

SUPERFUND
Site: <u>OT &amp; G</u>
Drawn: <u>3/2</u>
Other: _____

**FIVE YEAR REVIEW**

**OTTATI AND GOSS / GREAT LAKES CONTAINER CORPORATION  
SUPERFUND SITE  
KINGSTON, NEW HAMPSHIRE**

**DECEMBER, 1998**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION I - NEW ENGLAND**

3402

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**I. Introduction**

**Authority Statement. Purpose.** EPA Region 1 conducted this review pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 121(c), National Oil and Hazardous Substances Pollution Contingency Plan (NCP) section 300.430(f)(4)(ii), and OSWER Directives 9355.7-02, "Structure and Components of Five Year Reviews" (May 23, 1991) and 9355.7-02A, "Supplemental Five Year Review Guidance" (July 23, 1994). This is a statutory review. The purpose of a five year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. This document will become a part of the Site file. This review (Type Ia) is applicable to a site at which response is ongoing. The Site was placed on the National Priorities List on September 8, 1983. The last five year review was submitted on December 15, 1993.

**Site Characterization.** The Ottati and Goss / Great Lakes Container Corporation ( O & G / GLCC) Site is located approximately 3 miles south of Kingston, New Hampshire along Route 125. The entire Site is generally referred to as the O & G Site; however, the Site can be broken down into three distinct segments. First, a 5.88 acre parcel, owned at times by the Great Lakes Container Corporation and International Minerals and Chemical Corporation, is known as the GLCC or Kingston Steel Drum (KSD) portion. Second, there is a 29 acre parcel which has been owned by Senter Transportation Company and Concord Realty Trust. Of these 29 acres, one acre was leased to Ottati and Goss, Inc. and now this entire 29 acre parcel is known as the O & G portion. Third, there is a 23 acre marsh to the east of the GLCC portion between Route 125 and Country Pond. This parcel was purchased by IMCERA Group Inc. in 1984 and is known as the Country Pond Marsh. See Figure 1.

From the late 1950's through 1967, Conway Barrel and Drum Company (CBD) owned the Site and performed drum reconditioning operations on the GLCC portion. The reconditioning operations included caustic rinsing of drums and disposal of the rinse water in a dry well near South Brook. Kingston Steel Drum, the operator of the facility since 1967, continued the same operations as GLCC through 1973. South Brook and Country Pond became polluted, so CBD established two leaching pits (lagoons) in an area removed from South Brook. In 1973 International Minerals and Chemicals Corporation (IMC) purchased the drum and reconditioning plant and operated it until 1976. The two lagoons were reported filled in 1973 and 1974. In 1976 the property was purchased by Great Lake Container Corporation. Beginning in 1978, the Ottati and Goss Company operations consisted of "processing hazardous materials brought to the Site in drums." Heavy sludges from the wash tank and from drainings, and residues from incinerator operations at GLCC, were brought to the O & G Site for processing. The O & G operations ceased in 1979. GLCC continued the drum reconditioning operation on its portion of the Site until July 1980.

Beginning in 1980, a number of investigations and remedial activities have been conducted at the Site. From December 1980 to July 1982 EPA conducted emergency removal actions and processed and removed over 4,000 drums from the O & G portion of the Site. IMC conducted similar operations at the GLCC portion of the Site removing drums and soil from the Site between July 1984 and June 1985. The total removal included: 12,800 tons of soil, drums, and metals; 101,700 tons of flammable sludge; and 6,000 gallons of flammable liquid. The Site was secured with fencing in 1988.

Remedial Investigation / Feasibility Studies (RI/FS) were completed under a Cooperative Agreement with the New Hampshire Water Supply and Pollution Control Commission in 1986. The RI/FS conclusions were as follows:

Soils throughout the Site were contaminated with Volatile Organic Compounds (VOCs), polychlorinated biphenyls (PCBs), Acid/Base/Neutral compounds (ABNs), metals and cyanide at high concentrations at numerous locations.

Surface water in the North and South Brooks and Country Pond contained dissolved VOCs.

Sediments in the North and South Brooks and the marsh contained VOCs and PCBs.

Groundwater contaminated with VOCs, arsenic, nickel, iron and manganese was evident in several plumes that merged into one plume and then migrated under Route 125 and under the Country Pond Marsh eventually discharging into Country Pond.

