Decision Document for the Remediation of Glidden Resin Facility
Erie County, Ohio

March 2004

Bob Taft, Governor
Christopher Jones, Director
DECLARATION

SITE NAME AND LOCATION

GLIDDEN RESIN FACILITY
Huron, Erie, Ohio

STATEMENT OF BASIS AND PURPOSE

This Decision Document presents the selected remedial action for Glidden Resin Facility in Huron, Erie County, Ohio, chosen in accordance with the policies of the Ohio Environmental Protection Agency (Ohio EPA), statutes and regulations of the State of Ohio, and the National Contingency Plan, 40 CFR Part 300.

ASSESSMENT OF THE SITE

The Glidden Resin Facility was constructed in 1964 by The Glidden Company (Glidden) and has been operated by Glidden since that time (see Figure 1, Site Location). Glidden initially became aware of possible degradation of ground water in 1979. Concern arose when potential contaminants appeared in the discharge from an underdrain system underlying part of the site. The areas of potential concern include:

- Tank Farm and Railcar Unloading Area
- Former Shop Pit Area
- Former Incinerator Building and Underground Storage (solvent) Tank Area
- Former Wastewater Storage Pond Area
- Former Boiler House Area
- Aeration Pond

See Figure 2, Site Layout.

The underdrain system was initially constructed to discharge into a storm sewer on the site. This connection was reportedly plugged in 1979 and discharge from the underdrain was rerouted to the on-site treatment facility. In 1981, Glidden filed a Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) 103C notification with the United States Environmental Protection Agency (U.S. EPA), and subsequent environmental investigations were initiated in 1983. In the summer of 1988, during drought conditions, free-phase hydrocarbons were observed in the underdrain discharge.

There are reported incidents of chemical spills reported to the Ohio EPA. Glidden has on numerous occasions violated its National Pollutant Discharge Elimination System (NPDES) permit according to a review of Ohio EPA and U.S. EPA files.

Actual and threatened releases of contaminants of concern (COCs) at the site, if not addressed by implementing the remedial action selected in the Decision Document, constitute a substantial threat to public health or safety and are causing or contributing to air or water pollution or soil contamination.

DESCRIPTION OF THE SELECTED REMEDY
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The major components of the remedy proposed in the January 28, 2003, Ohio EPA-issued Preferred Plan include:

- The removal of contaminated soil and sludge with proper disposal.
- The installation and operation and maintenance (O&M) of a ground water collection system.
- Treatment of the collected ground water to levels acceptable for discharge to a Publicly Owned Treatment Works (POTW).
- The preparation and implementation of an Ohio EPA approved long-term ground water monitoring plan, including regular O&M and monitoring reports.

The Ohio EPA believes that these measures will reduce risks to human health and the environment to acceptable levels.

STATUTORY DETERMINATIONS

The selected remedial action is protective of human health and the environment, complies with legally applicable state and federal requirements, is responsive to public participation and input and is cost-effective. The remedy utilizes permanent solutions and treatment technologies to the maximum extent practicable to reduce toxicity, mobility and volume of hazardous substances at the site. The effectiveness of the remedy will be reviewed regularly.

