**STATEMENT OF BASIS**
**FOR**
**THE SCIO POTTERY COMPANY**
**SCIO, OHIO**

**OHD 004 465 084**

## Introduction

This Statement of Basis (SB) for the Scio Pottery Company (Scio Pottery) in Scio, Ohio is being issued by the United States Environmental Protection Agency (U.S. EPA) to fulfill part of its public participation responsibilities under the Resource Conservation and Recovery Act (RCRA). This SB documents the remedy which has been constructed at the facility in order to address soil and ground water contamination. Before making a determination of "Corrective Action Complete" for Scio Pottery, the U.S. EPA will ensure that all appropriate restrictions on land and ground water use are in place, in addition to providing an opportunity for the public to comment on the remedy.

This document summarizes information that can be found in greater detail in the January 22, 1987, Hydrologic Information and Ground water Monitoring Plan by Jack I. Stacy and Dave Moran; the October 19, 1987, A.T. Kearney Preliminary Review / Visual Site Investigation Report (PA/VSI Report); the December 30, 1996, Comprehensive Ground Water Monitoring Evaluation by the Ohio Environmental Protection Agency (OEPA); the February 17, 2006, Tetra Tech Site Assessment Report; and other documents contained in the administrative record for the Scio Pottery facility. This administrative record is maintained at the U.S. EPA Region 5 office, located at 77 West Jackson Boulevard, Chicago, Illinois. The U.S. EPA encourages the public to review these documents in order to gain a more comprehensive understanding of the facility and RCRA activities that have been conducted there.

The U.S. EPA may modify the remedy if it is warranted by new information received from the public. Therefore, the public is encouraged to review and comment on the remedy. This SB describes the Scio Pottery facility and the constructed remedy, and informs the public of the location and availability of the administrative record.

## FACILITY BACKGROUND

### Site Description

The Scio Pottery manufacturing facility was built in 1911. The company produced a variety of ceramic whiteware and dinnerware which included cups, plates and saucers. Production ceased in February 1985. Most of the facility has remained inactive; although some of the buildings are currently used for storage operations.

The site is located at 38500 Crimm Road, in Scio, Harrison County, Ohio. Scio Pottery occupies approximately 50 acres and is bordered on the northeast by railroad tracks, Conotton Creek and a walking trail. Crimm Road borders the site to the south and west, and residences border the site to the east. An irregularly shaped lagoon (surface impoundment) was located on the northwest portion of the site and was used as a settling pond during operation of the plant.

The village of Scio has a population of approximately 900. Scio Pottery is located less than ¼ mile beyond the village boundary. Surrounding land use includes right-of-way for the railroad and Crimm Road, undeveloped land, and residential properties.

**Manufacturing Processes**

Production of the dinnerware involved the injection of slip (liquid clay) into molds, heating the clay in natural gas fired kilns, smoothing the pieces, followed by glazing and packaging. For much of the operational life of Scio Pottery, lead-bearing glazes were utilized.

Waste waters from the liquid clay and glazing operations were discharged to the unlined 2-acre surface impoundment behind (northwest of) the factory buildings. Broken pottery and waste clays were also discarded in and around the surface impoundment. Periodically, the company dredged the surface impoundment, which created ridges and channels in the depression, giving it an overall sinuous shape. Overflow from the surface impoundment discharged into a small tributary of Conotton Creek.

Test drilling at the surface impoundment location indicated that the first 3 to 8 feet of material represented broken pottery fill. At the base of this fill, beds of natural clay with lesser amounts of silt and sand were found. The beds of natural clay and silt extend for a thickness of 6 to 45 feet to sandstone and shale bedrock. Very little ground water was found in the soils above the bedrock. The contact between the ceramic clays and the natural clay contains small amounts of moisture in the form of a thin “perched” water table (Ref. PA/VSI Report, October 19, 1987).

**Regulatory History**

In 1981, the OEPA became aware of the surface impoundment and suspected that it may be a hazardous waste disposal unit which is subject to RCRA regulation. OEPA sampled the clay sludge and determined it to be a characteristic hazardous waste for its lead content by the Extraction Procedure Toxicity method of analysis. OEPA directed Scio Pottery to either close the surface impoundment or seek a RCRA permit for its continued operation. Scio Pottery elected to close the unit.

During the years that followed, U.S. EPA, OEPA and the company made little progress on the closure of the unit. Scio Pottery claimed financial hardship, and the regulatory agencies found the plans for closure unacceptable. In 1986, U.S. EPA issued a Complaint and Compliance Order which required Scio Pottery to submit a detailed plan for ground water monitoring and closure of the unit. Scio Pottery responded with a plan to construct a coal-fired rotary boiler to generate electricity for the plant. The company proposed to feed the hazardous clay sludge into the boiler, which the facility owners claimed would vitrify the waste into non-hazardous clinker. U.S. EPA determined that the procedure was an unacceptable form of incineration and rejected the plan.