There were not any significant airborne contaminants.

In January 1987, EPA issued a Record of Decision (ROD) for the Site which evaluated 18 alternatives and recommended excavating about 19,000 cubic yards of soil and treating them on site using incineration and thermal aeration. The ROD also recommended treatment of ground water by pumping, treating and re-injection of the treated ground water; demolition and disposal of above ground and below ground structures including the building, utilities, and underground storage tanks; and long term monitoring of the Site.

In 1988 and 1989 several Potentially Responsible Parties (PRPs) excavated and treated about 4,700 cubic yards of soils contaminated with VOCs at the O & G portion of the Site. The treatment was by thermal desorption (thermal aeration in the ROD). This work was designated as Operable Unit (OU) 1. The groundwater design that was being performed by the PRPs was designated OU 2.

In 1993, the EPA, New Hampshire Department of Environmental Services (NHDES), and the PRPs entered into a Consent Decree. This agreement resulted in most parties contributing to a cash settlement, thus rendering the remainder of the costs at the Site to be paid for by Federal Superfund money. Two Operable Units, OU 3 and OU 4, were defined to complete the

remediation. OU 3 would address the groundwater contamination while OU 4 would address building demolition and the soil and sediment contamination. OU 1 and OU 2 would not be used to designate any further work on the Site.

## **II. Discussion of Remedial Objectives; Areas of Noncompliance.**

**A. 1987 ROD** In 1986 EPA completed the RI/FS and the ROD was issued on January 16, 1987. The RI indicated that groundwater under the Site was contaminated above drinking water standards and a significant amount of soils and sediments were contaminated above levels protective of human health and the environment. Contaminants of concern in the groundwater included: benzene, trichloroethylene, tetrachloroethylene and 1,2 dichloroethane. PCBs are the primary contaminant of concern in the soils and sediments, although high levels of VOCs were also found. The remedy for the Site included the cleanup of groundwater to drinking water quality using pump and treat technology and the clean up of soils and sediment to (1) levels protective of human health and the environment and (2) levels that would be consistent with the groundwater cleanup. The technology chosen for the soils and sediment included excavation and incineration for the PCB contaminated material and thermal desorption for the VOC contaminated material. The following cleanup levels were established in the ROD:

Groundwater - 5 ppb for each of the following four indicator compounds; benzene, trichloroethylene, tetrachloroethylene, and 1,2 dichloroethane.

Soils - 20 ppm for PCBs and 1ppm for total VOCs.

Sediments - 1 ppm for PCBs and total VOCs.

**B. Site Progress** In November 1988, a group of PRPs entered into a Consent Decree with EPA to cleanup the soils in the O & G portion of the Site. This work was designated as OU 1. That work was completed in 1989 using thermal desorption on site. OU 2 was designated as the PRP lead groundwater design and remediation. In 1993, EPA, the State of New Hampshire, and a large group of PRPs entered into a Consent Decree which resulted in the remainder of the costs at the Site being financed through Federal Superfund money. As a result, Operable Units 3 and 4 were designated to complete the remediation and OU 1 and OU 2 would not be used to designate further work at the Site.

**C. Operable Unit 3, Groundwater Remediation** The design for the pump and treat groundwater remediation system was completed in September 1996. The design flow is about 50 gpm and the system included groundwater extraction wells in the GLCC portion of the Site and in the marsh east of Route 125. Discharge of treated water is to be reinjected into the aquifer. The estimated present worth cost of the system is about \$4.5 million. A review of the groundwater data during the design phase indicated significant declines of contamination levels have occurred since the 1988. See Table 1, Total VOCs Over Time, for selected wells showing groundwater contaminant concentrations over time and Figure 1 for well locations. Significant reductions of contaminant concentrations in wells W-13 and GZ -12 (down gradient of O & G but up gradient of GLCC) occurred after removal operations (1989) at the VOC source area in

the O & G portion of the Site. The remaining wells show changes over time but these are more influenced by contamination from the GLCC portion of the Site. Chemical data review and modeling projects that if source areas for groundwater contamination are removed, attenuation of the remaining contamination would occur in less than 10 years. Review of the modeling efforts and historical data by NRMRL-EPA in Ada, Oklahoma concluded that more field work would be necessary to evaluate the processes affecting the groundwater and the attenuation of the contamination. However, there was general support for the postponement of groundwater remediation until further evaluation could be accomplished.

