater remediation plan, which is not necessary to protect human health or the environment, and is not mandated by state law, the Agency must select the most cost-effective remedial action. The proposed pump and treat system does not take into account the characteristics of the JDF site and, therefore, does not meet this standard. In contrast, the ROD for the City of Wausau Superfund site allowed for a site-specific analysis of the appropriate pump and treat system. This flexibility allowed a system to be developed which did not require the use of a stripping tower in order to meet all applicable requirements, including the applicable discharge standard. A similar approach could be used in this case in order to maximize the cost effectiveness associated with any extraction well system.

In conclusion, the Steering Committee believes that the preferred remedies for the 1985 site, the 1963 site and the groundwater remediation as published in the EPA's Proposed Plan are inappropriate and impractical for the site. Alternative remedies exist which are equally protective of human health and the environment, which meet all federal and state remediation standards, and which are more cost effective. The Committee requests that the EPA carefully evaluate its preferred remedies in light of the above comments and revise its preferred remedies accordingly. Pursuant to Section

XXVI (Selection of Remedial Action Alternative) of the Consent Order for the JDF sites, the Committee is ready to enter into good faith negotiations with the Agency regarding the implementation of remedial action alternatives for the sites. The Committee will work with the Agency to design corrective actions for the site which better address the actual conditions of each site and which will meet all applicable requirements.

Response 7: In response to this comment and pursuant to Section XXVI of the JDF Consent Order, the U.S. EPA held a 60-day (from September 29, 1989 through November 29, 1989) technical negotiation period with the WDNR and the PRP Steering Committee (comprised of representatives from the City of Janesville, General Motors Corporation, Parker Pen Co. and Tecumseh Co.). The points addressed in this letter were discussed and some changes were made to the U.S. EPA's Proposed Plan, as noted within this response and within Section VIII of the ROD. In regard to your comment stating that the U.S. EPA has improperly de-emphasized cost as a factor to be considered in its selection of preferred alternatives, the U.S. EPA disagrees. RCRA is a party to this project and RCRA does not consider cost to be an issue in remediation unless there are two equal processes and if one is less costly than the other, then cost may be considered in the selection of a preferred alternative. In response to the individual points of this comment the following responses are made:

A) "1985" SITE: After evaluation of public comments and additional technical information received from the PRP Steering Committee, the U.S. EPA's preferred remedy as stated in the Proposed Plan has been changed, for reasons as stated within the ROD, from requiring a cap compliant with WAC NR 181.44(13) to a cap compliant with WAC NR 504.07. The U.S. EPA and the WDNR, strongly believe that this remedy is both practical and cost effective for reasons as stated below.

A-1) The U.S. EPA (CERCLA and RCRA), in consultation with the WDNR, believe that the findings of the RI are not conclusive as to which site, the 1978 or the 1985 site, or both, is responsible for the contamination found within well 1R. As stated within the RI Report, well 1R is located downgradient of the 1985 site, and therefore, is capable of detecting any contaminants that may be leaking from that site. Also, the RI Report states that the source of the contamination in well 1R is not clear; the contamination may be from the 1978 site, the 1985 site, or both. Furthermore, the impacted well is part of the RCRA monitoring system for the 1985 site. While it is entirely possible that the contamination is from sources other than the 1985 site, the U.S. EPA and WDNR believe that the high leachate head levels within the 1985 site and the comparison of contaminants found within the leachate and in the groundwater (as noted in response 7A-2 below), the 1985 site cannot be ruled out as a likely source of the well 1R contamination. Under the hazardous waste regulations, the City of Janesville has the responsibility of demonstrating that a source other than the 1985 site is responsible for the contamination. This has not been done.

A-2) The U.S. EPA and the WDNR do not agree with this comment. According to Table 16 of the RI Report (Summary of Organic Compounds In Leachate - Round 1) results of samples from the leachate wells at the 1978 site and the leachate manhole at the 1985 site, were compared. Both sites showed detections of benzene, ethylbenzene, xylenes, and toluene. In fact,

the level of toluene was found at higher concentrations within the 1985 site than within the 1978 site. This fact, along with the high leachate head levels found within the 1985 site (as mentioned later in part A-7 of this response) implies that it is a strong possibility that the contamination found in well 1R may be attributed to the 1985 site. Therefore, it is the opinion of the U.S. EPA and the WDNR that cap improvements are needed for the 1985 site.

A-3) As stated in the RI Report, well 1R is located downgradient of the 1985 site. Even though groundwater quality in wells 3 and 4, also downgradient of the 1985 site, is found to be similar to background groundwater quality, as your comment mentions, the contamination may be localized. Usually, not all wells within a monitoring system pickup a release from a site, but if a system is working correctly, at least one well in the system will detect a release if a release is occurring. As indicated above in part A-2 of this response, the 1985 site is a likely source of the contaminants found within well 1R.

