

Record of Decision Interim Action for the Surficial Aquifer

Declaration

SITE NAME AND LOCATION

Sherwood Medical Industries Site DeLand, Volusia County, Florida

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected interim action for the surficial aquifer at the Sherwood Medical Site (the Site), in DeLand, Volusia County, Florida, which was chosen in accordance with CERCLA, as amended by SARA, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for this Site.

The State of Florida has concurred with this interim action for the surficial aquifer.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present a current or potential threat to public health, welfare, or the environment.

DESCRIPTION OF THE REMEDY

The major goal of this interim action is to prevent the spread of contaminated groundwater in the surficial aquifer from migrating off the Sherwood Site boundaries and to prevent the potential of vertical migration downward into the Floridan aquifer. The surficial aquifer under the Site is contaminated with volatile organic compounds (VOCs). The major VOC contaminants in the surficial aquifer, trichloroethylene and tetrachloroethylene, greatly exceed both state and federal groundwater standards. Although the surficial aquifer is not the source of drinking water for the local residents, under future use scenarios it presents a threat to human health and the environment. This interim action is intended to prevent the spread of contaminated groundwater by treating the surficial aquifer early in the Superfund process before the Remedial Investigation/Feasibility Study (RI/FS) at the Site has been completed. This is not the final action planned for the surficial aquifer at the Site. Subsequent actions are planned to fully address the principal threats posed by the conditions at the Site. These actions will be defined when the RI/FS is complete.

The major components of the interim action remedy include:

- Installation of a system of recovery wells in the surficial aquifer onsite.
- Installation of an onsite air stripper to treat recovered groundwater.
- Discharge of treated groundwater into an onsite lake.

The estimated cost for the interim action remedy is \$400,000 with an annual operation and maintenance cost of \$35,000. Present worth cost could not be calculated because the number of years that the interim action system will be in place is uncertain.

STATUTORY DETERMINATIONS

This interim action is protective of human health and the environment, complies with Federal and State applicable or relevant and appropriate requirements directly associated with this action, and is cost-effective. This action utilizes permanent solutions and alternative treatment technologies (or resource recovery), to the maximum extent practicable, given the limited scope of this action. Additionally, this interim action satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. Because this interim remedy will result in hazardous substances remaining onsite above health-based levels, a review will be conducted at least every five years after commencement of the remedial action, to ensure that this remedy continues to provide adequate protection of human health and the environment. Of course, because this is an interim action ROD, review of the Site is expected to be more frequent, and is, in fact, continuing as part of the development of the final remedial alternatives for this Site. Subsequent actions are planned to address fully the principal threats posed by the conditions at this Site.

MAR 2 7 1991

Date

Greer C. Tidwell Regional Administrator

Record of Decision Interim Action for the Surficial Aquifer

The Decision Summary

Sherwood Medical Site DeLand, Volusia County, Florida

Prepared by: U.S. Environmental Protection Agency Region IV Atlanta, Georgia

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RECORD OF DECISION Interim Action for the Surficial Aquifer

The Decision Summary

Sherwood Medical Site

DeLand, Volusia County, Florida

1.0 Introduction

The Sherwood Medical Site (the Site) was proposed for inclusion on the National Priorities List (NPL) in December 1982. The Site has been the subject of an Interim Remedial Measures Report (IRM) performed by the responsible parties, Sherwood Medical, Inc. (Sherwood) under the direction of the Florida Department of Environmental Regulation (FDER). In July 1988, Sherwood retained Roy F. Weston, Inc. (Weston) to perform IRM activities and initiate the Remedial Investigation and Feasibility Study (RI/FS), as specified in a Administrative Order on Consent entered into in October 1987 with the U.S. EPA Region IV. The RI/FS is currently being conducted by Weston.

Site Name, Location, and Description 2.0

The Sherwood Site is located approximately three miles northeast of Deland, Florida. Although close to Deland, the Site lies outside the city limits in an unincorporated area of Volusia County. Figure 2-1 shows the geographic location of the Site. The Site occupies approximately 42 acres, including a section of Lake Miller, located along the Site's western boundary. U.S. Highway 92 runs along the northern boundary of the Site, while a wooded, swampy area lies to the south. A commercial and residential area along Kepler Road is located to the east of the Site. The Sherwood property is currently occupied by several manufacturing buildings, a biological laboratory, sizeable parking areas, plus additional structures, including an industrial wastewater treatment facility. A Site map is presented as Figure 2-2.