In 1994, the U.S. EPA Enforcement and Compliance Branch issued a Consent Agreement and Final Order which required detailed plans for closure and ground water monitoring. Also in 1994, a ruling was handed down from the Federal District Court which reiterated the necessity for a proper closure and ground water monitoring.

On May 2, 1994, Scio Pottery submitted to OEPA a closure plan which proposed a joint venture with a building materials manufacturer. The plan involved the manufacture and sale of bricks to be made from the lead contaminated clay and debris from the surface impoundment. Scio Pottery revised the closure plan in September 1994 and March 1995. OEPA approved the closure plan with modifications and conditions on August 10, 1995, but Scio Pottery did not acknowledge the approval or implement the closure. No further action was taken by Scio Pottery in the years that followed.

In March 2005, the U.S. EPA RCRA program requested that the U.S. EPA Superfund Division investigate the Scio Pottery site and consider a closure or removal action for the former surface impoundment. The Superfund program agreed to take action.

## SITE INVESTIGATION

The U.S. EPA Superfund Division conducted a Site Assessment in June 2005. The results of this assessment were used to determine the scope of a Time-Critical Removal Action, in order to minimize the threat of lead exposure to on-site personnel and/or trespassers, and to reduce the risk of off-site contamination. The overall objective was to consolidate and cover the contaminated material, thereby reducing the “footprint” of contamination at the site.

A total of 83 soil samples (including 7 duplicates) were collected from the site during June 2005 and were analyzed for total metals content. Of the soil samples taken from in and around the former surface impoundment, 74 of the 83 exceeded the U.S. EPA Preliminary Remediation Goal for lead in industrial soil of 800 milligrams per kilogram (mg/kg).

The highest lead concentration detected was 66,000 mg/kg. Six of the soil samples were subjected to the Toxicity Characteristic Leaching Procedure (TCLP), which has replaced EP Toxicity as the regulatory determination for RCRA characteristic hazardous waste. The lead content in all 6 samples (180,000 to 530,000 parts per million or ppm) exceeded the regulatory threshold of 5.0 ppm for determination as hazardous waste.

Surface water samples were collected from Conotton Creek and from around the Scio Pottery site during June 2005. Conotton Creek was sampled from upstream and downstream of the site, and from an upstream location where a reservoir discharges to the creek. Standing water in the surface impoundment was also sampled. Analytical results were compared with State of Ohio protective criteria for aquatic life in stream water, outside of what is termed the mixing zone, i.e., where discharged water is reasonably well mixed with the receiving body of water. The Ohio protective criteria for lead are outside mixing zone average – 0.0064 ppm, and outside mixing zone maximum – 0.120 ppm. Only one sample result, from the standing water within the unit, which had a lead concentration of 0.0539 ppm, exceeded the outside mixing zone average, but was well below the allowable outside mixing zone maximum.

During August 2005, a total of 12 drinking water samples were collected from eight residential properties near the site. Analytical results were compared with the U.S. EPA National Primary Drinking Water Standard Maximum Contaminant Level (MCL) for lead, which is 15 parts per billion (ppb). All 12 samples were well below the MCL for lead, with results ranging from non-detect to 2.2 ppb.

The 2005 site assessment which was conducted by the U.S. EPA Superfund program reached the following conclusions:

- The potential for contamination of drinking water supplies exists but no actual threats were documented in nearby residential wells.

- The Village of Scio is serviced by a municipal drinking water system and is not impacted by the Scio Pottery site. Specifically, the direction of ground water flow at Scio Pottery is not toward the Village of Scio, and the Village's municipal drinking water wells are installed in deep bedrock. (Ref. 1996 Comprehensive Ground Water Monitoring Evaluation and 2006 Site Assessment Report).

- The concentrations of lead in the soil and clay sludge found in the surface impoundment posed an imminent and substantial threat to on-site personnel and trespassers.

- A Time Critical Removal Action is warranted for the surface impoundment.

## THE REMEDY

On May 16, 2006, the U.S. EPA Superfund program began remediation of the surface impoundment area. Broken pottery, clay sludge and adjacent soil were consolidated into the former surface impoundment and graded to prevent the accumulation of rain water on the surface of the cover. The surrounding area was graded to divert the overland flow of precipitation away from the unit.

The surface of the covered unit was mulched and seeded to provide a grass cover which will minimize both the erosion of the compacted soil and the infiltration of precipitation into the waste. Finally, the former surface impoundment was enclosed with an 8 – foot chain link fence to prevent access to the area by unauthorized personnel. Construction of the remedy was completed on August 1, 2006.

The objective of the remedy was to contain and isolate the lead contamination from potential human and ecological exposures, rather than the off-site removal of the contamination. U.S. EPA will ensure that Scio Pottery will fulfill its responsibility for maintenance of the fence and the integrity of the cover materials.

The U.S. EPA RCRA program concurs that the actions taken by the Superfund program are protective of human health and the environment, through the isolation of hazardous waste from human and ecological receptors. These corrective measures will be maintained under the legal restrictive covenants which the RCRA program will into the property deed for the former surface impoundment.

