

US EPA ARCHIVE DOCUMENT

Revised Phase II SOW 6/12/91



SDMS DocID 466913

Superfund Records Center
11th Wells GZH
PLAINVILLE, MA 01060
EXH 16 466913

Microwave
Specialties

1.00 BACKGROUND



This revised Phase II - Scope of Work (SOW) for the Microwave Specialties Site has been prepared by GZA GeoEnvironmental, Inc. (GZA) on behalf of Chomerics Inc., Frederick Brown, Donald James, and Standard Chain Company. Standard Chain is the current owner of the property where Microwave Specialties operates, at 380 South Street in Plainville. Chomerics Inc., and Frederick Brown and Donald James are former owners of this parcel. The "Site" is considered as the area affected by contaminants (above background levels) originating from the 380 South Street (Microwave) parcel. This document is intended to comply with the requirements of 310 CMR 40.545, which outlines the purpose and scope of a Phase II - Comprehensive Site Assessment under the Massachusetts Contingency Plan (MCP).

IEP Inc. recently completed a Phase I - Limited Site Investigation of the Microwave Specialties Site at 380 South Street in Plainville, Massachusetts, documenting the results of their work in a December 1990 report. This report was submitted to the Massachusetts Department of Environmental Protection (DEP) on December 18, 1990. DEP issued a Notice of Responsibility to Standard Chain Company on February 26, 1991, requiring submission of a Phase II - Scope of Work.

In summary, IEP's Phase I - study indicated the presence of chlorinated volatile organic compounds (VOCs) and metals in groundwater at the 2.8-acre Microwave Specialties parcel (380 South Street). Microwave has operated at the parcel since late 1963, manufacturing precision metal electronic components. As part of their process, they use trichloroethylene (TCE) to degrease metal parts. Spent TCE is disposed off-site in accordance with RCRA regulations. Process wastewater was formerly discharged to on-site disposal systems; this practice was terminated in late 1990.

IEP installed and sampled four monitoring wells as part of their study. Results of their analyses indicated TCE and other chlorinated VOCs in groundwater at levels up to 920 parts per billion (ppb). Additionally, various metals (chromium, copper, lead, nickel, zinc and beryllium) were found in groundwater samples. Because these samples were not filtered prior to analysis, the significance of these findings is uncertain. Based on their elevation measurements and on regional conditions, IEP concluded that groundwater flow was southwest, toward the Ten Mile River.

An active water supply well for the Town of North Attleboro, located on the east bank of the Ten Mile River, is approximately 2,000 feet southwest of the site. This well was identified as Plainville Water Supply Well No. 3 by IEP and is labelled in the field as "Plainville Well No. 3."

**VOLUME I
PHASE II - COMPREHENSIVE
SITE ASSESSMENT
MICROWAVE SPECIALTIES, INC.
380 SOUTH STREET
PLAINVILLE, MASSACHUSETTS
DEP SITE NO. 4-1040**

PREPARED FOR:
Massachusetts Department
of Environmental Protection
Southeast Region
Lakeville, Massachusetts

ON BEHALF OF:
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Chomerics Inc.
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January 1995
File No. 12444

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health and environmental risk assessment, and the preparation of this report. Excerpts from our June 1991 Revised Phase II Scope of Work and subsequent correspondence with DEP are presented in Appendix B.

2.00 BACKGROUND



This section describes the physical layout of the site, topography and drainage, site history and results of previous studies.

2.10 SITE AND STUDY AREA DESCRIPTION

GZA's Phase II study focused on the Microwave property but also included an assessment of a broader area, extending from the North Attleboro water supply wells south of Fuller Street to Cross Street (see Figures 1 and 2). The Microwave site and the larger study area are described in the following sections.

2.11 Microwave Site

The Microwave site is located at 380 South Street (Route 1A), in Plainville Massachusetts, about 2 miles south of the intersection of Route 495 and Route 1A. A site locus plan is presented as Figure 1 of this report. The site is located at 71 20'52" west longitude and 42 01'04" north latitude (Universal Transverse Mercator coordinates 305,700 meters north, 4,654,200 meters east). South Street forms the eastern boundary of the property; residences and undeveloped, wooded land lie east of the site across South Street. Residential houses are located north and south of the site. Directly abutting the site to the south is one of the access roadways to the Northeast Concrete Products (Northeast Concrete) facility which occupies a large parcel immediately west of the Microwave property.