Site History and Enforcement Activities 3.0

Sherwood Medical Industries has occupied the property since 1959 for the manufacturing of medical supplies, primarily hypodermic needles. Industrial operations currently include the grinding hub processing, and cleaning of stainless steel and aluminum parts used to manufacture hypodermic syringes. Sherwood also molds plastic syringes and conducts in-house quality assurance and quality control.

The Sherwood facility pumps approximately 175,000 gallons of water per day from the underlying Floridan Aquifer. Approximately 150,000





gallons of the water is used for industrial processes and the remainder (25,000 gallons) is used for domestic purposes. Water drawn for industrial needs is used for cleaning, manufacturing, and cooling/evaporation processes. Several manufacturing steps result in wastewater which must be treated. An industrial wastewater treatment (IWT) facility was constructed in July 1983 to meet the Florida Drinking Water Standards. This facility is permitted by FDER to receive and treat wastewater from the plant, and to discharge the resulting effluent. The treated effluent is currently disposed of by percolation and evaporation in the denitrification field and perimeter percolation pond. In late 1985, Sherwood Medical Industries installed an air stripper to pretreat production water used onsite in the facility's operations. The air stripper removes chlorinated solvent compounds existing in the water pumped from the Floridan Aquifer production wells onsite.

Between 1971 and 1980, the company disposed of approximately two tons of liquid and sludge waste into two unlined percolation ponds. During this time, solids were removed from the ponds and placed into onsite, unlined impoundments. From 1980 and 1982, Sherwood analyzed the contents of the impoundments and disposed of the wastes in an offsite landfill.

In December 1982, the Sherwood site was proposed for inclusion on the National Priorities List at the request of the FDER because of the threat of contamination from wastes stored in the holding ponds and impoundments. FDER initially believed that the removal of wastes from onsite storage areas was sufficient to eliminate the threat of contamination. However, subsequent testing conducted by Sherwood Medical and FDER revealed groundwater contamination in onsite wells.

In October 1985, Sherwood Medical notified EPA that they would perform a focused Remedial Investigation (RI) at the site. During EPA's negotiations with Sherwood to conduct the RI, FDER and the Florida Department of Health and Rehabilitation Services (HRS) received health related complaints on private wells from nearby residents. Water samples were collected and analyzed in September 1986 from offsite private wells and Sherwood's onsite supply well. Chlorinated solvents were detected in samples from the onsite supply wells, but no violations of drinking water standards were found in private well samples. Additional samples collected in October 1986 confirmed onsite contamination of the Floridan Aquifer. In light of this information, it was agreed that a full scale Remedial Investigation/Feasibility Study (RI/FS) would be conducted at the In October 1987 Sherwood Medical entered into a Site. Administrative Order on Consent to preform the RI/FS.

In August 1987, at FDER's request, Sherwood sampled the onsite Floridan water wells and a downgradient residential well to assess the extent of contamination and evaluate the need to implement interim remedial measures (IRM) to control and treat the

contamination of the Floridan Aquifer. Based on the observed onsite Floridan Aquifer contamination, FDER recommended an IRM action be undertaken prior to the completion of the RI/FS. Sherwood developed an investigation plan to evaluate the Floridan Aquifer and the shallow aquifer through a sampling program. Field testing was completed in April of 1989.

As part of the IRM, Sherwood Medical has been testing all of the private wells along Kepler Road every six months. The wells are immediately adjacent to the site and extend from the intersection of U.S. 92 and Kepler Road through the intersection of Marsh and Kepler Roads. Sherwood is also monitoring the only downgradient private well to the west of the site, just across Lake Miller. The investigation detected one private well with VOC concentrations above safe drinking water standards. This well is located on Kepler Road, and the test results indicated tetrachloroethene (PCE) and trichloroethene (TCE) concentrations of 11 ppb and 4 ppb, respectively. The applicable Florida Drinking Water Standard for both PCE and TCE is 3 ppb. Since the discovery of this contamination, Sherwood has supplied the affected residence with bottled water. In June 1990 a new well was installed in the Floridan aquifer for the affected residence by Sherwood Medical. The new well has been tested and no contamination has been found.

In October 1989, Sherwood submitted a design workplan to FDER outlining further interim measures to be conducted at the site including the installation of a pump and treat system to begin cleaning the contaminated groundwater. FDER approved the design workplan in September 1990 following the receipt of the Final IRM study report. In November 1990, FDER requested that EPA assume the lead for Interim Actions for the site.