A-4) The issue regarding the side slopes and the sliding of materials off of the landfill slopes is no longer a major issue. The capping remedy for the 1985 site has been changed from the NR 181.44(13) cap, as mentioned within the U.S. EPA's Proposed Plan and in this comment, to a WAC NR 504.07 cap as further described within the ROD. RCRA feels that it would be justified to require an NR 181.44(13) cap through its corrective action authorities, but since the WAC NR 504.07 cap, along with the landfill gas extraction and treatment, and the improvements to the leachate collection system will achieve the performance standards, they have concurred on the less stringent cap. The WAC NR 504.07 cap of the 1985 site shall be tied in with the NR 504.07 cap selected for the 1978 site.

A-5) The existing cap did meet the original closure requirements set out in WAC NR 181.44(12), but due to the findings of the RI (see response to A-2 above) and the fact that this landfill has had maintenance problems in the past, the U.S. EPA and the WDNR feel justified in selecting/requiring cap improvements for the 1985 site. Your citation to 40 CFR 265.10 is incorrect and if the correct citation is 40 CFR.265.310, then RCRA states that the closure standards and post-closure care standards for the landfill's cap have clearly not been met. The present cap has settled. slumped and has deep cracks in the surface. Post-closure care and maintenance have not been performed on the cap.

A-6) The U.S. EPA and the WDNR believe that the revised selected capping alternative, meeting the requirements of WAC NR 504.07, is the most cost-effective capping alternative to address the frost line protection, reduction of the leachate head levels (in combination with the leachate collection system improvements) and the reduction of infiltration of precipitation through the landfill cover. Within Warzyn's letter, dated November 30, 1989, to Dan Cozza of the U.S. EPA, Warzyn states "Warzyn believes the upgraded leachate collection system in combination with the WAC NR 504 cap will substantially reduce the potential for release of contaminants from the "1985" site to groundwater."

A-7) The Proposed Plan did not state that caissons must be installed to address the excessive levels of leachate within the 1985 site, but merely stated that a system such as caissons may be considered. The selected remedy within the ROD is consistent with the Proposed Plan in that it states that the leachate collection system will be improved so that one foot or

less of leachate head will be present above the landfill liner. The method may be what was suggested within this comment, but the exact system will be determined within the Remedial Design stage of the project.

B) During the 60-day technical negotiation period with the PRP Steering Committee, the U.S. EPA and the WDNR determined that there are no ARARs for site closure for the 1963 site. However, if contamination was shown to be attributed to the 1963 site, RCRA corrective action may require cap improvements since the 1963 site is considered a solid waste management unit, being contiguous with the JAB, a RCRA-regulated unit. The ROD, Section VIII, indicates the changes to the Proposed Plan, stating that only access/land use restrictions and continued groundwater monitoring will be the selected remedy for the 1963 site.

C) The selected remedy regarding the groundwater remediation has not changed from the preferred remedy as stated within the U.S. EPA's Proposed Plan. Responses to the comments are as follows:

C-1) Due to contamination exceeding Federal Maximum Contaminant Levels (MCLs) and the State's Enforcement Standards for several contaminants, the U.S. EPA (CERCLA and RCRA) and the WDNR are requiring groundwater pump and treat as their selected remedy for groundwater remediation. Under RCRA, remediation is based on standards, such as MCLs, which may be based on risk levels. Alternative Concentration Limits (ACLs) were determined by U.S. EPA (CERCLA and RCRA) and the WDNR to be inappropriate in this case since MCLs have been exceeded for several contaminants and the site border is over 1,000 feet from the point of discharge, the Rock River, with private property located between the two. The aquifer that is contaminated by the JDF may be classified, as per the proposed NCP, as a Class II-B aquifer - groundwaters that are potential drinking water sources. The proposed NCP continues to state "For groundwater that is or may be used for drinking water (Class I or II) the MCLs set under the Safe Drinking Water Act or more stringent promulgated State standards, are generally the applicable or relevant and appropriate standard." The proposed NCP later states "These provisions offer the choice of establishing cleanup standards at background, MCLs or alternative concentration limits (ACLs). In setting remediation levels, the Superfund program generally uses the MCL or other health-based standards, criteria, or advisories which are equivalent of a health-based ACL under RCRA." Since there are contaminants in groundwater that exceed Federal MCLs and State Enforcement Standards, and even though there are no present uses of the portions of the aquifer located between the JDF and the Rock River, the U.S. EPA and the WDNR are requiring groundwater pump and treat to protect the environment (groundwater discharges to the Rock River and VOCs have been detected in the River) and to protect human health and welfare by addressing the groundwater contamination through treatment which will quicken the time frame in which the aquifer may become safe for human consumption. Also, CERCLA Section 121 (d)(2)(B)(ii) states that ACLs may not be used to establish applicable standards if the process assumes a point of human exposure beyond the boundary of the facility and if there is or may be a statistically significant increase of contaminants at that point of entry. Since contaminants have been detected within the Rock River, originating from either Parker Pen or from JDF, and since the RI concludes that groundwater from the JDF area discharges into the Rock River, it can be

concluded that there is or may be a statistically significant increase (a detection) of contaminants from the JDF and therefore, ACLs may not be used.