## RISK MANAGEMENT AND CONSIDERATION OF UNCERTAINTY

The determinations presented in this Statement of Basis are based upon the extent of site information and investigations to date as found in the administrative record and explained in this Statement of Basis, and remedial action which U.S. EPA and OEPA have been able to obtain from the Scio Pottery Company. At present, it is indeterminate if further investigation or remediation will be conducted at the facility.

The ground water flow system beneath the surface impoundment area is not completely defined. Scio Pottery installed 4 shallow ground water monitoring wells around and within the surface impoundment in 1987, but limited information was obtained from these wells. Only two rounds of ground water level measurements were collected by the facility after the wells were installed, only one of which included the upgradient well, which was damaged sometime in 1988. These measurements indicated shallow ground water flowed from south to north toward Conotton Creek. The yields from these wells were reported to be very low and it is not clear if the wells were installed in the uppermost aquifer (Ref. 1996 Comprehensive Monitoring Evaluation). However, the 2006 study of local drinking water has shown lead concentrations to be either non-detect or well below the Federal drinking water standard (MCL) of 15 ppb

**PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT**

The primary human health and ecological threats posed by the surface impoundment prior to U.S. EPA's August 2006 remedy were related to direct soil contact in the surface impoundment area. Additional threats were related to the potential for migration of contamination from the surface impoundment via soil erosion, surface water run-off and leaching to the ground water.

U.S. EPA believes that the remedy constructed by the Superfund Division at the Scio Pottery Company is protective of human health and the environment for the following reasons:

- Consolidation and covering of the more highly contaminated material has reduced the "footprint" of contamination at the site;

- The placement of a graded and seeded cover over the formerly exposed contaminated materials will minimize its contact with precipitation and the leaching of lead into the environment;

- The study of local drinking water has shown lead concentrations to be either non-detect or well below the Federal drinking water standard (MCL) of 15 ppb. Under normal conditions, the bottom of the surface impoundment is above the water table. The bottom of the surface impoundment is composed mainly of a clay which creates low infiltration rates (Ref. 1996 Comprehensive Monitoring Evaluation, and the1987 Hydrologic Information and Ground Water Monitoring Plan). Considering the age of the surface impoundment (estimated at over 50 years), the length of time during which the wastes were exposed to weather and the current enclosure of the wastes which minimizes contact with water, contaminant levels in the ground water are expected to remain stable or to decrease;

- Regrading of the surface impoundment area, the addition of drainage ditches to divert flow of precipitation away from the area and the planting of a grass cover will minimize or eliminate the release of lead from the unit to Conotton Creek, and

- The grass cover and fence will minimize direct contact human exposure to the buried wastes by on-site workers and possible trespassers.

## INSTITUTIONAL CONTROLS

U.S. EPA believes that the remaining human health and environmental risks associated with direct exposure to surface soils and on-site ground water will be addressed by institutional controls. U.S. EPA will ensure that the following institutional controls are in place for the surface impoundment area:

- The area of the closed surface impoundment will be surveyed and documented in a metes and bounds plat;

- Restrictive covenants will be emplaced on the property deed to ensure that the surface impoundment area will remain restricted to commercial/industrial use, and to ensure that on-site ground water will not be used for potable purposes;

- The restrictive covenants on the property deed will be in accordance with the State of Ohio's Uniform Environmental Covenants Act, and

- U.S. EPA and Scio Pottery will enter into an enforceable agreement under which Scio Pottery will maintain the fence, drainage ditches and the grass cover at the surface impoundment area .

U.S. EPA's determination of "corrective action complete" will be based upon current conditions at the facility and known pathways of exposure to lead contamination. If U.S. EPA or OEPA become aware of significant changes to the current site conditions, such as the surface impoundment area being used for purposes other than industrial/commercial and/or on-site ground water being used for potable purposes, U.S. EPA will revisit its determination and will take all appropriate actions necessary to protect human health and the environment.

## PUBLIC PARTICIPATION

The U.S. EPA is soliciting comments from the public on the remedy at Scio Pottery Company which is described in this document. The U.S. EPA has scheduled a public comment period of 45 days from July 22, 2008, to September 5, 2008, in order to encourage public participation in the decision process. During the public comment period, the U.S. EPA will accept written comments and questions concerning the remedy. The public may submit written comments and questions to the following address:

United States Environmental Protection Agency, Region 5
Remediation and Reuse Branch (LU-9J)
77 West Jackson Boulevard
Chicago, IL 60604
(312) 353-1248
Attention: Don Heller

Copies of this Statement of Basis, the Public Notice and key documents are available for public review at:

Scio Public Library
331 West Main Street
Scio, Ohio 43988
(740) 945-6811

The entire administrative record is available for public review at:

United States Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604
Attention: Don Heller

After U.S. EPA's consideration of the public comments that are received, they will be summarized and responses will be provided in a Response to Comments document. The Response to Comments will be drafted after the conclusion of the public comment period and will be incorporated into the public record. Copies of the Response to Comments will be mailed to all members of the public who submitted written comments.