In December 1989, EPA and FDER approved the RI/FS workplan submitted by Sherwood Medical's contractor, Roy F. Weston, Inc. The field work for the RI began in January 1990. The field work included the installation and sampling of additional Floridan aquifer monitoring wells, sampling of soil, sediment, and surface water, and a thorough resampling of all existing wells. The final RI report is scheduled to be submitted to EPA in mid-1991 and the FS is scheduled for submission in early 1992.

4.0 Highlights of Community Participation

The Interim Remedial Measures Report and the Proposed Plan for the Sherwood Site were released to the public on January 8, 1991. These two documents were made available in both the administrative record and an information repository maintained at the EPA Docket Room in Region IV and at the DeLand Public Library. The notice of availability was published in the Deland Sun News on January 16, 1991 and a second notice was published on January 30, 1991. A public comment period was held from January 21, 1991 through

February 21, 1990. In addition to public comment and the accessibility of the information, a public meeting was held on January 31, 1991. At this meeting, representatives from FDER and EPA answered questions and addressed community concerns. A response to comments received during this period is included in the Responsiveness Summary, Appendix A of this Record of Decision. This decision document presents the selected interim remedial action for the surficial aquifer at the Sherwood Medical Site, chosen in accordance with CERCLA, as amended by SARA and, to the extent practicable, the National Contingency Plan. The decision for this site is based on the administrative record.

5.0 Scope and Role of Response Action Within Site Strategy

The major goal of this interim action is to prevent the spread of contaminated groundwater in the surficial aquifer from migrating off the Sherwood Site boundaries and to prevent the potential of vertical migration downward into the Floridan aquifer. The surficial aquifer under the site is contaminated with volatile organic compounds (VOC's) above safe drinking standards. Although the surficial aquifer is not the source of drinking water for the local residents, under future use scenarios it presents a threat to human health and the environment. The cleanup objectives for this interim action ROD are to prevent current or future exposure to the contaminated groundwater through treatment and containment, and to reduce the migration of contaminants. This is not the final action planned for the surficial aquifer at the Site. Subsequent actions are planned to address fully the principal threats posed by the conditions at the site. These actions will be defined when the RI/FS is complete and will be subject to public comment.

6.0 Summary of Site Characterizations

6.1 Hydrology

The hydrogeologic sequence at the Site includes the surficial or water table aquifer, a confining unit composed of clay, sandy clay, and shell layers, and the confined Floridan Aquifer.

The surficial aquifer extends from the uppermost saturated sediments (typically less than 10 feet below ground surface) to the top of the first aquitard found at depths of 25 to 50 feet below land surface. The surficial aquifer has been recorded as 35 feet thick near Kepler Road bordering the eastern edge of the site and 10 to 15 feet thick along the western property boundary near Lake Miller.

The confining unit underlying the surficial aquifer is comprised of a four to eight foot thick clay to sandy clay that overlies a 35 to 40 foot thick poorly sorted deposit of shells, sand, silt, and clay. Collectively, these sediments seve to restrict the vertical

movement of water from the surficial aquifer to the confined Floridan aquifer system below.

The Floridan Aquifer is a highly productive aquifer and is encountered beneath the confining unit. The Floridan Aquifer is the source of drinking water for the local residents.

6.2 Surficial Aquifer

Twelve monitor wells were installed in the surficial aquifer during the June 1989 IRM study (Figure 6-1). The analytical results (Table 6-1) of the IRM study revealed that the major contaminants were tetrachloroethene (PCE), trichloroethene (TCE), and acetone. Concentrations of other volatile organic compounds (VOCs) were also detected, but these concentrations were low compared to the concentrations of PCE and TCE. Analysis of the surficial aquifer indicated that concentrations of PCE ranged from 130 to 11,000 ppb and concentrations of TCE ranged from 16 to 420 ppb. The results indicate that generally the highest concentrations of VOCs were present on the downgradient (west) side of the Site along Lake Miller.

7.0 Summary of Site Risks

CERCLA directs that the Agency must protect human health and the environment from current and potential exposure to hazardous substances at Superfund sites. In order to assess the current and potential risks for the Sherwood Site, a full risk assessment is being conducted as part of the Feasibility Study.