Christopher Jones, Director

3-11-04

Date
# TABLE OF CONTENTS

## 1.0 SITE BACKGROUND

1.1 Site History .................................................... 6

1.2 Summary of the Remedial Investigation .......................... 6

1.2.1 Soil Contamination ........................................ 7

1.2.2 Ground Water Contamination .............................. 7

1.2.3 Surface Water Contamination ................................ 7

1.2.4 Impacts to Biological Resources ............................ 8

1.3 Additional Information, Subsequent to the Remedial Investigation .... 8

## 2.0 SUMMARY OF SITE RISKS ............................................ 8

2.1 Risks to Human Health ........................................... 8

2.2 Risks to Ecological Receptors .................................... 9

## 3.0 FEASIBILITY STUDY ............................................. 9

## 4.0 REMEDIAL ACTION OBJECTIVES ..................................... 9

## 5.0 SUMMARY OF REMEDIAL ALTERNATIVES .............................. 10

5.1 No Action Alternative ........................................... 10

5.2 Institutional Controls and Associated Measures ..................... 10

5.3 Cover System and Institutional Controls .......................... 10

5.4 Waste Excavation & Off-Site Disposal, Ground Water Extraction & Treatment 11

## 6.0 COMPARISON & EVALUATION OF ALTERNATIVES ....................... 11

6.1 Evaluation Criteria ............................................. 11

6.2 Analyses of Evaluation Criteria .................................... 13

6.2.1 Overall Protection of Human Health and the Environment .......... 14

6.2.2 Compliance with ARARs ....................................... 15

6.2.3 Long-Term Effectiveness and Permanence ........................ 15

6.2.4 Reduction of Toxicity, Mobility or Volume through Treatment ....... 15

6.2.5 Short-Term Effectiveness ..................................... 15

6.2.6 Implementability .......................................... 16

6.2.7 Cost ................................................... 16

6.2.8 Community Acceptance ..................................... 16

## 7.0 SELECTED REMEDIAL ALTERNATIVE ................................. 16
7.1 In situ stabilization of Aeration Pond sludge and off-site landfill disposal . . . . 16
7.2 Removal of the underground storage tank ............................................ 17
7.3 Excavation of soils containing hazardous wastes .................................... 17
7.4 Excavation of concrete and four to five feet of soil beneath the concrete floor of the Tank Farm secondary containment pad. Construction of ground water collection trenches in the Tank Farm Area. Construction of an activated carbon treatment system to treat extracted ground water from the collection trenches and discharge ground water to the local POTW or storm sewer depending upon treated ground water characteristics ............................................ 17
7.5 Regrading and runoff improvements .................................................. 17
7.6 After-source removal of contaminants, ground water monitoring for a minimum of five years. ................................................................. 17

8.0 GLOSSARY .................................................................................. 19

RESPONSIVENESS SUMMARY .......................................................... 22
1.0 SITE BACKGROUND

1.1 Site History

The Glidden Resin Facility is located at 300 Sprowl Road, immediately south of the City of Huron, Erie County, Ohio. The location of the facility is shown in Figure 1, Site Location. The site, which covers an area of approximately 16.5 acres, is bounded to the north by Sprowl Road, to the west by River Road and to the south by a spur of the Norfolk and Western Railroad. To the east, the facility is bound by a drainage ditch which flows north about one mile to a large pond just south of Lake Erie. The site is immediately bounded by River Road to the west, with the Huron River located further west. The 100-year flood plain of the Huron River does not impinge on the Glidden Resin Facility property.

The Glidden Resin Facility was constructed in 1964 by Glidden and has been operated by Glidden since that time. Glidden initially became aware of possible degradation of ground water in 1979. Concern arose when potential contaminants appeared in the discharge from an underdrain system underlying part of the site. The areas of potential concern include:

- Tank Farm and Railcar Unloading Area
- Former Shop Pit Area
- Former Incinerator Building and Underground Storage (solvent) Tank Area
- Former Wastewater Storage Pond Area
- Former Boiler House Area
- Aeration Pond

These areas are shown in Figure 2, Site Layout. The underdrain system was initially constructed to discharge into a storm sewer on the site. This connection was reportedly plugged in 1979 and discharge from the underdrain was rerouted to the on-site treatment facility. In 1981, Glidden filed a Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) 103C notification with the United States Environmental Protection Agency (U.S. EPA), while subsequent environmental investigations were initiated in 1983. Concern arose again in the summer of 1988 during drought conditions when the underdrain discharge was observed to contain free-phase hydrocarbons.

There are reported incidents of chemical spills reported to the Ohio Environmental Protection Agency (Ohio EPA). Glidden has on numerous occasions violated its National Pollutant Discharge Elimination System (NPDES) permit according to Ohio EPA and U.S. EPA files.

On August 8, 1991, Glidden entered into Director’s Final Findings and Orders with Ohio EPA for the implementation of a Remedial Investigation and Feasibility Study to determine the nature and extent of contamination on the Site and to evaluate the remedial alternatives.

1.2 Summary of the Remedial Investigation

The Remedial Investigation was conducted by Glidden and included a number of tasks to identify the nature and extent of site-related chemical contaminants. The investigation was conducted with oversight by Ohio EPA and was approved on January 14, 1997. The tasks
The nature and extent of contamination at the Glidden Resin facility in each environmental medium and the contaminants of concern attributable to the site are described below:

### Ground Water

- Acetone
- Trichloroethylene (TCE) & Tetrachloroethylene (TCA)
- Benzene
- Toluene
- Ethylbenzene
- Xylene

### Soil

- TCE & TCA
- Benzene
- Toluene
- Ethylbenzene
- Xylene

**1.2.1. Soil Contamination**

Soils in the following areas were found to be contaminated: the tank farm, railcar unloading area, former shop pit area, the former incinerator building and the former underground storage tank area. The primary contaminants are benzene, toluene, ethylbenzene and xylenes (BTEX). Those chemicals are associated with fuels such as gasoline. Other compounds detected include acetone, TCE, TCA (solvents), as well as trace occurrences of other industrial solvents. The primary soil contaminants will be carried down to the underlying ground water by infiltration and precipitation, leading to further ground water contamination.

**1.2.2 Ground Water Contamination**

On the basis of ground water analytical results, the following areas of contamination were identified at the facility by WW Engineering: the area around the former underground storage tanks, the railcar loading and unloading area and the location of the former wastewater overflow storage pond. Monitoring wells in these areas showed the presence of the same organic compounds detected in the underdrain system.

