SUPERFUND STANDBY PROGRAM

New York State
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-7010

SITE ID 298: PASS & SEYMOUR, INC.

SITE SUMMARY REPORT

Onondaga Lake Project
Task 5: 104(e) Review

Site No. 734030-002
Work Assignment Number D003060-27

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1.0 SITE DESCRIPTION

The information referenced in this report was mainly obtained from the 104(e) responses of Pass & Seymour, Inc. (Pass & Seymour, Company ID 2042). Two mailings were received from Pass & Seymour dated October 9, 1996 and January 29, 1999. The supplemental response was based on the April 14, 1998 USEPA/NYSDEC request for additional information. Information obtained from other sources is noted, as necessary.

1.1 Location

The Pass & Seymour facility is located at 50 Boyd Avenue in Solvay, New York in Onondaga County (Site ID 298). The site is bound by Milton Avenue to the south, Boyd Avenue to the east, Geddes Brook approximately 2,500 feet west of the site and the Old Erie Canal approximately 1,000 feet to the north. The location of the facility in relation to Onondaga Lake is shown in Figure 1 herein. The site location is also shown on the USGS Syracuse West topographic map in Figure 2. Based on the USGS map and the unscaled site layouts provided (Mailing No. 1, p. 000019), the size of the Pass & Seymour manufacturing facility is approximately four acres.

Pass & Seymour is located approximately 1,000 feet east of both the Frazer & Jones Company facility (Frazer & Jones, Company ID 2038, Site ID 284), and the Frazer & Jones Landfill. At an unspecified date prior to July 18, 1996, disposed waste in the Frazer & Jones Landfill had been removed (TAMS, 2000a). The Village of Solvay (Company ID 2061) operated a landfill (Site ID 354) approximately 500 feet northwest of the Pass & Seymour facility. Operations at the Village of Solvay Landfill continued from the early 1950s to late 1991 (TAMS, 1999a). North of the Village of Solvay Landfill, Honeywell International, Inc., formerly known as AlliedSignal (Honeywell, Company ID 2010), performed landfilling operations at the Mathews Avenue Landfill (Site ID 315), which was permitted to receive waste until 1986 (TAMS, 1999b). The Mathews Avenue Landfill is located approximately 500 feet north of the Pass & Seymour site. The Stanton Foundry, Inc. facility (Stanton

Foundry, Company ID 2050, Site ID 310) was in operation between 1941 and 1988, and was located approximately 1,500 feet west of Pass & Seymour. The Stanton Foundry Landfill was operated during the same time period as the main Stanton Foundry facility, and is located approximately 2,300 feet west of Pass & Seymour (TAMS, 2000b). The locations of Pass & Seymour, Frazer & Jones, Stanton Foundry, Geddes Brook, and the aforementioned landfills are shown in an aerial photograph (date unknown) that is provided as Figure 3 herein. It is not readily apparent on Figure 3, where the exact location of the Pass & Seymour Landfill was situated, however, the company indicated that it was west of its main building and parking lot (Mailing No. 2, Exhibit 6(A)).

1.2 Geology

The surficial geology of the Syracuse area was strongly influenced by the most recent glacial advance (Wisconsin age, 12,000 to 14,500 years ago). The area occupies a region that was covered by Lake Iroquois, a large glacial lake situated in front of the ice margin. The broad flat-lying plains situated north from Syracuse to Lake Ontario were formed beneath Lake Iroquois and are characterized by lacustrine fine sand and silt deposits. Additional glacial features common to the region are moraines, drumlins, U-shaped valleys, and meltwater channels.

Onondaga Lake and all its major tributaries lie within glacial meltwater channels. These features originally were conduits carrying meltwater at large volumes and high velocities away from the glacier. Sediment types characteristically found in meltwater channels are sands and gravels. These relict features form important water bearing and transmitting units which form an irregularly branching, net-like pattern.

The bedrock geology of the greater Syracuse area includes Lower to Middle Paleozoic age sedimentary rocks predominated by carbonate (dolostone and limestone) and shale, and containing some sandstone, siltstone, and evaporites. Bedrock directly beneath the area (as well as underneath Onondaga Lake) is Silurian Vernon Shale (Rickard and Fischer, 1970) which has low permeability, but does possess secondary porosity due to fractures. Soil boring logs were not provided by Pass & Seymour.

In 1986, Wehran Engineering prepared a Phase I investigation report for NYSDEC regarding the Frazer & Jones facility (NYSDEC, 1986). In this report (NYSDEC, 1986, p. 4-3), details were provided for geologic characteristics in the vicinity of the Frazer & Jones facility, and their findings are also likely true for Pass & Seymour which is adjacent to the Frazer & Jones facility. It was noted that the Frazer & Jones facility is located within the physiographic boundary of the Ontario-Mohawk Lowland and is generally flat without any dominant trend to land forms. The soils in the surrounding areas are classified as Urban Land and the overburden is glacial till (USDA, 1977). Underlying the glacial till is the Middle Shale unit consisting of the 350-foot thick Camillus Shale formation, which is underlain by the 500-foot thick Vernon Shale formation. The Camillus Shale consists of grey thin-bedded shale, gypsum beds, salt, and dolomite. The Vernon Shale consists of red soft shale, beds of green shale, gypsum, and dolomite.

1.3 Hydrogeology

According to the Syracuse West USGS map, the ground surface elevation at the Pass & Seymour site is approximately 425 feet NGVD (see Figure 2). Groundwater elevation data were not provided by Pass & Seymour. Shallow groundwater is expected to flow towards Geddes Brook and the Old Erie Canal (approximate elevation 400 feet NGVD) to the north and northwest based on ground surface contours.

It was noted in a document provided by Stanton Foundry that there is a wetland area located on their property which implies a saturated soil condition for at least part of the year (TAMS, 2000b). This area extends from the vicinity of the nearby Stanton Foundry facility to the north and northwest off their property. A wetland delineation map was not available for review, however, the land was confirmed to be a freshwater wetland in a June 17, 1980

NYSDEC interoffice memorandum and subsequent correspondences with Stanton Foundry instructing the facility on wetland permit regulations.

As noted in the Phase I Report that was prepared regarding the nearby Frazer & Jones facility (NYSDEC, 1986), overburden in the area consists of glacial till and is not considered a significant water bearing unit. Estimated well yield within the till is between 0.1 and 2 gallons per minute (gpm). It was also noted in the Phase I Report that Allied Chemical (currently Honeywell), which was located approximately one mile northeast of the site, had three wells in the Middle Shale formation, with depths ranging from 200 to 300 feet below the ground surface. At the Allied Chemical wells, the depth to bedrock was between 10 and 30 feet, and the depth to groundwater was between 10 and 56 feet below the ground surface. The reported well yield was between 100 and 245 gpm. Typically, the water quality in this area is hard and contains elevated sulfate levels. The Phase I Report also states that the Frazer & Jones facility is located in a region where "salty groundwater is likely to occur within the upper 100 feet of bedrock" (NYSDEC, 1986, p. 4-3). A NYSDEC summary of the Frazer & Jones site noted that the depth to groundwater at the facility was between 10 and 30 feet (NYSDEC Additions/Changes to Registry of Inactive Hazardous Waste Disposal Sites, 1991a). The Frazer & Jones Landfill (see Figure 3) is located in an area that was once a freshwater wetland. It was noted in the Phase I Report (page 2 of the Hazard Ranking System [HRS] Documentation Records) that groundwater is present at the ground surface in unconsolidated deposits in the area of the landfill (TAMS, 2000a).