Although the surficial aquifer is not the source of drinking water for the local residents, under future use scenarios it presents a threat to human health and the environment. Results of the June 1989 IRM study revealed that the major contaminants were tetrachloroethene (PCE), trichloroethene (TCE), and acetone. Analysis of the surficial aquifer indicated that concentrations of PCE ranged from 130 to 11,000 ppb and concentrations of TCE ranged from 16 to 420 ppb. The applicable drinking water standard for both PCE and TCE is 3 ppb, which is the Florida State Standard. The State standard is more stringent than the Federal standard of 5 ppb for the respective contaminants. Therefore, given the high levels in the surficial aquifer, EPA has determined that a potential risk to human health and the environment exists.

The major goal of the interim action is to prevent the spread of contaminated groundwater in the surficial aquifer from migrating off the Sherwood Site boundaries and to prevent the potential of vertical migration downward into the Floridan aquifer. This action will achieve significant risk reduction early in the Superfund process.



SHERWOOD MEDICAL COMPANY, DELAND, FLORIDA

TABLE 6-1

Results of Volatile Organic Analyses March 1989 - Shallow Monitor Well Sampling Sherwood Medical

Concentrations in Micrograms Per Liter (ug/L)

	Nell No.												
Parameters	HN-101	HH-102	MH-103	MW-104	MW-105	HW-106	HH-107	HW-108	HH-109	MW-110	HW-110 (Duplicate)	HW-111	MW-112
Chloromethane								وسندني					
Bromomethane													
Vinyl Chloride					20								
Chloroethane													
Methylene Chloride	1 JB	2 JB	2 JB			17JB	3 JB	3 JB	3 JB	14JB	58	68	
Acetone	200	25B	100	1508	770	10 0B	250	56B	270B	18,000B	24,000	1008	1,000B
Carbon Disulfide											3B		
1.1-Dichloroethene			33		2J								
1.1-Dichloroethane					—								
1.2-Dichloroethene (Total)	24	10	37	21	82	62	25	11			9		
Chloroform			10						-				
1.2-Dichlorgethane													
2-Butanone											14		~
1,1,1-Trichloroethane			2J										
Carbon Tetrachloride					—								
Vinyl Acetate													
Bromodichloromethane					—								
1.2-Dichloropropane						—							
cis-1.3-Dichlorpropene	·				—								
Trichloroethene	420	210J	73	67	140	150	32	81	16	170	180		
Dibromochloromethane													
1.1.2-Trichloroethane													
Benzene								 .					
Trans-1.3-Dichloropropene													
Bromoform													
4-Methyl-2-Pentanone								<u>ن ستندی</u>					
2-Hevanone													-
	1000	6 4000	11 000	4000	2 400	2 0000	2008	4000	2700	560	4008	7200	120
letrachioroethene	1000	0,4000	11,000	4000	3,400	2,0000	2900	4908	2708	200	490D	2300	130
i,i,2,2~letrachioroethane						<u> </u>	*****						
101Uene			2J	,									
Chlorobenzene													
Ethylbenzene													
Styrene										<u></u>			
Xylene (Total)		·											

^aTetrachloroethene detected at 4(J) ug/L in an associated laboratory blank. B - Indicates the compound was found in the blank and the sample.

J - Indicates an estimated value present below the detection limit.

--- Indicates compound was analyzed for but not detected above the detection limit presented in Appendix B.

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Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present a current or potential threat to public health, welfare, or the environment.

8.0 Description of Remedial Action Alternatives

8.1 Alternative 1 - No Action

The No Action alternative is required by the National Contingency Plan (NCP) to be considered through the detailed analysis. It provides a baseline for comparison of other alternatives. Under the No Action alternative, no source control remedial measures would be undertaken at the Sherwood Site.

> Construction Cost: \$0 Annual Operation and Maintenance Costs (O&M): \$0 Months to Implement 0

The No Action alternative would not eliminate any exposure pathways or reduce the level of risk.

8.2 Alternative 2 - Pump and Treat System

In order to minimize potential migration of contamination in the surficial aquifer into the Floridan aquifer or into areas off the Sherwood site property bounderies, a system of recovery wells will be installed in the downgradient (west) side of the Site. The wells will be located to recover groundwater in the more highly contaminated areas, and will be designed to create a hydraulic barrier along the west side of the Site. Recovered groundwater will be routed to a air stripper for treatment. The air stripper will treat the groundwater to meet all Federal and State water quality standards. Additionally, the air stripper will be designed to meet the Federal and State air quality standards. The treated groundwater will then be discharged onsite into Lake Miller. The treated effluent will meet the substantive requirements of the National Pollutant Discharge Elimination System (NPDES) program for onsite discharge to surface water.