**1.2.3 Surface Water Contamination**

Analytical results from the sampling of sediment and surface water from the drainage ditch on the northern portion of the site and the Huron River showed no measurable concentrations of target compounds. These data indicate no apparent risk to the off-site receptors from this pathway or from exposure by ingestion of or dermal contact with the surface water and/or sediment material. The aeration pond water sample did not contain measurable quantities of target compounds. Water from the pond is discharged to a sprayed field for additional treatment and monitoring.
under the NPDES permit for the facility. Measurable concentrations of volatile organic compounds were detected in the aeration pond sediment. Potential exposure may occur to persons involved with maintenance of the aeration pond system and/or from any other intrusive activities such as evacuation or dredging of the aeration pond sediments. Exposure routes would include dermal contact and ingestion.

1.2.4 Impacts to Biological Resources

A qualitative ecological evaluation covering the area within a two-mile radius from the site was performed by Golder Associates in a report dated September 1993. The conceptual model included aquatic species in the Huron River and avian species throughout the study area. The evaluation concluded that the risks to ecological receptors are very low because:

- The main route for contaminant migration is by infiltration into the storm sewer line and then into the Huron River through the storm sewer outfall, where the contaminants would be diluted due to the high flows in the river; and,

- The low concentrations of on-site contaminants indicate that they are unlikely to cause chronic effects to ecological receptors. Also, the chemical structures of the contaminants preclude them from bioconcentrating through the food chain.

1.3 Additional Information, Subsequent to the Remedial Investigation

Twelve (12) residential wells within a three-mile radius of the facility and two (2) sediment samples from the ditch were sampled for volatile organic compounds (VOCs) after the public presentation of the Preferred Plan. Ohio EPA also split six (6) of those samples. The analytical results from Glidden, as well as the results from Ohio EPA, show no detections of any chemical of concern.

2.0 SUMMARY OF SITE RISKS

A baseline risk assessment was conducted to evaluate current and potential future risks to ecological receptors and to human health associated with contaminants present at the site. The results demonstrated that the existing concentration of contaminants in environmental media pose risks to human and ecological receptors at a level sufficient to trigger the need for remedial actions.

2.1 Risks to Human Health

Ground water under the site contains chemical contaminants in excess of the allowable maximum contaminant levels established by Ohio Law (Ohio Administrative Code 3745-81-12). Those standards are the maximum permitted for a public drinking water supply that would not create an unacceptable health risk to persons using the water. The Ohio EPA considers those standards to be the maximum allowable for other water supplies as well.
2.2 Risks to Ecological Receptors

As indicated in the ecological risk assessment, the risk to ecological receptors appears to be negligible.

3.0 FEASIBILITY STUDY

A Feasibility Study was conducted by Golder Associates for the Glidden Company in order to define and analyze appropriate remediation alternatives. That study was conducted with oversight by the Ohio EPA, which approved its content on January 13, 2000. The Ohio EPA considered this Feasibility Study and the Remedial Investigation in determining its Preferred Plan for remediation of the Glidden Resin Facility Site. A copy of the Feasibility Study can be found in the public repository and at the Northwest District Office.

4.0 REMEDIAL ACTION OBJECTIVES

As part of the remedial investigation/feasibility study (RI/FS) process, remedial action objectives (RAOs) were developed in accordance with the National Contingency Plan (NCP), 40 CFR Part 300, which was promulgated under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, and U.S. EPA guidance. The RAOs are goals that a remedy should achieve in order to ensure the protection of human health and the environment. The goals are designed specifically to mitigate the potential adverse effects of site contaminants present in environmental media. For environmental media, remediation levels were developed for a range of potential residual carcinogenic risk levels (i.e., 1 in 100,000; 1 in 1,000,000, etc.) and using a non-cancer hazard quotient of 1.0 for a range of potential exposed receptors including direct soil contact. These carcinogenic risk levels refer to the increased likelihood that someone exposed to the chemical releases from the site would develop cancer during his lifetime as compared with a person not exposed to the site. For example, a 1 in 10,000 risk level means that if 10,000 people were chronically exposed to the hazards created by the site, one would probably develop cancer during his or her lifetime. Note that these risks refer only to the incremental risks created by exposures from the site. They do not include the risks of cancer from other non-site related factors to which people may be exposed. Noncarcinogenic risks are generally expressed in terms of a hazard quotient or index, which combines the concentration of chemical exposures with the toxicity of the chemicals (quotient refers to the effects of an individual chemical whereas index refers to the combined effects of all chemicals). A hazard index of 1.0 represents the maximum exposure at which no harmful effects are expected.

The RAOs were developed to ensure that remedial actions reduce the projected risk to humans to acceptable levels. The U.S. EPA through the NCP defines acceptable remediation goals for known or suspected carcinogens to be concentration levels that represent an upper bound excess (i.e., above background) lifetime cancer risk to an individual between 1 in 10,000 and 1 in 1,000,000, using information on the relationship between dose and response, with the 1 in 1,000,000 risk level as the point of departure (the level of risk at which further remedial action is considered unnecessary).