The groundwater plume in the overburden extends from the former O & G operations location under Route 125 and the Country Pond Marsh and discharges to the Country Pond. While there is evidence of contamination in the bedrock aquifer, there has been little work to define the extent of bedrock contamination. Drinking water for residences and business near the Site is supplied from individual wells. These wells are both overburden and bedrock wells. The RI/FS estimated that about 450 year round persons have potential for exposure from bedrock wells and about 50 year round persons from overburden wells. Seasonal use of homes on Country Pond, a private camp ground on Country Pond and a Boy Scout camp on Country Pond add a potential population of 1,125 that could be exposed from overburden and bedrock wells. Sampling of residential wells has been performed by the NHDES since January 1984. The sampling includes residences near the Site as well as Camps and homes as far as several miles away. Results from drinking water wells near the site are below drinking water standards. The NHDES performs the annual sampling and sends the sampling results to each resident after each sampling event. The New Hampshire Department of Health and Human Services has written advisory letters to each owner when sampling results warrant their input. These letters delineate recommendations for use of the water and a Health Information Summary (fact sheet) on the chemicals detected. The NHDES will continue to monitor residential drinking water wells to insure the protectiveness of human health.

**D. Operable Unit 4, Building Demolition and Soil Remediation** As part of OU 4, EPA demolished and removed the building and associated structures during the fall and winter of 1993 and 1994. Approximately 3,229 tons of demolition material and 11,535 gallons of liquid waste and sludge were removed from the Site. Soil contamination and waste/debris were left in place below ground surface pending future soil remediation actions. A temporary cap was placed over these areas. See attached photos of Site.

The remaining part of OU 4 is a source control remedy for VOC contribution to groundwater and a removal remedy for PCBs and other contaminants in the soil and sediment. The ROD decision was to incinerate the soils and sediments with a clean up level of 20 ppm for PCBs and 1 ppm for VOCs in soils; and 1 ppm for PCBs and total VOCs in sediment. Design studies found the extent of PCB contamination were more extensive in the Country Pond Marsh portion of the Site. The extent of contamination in the marsh identified in the ROD was about 20 feet by 50 feet at the entrance and 40 feet by 100 feet at the exit of the culvert that carries South Brook under Route 125. The present extent of contamination in the Country Pond Marsh is about 11 acres. The remedial design is being completed to address the changed field conditions.

The design review examined the technology and cost effectiveness of the ROD decision to use incineration. Three alternatives were evaluated, on site incineration (ROD), off site incineration, and on site thermal desorption. The evaluation concluded that on site thermal desorption is more cost effective.

### **E. Changing Standards / Risk Evaluation**

Since 1986 additional methodologies to determine human health risk have been used. The ROD clean up level of 20 ppm was based on carcinogenic risk to human health based on a future residential scenario. The present EPA policy includes a risk evaluation for non-carcinogenic risk in making risk management decisions, which was not applicable in 1986 at the time of the risk assessment. The non-carcinogenic risk is stated in terms of a Hazard Quotient(HQ). An HQ of 1 is usually the goal of remediation. The current carcinogenic risk for exposure to PCBs in a residential scenario is evaluated as  $2 \times 10^{-3}$  with a hazard quotient of 423. The ROD clean up level of 20 ppm would reduce the carcinogenic risk to  $3.6 \times 10^{-5}$  and a hazard quotient of 7.7 for a residential scenario. The carcinogenic risk level is within the EPA acceptable risk range but the non carcinogenic risk is not acceptable. To provide an acceptable Hazard Quotient of 1, the clean up level for PCBs would be reduced to 3 ppm. This would increase the excavated and treated volume of soil in the GLCC portion of the Site by an additional 10,000 cubic yards (cu. yds.); a related cost increase of \$4.5 million. A change in the future use scenario from residential to non residential would keep the clean up level at about 20 ppm and be protective.