1.4 Surface Water Hydrology

The Pass & Seymour facility is located within the Onondaga Lake basin approximately 1¼ miles southwest of the western shore of Onondaga Lake, approximately 2,500 feet east of Geddes Brook (a tributary to Ninemile Creek), and approximately 1,000 feet south of the Old Erie Canal location. Surface contours on the USGS Syracuse West topographic map depict surface water from the Pass & Seymour site to likely flow to the north and northwest (see Figure 2). As noted in Section 1.3, there is a wetland area to the north and northwest of Pass

& Seymour, in the vicinity of the Stanton Foundry Landfill. It was not indicated in the documents that were available for review whether any surface water runoff measures or runoff management/treatment structures (i.e., berms, swales) were used by Pass & Seymour to minimize off-site contamination.

2.0 SITE HISTORY

2.1 Owners/Operators

The Pass & Seymour manufacturing facility, which was located at 50 Boyd Avenue in Solvay, NY, was in operation from approximately 1890 to 1994 (Mailing No. 1, p. 000004). Legrand Holding, Inc. is the parent company of Pass & Seymour.

2.2 Site Operations

Pass & Seymour operated an electronics manufacturing facility (SIC Code 3642) which produced electrical wiring devices from approximately 1890 to 1994 at which time manufacturing operations ceased (Mailing No. 1, p. 000005). From 1890 to 1972, the facility was also used for the manufacture of porcelain light fixtures (Mailing No. 1, p. 000005). According to a newspaper article (date and source unknown), it was noted that Pass & Seymour also manufactured switches, switch plates, and sockets at this location. Presently, the facility is maintained as a corporate office (Mailing No. 1, p. 000005). Descriptions of manufacturing processes at the Pass & Seymour facility were provided in Mailings No. 1 and No. 2 and are discussed below. Details regarding the types of wastes that were generated on-site are provided in Section 2.3.

Pass & Seymour provided two site layouts that indicate numbers that identify various buildings and areas of the site (Mailing No. 1, pp. 000019, 000021). These layouts are presented herein as Figures 4 and 5. It should be noted that there are two discrepancies in the two figures. Area numbers 10 and 22 on Figure 5 seem to match up with areas on Figure 4 that are labeled 15 and 23, respectively (also note that there are two areas with the number 10 on Figure 5; it is likely that the area labeled "10," containing the drum storage location, is actually area "15" and thus, the change was made to Figure 5). The reason for this difference in labeling was not indicated by Pass & Seymour. Furthermore, Pass & Seymour refers to these areas as buildings in their two mailings, but it is not apparent in the site sketch layouts whether the areas are, in fact, separate buildings within the manufacturing facility.

From 1930 to 1994, thermal molds were used to produce plastic wiring devices in what is referred to as a thermoset process (Mailing No. 1, p. 000006). In the thermoset process, a urea powder was placed in a mold. The mold was then heated until the urea powder melted, producing a subassembly. The mold was allowed to cool and the subassemblies were removed. Excess molding material, referred to as "flash," was then removed and recycled at an unspecified off-site recycling facility. The wiring devices were composed of porcelain, unidentified metal types, and a plastic known as Bakelite. The processes that were used to manufacture plastic wiring devices prior to 1930 were not indicated in the documents that were available for review.

A second type of molding process used at the Pass & Seymour facility, referred to as thermoplastic molding, involved the use of a phenolic-based compound (Mailing No. 1, p. 000006). This process was also used between 1930 and 1994 and involved the injection of melted nylon or Lexan (a polycarbonate thermoplastic) into the mold as compared to urea powder in the thermoset process. After injection of the nylon or Lexan, the mold was heated until the nylon or Lexan melted, producing a subassembly. The mold was then cooled and the subassemblies were removed. Excess plastic strings (runners) from this process were reused as feed stock.

From 1971 to 1994, Pass & Seymour manufactured timing devices and Ground Fault Circuit Interrupters (GFIs) (Mailing No. 1, p. 000006). To manufacture these items, circuit boards were purchased from an unspecified outside source. Circuit boards that were purchased and contaminated with foreign matter were cleaned in an acid wash to remove particulate matter prior to the plating process. After acid washing, the circuit boards were sprayed or dipped in an epoxy to produce a conformal coating and prevent short circuiting. Fumes produced in this process were filtered and emitted through emission points (EP) EP19 and EP29. Air emission permits are discussed in greater detail in Section 3.4.

From 1890 to 1972, Pass & Seymour also manufactured porcelain light fixtures which were composed of viscous clay and a glaze (Mailing No. 1, p. 000005). The manufacturing process involved the pouring of viscous clay material into light fixture molds, curing in a kiln, and then using hydraulic and pneumatic presses to mold porcelain pieces. The fixtures were then covered with a glaze compound and fired in a kiln oven. The glaze compound consisted of "feldspar, whitening (powdered) #3, red powdered dye, Supersil, calcium chlorohydrite, borax, and water" (Mailing No. 2, p. 1). The aforementioned Supersil is a trade name for silica sand. The type and properties of the powdered whitening compound and the dye were not indicated in the documents that were available for review. Porcelain fixtures were then assembled, packaged, and distributed to unspecified locations. After 1972, the porcelain fixtures were purchased from an unspecified location off-site.

After several uses, the fixture molds were cleaned to remove any left-over small pieces of porcelain by a process called media blasting (Mailing No. 1, p. 000005). These waste porcelain pieces were disposed of on the western portion of the Pass & Seymour site (see Figure 5). Pass & Seymour operated the on-site landfill between 1930 and 1972. Waste disposal practices are discussed in greater detail in Section 2.3. The current state of the landfill was not indicated in the documents that were available for review, and no leachate management systems nor erosion control measures were indicated.

Cold stamping of brass and steel was used in the manufacture of metal subassembly parts to remove excess metal material (Mailing No. 1, p. 000005). The stamped metal parts were then cleaned with an alkaline solution or an organic solvent to remove residual oil and grease. The type and quantity of alkaline solution which was used to clean stamped metal parts were not specified in the documents that were available for review. The cleaned parts were then usually plated with zinc, nickel, or copper. Plated parts from the zinc bath were lowered into a dead rinse tank to remove large portions of zinc from the plates to minimize the zinc concentration of waste rinse waters (Mailing No. 1, p. 000012). Once plated, the parts were then buffed with a cloth material to improve the luster of the plated assembly. Fumes produced during this process were emitted at emission points EP18, EP21, and EP28

(Mailing No. 1, p. 000005). Plated parts were then drilled, tapped, and assembled with fasteners. It was noted in a NYSDEC air permit that a Curtiss Grinder was used by Pass & Seymour for metal grinding purposes and generated iron waste (Mailing No. 1, p. 000038).

Parts not plated with metals were painted in a spray booth (Mailing No. 1, p. 000005). Paint fumes produced in this process were emitted to the atmosphere through emission point EP16 which included a particulate filter to remove solid particles. The painted parts were then dried in a baking oven and fumes formed during this process were emitted through a permitted air emission point EP17. The paint booth and baking oven ceased operation in 1984.