The site consists of approximately 2.8 acres of land occupied by a 15,000 square-foot one-story building, paved parking areas, landscaped areas and a small wooded area on the southern portion of the site. A site plan is provided as Figure 3. The building, which is utilized by Microwave as a manufacturing facility and office, was built in three separate stages with the final stage completed in 1988. The oldest portion of the building is the office, which is a one-story wood-framed structure with a granite block foundation. A one-story concrete block manufacturing facility was the initial addition to the original structure. The final addition occurred in 1988 and consisted of a one-story metal-sided structure which comprises the westernmost portion of the present building. The two additions were of slab-on-grade construction without basements.

An electrical transformer lies just north of the office portion of the building and two 275-gallon aboveground fuel oil tanks are located north of the newest portion of the structure. Paved parking lots are located to the east and north of the building. A loading



dock is located on the northern side of the building and is accessed via the northern parking lot. The remainder of the property is either landscaped or lightly wooded.

Ground surface elevation on the site declines moderately from east to west, from an elevation of approximately 250 feet (National Geodetic Vertical Datum or NGVD) along South Street to about 230 feet NGVD at the western property line. The site topography includes three relatively level terraces separated by steep slopes. Ground surface elevation in the front (eastern) portion of the site averages about 250 feet NGVD; a steep slope and stone retaining wall divide the front of the property from the central terrace, which is at an average elevation of 240 feet NGVD. A second steep slope leads to the western segment of the site, which is a flat, sparsely vegetated area with an elevation of approximately 230 feet NGVD.

The site is presently serviced by an on-site septic system located just west of the building within the central terraced area (see Figure 3). Sanitary waste lines exit the southern and western sides of the building and flow to two concrete septic tanks. The tanks drain through a distribution box to a leaching field at the western edge of the central terraced portion of the site. The current septic system was constructed in 1988 and replaced three cesspools located south of the building in the central area of the site (see Figure 3). The cesspools are further discussed in Section 2.30.

2.12 Surrounding Properties

The area surrounding the Microwave site consists of a mix of residential and industrial properties. The area which was studied for this report consists of the properties located west of South Street, between Cross Street approximately 1,100 feet north of the site, and Fuller Street approximately 1,450 feet south, and extending to the Tenmile River approximately 1,800 feet west of the site (Figure 2). Most of this area is occupied by Northeast Concrete, a producer of precast concrete specializing in large structural beams and girders. Northeast Concrete's property extends from the Microwave site boundary west to the Tenmile River and about 500 feet south along South Street. The area south and west of the Microwave property is a flat, cleared tract of land used for storing large concrete products prior to shipment. With the exception of an asphalt access roadway from South Street, this area is unpaved and gravel covered. The remnants of a partially demolished building were noted near the southern boundary of the Northeast Concrete property; no other permanent structures are present on this portion of the site.

Northeast Concrete's property extends to Cross Street to the north. The company's offices and main casting facilities are located on this northern segment, just south of Cross Street. A septic system which serves the office building is present in this area.

West of Northeast Concrete, across the Tenmile River, is a rock quarrying facility presently operated by the LoRusso Corporation. (The facility is also referred to as the

MassLite Division of the Plainville Corporation). LoRusso's operation includes rock excavation and crushing equipment and a maintenance garage.

North of Cross Street, across from the Northeast Concrete offices, is a multi-tenant industrial/commercial building. At the time of GZA's site visits in 1992 and 1993, tenants of this building included building and plumbing contractors, an equipment supply firm, and a steel fabrication company. Dale Medical Products Inc. is located further east of the industrial building on the north side of Cross Street in a predominantly residential area. Areas directly north, east and south of the Microwave property are also residential.