Constru	ction Cost:	\$400,000
Annual	Operation and Maintenance Costs (O&M):	\$ 35,000
Months	to Implement	5

The pump and treat system will prevent the spread of contaminated groundwater in the surficial aquifer from migrating off the Sherwood Site boundaries. This action will achieve significant risk reduction early in the Superfund process.

9.0 Summary of Comparative Analysis of Alternatives

This section provides the basis for determining which alternative (i) meets the threshold criteria of overall protection of human health and the environment and compliance with ARARs, and (ii) provides the "best balance" between effectiveness and reduction of toxicity, mobility, or volume through treatment, implementability, and cost, and (iii) state and community acceptance. A glossary of the evaluation criteria is provided in Table 9.1.

9.1 Overall Protection of Human Health and Environment

The No Action alternative is not protective of human health and the environment because it allows the contaminants to continue to migrate. The No Action alternative would not eliminate any exposure pathways or reduce the level of risk. Therefore, the No Action alternative will not be considered further in this analysis as an option for the Site.

The Pump and Treat System provides protection of human health and the environment by reducing, or controlling, the risk through treatment of the groundwater and preventing the spread of contamination.

9.2 Compliance with ARARs

The air stripper would treat the groundwater to meet all Federal and State water quality standards for discharge to surface water. Additionally, the air stripper will be designed to meet the Federal and State air quality standards.

The final cleanup levels for the groundwater are not addressed in this ROD because such goals are beyond the limited scope of this action. The final cleanup levels would be addressed by the final remedial action ROD for the Site.

9.3 Long-Term Effectiveness and Permanence

Extraction and treatment of contaminats in the surficial aquifer will achieve some reduction in the contamination at the Site, and will enhance the attainment of a permanent remedy for this Site. The EPA will continue to evaluate long-term effectiveness and permanence as part of the development of the final action for the Site.

9.4 Reduction of Toxicity, Mobility, or Volume of the Contaminants Through Treatment

The Pump and Treat System would reduce the toxicity, mobility, and

TABLE 9.1

GLOSSARY OF EVALUATION CRITERIA

Overall Protection of Human Health and 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.

<u>Compliance with ARARs</u> - 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 magnitude of residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

<u>Reduction of Toxicity, Mobility, or Volume Through Treatment</u> - is the anticipated performance of the treatment technologies that may be employed in a remedy.

<u>Short-Term Effectiveness</u> - refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impacts on human health and the environment that may result during the construction and implementation period.

Implementability - is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.

<u>Cost</u> - includes capital and operation and maintenance costs.

<u>State Acceptance</u> - indicates whether the State concurs with, opposes, or has no comment on the Proposed Plan.

<u>Community Acceptance</u> - the Responsiveness Summary in the appendix of the Record of Decision reviews the public comments received from the Proposed Plan public meeting.

volume of the extracted groundwater from the surficial aquifer by treating it in an Air Stripper. The Air Stripper is a proven treatment process which has been demonstrated to effectively reduce VOC contamination by forcing an air stream through the water and causing the compounds to evaporate.

9.5 Short-Term Effectiveness

There would be no adverse effects to human health or the environment from the Pump and Treat System. Any short-term risk to workers involved in construction of the remedy would be reduced through implementation of a health and safety plan. The interim action is effective in the short-term because it would prevent further degradation and would initiate reduction in toxicity, mobility, and volume of contamination until a final action is selected. The Pump and Treat System is a treatment process which has been demonstrated to effectively reduce VOC contamination on other Superfund sites.

9.6 Cost

The estimated cost for the Pump and Treat System is \$400,000 with an annual operation and maintenance cost of \$35,000. Present worth cost could not be calculated because the number of years that the interim action system would be in place is uncertain.

9.7 State Acceptance

The State of Florida, as represented by the Florida Department of Environmental Regulation, concurs in the selection of the Pump and Treat System as an interim action for the Sherwood Site.

9.8 Community Acceptance

Based on comments made by citizens at the public meeting held on January 31, 1991, and those received during the public comment period, the agency perceives that the community believes the interim action will effectively protect human health and the environment.

10.0 The Selected Remedy

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, EPA has determined that the Pump and Treat System for the surficial aquifer is an appropriate interim action until a final action for the site is determined.