It was noted in a May 5, 1982 RCRA Inspection Form that 1,1,1-trichloroethylene was used by Pass & Seymour to degrease equipment such as screws and washers until August 1982. Furthermore, the wastewater formed during the washing process (approximately 3,000 gallons per year) was found to be contaminated with metal chips, oil, and dirt, and was stored in 55-gallon drums. After August 1982, Pass & Seymour changed their degreasing operations to one that incorporated a centrifuge spin washer that used an oil and soap mixture. A September 28, 1982 RCRA Inspection Form verified that this process no longer produced wastewater because it was a closed system. It was not specified whether the aforementioned "alkaline solution" and "organic solvent," which were used to remove residual oil and grease from stamped metal parts, were among the materials which were replaced with the centrifuge spin washer (Mailing No. 1, p. 000005). On page 000007 of Mailing No. 1, Pass & Seymour indicated that hazardous wastes were generated during parts/tool cleaning between 1976 and 1994, however, "similar products may have been used prior to these dates." Naphtha solvents and 1,1,1-trichloroethane were specified as wastes that were generated, however, the specific waste-generating processes were not identified. It was noted in the Onondaga County Department of Drainage and Sanitation (OCDDS) permits that a Jensen Parts Washing Process was used from 1988 to 1993 for parts and equipment cleaning (Mailing No. 1, pp. 000138-000160), however, details regarding this washing process were not included in the documents available for review.

The plastic and metal assemblies were assembled into wiring devices which was either done "manually or semi-automatically" (Mailing No. 1, p. 000006). The products manufactured by Pass & Seymour were then packaged and shipped to distribution centers.

2.3 Generation and Disposal of Wastes

Waste generated during process operations were either recycled, disposed in an on-site landfill area, discharged to the sanitary sewer, or transported to an off-site disposal facility. Descriptions of waste generated and the location of on-site storage facilities, on-site disposal areas, and off-site disposal facilities were provided by Pass & Seymour for the period between 1980 and 1994 (Mailing No. 1, p. 000008; Mailing No. 2, p. 2). Pass & Seymour stated that "the precise nature, volume, and disposal methods before 1980 is not known" (Mailing No. 2, p. 1). As shown in Figure 5, production chemical storage areas A and C and hazardous waste storage areas B and D were located in Building No. 10 and adjacent to Building No. 18. The types of generated wastes, period of generation, quantity, and disposal location are indicated in Table 1 herein. This table (and the summary provided by Pass & Seymour) only includes facilities within 50 miles of Onondaga Lake. Pass & Seymour noted that disposal facilities outside of this area were also used (Mailing No. 1, p. 000009).

Table 1: Summary of Generated Wastes

Waste	Waste-Generating Process	Years	Quantity of Wastes Generated [2]	Disposal Location
Scrap porcelain from molds	Manufacture of Porcelain Fixtures	1930-1972	2,000 lb/week	On-site landfill
Electroplating rinse water	Zinc/Copper Plating	1930-1994	Data not available	OCDDS
Copper and nickel sludge (F003)	Copper Plating	1930-1994	550 lb/year	Solvents and Petroleum, Inc.[1]
Zinc and chromium sludge	Zinc Plating	1930-1994	Data not available	Solvents and Petroleum, Inc.[1]
Sodium persulfate (D008)	Parts Cleaning	1972-1986	Data not available	Solvents and Petroleum, Inc.[1]
Wave oil	Parts Cleaning	1972-1986	5-gallon cans	Solvents and Petroleum, Inc. [1]
Waste petroleum naphtha (D001)	Parts Cleaning	1976-1994	4,410 lb/year	Safety Kleen Corp. [1]
1,1,1-Trichloroethane (F002)	Parts Cleaning	1976-1994	385 lb/year	Solvents and Petroleum, Inc.[1]
Waste petroleum distillate, naphtha solvents (F003)	Parts Cleaning	1976-1994	583 lb/year	Solvents and Petroleum, Inc.[1]
Hazardous waste liquid NOS (F001)	Parts Cleaning	1976-1994	1,155 lb/year	Safety Kleen Corp. [1]
Methyl ethyl ketone (MEK) (F001) and MEK sludge	Parts Cleaning	1977-1985	< one 55-gallon drum/month	Solvents and Petroleum, Inc.[1]
Freon sludge	Parts Cleaning	1980-1988	1-2 drums/month	Solvents and Petroleum, Inc.[1]
Paraffin wax/oil (D001)	Parts Cleaning	1981-1986	< one 55-gallon drum/month	Solvents and Petroleum, Inc.[1]
Boiler water and cooling tower water	Closure	Oct. 14, 1995-Oct. 18, 1995	5,250 gallons	OCDDS
Cooling water	Data not available	Data not available	Data not available	OCDDS
Sanitary wastewater	Building Operation	? - Present	Data not available	OCDDS
Jensen parts washing wastewater	Parts Cleaning	Data not available	Data not available	OCDDS

Notes: 1 = Solvents and Petroleum, Inc. and Safety Kleen Corp. are located in Syracuse, New York.
2 = Quantities of wastes are average values from 1980 to 1994 (Mailing No. 1, p. 000008) unless otherwise indicated.

Specific wastes that contained urea powder (thermoset process) and phenolic-based compounds such as lexan or melted nylon (thermoplastic molding) were not indicated in the documents that were available for review. Once the mold cooled, the subassemblies were removed, and excess molding material (flash) was removed and recycled at an unspecified off-site recycling facility at a rate of approximately 40,000 lb/yr (Mailing No. 1, p. 000006). It was also not indicated if waste Bakelite was generated and, if so, where it was disposed. Pass & Seymour did note that "generally waste liquids were drummed and local haulers (identity not now known) removed [drums] from the facility" (Mailing No. 2, p. 1).

As a result of the acid washing (acid stripping) process of the circuit boards, air emissions consisting of nitrogen oxides and sulfuric acid mist from Building No. 15 were generated (Mailing No. 1, p. 000028). It was not indicated whether the acid washing of GFIs produced acidic wastewater. The epoxy coating and thermal curing operations of the circuit boards generated air emissions that contained hexone, toluene, isopropyl alcohol, and organic solvents (Mailing No. 1, p. 000031).

During the manufacture of porcelain light fixtures, waste porcelain scraps were generated and disposed in an on-site landfill which is referred to in Mailing No. 2 as a "porcelain dump area" (Mailing No. 2, p. 1 and Exhibit 6A). These landfilling operations, which also included the disposal of office rubbish, continued from 1930 until 1972. The location of the on-site landfill is shown on Figure 5 and was included as a sketch in Exhibit 6(A) in Mailing No. 2. This landfill is located on the western perimeter of the site beyond Building No. 18 and the parking lot. The area and volume of the landfill were not indicated by Pass & Seymour. It was stated that the average quantity of porcelain scrap waste that was landfilled was 2,000 lb/wk (Mailing No. 1, p. 000008). Thus, the total quantity disposed over the 42-year period was approximately 2,200 tons. No information was available for review regarding annual cover material application or the closing of the disposal site after 1972.

Wastes that were directly from the cold stamping process were not indicated in the documents that were available for review. It was noted that stamped metal parts were cleaned with organic solvents or an alkaline solution which was not identified. Based on NYSDEC air permits that were provided, the following metallic wastes were generated during the processing of metal materials: metal grinders were used in Building No. 3 which generated air contaminants consisting of iron and particulates (Mailing No. 1, p. 000023); buffing machines and a piece of equipment known as a "Curtiss Grinder" emitted iron waste into the air from Building No. 15 (Mailing No. 1, p. 000038); and a "Wheelabrator Grit Blast" cleaner which was used for machined parts that emitted iron and particulates from Building No. 17 (Mailing No. 1, pp. 000024-000025).

