

ATTACHMENT I

Scope of Work

for Continuing Corrective Measure Activities

at Freeman Chemical Corporation

PURPOSE

The purpose of this SOW for continuing corrective measure activities at Respondent's facility is to document investigations and corrective measures which have been conducted, to conduct investigations, and to continue to operate corrective measures to remedy the release of and effects of releases of hazardous waste and hazardous waste constituents to the environment from Respondent's facility.

SCOPE

The corrective measures work consists of the following tasks:

- Task 1 - Description of Past and Current Conditions
- Task 2 - Schedules
- Task 3 - Support Plans
- Task 4 - Work to be Performed
- Task 5 - Evaluation of Groundwater Collection System
- Task 6 - Reports

TASK 1- DESCRIPTION OF PAST AND CURRENT CONDITIONS

Submit a Completion Report (Site Construction Documentation Report) including the items listed below. The report will describe past and current conditions at the facility, and include information pertinent to the contamination at the facility. The report will also describe corrective measures which have been or are being conducted at the facility. Work that has previously been conducted by the Respondent which meets any requirement of Task 1 may be submitted or referenced (if previously submitted) by the Respondent to satisfy that requirement.

A. Facility Background

Summarize the location, facility physiography, and hydrogeology. Describe the history of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities that have occurred and are occurring at the facility. This summary shall at a minimum include:

1. Map(s) depicting the items outlined below. All maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site.
 - a. General geographic location;
 - b. Property lines, with the owners and land use of all adjacent property clearly indicated;

- c. Topography, waterways, wetlands, floodplains, water features, and drainage patterns;
 - d. All tanks, buildings, paved areas, and wells;
 - e. All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;
 - f. All known past solid or hazardous waste treatment, storage and disposal areas regardless of whether they were active on November 19, 1980; and
 - g. All known past and present product and waste underground tanks or piping.
2. A history of solid and hazardous waste treatment, storage, and disposal activities at the facility.
 3. A description of current production operations at the site.

B. Nature and Extent of Contamination

Summarize existing information on the nature and extent of contamination, including the following:

1. The sources of contamination, including the location of each source, and the quantity of raw materials, and solid and hazardous waste;
2. Details on known past product and waste spills including date, volume, nature, location and clean-up activities; and
3. A description of the degree and extent of contamination at the facility and in the vicinity of the facility, in the air, soil, sediments, surface water, and groundwater.

C. Behavior and Characteristics of Contaminants

Document the behavior of contaminants in the subsurface. Include the following factors for the odor, and the specific aromatic and chlorinated compounds:

1. Density and solubility of the contaminants in groundwater;
2. The transformation of contaminants with time and/or mixing with other contaminants and the geological media; and
3. Rate and direction of contaminant movement.

D. Investigation of Off-Site Property

1. Document the known nature and extent of contamination that exists and/or existed on adjacent property, including the Laubenstein property, church

property, and public and private property. Document corrective measures that have been taken to eliminate the contamination in these areas.

2. Document efforts that have been made to reach an agreement with Waters Instruments and other parties to investigate the nature and extent of contamination on the Laubenstein property.

E. Village of Saukville Water Supply

1. Document efforts that have been made to ensure that contamination from the facility is not affecting the quality or quantity of the public water supply for the Village of Saukville, and for any private wells being utilized for drinking water within the village limits.
2. Draw two or more flow charts designating the existing and projected future source and treatment of all groundwater and surface water used by the facility and by the Village of Saukville. Also diagram how the water used by the facility is disposed.
3. Describe the chemical source of the odor in the water from the dolomite wells. Document efforts that have been made to analytically determine the source of the odor.

F. Construction Documentation Corrective Measures

Document corrective measures which have been undertaken and are being undertaken at the facility to remedy the release of and effects of releases of hazardous waste and hazardous waste constituents to the environment from the facility. Verify and document all aspects of the installation of the equipment used for the corrective measures in accordance with the details of the May 12, 1986, letter from Richard O'Hara, WDNR to Russell Cerk, Freeman Chemical Corporation, outlined below.

1. A plan sheet or sheets, documenting the location of the Ranney collector trenches and manholes, groundwater monitoring wells, spot elevations of the base of the trenches, and location of pipes interconnecting the withdrawal systems. The plan sheet(s) should be based on a 1-inch to 100 foot scale (or less) topographic map with maximum 2-foot contour intervals and indicate property boundaries, survey grid and north arrow, homes, buildings, water supply wells, utility lines, man-made features, soil-boring and observation well locations, and other pertinent information.
2. A comprehensive narrative explaining how construction of the groundwater collection system was accomplished along with an analysis of data obtained from testing the collection system. This report should include an appendix containing all of the raw data from field and laboratory testing work.
3. Documentation of the corrective measures taken to eliminate potential sources of contamination, including: removal of unused/buried tanks, exhumation of the "dry well", reconstruction of floor sumps, removal and reconstruction of the tank farm, surface water control measures, construction of the enclosed tank unloading facility, and location and removal of the old farm well.