There are several industrial/commercial facilities located approximately 1,000 feet south of the Microwave site on South Street. These include:

- Medialogic (310 South Street) - electronic equipment assembly
- Electro Fix (300 South Street) - electrical fixture production
- J. T. Iacuzzi Contractors (337 South Street) - building contractor's yard
- Tammy's Job Shop (299 South Street) - jewelry and light industrial fabrication

Property at the southern edge of the study area consists of lightly wooded undeveloped land. Two small ponds are present in this area--Fuller Pond and a small unnamed water body termed "South Pond" for the purposes of this study. The Tenmile River flows through Fuller Pond while South Pond has no inlet or outlet. North Attleboro's "Plainville No. 3" water supply well is located within a small brick building just south of Fuller Road on the east bank of the Tenmile River.

2.13 Utilities

The site is serviced by municipal drinking water via piping which runs into the office portion of the building from South Street. Electricity and telephone services are provided to the site via aboveground lines which enter the office portion of the building. The site is heated by oil burners using No. 2 fuel oil, which is stored on the site in four 275-gallon aboveground tanks. Two of the aboveground tanks are located adjacent to the metal portion of the building; at the time of the site reconnaissance, the tanks were on a concrete pad and enclosed by a chain-link fence with a locking gate. The other two aboveground tanks are located in the basement portion of the office building. Prior to 1988 the site was serviced by three cesspools located south of the building. In 1988 the Town of Plainville required the installation of a septic tank and leaching field to meet the increased demands caused by the proposed addition. The leaching field was installed along the western portion of the new building addition.

2.20 SITE HISTORY

Information on the history of site usage was provided in IEP's December 1990 Phase I report. We reviewed these data, contacted certain town employees and obtained additional information from the current site owners to develop the following historical summary.

Standard Chain Inc., the current owner of the site, leases it to Microwave, which manufactures precision metal electronic components at the facility. Microwave purchased the business operation from Standard Chain in 1990, retaining the name; the land was not included in this transaction. Standard Chain had purchased the property on November 2, 1982 from Frederick Brown and Donald James. Chomerics Inc. was a previous owner of the property.

Information from the current site owners and town employees indicates that since the 1950's the site has been used for light manufacturing. Site usage prior to this period is unknown. No records were found regarding the construction date of the original building but town personnel indicated that it was built before 1950. The first addition was completed sometime before 1984 and the final addition was constructed in 1988.

2.30 OIL AND HAZARDOUS MATERIAL USAGE

Information concerning the use of oil and hazardous materials (OHM) at the site was obtained through review of the Phase I Report and discussions with site personnel. Microwave manufactures precision metal electronic components using a variety of metals as raw materials. Processes used by Microwave in producing these components include stamping, drawing, machining and tumbling, a final finishing process which smooths the metal parts. A small vapor degreaser which uses trichloroethylene (TCE) is employed to clean the metal parts prior to tumbling.

OHMs used in the production processes include lubricating oils for the various machining steps and TCE for degreasing. According to Microwave personnel, Microwave currently uses a synthetic lubricant for machining operations; small quantities of waste lubricant are collected in 55-gallon drums for off-site disposal. It is our understanding that Microwave purchases approximately 275 gallons of TCE per year for the vapor degreaser. TCE is stored in a 275-gallon aboveground tank in the basement of the office structure, adjacent to the east wall of the building. The solvent is delivered by tank truck to a fill port on the outside wall of the office area. TCE was formerly stored in an exterior aboveground tank adjacent to the southeast corner of the office building. The exterior tank is no longer present.

Spent TCE from the degreaser is collected in 55-gallon drums for off-site disposal. It is our understanding that one to two drums of waste solvent were generated per year. (The balance of the TCE is apparently accounted for by evaporative losses from the degreaser.) Waste oil and solvent are removed by General Chemical Inc.

Other wastes generated by Microwave's operations include metal scrap from machining and stamping, and wastewater and sludge from the tumbling process. Metal scrap is collected in 55-gallon drums and hauled off-site for recycling. Water from the tumbling process is presently treated by precipitation to remove metal salts and then recycled. This treatment system has been in place since 1991. The water is periodically removed for off-site disposal as it becomes spent. Spent process water and precipitated sludges are collected in 55-gallon drums and transported off-site by General Chemical Inc.