The stamped metal parts, after cleaning, were then either plated with zinc, nickel, or copper, or painted in a spray paint booth. Plating tanks were located in Building No. 15, and were either composed of nickel, copper, or brass (a hand-written note on the air permit indicates that this emission is from Building No. 10 rather than Building No. 15). Air emissions from these tanks contained liquid mist NEC (Mailing No. 1, p. 000029). Zinc and chromium sludge was generated during the zinc plating process from 1930 to 1994 (Mailing No. 1, p. 000007), however, the rate of sludge production and the disposal location were not included in the information that was available for review. Plating process wastewater was directly discharged into the sanitary sewer system and then transported to the Metropolitan Syracuse Wastewater Treatment Facility (METRO). A zinc chloride air emission waste stream was generated by the zinc plating operations in Building No. 5 (Mailing No. 1, p. 000032).

Pass & Seymour's sanitary wastes, rinse water from the zinc and copper plating processes, process wastewater from the parts washing equipment, and cooling water were discharged to the OCDDS sanitary sewer system as regulated by Industrial Wastewater Discharge Permit No. 7 (Mailing No. 1, pp. 000119-000160). The OCDDS permits, which were included in Pass & Seymour's first mailing, covered the following periods of time: July 23, 1981 to July 23, 1984; July 23, 1982 to July 23, 1985; December 15, 1988 to December 15, 1991; and February 5, 1990 to February 5, 1993. It was not noted in the Pass & Seymour mailings why overlapping OCDDS permits were issued. It is possible that a change in the plating process in 1982 necessitated a modification to the permit (see discussion below). Effluent discharge limitations are specified in the permits for biochemical oxygen demand (BOD), cadmium, chromium, copper, lead, nickel, oil and grease, pH, silver, total cyanide, total phosphorus (TP), total suspended solids (TSS), total toxic organics, and zinc. According to the most recent permit (1990-1993), each of the metals and total toxic organics were to be analyzed in sewer No. 7 (process wastewater). Prior permits indicate sewer No. 8 as the process wastewater discharge location and sewer No. 7 as the sanitary wastewater location (Mailing No. 1, pp. 000142-000143). In addition, prior permits also indicate monitoring at sewers Nos. 1, 2, and 6.

A dead rinse tank was integrated into plating operations in 1982 to make the facility compliant with new effluent permit limits for zinc as directed by the facility's OCDDS permit (Mailing No. 1, p. 000012). Water that was collected in the dead rinse tank was pumped, on a daily basis, into a zinc drag-out tank which contained two evaporating heaters. Liquid within the tank was then evaporated leaving a zinc sludge material remaining in the tank. The sludge was removed from the tank, placed into DOT-approved containers, and disposed off-site at a hazardous waste disposal facility (Mailing No. 1, p. 000012). Once emptied, the tank water was replaced with fresh water.

Pass & Seymour's wastewater from the copper and zinc plating processes was conveyed to the facility's manhole No. 3 where it then entered the Onondaga County sanitary sewer system (Mailing No. 1, p. 000020). It should be noted that manhole No. 3 is depicted in a flow chart provided in Mailing No. 1 (p. 000020), however, its exact location was not indicated on the site maps that were available for review. In another diagram that was included on page 000279 of Mailing No. 1, the facility's sewer system and roof drainage system is shown such that wastewater appears to flow into a manhole (not labeled with a manhole number) located north of Building No. 12 where the plating process occurred. This manhole was shown in this diagram to be connected to the area's storm sewer system, however, the exact nature of the discharge (if different than plating wastewater) was not indicated in the documents that were reviewed.

The paint spray booth and paint bake oven that were in operation until 1984 generated particulates and paint thinner waste that were discharged to the air from Building No. 15 (Mailing No. 1, pp. 000026-000027).

It was noted on a September 28, 1982 RCRA Inspection Form that trichloroethylene was used at this facility for the degreasing of equipment. Furthermore, a May 5, 1982 RCRA Inspection Form noted that approximately 3,000 gallons of 1,1,1-trichloroethylene were generated annually. The use of trichloroethylene as a degreaser was discontinued on August 27, 1982 and replaced with a closed system consisting of a centrifuge spin washer. This system used oil and soap and produced no waste stream (RCRA Inspection Form, September 28, 1982). Manifests were provided that described shipments of tetrachloroethylene and trichloroethylene waste to a facility located in Quebec, Canada (Mailing No. 1, pp. 000048-000052, 000093-000097). Solvents and Petroleum, Inc. in Syracuse, New York received an average of 385 lb of 1,1,1-trichloroethane waste per year from Pass & Seymour (Mailing No. 1, p. 000008). However, it was not indicated in the documents that were available for review whether the facility's degreasing operations were the sole generator of these wastes. It was noted that a "hot degreaser" was situated in Building No. 15, from which trichloroethylene was emitted into the air (Mailing No. 1, p. 000030), however, a process description of the hot degreaser was not provided in the documents that were available for review.

The disposal facilities within 50 miles of Onondaga Lake, where Pass & Seymour sent unrecoverable hazardous wastes, were Safety Kleen Corporation and Solvents and Petroleum, Inc. which are both located in Syracuse, New York (Mailing No. 1, p. 000008). Drummed wastes from the plating processes as well as spent solvents from the washing process (paraffin wax/oil, MEK, sodium persulfate, freon sludge, waste petroleum distillate, naphtha solvents, and wave oil) were sent to these facilities (Mailing No. 2, p. 2).

The December 15, 1988 to December 15, 1991 OCDDS permit required Pass & Seymour to disconnect all roof conductor pipes from the process wastewater discharge at sewer No. 8 by February 1, 1989 (Mailing No. 1, p. 000144). It is possible that this was in response to a violation in OCDDS effluent quality guidelines, however, this was not indicated in the information that was available for review. It was also not indicated whether the disconnections were performed. Pass & Seymour provided a 1988 as-built drawing of the site's sewer system as requested in the same OCDDS permit (Mailing No. 1, p. 000144). This drawing showed the storm sewer to flow north through the area where the plating process occurred (Building No. 12), however, the manhole to which this flow was directed was not labeled. The February 5, 1990 to February 5, 1993 OCDDS permit required Pass & Seymour to terminate all cooling water discharge to the sanitary sewer by July 15, 1990 because it was determined to be a source of extraneous flow (Mailing No. 1, p. 000156). No information was available for review that described how this waste was subsequently disposed. The only analytical data for effluent to the OCDDS system prior to the first OCDDS permit that were included in the Pass & Seymour mailings were wastewater effluent sample results collected by OCDDS in 1978. These samples were collected from sewer Nos. 1, 2, and 6, and were analyzed for pH and inorganics. The results of these 1978 sample events are discussed in Section 4.2.1.

Area B was located within Building No. 10 and area D appears to have been located outside of Building No. 18 (see Figure 5). These areas are described as "hazardous waste storage" locations, however, a description of the storage facilities and of the materials that were stored were not available for review. Pass & Seymour also operated two storage areas including a fuel tank storage area south of Building No. 12 and a drum storage area north of Building No. 15 (Mailing No. 1, p. 000010). In the fuel tank storage area, underlying soil was found to be contaminated with chlorinated solvents and it was speculated that "spent degreasers may have been stored in this area during the early years of operation." Furthermore, it was noted that, although the drum storage area north of Building No. 15 was used for "empty drums containing oil compounds," elevated levels of semi-volatile organic compounds (SVOCs) were found in the underlying soil. It was noted that in both areas of the site "the contaminated soil was disposed of off-site as hazardous waste" and the sources of the contamination were not known. These data are discussed in Section 4.2.1.

In addition, PCB-containing transformers and contaminated soil and concrete debris adjacent to the pad were removed from the site south of Building No. 14 in 1995. The soil and transformer wastes were disposed off-site at permitted facilities (Mailing No. 1, p. 000010).