Likewise, noncarcinogenic risks are also to be reduced to an acceptable level, which corresponds to a hazard index of 1.0, at which harmful effects are generally not observed in exposed persons. In a similar manner, important ecological resources (e.g., waters of the state or endangered species) will also be protected. The principal exposure pathway is soil direct contact.
The RAOs developed for the site are detailed below:

- Eliminate leaching from surface soils to the underlying water table.
- Prevent the use of contaminated ground water on the site.
- Eliminate contamination of surface water from exposure to contaminated sediments on the site.

5.0 SUMMARY OF REMEDIAL ALTERNATIVES

A total of four remedial alternatives were considered in the FS. A brief description of the major features of each of the remedial alternatives follows. More detailed information about each of these alternatives can be found in the FS.

5.1 No Action Alternative

FS Alternative 1 includes no efforts to reduce the levels of contamination in the soils or underlying ground water. This alternative will have no effect on human health risks associated with the site.

5.2 Institutional Controls and Associated Measures

FS Alternative 2 eliminates the human health risks associated with the site by preventing activities that could allow exposure to harmful contaminants. Included in the alternative are the following:

- Restrictions on property use and intrusive activities (through deed restrictions) to prevent ground water use and excavation into contaminated areas.
- Regrading and runoff improvements to reduce water infiltration through contaminated soil.
- A program of long-term ground water monitoring to assess the contaminant levels of the ground water.

5.3 Cover System and Institutional Controls

FS Alternative 3 combines restrictions on use of the property (from the previous alternative), and engineering measures to reduce contact with contaminated soil and water infiltration through contaminated soil. The major components of this alternative are:

- Simple, low permeability cover (soil and asphalt) over the areas of potential concern to reduce potential contact with soil, ground water or waste-containing hazardous substances and to reduce infiltration/leachate generation;
- Restrictions on property use and intrusive activities;
- In situ stabilization of Aeration Pond sludge to support a cover system and reduce mobility and toxicity;
- Regrading and runoff improvements; and
Ground water monitoring for a specified period of time, usually 30 years, unless monitoring indicates it is no longer necessary.

5.4 Waste Excavation & Off-Site Disposal, Ground Water Extraction & Treatment

FS Alternative 4 combines removal and stabilization of contaminated soils with removal of an old underground storage tank to mitigate the risks from direct soil contact or soil leaching to ground water. The remaining contaminated ground water will be collected and treated. The major components of this alternative are:

- In situ stabilization of Aeration Pond sludge and off-site landfill disposal;
- Removal of the underground storage (solvent) tank;
- Excavation of soils containing hazardous substances in the Former Shop Pit Area, selected sections of the old Tank Farm Area underdrain, Former Incinerator Building and Underground Storage Tank Area, Former Wastewater Storage Pond Area and Former Boiler House Area and off-site disposal;
- Excavation of concrete and 4 to 5 feet of soil beneath concrete floor of Tank Farm secondary containment pad and off-site disposal. Construction of ground water collection trenches (approximately 720 linear feet x 2.5 ft. x 4 to 5 ft. max depth or approximately 300 cubic yards of soil) in the Tank Farm Area and backfill excavated area with stone with an extraction system. Construction of an activated carbon treatment system to treat extracted ground water from the collection trenches and discharge ground water (estimated at 1,440 gpd average) to the local POTW or storm sewer depending upon treated ground water characteristics;
- Regrading and runoff improvements in compliance with the NPDES Permit; and
- After source removal of contaminants, ground water monitoring for a minimum of one five-year period. If at the end of the five-year monitoring period the data indicates a need for further monitoring, then the ground water monitoring period will be extended.

6.0 COMPARISON & EVALUATION OF ALTERNATIVES

6.1 Evaluation Criteria

In selecting the remedy for this site, Ohio EPA considered the following eight criteria as outlined in U.S. EPA’s National Contingency Plan (NCP) promulgated under CERCLA (40 CFR 300.430)

1. Overall protection of human health and the environment – Remedial alternatives shall be evaluated to determine whether they can adequately protect human health and the environment, in both the short- and long-term, from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the site.

2. Compliance with ARARs – Remedial alternatives shall be evaluated to determine whether a remedy will meet all of the applicable or relevant and appropriate
requirements under State and Federal and Local environmental laws.

3. **Long-term effectiveness and permanence** – Remedial alternatives shall be evaluated to determine the ability of the remedy to maintain reliable protection of human health and the environment over time, once pollution has been abated and RAOs have been met. This includes assessment of the residual risks remaining from untreated wastes, and the adequacy and reliability of controls such as containment systems and institutional controls.

4. **Reduction of toxicity, mobility or volume through treatment** – Remedial alternatives shall be evaluated to determine the degree to which recycling or treatment are employed to reduce toxicity, mobility or volume, including how treatment is used to address the principal threats posed by the site.