The Town of Kingston does not have a zoning category for commercial land and the Site is located in an area that is zoned rural residential. The current land uses abutting or near the Site include residential, commercial, recreational and wetland uses. The commercial uses include a gas station, RV sales and professional offices within 500 feet of the Site. The nearest residence is about 400 feet from the Site. A private campground is located east of Route 125 adjacent to the wetland and Country Pond. Future land use in the area is expected to remain mixed in a broad sense but change to reflect its location and proximity to the highway.

EPA and the NHDES believe that the most likely future use is of the Site is commercial because Route 125 is a major high volume traffic highway and historically the Site was in commercial use. EPA and the NHDES believe that a change in future use to non residential would be appropriate given the Site history and location. The GLCC Corporation was dissolved in Michigan in November 1991 and thus present ownership is unclear. Because there is no apparent owner the Town of Kingston was approached on this issue, and although declining to acquire the property and place deed restrictions on it preventing non residential use, the Town agreed that the State of New Hampshire could acquire the property and place deed restrictions on the property making the future use of the Site as nonresidential enforceable. Coordination between EPA and the NHDES is ongoing to make a decision to acquire the property. The change from residential to nonresidential will keep the clean up level established in the 1986 ROD but will result in lower costs to the governments.

The proposed remediation level of 1ppm for ecological risk in the ROD of Country Pond Marsh encompassed a very small area, at the entrance and exit of a culvert for South Brook.

Contamination was transported via surface water or surface discharges from the GLCC facility to South Brook and then to the Country Pond Marsh. Sampling in the marsh during November 1996 found the extent of PCB contamination above 1 ppm to be about 1200 feet from the culvert and include approximately 11 acres. Additional sampling is currently taking place and results will be available in 1999 for making remedial design decisions.

An Ecological Risk Assessment (ERA) has been completed for the marsh. The cleanup level proposed in the ERA and subsequent memoranda is 10 ppm. The present data indicates that about 5 acres of marsh or 10,000 cubic yards of material need to be remediated. The proposed design includes removal of the top layer of contaminated material and transport to the GLCC portion of the Site for on site treatment. The GLCC and Country Pond Marsh portions of the Site would be remediated concurrently.

### **III. Recommendations.**

The recommendations summarized here are the result of several years work in preparing the design documents for soil and groundwater remediation. Several changes to the remediation are proposed to be made during Fiscal Year 1999 resulting from new information gathered during design and in response to changes in policy concerning the evaluation of human health or ecological risk and the remediation of groundwater. The following recommendations are based on the above process.

A Decision Document with public input will be prepared in 1999 to address the following issues:

Keep on site thermal treatment but change from incineration to thermal desorption with off site disposal of residual PCBs.

Change the future use of the Site to non residential and implement institutional controls through the placement of deed restrictions (may need the acquisition of property to insure enforceable controls over time).

Document the cleanup levels for PCBs that are protective of human health for non residential site use.

Document the clean up level of PCBs in the Country Pond Marsh that are protective of the environment.

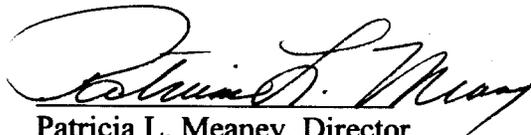
Develop a monitoring plan to evaluate potential for Monitored Natural Attenuation and continue coordination with EPA's Office of Research and Development (NRMRL, Ada, OK).

#### IV. Statement of Protectiveness.

The remedy is not at this time protective of human health and the environment. EPA is taking steps to make the remedy protective. The change in future use, implementation of institutional controls and associated clean up levels for PCBs will provide the appropriate protectiveness for the site (see III Recommendations).

#### V. Next Five-Year Review.

The next five-year review will be conducted in December, 2003.