Pass & Seymour speculated that, prior to 1980, an unspecified quantity and type of wastes were "stored in a garage outside the old blanking department building" (Mailing No. 1, p. 000007). The storage conditions (including floor imperviousness and stormwater runoff prevention measures) were not indicated in the documents that were available for review.

3.0 POTENTIAL PATHWAYS FOR RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

3.1 Soil

Soil at the Pass & Seymour site could have been contaminated directly from on-site disposal of wastes, spills from waste storage and handling areas, leaks from underground storage tanks, sewers, and pipelines, and from routine maintenance activities. These potential pathways of contamination were identified based on facility practices and past land uses documented in Pass & Seymour's mailings, as well as information regarding their storage of hazardous substances, and reported major spills. Potential source areas are shown on Figure 5 and the results of soil sampling events are summarized in Section 4.2.1.

3.2 Surface Water

The Pass & Seymour facility is located approximately 2,500 feet east of Geddes Brook, 1,000 feet south of the Old Erie Canal, approximately 1¼ miles southwest of Onondaga Lake as shown in Figure 1, and approximately 2,300 feet east of the wetlands near the Stanton Foundry Landfill. Stormwater discharge practices were not indicated by Pass & Seymour in the documents submitted. In Mailing No. 2 (p. 3), Pass & Seymour indicated that they have "no historical information concerning such discharges" in response to an inquiry about unpermitted releases and discharges to Geddes Brook, Ninemile Creek, or the Erie Canal. Spills, leaks of materials from on-site drum storage areas, and unpermitted releases could be potential threats to the nearby surface waters because Pass & Seymour is located upgradient of these surface waters. Documented discharges, spills, and leaks are discussed in Sections 4.1 and 4.2. Stormwater runoff management practices and structures, if any, were not described in the documents that were available for review. The site is bordered by paved roadways adjacent to the facility to the south (Milton Avenue) and east (Boyd Avenue), and it was not indicated whether there are roadway stormwater management structures (i.e., drainage ditches, swales).

3.3 Groundwater

Groundwater at the Pass & Seymour facility can be impacted directly by the leaching of contaminants from the on-site landfill, manufacturing and processing areas, deteriorated sanitary sewers throughout the site, and storage areas (i.e., former drum storage areas, former transformer pad area, and former fuel tank storage area), or from spills originating in processing, waste storage or handling areas. No groundwater data were provided for this site in the documents that were available for review, and no methods of leachate containment were documented for the on-site landfill.

3.4 Air

Air emissions represent a local source of contaminants to the atmosphere with potential deposition to the ground surface and subsequent transport to Geddes Brook or the Old Erie Canal by surface runoff. Various emission points permitted by NYSDEC were located throughout the Pass & Seymour facility. Although the location of these emission points were not shown on a map, the building number in which they were located were noted on the NYSDEC air permits (Mailing No. 1, pp. 000023-000040), and building numbers are indicated on Figures 4 and 5 herein.

Iron and particulates were discharged from emission point EP2 in Building No. 3 from the "grinding of metal parts," as well as EP14 and EP15 in Building No. 17 during grit blast cleaning. A paint spray booth was used in Building No. 15 for manufactured assemblies that were not plated, and EP16 was used to discharge paint thinner and particulates with a particulate filter. Fumes from EP17 were generated by a baking oven in Building No. 15 that was used on painted products to "provide a harder and more durable finish." The paint bake oven was permitted to discharge paint thinner. Paint booth and baking oven operations ceased in 1984. During the metal plating processes, fumes were generated and released into the atmosphere through emission points EP18, EP21, and EP28 (Mailing No. 1, p. 000005). It was specifically noted in a NYSDEC air emission permit that exhaust was generated by a Curtiss Grinder and discharged through EP18 (Mailing No. 1, p. 000038). Iron was the permitted contaminant that was emitted from EP18. Nitrogen oxides and sulfuric acid mist were emitted from EP19 in Building No. 15 during the acid stripping process.

Zinc chloride was generated by zinc plating operations that were used for screws in Building No. 5, and emitted through EP20. EP21 released "liquid mist NEC" from the nickel, copper, and brass plating tanks, however, a detailed description of the chemical composition and properties of NEC was not included in the material available for review. EP28 in Building No. 15 was permitted to release trichloroethylene from the facility's "hot degreaser." EP29 in Building No. 20 was permitted to discharge hexone, toluene, isopropyl alcohol, and organic solvents during the epoxy coating of circuit boards and thermal curing.

No violations of air emission standards were noted in the documents that were available for review.

3.5 County Sewer System

Pass & Seymour has discharged its industrial and sanitary wastewater to the OCDDS sanitary sewer system pursuant to pretreatment requirements established by Industrial Wastewater Discharge Permit No. 7. Sanitary and industrial wastewaters were conveyed from the facility through sewer Nos. 1, 2, 6, 7, and 8, and manhole No. 3. Pass & Seymour discharged the following types of wastewater to the OCDDS system: sanitary wastes; rinse water from the zinc and copper plating processes; process wastewater from the parts washing equipment (indicated only in the 1988 to 1993 permits); and cooling/boiler water. The earliest OCDDS permit that was available for review was instituted in 1981. OCDDS industrial wastewater discharge permits were provided from 1981 through 1994 at which time manufacturing operations ceased. The length of time prior to 1981 that discharges to the OCDDS system were being made was not noted.

OCDDS sewer sampling results from 1978 (see Section 4.2.1) were the only data provided regarding wastewater quality prior to 1980. A baseline monitoring report was prepared in 1980 by ERC/Lancy Analytical Services on Pass & Seymour's industrial wastewater. This report indicates that 10,000 gallons per day (gpd) were discharged at that time (Mailing No. 1, p. 000164). A four-day sampling event was conducted in 1980 on industrial wastewater generated from the electroplating process. Constituents that were analyzed included pH, cyanide, total suspended solids, chemical oxygen demand, and the following metals: iron, zinc, copper, nickel, chromium (hexavalent), and total chromium. Sampling results of the wastewater discharge were also provided for the following years: 1982, 1984 through 1986, and 1988 through 1994 (Mailing No. 1, pp. 000161-000250). These analytical data are presented in Section 4.2.1. OCDDS Notices of Violation (NOVs) that were issued are summarized in Section 4.1.

During decommissioning activities in 1995, Pass & Seymour discharged approximately 3,000 gallons of boiler water and 2,250 gallons of cooling tower water into the sanitary sewer. A maximum daily flow of 1,500 gpd was permitted for discharge over a four-day period. Wastewater pH was adjusted to meet OCDDS guidelines (Mailing No. 1, p. 000251). Analytical data for the boiler and cooling tower water are presented in Section 4.2.1.

It is possible that stormwater runoff drains into the storm sewers or that potentially contaminated groundwater infiltrates into the sewer system. Information regarding the site sewer system and the location of both sanitary sewer lines and storm sewer lines were presented for 1988 in a diagram drawn in response to the December 15, 1988 OCDDS permit. This diagram depicted the site's roof drainage system, sanitary sewer system, and storm sewer system. The storm sewer system was shown to flow north at the location near the plating line (Building No. 12) and east toward Boyd Avenue, north of Building No. 3 (Mailing No. 1, p. 000279). Site operations at Building No. 3 were not specified in the documents available for review. No other information regarding stormwater quality or discharges was provided.