5. **Short-term effectiveness** – Remedial alternatives shall be evaluated to determine the following: (1) Short-term risks that might be posed to the community during implementation of an alternative; (2) potential impacts on workers during remedial action and the effectiveness and reliability of protective measures; (3) potential environment impacts of the remedial action and the effectiveness and reliability of mitigative measures during implementation; and (4) time until protection is achieved.

6. **Implementability** – Remedial alternatives shall be evaluated to determine the ease of difficulty of implementation and shall include the following as appropriate: (1) Technical difficulties and unknowns associated with the construction and operation of a technology, the reliability of the technology, ease of undertaking additional remedial actions, and the ability to monitor the effectiveness of the remedy; (2) administrative feasibility, including activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies (for off-site actions); and (3) availability of services and materials, including the availability of adequate off-site treatment, storage capacity and disposal capacity and services; the availability of necessary equipment and specialists, and provisions to ensure any necessary additional resources; the availability of services and materials; and the availability of prospective technologies.

7. **Cost** – Remedial alternatives shall evaluate costs and shall include the following: (1) Capital costs, including both direct and indirect costs; (2) annual operation and maintenance costs (O&M); and (3) net present value of capital and O&M costs. The cost estimates include only the direct costs of implementing an alternative at the site and do not include other costs, such as damage to human health or the environment associated with an alternative. The cost estimates are based on figures provided by the Feasibility Study.

8. **Community Acceptance** – Remedial alternatives shall be evaluated to determine which of their components interested persons in the community support, have reservations about, or oppose.

Evaluation Criteria 1 and 2 are threshold criteria required for acceptance of an alternative that has accomplished the goal of protecting human health and the environment and complied with the law. Any acceptable remedy must comply with both of these criteria. Evaluation Criteria 3 through 7 are the balancing criteria for picking the best remedial alternatives. Evaluation Criteria 8, community acceptance, was determined, in part, by written responses received during the public comment period and statements offered at the public meeting.

### 6.2 Analysis of Evaluation Criteria
This section looks at how each of the selection criteria is applied to the remedial alternatives found in Section 5.0 and compares how the alternatives achieve the criteria.

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Explanations of Alternatives</th>
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Waste Excavation & Off-Site Disposal, Ground Water Extraction & Treatment

FS Alternative 4 combines removal and stabilization of contaminated soils with removal of an old underground storage tank to mitigate the risks from direct soil contact or soil leaching to ground water. The remaining contaminated ground water will be collected and treated. The major components of this alternative are:

- In situ stabilization of Aeration Pond sludge and off-site landfill disposal;
- Removal of the underground storage (solvent) tank;
- Excavation of soils containing hazardous substances in the Former Shop Pit Area, selected sections of the old Tank Farm Area underdrain, Former Incinerator Building and Underground Storage Tank Area, Former Wastewater Storage Pond Area and Former Boiler House Area and off-site disposal;
- Excavation of concrete and 4 to 5 feet of soil beneath concrete floor of Tank Farm secondary containment pad and off-site disposal. Construction of ground water collection trenches (approximately 720 linear feet x 2.5 ft. x 4 to 5 ft. max depth or approximately 300 cubic yards of soil) in the Tank Farm Area and backfill excavated area with stone with an extraction system. Construction of an activated carbon treatment system to treat extracted ground water from the collection trenches and discharge ground water (estimated at 1,440 gpd average) to the local POTW or storm sewer depending upon treated ground water characteristics;
- Regrading and runoff improvements in compliance with the NPDES Permit; and
- After source removal of contaminants, ground water monitoring for a minimum of one five-year period. If at the end of the five-year monitoring period the data indicates a need for further monitoring, then the ground water monitoring period will be extended.

6.2.1 Overall Protection of Human Health and the Environment

The assessment of cancer risks and non-cancer hazards to human receptors requires that exposure pathways be identified and the risks and hazards of each pathway be numerically estimated. One chemical exposure route that has been identified is direct soil contact. The other is the ingestion of contaminated ground water. The normal criteria for acceptability of risk represent an upperbound excess lifetime cancer risk to an individual to be between 1 in 10,000 and 1 in 1,000,000. The total noncancerous adverse health effects should result in a hazard index less than 1.0.

Adverse impacts to ecological receptors are identified as a hazard quotient and, when appropriate, a hazard index value greater than 1.0. Thus, RAOs for ecological receptors in the FS are based on either a hazard quotient or hazard index of 1.0. Full attainment of the appropriate water quality criteria is also evaluated in the FS for sites with contaminated surface water bodies. The achievement of the maximum contaminant level (MCL) for each identified chemical of concern (as specified by Ohio regulations) will bring the corresponding risks from drinking the ground water to within the goals stated above. Alternative 1 fails to meet this objective.
Alternative 2 achieves this goal only so long as institutional controls can be enforced. It has no effect on the underlying toxicity of the contaminated ground water. While Alternative 3 removes some of the source area which is contributing to ground water contamination, it still leaves a residual risk that must be prevented by institutional controls. Alternative 4 is most effective at removing the contamination that may be harmful to human health.