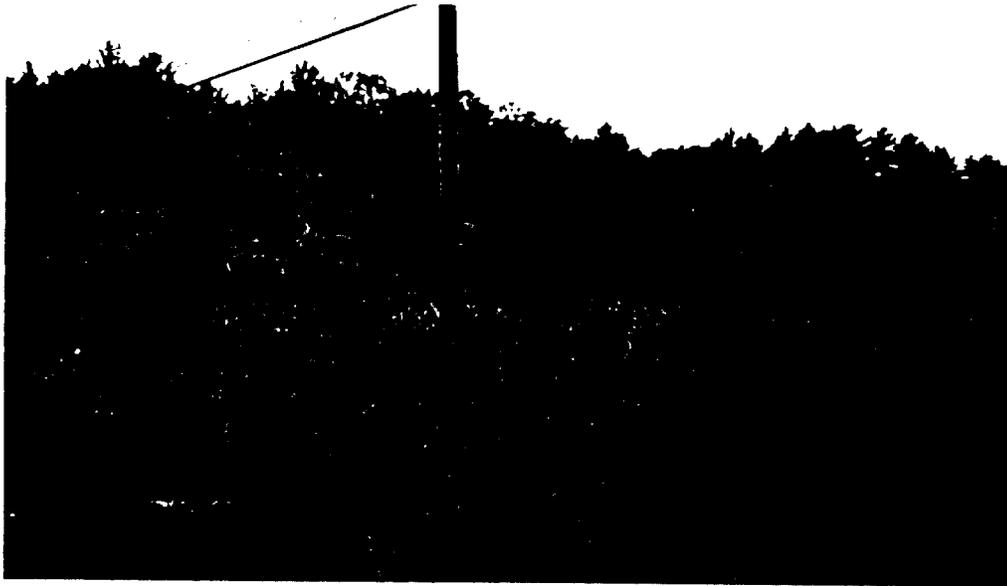
Patricia L. Meaney, Director  
Office of Site Remediation and Restoration

12/11/98  
Date

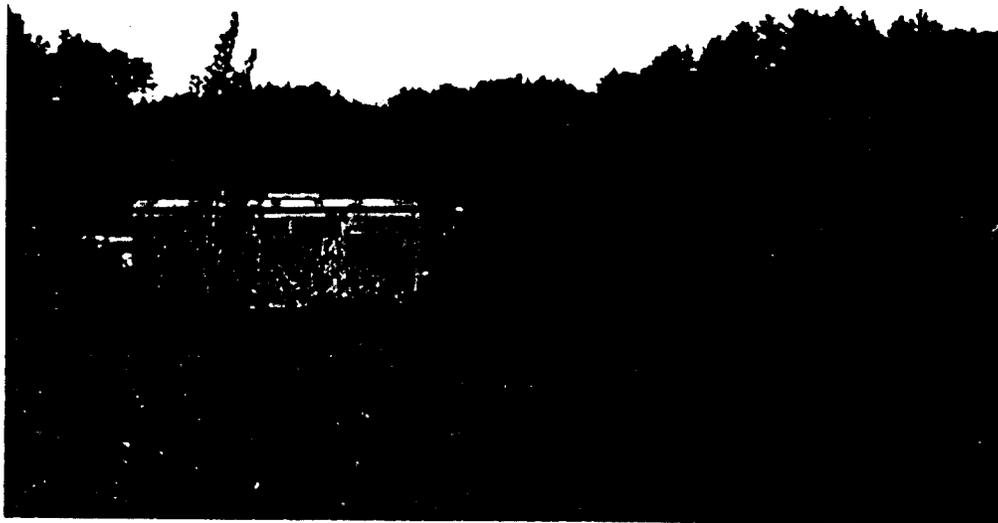
TABLE 1  
VOLATILE ORGANIC COMPOUNDS OVER TIME  
SELECTED WELLS OTTATI AND GOSS SUPERFUND SITE

WELL #	JAN-87	JAN-88	MAR-89	FEB-90	JAN-91	JAN-92	FEB-93	JUN-94	AUG-95	DEC-96
W-13	9119	1853	24726	524	429	258	98	51	2	91
GZ-12		1302	4630	2897	1861		476	234	511	285
W-22	16030	7402	27282	8822		6070	3670	9067	2212	7
GZ-11	1027	17529	7755	7824		14740	13342	20188	15494	14442
GZ-13	9065	7180	6738	6192		5390	4640	5272	4660	2727
W-6	1621	1323	954	726	237	485	410		804	1082
GZ-20	3634	875	944	380	964	1989	685			1008
Wells are listed in down gradient order from the O &G site to Country Pond Marsh. Groundwater flows in same direction. Empty cells means not sampled that year. Values are in parts per billion.										
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**OTTATTI & GOSS / GREAT LAKES CONTAINER CORP SUPERFUND SITE PHOTOS**  
**KINGSTON, NEW HAMPSHIRE**