C-2) This comment may be answered in part by the response to C-1. In addition, the JAB still contains wastes, or the residuals thereof, as shown by the RI Report. So, groundwater contamination may indeed continue over time, even though the present cap at the JAB is believed to be sufficient to prevent or lessen the amount of contamination reaching the groundwater beneath the JAB. Also, it is difficult to state that the comparison of water quality data collected by Parker Pen suggests that some improvements have already occurred since RI data was collected one year earlier, since different labs and possibly different field and lab procedures were used than with the RI investigation.

With regards to combining the JDF groundwater remediation with that to be designed for the contamination associated with Parker Pen, the U.S. EPA and WDNR still believe the most economical approach is to combine the two groundwater pump and treat systems into one. If the systems are combined, the JDF Respondents must provide the assurances that the groundwater pump and treat system will address the MCL/State Enforcement Standard exceedances found downgradient of the JDF, even after Parker Pen has achieved its cleanup goals as set by the WDNR. If the two systems are not combined for one reason or another, then as stated within the ROD, the JDF Respondents will implement their own groundwater pump and treat system to address the MCL/State Enforcement Standard exceedances.

C-3) WAC NR 140 does not require a groundwater pump and treat system or any other particular technology. NR 140 does, however, require that enforcement standards are addressed by taking one or more actions as outlined in Table 6 of NR 140. The NR 140 requirements are imposed through the NR 181 corrective action requirements which are applicable to the JAB and the 1985 sites. NR 181 requires that a facility remove or treat in place those hazardous constituents that have migrated from the hazardous waste unit. So, since State Enforcement Standards are exceeded, as stated within NR 140, treatment options are preferred to address these exceedances. Also, even though the 1985 and 1978 sites will receive cap improvements, the area that is believed to be contributing to the major portion of the present contamination from the JDF, the JAB, will not receive capping improvements (as discussed in the response for C-2).

C-4) Of the treatment alternatives presented within the FS, addressing the groundwater contamination, the groundwater pump and treat alternative selected is the most cost effective. The groundwater pump and treat alternative selected (Alternative 11), as described within the ROD, is cost effective when compared to the other groundwater treatment option presented within the FS Report, Alternative 12, Groundwater In-Situ Treatment. Both alternatives will achieve basically the same cleanup goals. Also, the method in which Alternative 11 is described in the ROD, the flexibility of the development of the system is similar in nature to that mentioned in the comment, in that air stripping or other air treatment technologies will be implemented if needed, as well as any treatment that may be needed to address inorganic parameters in the groundwater to enable any discharge to meet the Ambient Surface Water Quality Standards as set by the State.

In conclusion, the U.S. EPA and the WDNR do not believe that the remedies, as stated within the ROD, are inappropriate or impractical, but are cost-effective and are necessary to assure protection of human health, welfare and the environment. As stated previously, changes to the U.S. EPA's Proposed Plan, due to the public comment period and the 60-day technical negotiation period with the JDF Steering Committee, are stated within Section VIII of the ROD.

APPENDIX A

RESPONSIVENESS SUMMARY

LIST OF COMMENTORS

COMMENT #	NAME AND AFFILIATION	SOURCE OF COMMENT
COMMENT 1:	DAVID HOMAN ENVIRONMENTAL HEALTH DIRECTOR ROCK COUNTY HEALTH DEPARTMENT	8/30/89 MEETING
COMMENT 2:	JIM APPEL, RESIDENT	8/27/89 LETTER 8/30/89 MEETING
COMMENT 3:	MICHAEL EGAN, RESIDENT	8/30/89 MEETING
COMMENT 4:	SSI TECHNOLOGIES, INC. JOHN E. ANDERSON MICHAEL J. EGAN	9/6/89 LETTER
COMMENT 5:	VALLEY BANK ROWLAND J. McCLELLAN	9/12/89 LETTER
	PAUL T. LARSON, RESIDENT	9/14/89 LETTER
	CONSIGNY, ANDREWS, HEMMING & GRANT, S.C., ATTORNEYS AT LAW LOUIS D. GAGE	9/14/89 LETTER
	HAROLD RELIBERG, RESIDENT	9/5/89 LETTER
	CITY OF JANESVILLE CITY MANAGER STEVEN E. SHEIFFER	9/14/89 LETTER
	KANDU INDUSTRIES KENNETH E. LOHFF	9/13/89 LETTER
	SHEREX CHEMICAL COMPANY, INC ARTHUR F. JACKSON	9/13/89 LETTER
	YAHR AND PELSUE, D.D.S, S.C. ROBERT G. YAHR, D.D.S.	9/14/89 LETTER
	WISCONSIN POWER AND LIGHT CO. JACK GRAWE, DISTRICT MANAGER	9/13/89 LETTER
	S.P.I. RUSSELL AND RUTH FREND	9/15/89 LETTER