6.2.2 Compliance with ARARs

Alternatives 1 and 2 would have no effect on the ongoing discharges to waters of the state (ground water) which violate Section 6111 of the Ohio Revised Code. Alternative 3 reduces those discharges somewhat, while Alternative 4 best complies with the relevant law.

6.2.3 Long-Term Effectiveness and Permanence

Alternatives 1 and 2 would allow long-term discharges to ground water until the contaminants naturally attenuate (they are washed out of the soil or biodegrade). Alternative 3 would also leave much of the existing contaminants for natural attenuation. Alternative 3 would also require long-term maintenance of the cover and barrier systems. Alternative 4 presents the best long-term effectiveness because it removes much of the existing contamination immediately and is not dependent on external long-term actions, such as cover maintenance and enforcement of use restrictions.

6.2.4 Reduction of Toxicity, Mobility or Volume through Treatment

Alternatives 1 and 2 do nothing to reduce the toxicity, mobility or volume of hazardous wastes through treatment. Alternative 3 relies on in-situ stabilization of the aeration pond sludge, which reduces mobility and toxicity of wastes but may slightly increase their volume. Alternative 4 would treat both the sludge and the extracted ground water.

6.2.5 Short-Term Effectiveness

Alternative 1 changes nothing in the short term as the natural attenuation processes operating on the contaminants would probably take many years to be effective. Alternative 2 would quickly eliminate activities that lead to exposure, but would probably not be much more effective than Alternative 1 in quickly reducing the contaminant levels on the site. Alternative 3 would quickly eliminate the activities that lead to exposure and would quickly reduce the leaching from the aeration pond sludge. That alternative would leave much of the contaminated soil for long-term natural attenuation. Remedial activities under Alternative 3 would need from one to two years to complete. Alternative 4 would provide the quickest elimination of hazardous substances by removal and/or stabilization of contaminated soils and sludge. It would also provide the quickest cleanup of the contaminated ground water by actually removing it, rather than waiting for natural attenuation. Remedial activities of this alternative would require from one to three years. Alternatives 2, 3 and 4 could produce short-term releases of hazardous wastes to the environment (in approximately that order of severity) through such routes as dust emission. They could also result in exposures of remedial workers. However, such releases and exposures could be reduced significantly through proper construction practices.

6.2.6 Implementability

Administrative – All of these alternatives would require approval by the Ohio EPA. The Agency would accept those options which best complied with the pretreatment requirements in order to allow for discharge into the POTW as well as meet the NPDES Permit requirements.
Technical – Alternative 1 has no technical barriers to implementation because it has no site activities. Alternative 2 would be easy to implement because it relies chiefly on use controls (such as deed restrictions). The stabilization processes of Alternatives 3 and 4 would be relatively easy to implement, as would the soil removal activities of Alternative 4. Construction of the ground water trench in Alternative 4 would pose a moderate degree of difficulty, depending on the local soil conditions. However, such trenches have readily been installed at numerous remedial sites around the country. The ground water monitoring plans would be relatively easy to conduct.

Availability – The equipment, supplies and technical services needed to implement these alternatives are all readily available.

6.2.7 Cost

The costs of each of the alternatives are given in the following table. These costs include the construction (capital) costs and the present worth of 30 years of operation and maintenance.

<table>
<thead>
<tr>
<th>Cost Component</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
<th>Alternative 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Cost</td>
<td>$35,431</td>
<td>$345,609</td>
<td>$1,024,322</td>
<td>$1,024,322</td>
</tr>
<tr>
<td>30 Years' O&amp;M, Present Worth</td>
<td>$264,049</td>
<td>$283,451</td>
<td>$198,037</td>
<td>$198,037</td>
</tr>
<tr>
<td>Total, Present Worth</td>
<td>$299,480</td>
<td>$629,060</td>
<td>$1,402,359</td>
<td>$1,402,359</td>
</tr>
</tbody>
</table>

6.2.8 Community Acceptance

The Ohio EPA received comments from interested parties during the public comment period and at the public meeting held on April 21, 2003, at the Huron Public Library in Huron, Ohio. Those comments and Ohio EPA’s responses are included in the Responsiveness Summary.

7.0 SELECTED REMEDIAL ALTERNATIVE

The preferred remedial alternative is Alternative 4. The elements of Alternative 4, which will be implemented, are as follows:

7.1 In situ stabilization of Aeration Pond sludge and off-site landfill disposal

Performance Standard – The sludge stabilization will be considered satisfactory upon the completion of the stabilization process, a demonstration that the stabilized sludge meets all specified requirements (i.e., reduces leachability of contaminants as measured by a standardized test procedure as required by the disposal facility) and the removal of the stabilized sludge to an Ohio EPA-permitted landfill. Following the removal of the sludge, the contaminants of concern in soils remaining below the sludge must be at or below the cleanup standards for soils listed in Table 1.