4.0 LIKELIHOOD OF RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

4.1 Documented Releases

Documented Spills

The information that was provided by Pass & Seymour and NYSDEC regarding documented spills included two NYSDEC Initial Spill Report forms for 1991 and 1994, and documentation on other releases that were observed during site operations. The locations of contaminant releases that have been documented include the on-site landfill, sewers, drum storage area, fuel tank storage area, and former transformer pad area. These releases are discussed below. Analytical data were provided for some of the spill sites and are discussed in Section 4.2. Other documented releases include permitted air contaminant releases into the atmosphere and permitted wastewater releases to the sewer. Pass & Seymour stated that "there is no reason to believe a discharge to Onondaga Lake occurred as a result of these incidents" (Mailing No. 1, p. 000010).

An on-site waste disposal area was used for the disposal of waste porcelain (approximately one ton per week) and office rubbish (unspecified quantity) between 1930 and 1972. Analytical results of soil/waste samples collected at the landfill area did not show metal concentrations to exceed Toxicity Characteristic Leaching Procedure (TCLP) standards. These results are discussed in Section 4.2 and summarized in Table 2.

A NYSDEC Initial Spill Report Form (Spill No. 9101393) was submitted which noted a 1-gallon non-PCB oil spill from transformer equipment onto a blacktop surface on May 3, 1991. The report noted that the spill was a result of equipment failure and that the concentration of PCBs was less than 1 part per million (ppm). The spill was to be contained and cleaned by a company known as Environmental Oil. It was noted in the report that

Syracuse Advance Electric would be called on-site to transport the transformer back to the factory.

A second NYSDEC Initial Spill Report Form (Spill No. 9411245) indicated that an unspecified amount of petroleum spilled into a sewer on November 22, 1994. The exact location of this spill was not indicated. This spill was detected because of "strong smells of petro coming from [a] catch basin behind [the] building." It was noted that the building was in the process of being closed when the smells were detected, and that a company known as Clean Harbours had removed solvents and wastes from the building earlier that week. It was not indicated whether there was remediation within the catch basin where the spill was noted.

In addition to two hazardous waste storage areas (areas B and D), Figure 5 also shows three other potential areas of concern: a drum storage area within, and north of, Building No. 15; a fuel tank area south of Building No. 12; and a PCB-transformer area south of Building No. 14 (Mailing No. 1, p. 000010). Elevated SVOC concentrations were detected in the soil underlying the drum storage area north of Building No. 15. It was noted in Mailing No. 1 that "only empty drums containing oil compounds were stored at this location" (p. 000010), and based on this statement, it was not clear whether the stored drums were actually empty or contained oil. As noted earlier, the soil underlying Pass & Seymour's fuel tank storage area south of Building No. 12 was found to be contaminated with chlorinated solvents. It was speculated that "spent degreasers may have been stored in this area during the early years of operation" (Mailing No. 1, p. 000010). In addition, PCB contamination was detected in soil around the transformer pad south of Building No. 14. Contaminated soil was excavated from each of these three areas, and disposed off-site, during decommissioning activities from October 1994 through September 1995. The depths and volumes of the excavations were not indicated. According to manifests provided by Pass & Seymour (Mailing No. 1, pp. 000088, 000097), at least 140 tons of contaminated soil were disposed off-site (see Section 5.2 herein). Available data are summarized in Section 4.2.1. No information was available for review regarding the types of wastes stored in Area D or the measures, if any, that were taken to prevent off-site contaminant migration.

Ongoing/Recent Releases

Ongoing releases at the Pass & Seymour facility were not indicated in the information available for review, and it was noted that manufacturing operations at the facility ceased in 1994. It is possible, however, that leachate may be migrating into underlying groundwater from the on-site landfill, however no groundwater data were provided. Presently, the site serves as a corporate office.

Pass & Seymour provided information on four Notices of Violation (NOVs) from OCDDS relating to discharges into the sanitary sewer system between 1988 and 1994. On April 20, 1989, OCDDS indicated that Pass & Seymour incurred violations for non-compliance with effluent limitations based on 1988 data (Mailing No. 1, p. 000320). Exceedances of federal daily maximum limits for chromium, zinc and pH were noted. Exceedances of maximum monthly average limits for chromium, nickel and zinc were also noted. A pH of 11 was detected which exceeded the OCDDS allowable pH range of 5.5 to 9.5; chromium was detected at a maximum value of 7.01 mg/L which exceeded the daily maximum limit of 2.77 mg/L and the maximum monthly average limit of 1.71 mg/L; nickel was detected at 3.36 mg/L which exceeded the maximum monthly average effluent limit of 2.38 mg/L; and zinc was detected at a concentration of 5.1 mg/L which exceeded the daily maximum limit of 2.61 mg/L (Mailing No. 1, pp. 000139, 000322).

In 1993, two NOVs were issued on April 26 and October 11 for non-compliance with the federal effluent limitation for total cyanide, copper, and zinc. Four violations occurred at Pass & Seymour's sewer No. 7 as a result of total cyanide concentrations of 2.63 mg/L (March 3, 1993), 5.73 mg/L (August 10, 1993), 1.88 mg/L (August 11, 1993), and 1.39 mg/L (August 13, 1993), which exceeded the total cyanide permit limit of 1.20 mg/L (Mailing No. 1, pp. 000325-000326). Also at sewer No. 7, one violation occurred based on a copper concentration of 3.82 mg/L which exceeded the limit of 3.38 mg/L, and three violations occurred based on zinc concentrations of 4.64 mg/L, 2.82 mg/L, and 2.95 mg/L which exceeded the limit of 2.61 mg/L. Each of these violations occurred in August 1993 as noted on the October 11, 1993 NOV (Mailing No. 1, p. 000326). Pass & Seymour was required to re-sample sewer No. 7 for four consecutive days of typical production and samples would need to be analyzed by a NYS Department of Health-certified laboratory (Mailing No. 1, pp. 000323, 000326).

On May 20, 1994, Pass & Seymour incurred a NOV (dated August 1, 1994) for a pH exceedance at sewer No. 6. A pH value of 10.72 was measured which was in violation of the permitted range of 5.5 to 9.5. Pass & Seymour documented this violation in their June 1994 self-monitoring report but did not notify OCDDS of this violation within five days of their awareness of this violation. Furthermore, Pass & Seymour was found to have made "two erroneous statements stating that no pH excursions were noted during the reporting period" (Mailing No. 1, p. 000331). This report which was submitted by Pass & Seymour lacked data regarding average and maximum flow rates for sewer No. 6 and equipment calibration reports (Mailing No. 1, pp. 000331-000335).

4.2 Threat of Release to the Lake System

4.2.1 Extent of Site Contamination

According to the material submitted in Mailings No. 1 and No. 2, site investigations were conducted at the on-site landfill, drum storage area, fuel tank storage area, and former transformer area. These investigations were conducted because of visible areas of soil staining in the storage and transformer areas and a concern that metal-contaminated leachate was being generated from the on-site landfill (scrap porcelain disposal area). Pass & Seymour provided analytical sampling results for soil samples collected from these areas, however, groundwater, surface water, and sediment data were not provided. Analytical data collected by OCDDS were also submitted from sampling events of wastewater effluent. Data from each of the contaminated areas and from the wastewater discharge are summarized below.

Soil

On-Site Landfill

Scrap porcelain pieces which were generated during the cleaning of light fixture molds (media blasting) were disposed in the on-site landfill between 1930 and 1972 (Mailing No. 1, pp. 000005, 000007). As described in Section 2.2, the porcelain light fixtures were comprised of a viscous clay material and a glaze compound. The constituents of the viscous clay material were not indicated in the documents that were available for review, and the glaze compound consisted of "feldspar, whitening (powdered) #3, red powdered dye, Supersil, calcium chlorohydrite, borax, and water" (Mailing No. 2, p. 1). Approximately one ton of scrap porcelain pieces was suspected to be disposed on-site per week, as well as an unspecified quantity of office rubbish. According to this approximation, after 42 years of disposal (1930 to 1972), approximately 2,200 tons of porcelain waste were disposed at the on-site landfill. The approximate size (i.e., acreage and volume) of the on-site landfill was not indicated in the documents submitted for review, and the only landfill figure provided was an unscaled, hand-drawn sketch (Mailing No. 2, Exhibit 6A). Figure 5 shows the approximate location of the scrap porcelain disposal area.