COMMENT 5 CONTINUED:

	LAW OFFICES OF BRENNEN, STEIL, BASTING & MACDOUGALL, S.C. GEO. K. STEIL, SR.	9/14/89 LETTER
	CENTRAL VENDING ROBERT F. YEOMANS	9/16/89 LETTER
	ROBERT C. STONECLIFFE, RESIDENT	9/15/89 LETTER
	ROY MARKHAM, RESIDENT	9/18/89 LETTER
	BRUCE H. HAMILTON, CMA	9/18/89 LETTER
	H.E. ROBB, RESIDENT	9/15/89 LETTER
	RICHARD L. MCNALL, RESIDENT	9/18/89 LETTER
	TED WALTON, RESIDENT	9/20/89 LETTER
	HUFCOR, INC./RESIDENT FRANK R. SCOTT	9/19/89 LETTER
	J.P. CULLEN AND SONS, INC. MARK A. CULLEN	9/20/89 LETTER
	SEDOR & HOAG, S.C., ATTORNEYS AT LAW GILBERT D. SEDOR	9/19/89 LETTER
	VICTOR D. LITTLE, RESIDENT	9/19/89 LETTER
COMMENT 6:	WISCONSIN DEPARTMENT OF NATURAL RESOURCES MARK GIESFELDT FOR PAUL DIDIER	9/15/89 LETTER
COMMENT 7:	JANESVILLE DISPOSAL FACILITIES STEERING COMMITTEE INCLUDING: CITY OF JANESVILLE, GENERAL MOTORS CORP., PARKER PEN CO. AND TECUMSEH PRODUCTS CO. WITH ASSISTANCE FROM WARZYN ENGINEERING, INC.	9/18/89 LETTER

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny
Secretary

Box 7921
Madison, Wisconsin 53707

DEC 2 7 1989

File Code: 4430

Mr. Valdus Adamkus, Regional Administrator
U.S. EPA, Region V
230 S. Dearborn Street
Chicago, Illinois 60604

SUBJECT: Selected Superfund Remedy
Janesville Disposal Facility
Janesville, Wisconsin

Dear Mr. Adamkus:

The Department is providing you with this letter to document our position on the proposed final remedy for the Janesville Disposal Facility (JDF). The proposal as identified in the draft Record of Decision includes the following:

1985 Site A landfill gas and flaring system,
upgrading the cap to NR 500 standards, and
repairing and/or improving the leachate collection system.

Estimated Costs Construction - $2,949,000
Operation and Maintenance - $39,500 to $142,000
30 Year Present Net Worth - $4,521,000

1978 Site A landfill gas and flaring system (or to test out of the need to install the landfill gas system) and
upgrading the cap to NR 500 standards,

Estimated Costs Construction - $3,993,000
Operation and Maintenance - $52,500 to $135,000
30 Year Present Net Worth - $5,331,000

1963 Site No action other than groundwater extraction (see JDF Groundwater) and continued monitoring.

Estimated Costs Monitoring Costs (not quantified)

JAB Cap Maintenance

Estimated Costs Construction - $75,000
Operation and Maintenance - $14,100
30 Year Present Net Worth - $292,000

JDF Groundwater Groundwater extraction and treatment to address the contaminated groundwater.

Estimated Costs Construction - $504,000
Operation and Maintenance - $57,000 to $117,000
30 Year Present Net Worth - $2,184,000

The total 30 year present net worth for the JDF remedial action is approximately $12,000,000. We understand that if the potentially responsible parties do not agree to fund the remedy, the State of Wisconsin will contribute 10% of the remedial action costs.

We also understand that our staff will continue to work in close consultation with your staff during the predesign, design and construction phases of this project.

Thank you for your support and cooperation in addressing the contamination problem at the JDF. If you have any questions regarding this matter, please contact Mr. Paul Didier, Director of the Bureau of Solid and Hazardous Waste Management at (608) 266-1327.

Sincerely,

C. O. Besadny

C. D. Besadny, Secretary

CDB:MT

cc: Lyman Wible - AD/5
Linda Wymore - LC/5
Paul Didier - SW/3
Mark Giesfeldt/Sue Bangert - SW/3
Joe Brusca/Mike Schmoller - SOD
Dan Cozza - EPA, Region V