The major goal of the interim action is to prevent the spread of contaminated groundwater in the surficial aquifer from migrating off

the Sherwood Site boundaries and to prevent the potential of vertical migration downward into the Floridan aquifer. This action will achieve significant risk reduction early in the Superfund process.

The final cleanup levels for the surficial aquifer groundwater are not addressed in this ROD because such goals are beyond the limited scope of this action. The final cleanup levels will be addressed by the final remedial action ROD for the Site.

11.0 Statutory Requirements

The U.S. EPA and FDER believe that the Pump and Treat System will satisfy the statutory requirements of providing protection of human health and the environment, attain applicable or relevant and appropriate requirements directly associated with this action and will be cost-effective. Sections 11.1 thru 11.6 below summarize the statutory requirements for this Site.

11.1 Protection of Human Health and the Environment

Although the surficial aquifer is not the source of drinking water for the local residents, under future use scenarios it presents a threat to human health and the environment. The interim action remedy provides protection of human health for future users through extraction and treatment of contaminated groundwater until a final action is determined. The remedy also provides protection to the environment by preventing the spread of contamination.

11.2 Attainment of the Applicable or Relevant and Appropriate Requirements (ARAR)

The final cleanup levels for the groundwater are not addressed in this ROD because such goals are beyond the limited scope of this action. The final cleanup levels will be addressed by the final remedial action ROD for the Site.

The air stripper will treat the groundwater to meet all Federal and State groundwater quality standards for discharge to surface water. Additionally, the air stripper will be designed to meet the Federal and State air quality standards. The treated groundwater will then be discharged onsite into Lake Miller. The treated effluent will meet the substantive requirements of the National Pollutant Discharge Elimination System (NPDES) program for onsite discharge to surface water.

11.3 Cost Effectiveness

The interim action remedy employs a proven technology which can be

implemented year round and affords overall effectiveness proportional to its costs such that the remedy represents a reasonable value for the money.

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

The objectives for this interim action are to prevent current or future exposure to the contaminated groundwater in the surficial aquifer, through treatment and containment, and to reduce the migration of contaminants. Extraction and treatment of contaminats in the surficial aquifer will achieve some reduction in the contamination at the Site, and will enhance the attainment of a permanent remedy for this Site. The EPA will continue to evaluate long-term effectiveness and permanence as part of the development of the final action for the Site. This is not the final action planned for the surficial aquifer at the Site. Subsequent actions will address fully the principal threats posed by the conditions at the Site. Utilization of a permanent solution will be addressed in the final decision document for the Site.

11.5 Preference for Treatment as a Principal Element

The Pump and Treat remedy is a treatment process which has been demonstrated to effectively reduce VOC contamination at other Superfund sites. Therefore, the statutory preference for remedies that employ treatment as a principal element is satisfied.

11.6 Documentation of Significant Changes

The Proposed Plan for the Sherwood Site was released for public comment on January 15, 1991. The Proposed Plan identified the Pump and Treat System as the preferred interim action remedy for the surficial aquifer. EPA reviewed all written and verbal comments submitted during the public comment period. Upon review of these comments, it was determined that no significant changes to the remedy, as it was originally identified in the Proposed Plan, were necessary.

APPENDIX A

Responsiveness Summary

Sherwood Medical Site DeLand, Volusia County, Florida

RESPONSIVENESS SUMMARY

The U.S. Environmental Protection Agency (EPA) established a public comment period from January 21, 1991 through February 21, 1991 for interested parties to comment on EPA's Proposed Plan for Interim Action of the surficial aquifer at the Sherwood Medical Site ("the Site"). The comment period followed a public meeting on January 31, 1991, conducted by EPA, held at the Stetson University, Davis Hall, in DeLand, Florida. The meeting presented the results of the preliminary studies undertaken at the Site and the proposed interim action for the surficial aquifer.

A responsiveness summary is required by Superfund law and regulations to provide a summary of citizen comments and concerns about the Site, as raised during the public comment period, and the responses to those concerns. All comments summarized in this document have been factored into the final decision of the interim action for the Sherwood Medical Site.

This responsiveness summary for the Sherwood Medical Site is divided into the following sections.

- I. <u>Overview:</u> This section discusses the recommended interim action for the Site and the public reaction to this alternative.
- II. <u>Background on Community Involvement and Concerns</u>: This section provides a brief history of community interest and concerns regarding the Sherwood Medical Site.
- III. <u>Summary of Major Questions and Comments Received During the</u> <u>Public Comment Period and FDER's or EPA's Responses</u>: This section presents both oral and written comments submitted during the public comment period, and provides the responses to these comments.
 - IV. <u>Remaining Concerns:</u> This section discusses community concerns that EPA should be aware of in design and implementation of the interim action for the Site.