4. A series of 35 mm slides or color prints documenting all major aspects of the corrective measures program.

G. Objectives and Evaluation of Corrective Measures

Describe the objectives for the corrective measures. Also evaluate each of the corrective measures that are being implemented at the facility in the following areas:

1. Useful life. Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Corrective measures shall be evaluated in terms of the projected service lives of its component technologies.
2. Reliability. Reliability is a way of measuring the risk and effect of failure. Evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies has been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measures have the flexibility to deal with uncontrollable changes at the facility.
3. Safety. This evaluation shall include threats to the safety of the nearby community and environment as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

TASK 2- SCHEDULES

Develop a project schedule which identifies the initiation and completion times of corrective measures being performed at the facility. Also, develop a schedule for the submittal of work to be conducted under Task 4 of this SOW.

TASK 3- SUPPORT PLANS

Develop and submit the following plans for investigations and for conducting corrective measures at the facility.

A. Sampling Plan

Prepare a sampling plan for the investigation of contamination in the environment and for evaluating the effectiveness of the groundwater collection system. The plan shall include the objectives of sampling and other items stated below. The plan shall include sampling the groundwater for the hazardous waste constituents listed in the proposed Appendix IX of 40 CFR 262.

1. The objectives of the sampling plan is to:
 - a. Provide specific guidance for all field work;

- b. Provide a mechanism for planning and approving sampling activities;
 - c. Ensure that sampling activities are limited to those that are necessary and sufficient;
 - d. Provide a common point of reference for all parties to ensure comparability and compatibility between sampling activities performed; and
 - e. Provide information on work limitations, list authorized personnel, safety precautions, and detail decontamination procedures and emergency information.
2. The sampling plan should include the following additional items:
- a. Investigation and evaluation objectives;
 - b. Parameters to be sampled for;
 - c. Sampling locations;
 - d. Justification for sample type and location;
 - e. Collection methods;
 - f. Sample number and frequencies;
 - g. Analytical procedures, including methods verification and standard operating procedures; *Screen*
 - h. Quality assurance/quality control;
 - i. Operational plan and schedule;
 - j. Monitoring well and piezometer construction materials and techniques; and
 - k. Safety requirements.

B. Data Management Plan

Develop and initiate a data management plan to document and track investigation data and results. This plan should identify and set up laboratory and data documentation materials and procedures, and project-related progress and documents. Also identify the State and federal bureaus that must be notified of the designated activities that will be occurring on-site. The data management plan shall address the following:

1. The data record shall include:
 - a. Unique sample or field measurement code;

- b. Sampling or field measurement location and sample or measurement type;
 - c. Sampling or field measurement raw data;
 - d. Laboratory analysis ID number;
 - e. Property or component measured; and
 - f. Result of analyses (e.g. concentration).
2. The following data shall be presented in tabular displays:
- a. Unsorted (raw) data;
 - b. Sampling results for each medium;
 - c. Data reduction for statistical analysis;
 - d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
 - e. Summary data.
3. The following data shall be presented in graphical formats:
- a. Sampling location and sampling grid;
 - b. Boundaries of sampling area, and areas where more data are required;
 - c. Levels of contamination at each sampling location;
 - d. Geographical extent of contamination;
 - e. Contamination levels, averages, and maxima;
 - f. Changes in concentration in relation to distance from the source, time, depth or other parameters;
 - g. Features affecting intramedia transport; and
 - h. Potential receptors.

C. Community Relations Plan

Prepare a plan, based on on-site discussions, for the dissemination of information to the public regarding investigation and corrective measures work, including but not limited to, groundwater sampling results. Opportunities for comment and input by citizens, Village of Saukville officials, and community groups must also be identified and incorporated into the plan.