**VIEW OF SITE - GLCC PORTION - FORMER BUILDING LOCATION**  
**AUTUMN 1998**



**VIEW OF GLCC PORTION OF SITE FROM ROUTE 125**  
**AUTUMN 1998**

# Ottati & Goss / Great Lake Container Corporation Superfund Site Kingston, New Hampshire

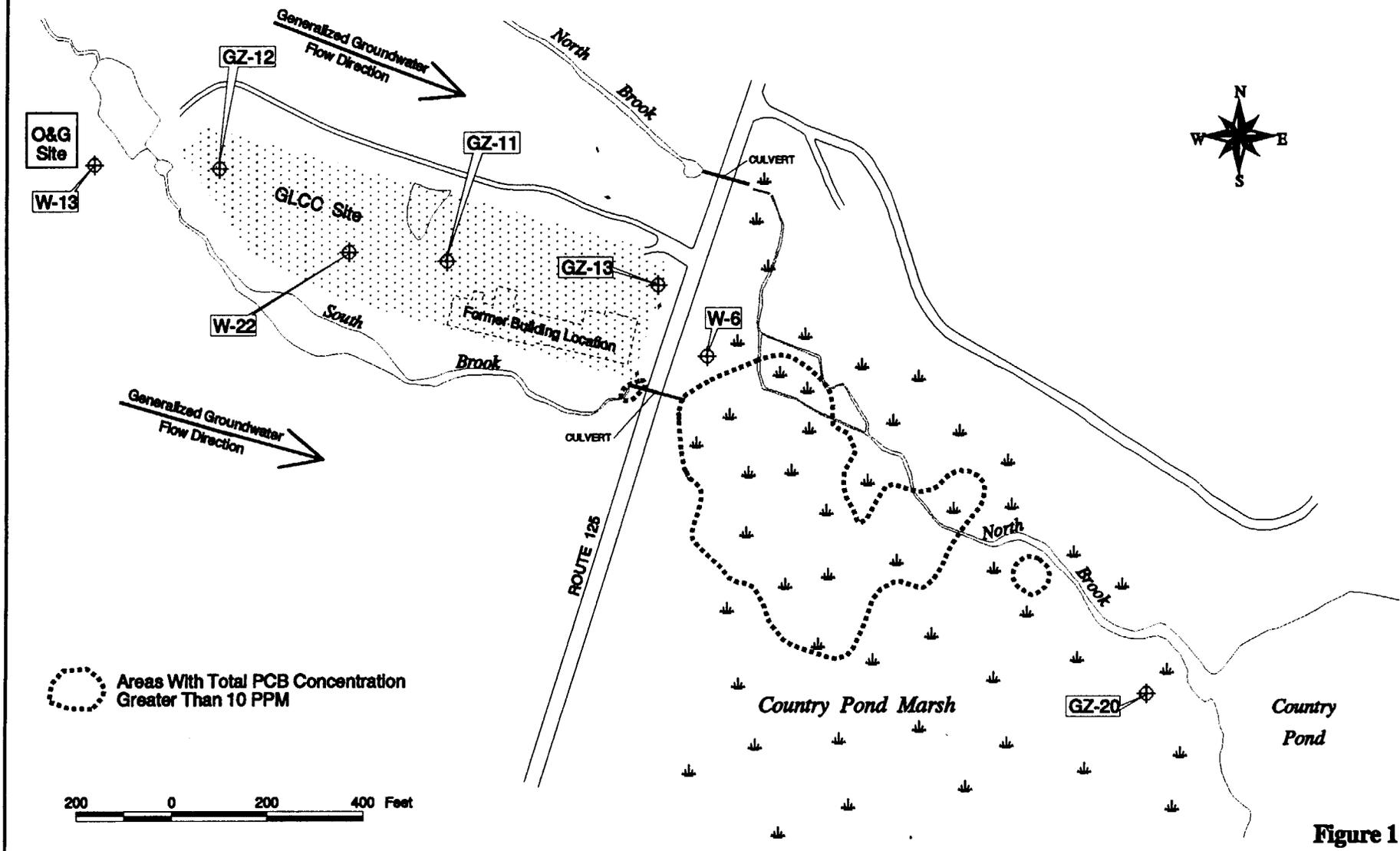


Figure 1