7.2 Removal of the underground storage tank

Performance Standard – The tank removal will be considered completed upon approval by Ohio EPA that it has been successfully extracted and that the residual meets appropriate cleanup standards, namely Ohio EPA leach-based soil standards listed in
Table 1.

7.3 Excavation of soils containing hazardous wastes

Performance Standard – The soil excavation will be complete upon approval by Ohio EPA that the predefined area of contamination has been removed and that confirmatory soil sampling, according to an approved plan, meets appropriate cleanup standards, namely Ohio EPA leach-based soil standards listed in Table 1.

7.4 Excavation of concrete and four to five feet of soil beneath the concrete floor of the Tank Farm secondary containment pad. Construction of ground water collection trenches in the Tank Farm Area. Construction of an activated carbon treatment system to treat extracted ground water from the collection trenches and discharge ground water to the local POTW or storm sewer depending upon treated ground water characteristics.

Performance Standard – The extraction trench system will be considered completed upon approval by Ohio EPA indicating that it has been constructed according to plans. The discharge from the treatment system must meet all applicable standards including requirements of a National Pollutant Discharge Elimination System (NPDES) permit. The treatment must continue until MCLs or lower concentrations as specified in Table 1 are reached in the influent (pretreatment) water.

7.5 Regrading and runoff improvements

Performance Standards – The regrading and runoff improvements must be completed according to design plans approved by Ohio EPA. Long-term maintenance of the regrading and runoff improvements will be performed according to a plan to be approved by Ohio EPA. Ohio EPA will receive reports on inspections and maintenance and may, as necessary, conduct its own inspections of the site.

7.6 After source removal of contaminants, ground water monitoring for a minimum of five years.

Performance Standard – The ground water monitoring must be conducted for a minimum of five years according to a sampling plan approved by Ohio EPA. The sampling and analytical procedures must be properly documented. The results of the ground water monitoring must demonstrate that the water meets acceptable cleanup standards (MCLs) listed in Table 1 for at least four (4) successive quarters. In the event that the data does not meet 4 successive quarter, ground water monitoring will continue. If through sample analysis, it appears that contaminants appear to migrate off-site via ground water, the remedy approved by Ohio EPA will be modified or amended and the new measures implemented.
<table>
<thead>
<tr>
<th>Chemical of Concern</th>
<th>Ground Water Standard&lt;sup&gt;1&lt;/sup&gt; (µg/l)</th>
<th>Soil Standard&lt;sup&gt;2&lt;/sup&gt; (µg/Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone&lt;sup&gt;2&lt;/sup&gt;</td>
<td>N/A</td>
<td>115</td>
</tr>
<tr>
<td>Benzene</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Toluene</td>
<td>1,000</td>
<td>7,700</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>700</td>
<td>16,000</td>
</tr>
<tr>
<td>Xylenes</td>
<td>10,000</td>
<td>190,000</td>
</tr>
<tr>
<td>Trichloroethene&lt;sup&gt;2&lt;/sup&gt;</td>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td>Trichloroethane&lt;sup&gt;2&lt;/sup&gt;</td>
<td>200</td>
<td>122</td>
</tr>
</tbody>
</table>

Notes:

1 Ground Water Standards are Maximum Contaminant Levels (MCLs) per Ohio Administrative Code (OAC) Chapter 3745-81 and 40 CFR 141 Subpart G.

2 Soil Standards for acetone, Trichloroethene and Trichloroethane were derived from partitioning equations.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquifer</td>
<td>An underground geological formation capable of holding and yielding water.</td>
</tr>
<tr>
<td>ARARs</td>
<td>Applicable or relevant and appropriate regulations. Those rules which strictly apply to remedial activities at the site, or those rules whose requirements would help achieve the remedial goals for the site; concept taken from CERCLA and the NCP.</td>
</tr>
<tr>
<td>Baseline Risk Assessment</td>
<td>An evaluation of the risks to humans and the environment posed by a site.</td>
</tr>
<tr>
<td>Carcinogen</td>
<td>A chemical that causes cancer.</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended. A federal law that regulates cleanup of hazardous substances sites under the oversight of U.S. EPA. Commonly referred to as the Superfund Program.</td>
</tr>
<tr>
<td>Decision Document</td>
<td>A statement issued by the Ohio EPA giving the Director’s selected remedy for a site and the reasons for its selection.</td>
</tr>
<tr>
<td>Ecological Receptor</td>
<td>Animals or plant life exposed to chemicals released from a site.</td>
</tr>
<tr>
<td>EE/CA</td>
<td>Engineering Evaluation/Cost Assessment. A report issued under the U.S. EPA’s Superfund Accelerated Cleanup Model that evaluates remedies for a site and estimates their costs. EE/CAs are generally shorter and include fewer alternatives than Feasibility Studies.</td>
</tr>
<tr>
<td>Exposure Pathway</td>
<td>Route by which a chemical is transported from the site to a human or ecological receptor.</td>
</tr>
<tr>
<td>Feasibility Study</td>
<td>A study conducted to ensure that appropriate remedial alternatives are developed and evaluated, such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected.</td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>A waste product, listed or defined by RCRA, which may cause harm to humans or the environment.</td>
</tr>
<tr>
<td>Human Receptor</td>
<td>A person exposed to chemicals released from a site.</td>
</tr>
<tr>
<td>Leachate</td>
<td>Water contaminated by contact with wastes.</td>
</tr>
</tbody>
</table>
LOE Contractor  
**Level of Effort Contractor.** A person or organization retained by the Ohio EPA to assist in the investigation, evaluation or remediation of a site.