D. Operation and Maintenance Plan for Corrective Measures

Prepare an Operation and Maintenance Plan to cover both implementation and long term maintenance of the corrective measures. The plan shall be composed of the following elements:

1. Description of normal operation and maintenance (O&M)
 - a. Description of tasks for operation;
 - b. Description of tasks for maintenance, including but not limited to maintenance of surface pavement for soil protection;
 - c. Description of prescribed treatment or operation conditions; and
 - d. Schedule showing frequency of each O&M task.
2. Description of potential operating problems
 - a. Description and analysis of potential operation problems;
 - b. Sources of information regarding problems; and
 - c. Common and/or anticipated remedies.
3. Description of alternate O&M
 - a. Should systems fail, alternate procedures to prevent undue hazards must be available. In particular, discuss how cooling water and municipal drinking water supplies will be protected in the event of any system failure.
 - b. Analysis of vulnerability and additional resource requirements
4. Safety plan
 - a. Description of precautions for site personnel; and
 - b. Safety required in event of systems failure.
5. Description of equipment
 - a. Equipment identification;
 - b. Maintenance of site equipment; and
 - c. Replacement schedule for equipment and installed components.
6. Records and reporting mechanisms required
 - a. Daily operating logs;

- b. Laboratory records;
- c. Records for operating costs;
- d. Mechanism for reporting emergencies;
- e. Personnel and maintenance records; and
- f. Quarterly reporting.

TASK 4- WORK TO BE PERFORMED

Work to be performed shall follow the schedule established in Task 2 and the support plans established in Task 3.

A. Village of Saukville Water Supply

Develop and implement (with U.S. EPA and WDNR approval), a plan to protect the quantity and quality of potable water available to the Village of Saukville in the future if contamination from the facility limits the quantity and quality of available potable water. Also, develop and implement, if possible and economically feasible, a plan to eliminate the odor in the water from dolomite wells.

B. Exposure Information (Potential Receptors)

Submit a report, including the information identified below, describing the hazards associated with contamination at the facility and the human and environmental systems that are potential receptors of the contamination.

1. Provide a list of contaminants from the facility determined to be present in the environment. Document the following toxicological properties for each contaminant:
 - a. Metabolism;
 - b. Acute, subacute, chronic toxicity;
 - c. Carcinogenicity;
 - d. Mutagenicity;
 - e. Teratogenicity/reproductive effects;
 - f. Epidemiological evidence; and
 - g. Other health effects, and aquatic species toxicity.
2. Provide data on the type and extent of human contact with contaminated media, including:
 - a. Recreational, industrial, or agricultural uses of surface water draining the site;

- b. Location and type of groundwater users;
- c. A description of the ecology overlying and adjacent to the facility; and
- d. A description of any endangered or threatened species on or near the facility.

C. Groundwater Protection Standards

Prepare and provide information to support the U.S. EPA's and WDNR's selection of groundwater protection standards (acceptable "clean" level of contaminants in the groundwater) for all of the Appendix IX constituents found in the groundwater. The groundwater protection standards will consist of one of the following:

1. The respective value (MCL) given in Table 1 of 40 CFR 264.94, if the background level of the constituent is below that given in Table 1;
2. The background level of that constituent in the groundwater;
3. A U.S. EPA approved Alternate Concentration Limit (ACL); or
4. The value given in Wisconsin Administrative Rule NR 140.

D. Soil Protection Standards

Excavated soil from the site is subject to treatment and restricted use as specified in an August 8, 1986, and June 10, 1987, letter to Russell Cerk, Freeman Chemical Corporation from Richard O'Hara, WDNR.

TASK 5- EVALUATION OF GROUNDWATER COLLECTION SYSTEM

Evaluate the effectiveness of the groundwater collection system to perform its intended function by conducting groundwater monitoring for volatile organic compounds.

A. Groundwater Monitoring

Until such time as the groundwater monitoring system submitted under Task 3 is approved, groundwater monitoring will be consistent with an October 21, 1986, letter to Russell Cerk, Freeman Chemical Corporation, from Richard O'Hara, WDNR, and include any subsequent approved changes.

B. Annual Evaluation

Annually, make an evaluation, based primarily on the analytical data and water flow rates, of the effectiveness of the groundwater collection systems. The evaluation shall be submitted in the form of an annual report, including source and volume of groundwater collected and treated during the year, and a summary of water quality from monitoring wells; collection devices, and the treatment system.

TASK 6 - REPORTS

Listed below is a schedule for the submittal of reports and information required by the SOW and Section VIII of this Consent Order.

<u>Submission</u>	<u>Time</u>
Completion Report (Task 1)	30 days after the effective date of this Consent Order
Schedules (Task 2)	30 days after the effective date of this Consent Order
Support Plans (Task 3)	60 days after the effective date of this Consent Order
Work conducted pursuant to Task 4	as determined in Task 2
Groundwater Monitoring Data (Task 5A) and Progress Reports	quarterly
Evaluation of Corrective Measures (Task 5B)	annually

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