Prior to late 1990, the process water was discharged to the on-site septic system. This practice was terminated in late 1990 when the discharge pipe to the septic system was cut and plugged. At that time, Microwave was generating approximately 50 gallons of wastewater per day, which was either removed for off-site disposal by General Chemical or stored in 55 gallon drums for future treatment after completion of the treatment system (under construction at that time). IEP's analysis of the process water in 1990 indicated nondetectable levels of VOCs, but several metals were reported. A previous analysis from 1988 documented in IEP's report had indicated low levels (less than 0.05 ppm) of VOCs in the wastewater, including TCE.

Before 1988, process water from the tumblers had been directly discharged to cesspools located south of the building. Three cesspools are depicted on a May 1987 plan prepared by SMR Surveying and Engineering Inc.; these are shown on Figure 3. The southernmost cesspool is believed to have been the discharge point for the tumbling process area. The three cesspools reportedly were removed by Iacuzzi Construction in 1988 when the current septic system and leach field were installed. Details regarding the closure/removal of the former cesspools were not available.

2.40 REGULATORY FILE REVIEW

As part of the Phase I study, IEP reviewed pertinent local, state and federal regulatory agency files for information regarding possible releases of OHM at the site. To update this previous research, GZA engaged New England Data Map Technology Corporation (NEDTC) to complete a regulatory database search and also reviewed certain state and federal lists and databases in our offices. A copy of NEDTC's report is included in Appendix C.

2.41 Federal Files

The Microwave site is identified on the US EPA's Comprehensive Environmental Response Compensation and Liability Act Information System List (CERCLIS) of sites for possible investigation under the federal Superfund program. This listing is apparently the result of information from IEP's Phase I report which was provided to the EPA by the DEP. Listing of the site on the CERCLIS database does not necessarily indicate that the site will be studied under Superfund. The Microwave site has not been proposed for

National Priority List status. No other CERCLIS or National Priority List sites were identified within 1/2 mile of the Microwave property.

EPA's Facility Index System (FINDS) database dated April 23, 1993 identified the Microwave property and three other sites within the study area as RCRA generators. These sites were: Electro Fix, 300 South Street; Plainville Corporation (LoRusso), Cross Street; and Studio Creations, 299 South Street (this is the same address as Tammy's Job Shop). NEDTC's report indicated a number of RCRA permit violations were noted at the Electro Fix site.



During its Phase I study, IEP reviewed the RCRA file for the Microwave site. The file contained a memorandum documenting a March 1986 RCRA inspection by DEP personnel during which minor labelling and reporting violations were noted. A follow-up inspection and letter dated later that year confirmed that the violations had been corrected. As a result of the March 1986 visit, DEP had also generated an internal memorandum regarding the disposal of process waste into the on-site cesspools. However, no action was required by DEP on this issue at that time.

2.42 State Files

NEDTC's review of the DEP's Spills listing updated through August 9, 1993 indicated three incidents within the study area. A release was reported at the "Former Standard Chain" property at 380 South Street on October 18, 1990. This listing apparently refers to the original reporting of IEP's Phase I study results for the subject site by Standard Chain's attorney. An incident involving soil contaminated by No. 2 fuel oil at 26 Cross Street (just west of Northeast Concrete's offices) was reported on October 31, 1992. This site is further discussed below. A release of an unknown quantity of No. 4 fuel oil was reported at the Northeast Concrete site on July 21, 1993. This release was apparently related to an underground storage tank (UST) at the site but no additional information was found.

NEDTC's report, DEP's July 15, 1993 List of Confirmed Disposal Sites and Locations to be Investigated (LTBI), and DEP's April 1994 Transition List Addendum identified four sites within the study area. These sites and their reported regulatory status was as follows:

Microwave Specialties Inc., Confirmed, Priority site,	Phase II
Iacuzzi Construction, 337 South Street -	LTBI
Lewicki Brothers, 26 Cross Street -	LTBI
LoRusso Corporation, Cross Street -	LTBI

Limited information on the three LTBI's which GZA obtained during the course of our Phase II study is summarized below.