Sampling was conducted by Pass & Seymour in September 1992 because of concerns of possible discharges of metals from the scrap porcelain landfill. Soil samples were collected at intervals of 2 to 4 feet, 8 to 10 feet, and 10 to 12 feet below grade. A sample location map was not provided by Pass & Seymour. Samples were analyzed for TCLP metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) and results were compared with TCLP regulatory limits (see Table 2 herein). Cadmium was the only metal measured above detection limits in the TCLP extract. Pass & Seymour indicated that both total and TCLP metals "were not above TCLP regulatory limits or background levels for total metals" (Mailing No. 1, p. 000010). However, it should be noted that only TCLP results were provided for these soil samples (in mg/L) and not bulk soil chemistry results (in mg/kg).

Table 2: On-site Landfill Analytical Data

Analyte	TCLP Standard	B3 8-10 ft	B3 10-12 ft	B4 2-4 ft	Landfill Sample No. 1	Landfill Sample No. 3	Landfill Sample No. 4	Landfill Sample No. 5
TCLP Metals (mg/L)								
Arsenic	5.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Barium	100	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Cadmium	1.0	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1
Chromium	5.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Lead	5.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Mercury	0.2	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Selenium	1.0	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Silver	5.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Sources: TCLP data are from Mailing No. 1, pp. 000073-000075. TCLP standards are from 40 CFR 261.

Notes: 1 = Pass & Seymour indicated that they were unable to locate sampling results for B1, B2, and Landfill Sample No. 2 (Mailing No. 2, p. 2).

2 = Depths were not indicated for the "Landfill Samples."

Former Drum Storage Area

The former drum storage area (shown on Figure 5) is located at the northern end of Building No. 15 and along the western edge of Building No. 15 where it abuts Building No. 16 (Mailing No. 2, Exhibit 9(c)). Building No. 15 was used by Pass & Seymour for buffing of plated pieces and the spray painting of plated pieces. The cleaning of parts was done in this building using trichloroethene until 1982 when the process was changed to a closed system using oil and soap (RCRA Inspection Form, September 28, 1982). The area north of Building No. 15 was used as a temporary hazardous waste drum storage area, and the wastes were then disposed at an off-site facility. The underlying soil was found to be contaminated with elevated levels of SVOCs. The drums stored in this area were suspected to contain oil and the source of the SVOCs was not known by Pass & Seymour at the time their mailings were submitted (Mailing No. 1, p. 000010). Results of the soil sampling conducted in 1995 are presented in Table 3 herein for detected parameters only. Detected volatile organic compounds (VOCs) included methylene chloride (10 µg/kg) and trichloroethene (290 µg/kg) with no exceedances of the NYSDEC Recommended Soil Cleanup Objectives (RSCOs) (100 µg/kg and 700 µg/kg, respectively) (Mailing No. 1, pp. 000098-000108). Detected SVOCs included select polycyclic aromatic hydrocarbons (PAHs). The following SVOCs exceeded the NYSDEC RSCOs at the former drum storage area: benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and chrysene. Of the inorganics analyzed (lead, arsenic, mercury, and selenium), only lead (11 mg/kg) and arsenic (16 mg/kg) were detected. It was not indicated why the full suite of inorganics was not analyzed. It should also be noted that PCBs were not analyzed in these soil samples. The contaminated soil in this area was excavated and "disposed off-site as hazardous waste" (Mailing No. 1, p. 000010).

Table 3: Former Drum Storage Area Analytical Data (Detections Only)

Analyte	NYSDEC RSCO (mg/kg)	Sample Collected 8/15/95 (mg/kg)	Sample Collected 9/12/95 (mg/kg)
VOCs			
Methylene chloride	0.1	< 0.005	0.01
Trichloroethene	0.7	0.290	< 0.005
SVOCs			
Benz(a)anthracene	0.224 or MDL [1]	0.70	< 0.2
Benzo(b)fluoranthene	1.1	1.20	< 0.2
Benzo(k)fluoranthene	1.1	0.50	< 0.2
Benzo(g,h,i)perylene	50	0.43	< 0.2
Benzo(a)pyrene	0.061 or MDL [1]	0.81	< 0.2
Chrysene	0.4	1.10	< 0.2
Dibutylphthalate	8.1	< 0.2	3.10
Fluoranthene	50	1.10	< 0.2
Indeno(1,2,3-c,d)pyrene	3.2	0.42	< 0.2
Phenanthrene	50	0.36	< 0.2
Pyrene	50	0.91	< 0.2
Metals			
Lead	SB [1]	< 10	11
Arsenic	7.5 or SB [1]	1.80	16

Sources: Analytical data are from Mailing No. 1, p. 000098. NYSDEC RSCOs are from NYSDEC TAGM 4046 (1994).

Notes: 1 = The NYSDEC RSCO for these analytes are based on site background (SB) values or maximum detection limits (MDL). Soil SB values and analyte MDLs were not indicated in the documents that were available for review.

2 = Exceedances of RSCOs are shaded.

Former Fuel Tank Storage Area

The former fuel tank storage area (shown on Figure 5) is located south of Building No. 12 where the facility's plating operations were located. Another potential source of contamination in the former fuel tank storage area is the adjacent Building No. 10, located directly east of Building No. 12. Timing devices and ground fault circuit interrupters were manufactured in Building No. 10 which involved acid washing and epoxy application. Chlorinated solvents were detected in the soil during closure of the fuel tank area. Analytical results from samples collected in August 1995 along the east wall, north wall, west floor/wall, and south wall at both deep and shallow intervals along the perimeter of the soil excavation area are included in Table 4 herein (Mailing No. 1, p. 000104). A sample location map was not available for review, and the depths of the samples were not indicated. SVOCs, PCBs, and metals were not analyzed, and only detected VOCs are included in Table 4. The contaminants that were detected include methylene chloride (up to 16 μg/kg), tetrachloroethene (up to 53 μg/kg), and trichloroethene (84 μg/kg), which were all at levels below NYSDEC RSCOs. The highest concentrations of these VOCs were detected in sample W-2, which was collected along the north wall at a shallow interval. Concentrations of tetrachloroethene (9.5 μg/kg) and trichloroethene (<5 μg/kg) in sample W-4 also along the north wall but in the deep interval were both much less than the concentrations in W-2 from the shallow interval. It was noted in the analytical results that laboratory contamination was suspected to be the cause of the methylene chloride detections (Mailing No. 1, pp. 000104, 000110-000118). The contaminated soil was excavated and disposed off-site at a hazardous waste facility.

Table 4: Former Fuel Tank Storage Area Analytical Data (Detections Only)

Analyte	NYSDEC RSCO (µg/kg)	W-1 (µg/kg)	W-2 (µg/kg)	F/W-3 (µg/kg)	W-4 (µg/kg)	W-5 (µg/kg)	W-6 (µg/kg)	F-1 (µg/kg)	F-2 (µg/kg)
VOCs									
Methylene chloride	100	13	16	14	15	13	16	14	12
Tetrachloroethene	1,400	< 5	53	< 5	9.5	5.4	< 5	6.3	< 5
Trichloroethene	700	< 5	84	< 5	< 5	< 5	< 5	< 5	< 5

Sources: Analytical data are from Mailing No. 1, pp. 000104, 000110-000118. NYSDEC RSCOs are from NYSDEC TAGM 4046 (1994).