I. <u>Overview</u>

The proposed plan for interim action on the surficial aquifer was presented to the public in a fact sheet released on January 15, 1991 and at a public meeting held on January 31, 1991.

The major goal of this interim action is to prevent the spread of contaminated groundwater in the surficial aquifer from migrating off the Sherwood Medical Site boundaries and to prevent the potential of

vertical migration downward into the Floridan aquifer. The surficial aquifer under the Site is contaminated with volatile organic compounds (VOCs). The major VOC contaminants in the surficial aquifer, trichloroethylene and tetrachloroethylene, greatly exceed both state and federal groundwater standards. Although the surficial aquifer is not the source of drinking water for the local residents, under future use scenarios it presents a threat to human health and the environment. This interim action is intended to prevent the spread of contaminated groundwater by treating the surficial aquifer early in the Superfund process before the Remedial Investigation /Feasibility Study (RI/FS) at the Site has been completed. This is not the final action planned for the surficial aquifer at the Site. Subsequent actions are planned to fully address the principal threats posed by the conditions at the Site. These actions will be defined when the RI/FS is complete.

The major components of the interim action remedy include:

- Installation of a system of recovery wells in the surficial aquifer onsite.
- Installation of an onsite air stripper to treat recovered groundwater.
- Discharge of treated groundwater into an onsite lake.

The estimated cost for the interim action remedy is \$400,000 with an annual operation and maintenance cost of \$35,000. Present worth cost could not be calculated because the number of years that the interim action system will be in place is currently unknown.

The community, in general, favors taking an interim action for the surficial aquifer.

II. Background on Community Involvement and Concern

The DeLand community has been aware of the contamination problem at the Sherwood Medical Site for several years. EPA distributed the first fact sheet to the public in December, 1989. This fact sheet contained information pertaining to the upcoming Remedial Investigation (RI).

EPA conducted the first public meeting on January 9, 1990. The purpose of this meeting was to explain the Superfund process, and to accept questions from the public on any aspect of the Site or the upcoming RI. At this meeting, the key issues and concerns identified were:

<u>Groundwater Contamination Concerns:</u> Property owners were concerned with the levels of contaminants found in the groundwater. The citizens were also concerned that their private wells might be contaminated.

<u>Time:</u> The public was concerned with the amount of time that it will take to conduct an Remedial Investigation/ Feasibility Study (RI/FS).

III. <u>Summary of Major Questions and Comments Received During the</u> <u>Public Comment Period and FDER's or EPA's Responses.</u>

1.) A commentor stated that his well water did not taste good. He inquired what the contaminants were.

EPA Response: The drinking water source for this area is naturally high in iron and sulfur, which leads to a bad taste, odor, and color. However, EPA, the State of Florida Department of Health and Rehabilitative Services (HRS), and the Volusia County Health Department have examined the water quality of the residential wells near the Site and have found no toxic chemicals.

2.) Another commentor asked if EPA had tested the water quality of Lake Miller?

<u>EPA Response:</u> EPA has tested the water quality of Lake Miller and found low levels of VOC's.

3.) One citizen inquired if the water quality of Lake Talmadge had been tested?

<u>EPA Response:</u> No, EPA has not tested the water quality of the lake; however, Lake Talmadge is upgradient from Lake Miller. This means that water in this area flows from Lake Talmadge to Lake Miller. EPA has sampled the canal that runs from Lake Talmadge to Lake Miller and found no contamination related to the Sherwood Medical Site.

4.) A commentor inquired if the private residential well located west of Lake Miller had been tested.

<u>EPA Response:</u> EPA analyzes the private residential wells every six months and has found no contamination in the private residential well west of the site.

5.) Another citizen asked who was financing the cost of the monitor wells installed during the RI.

<u>EPA Response:</u> Sherwood Medical signed an Administrative Order on Consent to finance and conduct the study with EPA oversight. Sherwood Medical has contracted Roy F. Weston, Inc. to conduct the RI.

6.) One commentor asked if the amount of water that Sherwood extracts from the Floridan Aquifer could affect the quality of water in the private residential wells near the Site.