NCP  
**National Contingency Plan.** A framework for remediation of hazardous materials sites specified in CERCLA found at 40 CFR Part 300.

O&M  
**Operations and Maintenance.** Long-term measures taken at a site after the remedial actions to assure that a remedy remains protective of human health and the environment.

Preferred Plan  
The plan chosen by the Ohio EPA to remediate the site in a manner that best satisfies the evaluation criteria. It is submitted to the public for comment before being finalized in the Decision Document.

RCRA  
**Resource Conservation and Recovery Act.** A federal law that regulates the handling of hazardous wastes.

RAO  
**Remedial Action Objectives.** Specific goals of the remedy for reducing risks posed by the site.

Remedial Investigation  
A study conducted to collect information necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.

Responsiveness Summary  
A summary of all comments received concerning the Preferred Plan and the Ohio EPA’s response to all issues raised in those comments.

Water Quality Criteria  
Chemical and thermal standards that define whether a body of surface water is unacceptably contaminated. These standards are intended to ensure that a body of water is safe for fishing, swimming and as a drinking water source.

Benzene  
A widely used chemical formed from both natural processes and human activities. Breathing benzene can cause drowsiness, dizziness and unconsciousness. Long-term benzene exposure causes effects on the bone marrow and can cause anemia and leukemia.

Ethylbenzene  
A colorless liquid found in a number of products including gasoline and paints. Breathing very high levels can cause dizziness and throat and eye irritation.

Toluene  
Exposure to toluene occurs from breathing contaminated workplace air, in automobile exhaust, some consumer products such as paints, paint thinners, fingernail polish, lacquers and adhesives. Toluene affects the nervous system.
<table>
<thead>
<tr>
<th>Chemical</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Xylene</strong></td>
<td>Exposure to xylene occurs in the workplace and when you use paint, gasoline, paint thinners and other products that contain it. People who breathe high levels may have dizziness, confusion and a change in their sense of balance.</td>
</tr>
<tr>
<td><strong>Trichloroethylene</strong></td>
<td>A colorless liquid which is used as a solvent for cleaning metal parts. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma and possibly death.</td>
</tr>
<tr>
<td><strong>Tetrachloroethylene</strong></td>
<td>A manufactured chemical used for dry cleaning and metal degreasing. Exposure to very high concentrations of tetrachloroethylene can cause dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness and death.</td>
</tr>
</tbody>
</table>
After the public presentation of the Ohio EPA preferred plan on April 21, 2003, Ohio EPA received three comment letters from the public. None of them appear to have any direct relationship with the remedial investigation and feasibility studies at the site.

Comment 1: “I am requesting that Glidden activate a Restoration Advisory Board (RAB) to evaluate the cleanup at the Huron, Ohio, facility.”

EPA Response: There is no provision in the state hazardous waste cleanup statutes and regulations for the formal establishment of such a board. However, the Ohio EPA would be willing to help organize an informal group if there is sufficient interest in the community.

Comment 2: “I am very upset that you did not feel it necessary to notify the residents closely affected by Glidden that there was a meeting scheduled. This time of the year we rarely have time to listen to radio and only read the headlines in the paper.”

EPA Response: All area radio stations duly announced and the Sandusky Register (newspaper) published the public meeting event based on information provided by Ohio EPA. In addition, the Ohio EPA Public Information Center issued a news release and issued a Citizen’s Advisory. The local library where the meeting was held posted announcement signs in the building. Ohio EPA made every effort to inform the local citizens of the meeting.

Comment 3: Erie County Solid Waste Management District’s Rule 2, effective May 1, 1999, requires the disposal of solid waste generated within the Erie County Solid Waste Management District at the Erie County Sanitary Landfill.”

EPA Response: It is the responsibility of the potentially responsible party (Glidden) to meet local rules and regulations. Ohio EPA requires that the Glidden Company dispose of the waste in a licensed and permitted authorized hazardous waste and/or solid waste facility.
FIGURE 2. SITE LAYOUT