<u>FDER Response</u>: No, Sherwood extracts the water from directly beneath their facility, and this has no apparent effect on the quality of water in nearby residential wells. However, Sherwood Medical does pump one hundred and seventy-five thousand gallons of water per day, from the Floridan Aquifer, which has formed a cone of depression on the Site. A cone of depression is a depression in the water level surface of the Floridan Aquifer, which has the shape of an inverted cone and has developed around the Sherwood Medical production well. This depression in the water level surface of the Floridan Aquifer has prevented any on-site contaminated water in the Floridan Aquifer from migrating off-site.

7.) Several commenters inquired if the water quality in the private residential wells near the Site could make them sick.

<u>State Toxicologist Response:</u> The naturally occurring groundwater in this area has high iron and sometimes high sulfate, which in part has a disagreeable taste and odor. The sulfates, if high enough, could at worst cause diarrhea.

8.) One commentor inquired if the clay layer prevented the surficial water from migrating downward into the Floridan water.

<u>EPA Response:</u> Yes, the clay layer does prevent the surficial water from migrating into the Floridan water. However, the contaminated water in the surficial aquifer on the Sherwood Site migrated downward along the old well casings on the Site. Sherwood is currently reconditioning these old wells to prevent future contamination of the Floridan aquifer.

9.) One commentor inquired if the Floridan aquifer was being treated for the contamination on the Site.

EPA Response: Yes, in 1985, Sherwood Medical Industries installed an air stripper to treat the Floridan aquifer. Because Sherwood currently pumps groundwater from the Floridan, the contaminants have not migrated off-site and are treated through the air stripper and then used in the facility's operations.

10.) Two commentors inquired if the air quality will be a problem for the local residents with the new or existing air strippers.

<u>EPA Response:</u> No, EPA has modeled the projected effects of the air strippers and found them to be safe. These emissions will be monitored and must be below state and federal standards.

11.) One commentor asked whether EPA was conducting quality assurance/quality control (QA/QC) checks on Sherwood to ensure that they are preforming quality sampling.

EPA Response: Yes, EPA does conduct QA/QC checks on the sampling to ensure that the results are valid. In addition, EPA has an oversight

contractor that observes the field activities to ensure that they are conducted correctly.

12.) One commentor inquired if the local citizens have access to the sampling results.

<u>EPA Response:</u> Yes, a public information repository has been established at the DeLand Library. The repository has all of the current sample results from the Interim Remedial Measures (IRM) report and EPA will update the repository with sampling information through out the process.

IV. <u>Remaining Concerns</u>

The community's concerns surrounding the Sherwood Site will be addressed in the following areas: community relations support throughout the Superfund process and incorporation of comments /suggestions from the community into all phases of the Superfund activities planned for the Site.

Community relations will consist of making final documents available in a timely manner to the local information repository for the Site. EPA will also issue fact sheets to those on the mailing list to provide further information on progress of the project and schedules for future activities at the Site. EPA will inform the community of any principal design changes made during the project design for the interim action. If, at any time during the Remedial Design or Remedial Action, new information is revealed that could affect the implementation of the interim remedy for the surficial aquifer, the Record of Decision may be revised with an opportunity for public comment.

APPENDIX B

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State's Concurrence Memorandum

Sherwood Medical Site DeLand, Volusia County, Florida 9 0028



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400 Lawton Chiles, Governor 3 23 Pill 3 23 Pill 4 M Browner, Secretary

And the second second

April 2, 1991

Mr. Greer Tidwell, Regional Administrator US EPA, Region IV 345 Courtland Street, NE Atlanta, Georgia 30365

Dear Mr. Tidwell:

The Florida Department of Environmental Regulation agrees with the selected remedial alternative to address groundwater contamination in the surficial aquifer at the Sherwood Medical Superfund site in Deland, Florida. This is an interim action only. The final site remedy will be selected after completion of the remedial investigation/feasibility study (RI/FS).

Surficial aquifer recovery wells will be installed in downgradient areas where the highest levels of contamination have been observed. Groundwater recovery will result in a hydraulic barrier which will prevent off-site migration. The contaminated water will be treated on-site by air stripping to meet health based standards prior to discharge to Lake Miller.

The estimated construction cost of the groundwater recovery, treatment and disposal system is \$400,000 with an annual operation and maintenance cost of \$35,000.

We understand that Sherwood Medical will be performing the interim action and that state cost share participation will not be necessary.

We look forward to completion of the RI/FS and selection of the final remedy.

Recycled Paper

Singerely How Carol Browne

Secretary

CB/khz