Former PCB Transformer Pad Area

The former PCB transformer pad area is located south of Building No. 14 and north of Building No. 13 (Mailing No. 2, Exhibit 9(c)) as shown on Figure 5 herein. Facility operations at Building No. 14 were not specified in the documents available for review and Building No. 13 was described as a carpenter shop. PCB-contaminated soil was detected during decommissioning activities in the area surrounding the former transformer pad. The concrete pad, contaminated soil, and five PCB transformers were removed from the site and disposed at "various permitted facilities" off-site (Mailing No. 1, p. 000010).

The concrete pad on which the transformers were situated and the surrounding soil were subsequently analyzed for PCBs in September 1995. Results are presented in Table 5. Aroclor 1260, which was the only Aroclor detected, was detected in all samples. The highest detection was 5.2 mg/kg from a sample located near the north wall of the large transformer pad. Aroclor 1260 was detected at concentrations of about 1 mg/kg or less in the other four samples.

Table 5: Former PCB Transformer Pad Area Analytical Data

Analyte	NYSDEC RSCO (mg/kg)[1]	North Wall Large Pad (mg/kg)	North Floor Large Pad (mg/kg)	West Wall and Floor Large Pad (mg/kg)	SE Floor Small Pad (mg/kg)	NW Floor Small Pad (mg/kg)
PCBs						
Aroclor 1016	1, 10	< 0.4	< 0.02	< 0.08	< 0.09	< 0.3
Aroclor 1221	1, 10	< 0.4	< 0.02	< 0.08	< 0.09	< 0.3
Aroclor 1232	1, 10	< 0.4	< 0.02	< 0.08	< 0.09	< 0.3
Aroclor 1242	1, 10	< 0.4	< 0.02	< 0.08	< 0.09	< 0.3
Aroclor 1248	1, 10	< 0.4	< 0.02	< 0.08	< 0.09	< 0.3
Aroclor 1254	1, 10	< 0.4	< 0.02	< 0.08	< 0.09	< 0.3
Aroclor 1260	1, 10	5.2	0.026	0.29	0.12	1.2

Sources: Analytical data are from Mailing No. 2, Exhibit 9(E). NYSDEC RSCO are from NYSDEC TAGM 4046 (1994).

Notes:
1 = NYSDEC RSCOs are provided for PCBs, and not for specific Aroclors (1 mg/kg [ppm] for surface soil and 10 mg/kg for subsurface soil).
2 = Exceedances of RSCOs are shaded (since depths of samples were not indicated, the data were compared to the shallow PCB RSCO [1 mg/kg]).

Groundwater

Based on the information that was available for review, it is believed that groundwater sampling has not been conducted at the Pass & Seymour facility. Potential sources of groundwater contamination include leachate from the on-site landfill (scrap porcelain disposal area), and infiltration of VOCs, SVOCs, or PCBs from former on-site hazardous waste and drum storage areas or the former transformer area. Information on the depth to the water table was not included in the documents that were available for review.

Surface Water/Sediment

Surface water may have been impacted by the various on-site hazardous waste storage areas and by the on-site landfill (scrap porcelain disposal area). The closest surface water bodies are Geddes Brook, located approximately 2,500 feet west of the site, and the Erie Canal, located approximately 1,000 feet north of the site. No information was provided in either of the mailings regarding SPDES permits or stormwater management at the site.

Spills which occurred at the Pass & Seymour facility could also be a source of surface water contamination. Two spills were documented in NYSDEC Initial Spill Reports and were discussed in detail in Section 4.1. The first spill was a release of petroleum into a catch basin in 1994, however, the location of the catch basin was not indicated in the documents available for review. The second spill occurred in 1991 and consisted of one gallon of non-PCB oil that was released onto the blacktop surface due to equipment failure. It was noted that this spill was contained, cleaned, and disposed of off-site. Surface water runoff throughout the site may have been impacted by soil contamination in the former drum storage area, former fuel tank storage area or the location of the former transformer pad. No surface water sampling data was included in the documents that were available for review. Pass & Seymour stated that "there is no reason to believe a discharge to Onondaga Lake occurred as a result of these incidents" (Mailing No. 1, p. 000010).

NYSDEC collected sediment samples in Geddes Brook upstream of the Old Erie Canal and upstream of the West Flume in 1996 and 1997. A summary of these data is not provided herein since two other industrial facilities, Frazer & Jones Company and Stanton Foundry, Inc., are situated between the Pass & Seymour site and Geddes Brook. Summaries of these data are provided in the Site Summary Reports for Frazer & Jones (TAMS, 2000a) and Stanton Foundry (TAMS, 2000b).

NYSDEC collected additional sediment samples in 2000 in Geddes Brook as well as in a ditch north of the Pass & Seymour site and south of the Village of Solvay Landfill. This ditch also flows adjacent to the Frazer & Jones and Stanton Foundry sites and then discharges to Geddes Brook. Sample FJ-02 (ID B395-04) was collected by NYSDEC on June 20, 2000 in this ditch northwest of the Pass & Seymour site, east of the Frazer & Jones Landfill, and directly southeast of the Village of Solvay Landfill (see Figure 3). Only metals were analyzed in this surface sediment sample (collected from 0 to 7.6 cm). Metals detected above NYSDEC's sediment screening criteria (NYSDEC, 1999) include: cadmium (1.3 mg/kg compared to the NYSDEC Low Effect Level [LEL] of 0.6 mg/kg and the Severe Effect Level [SEL] of 9 mg/kg); copper (60.8 mg/kg compared to the LEL of 16 mg/kg and the SEL of 110 mg/kg); lead (32 mg/kg compared to the LEL of 31 mg/kg and SEL of 110 mg/kg); mercury (0.24 mg/kg compared to the LEL of 0.15 mg/kg and SEL of 1.3 mg/kg); silver (3.2 mg/kg compared to the LEL of 1 mg/kg and SEL of 2.2 mg/kg); and zinc (226 mg/kg compared to the LEL of 120 mg/kg and SEL of 270 mg/kg). Of these metals, silver is the only parameter to exceed the SEL screening criteria.

Sewer Discharges

As stated in Section 2.3, sanitary wastewater and industrial wastewater generated from rinsing processes and equipment cleansing were discharged to the OCDDS sewer system. Boiler and cooling tower water was also discharged to the sanitary sewer during decommissioning activities in 1995. Wastewater sampling data collected by the OCDDS were provided for the following years at sewer Nos. 1, 2, 6, 7, and 8: 1978; 1980; 1982; 1984 through 1986; and 1988 through 1994 (Mailing No. 1, pp. 000161-000250). This information is discussed in further detail below.

Pass & Seymour was given permission to discharge approximately 3,000 gallons of boiler water and 2,250 gallons of cooling tower water into the sanitary sewer in 1995 during facility closure (Mailing No. 1, pp. 000251-000278). High pH levels detected in October of 1994 resulted in OCDDS requiring pH treatment and monitoring of this discharge which was directed into sanitary sewer No. 6. This flow was sampled for all other regulated constituents but no exceedances of effluent limitations were obtained.

The only wastewater data that were available for review prior to 1980 were for samples that were collected by OCDDS in 1978 from sewer Nos. 1, 2, and 6. Sample results indicate zinc concentrations up to 8.60 mg/L and cyanide concentrations up to 5.9 mg/L. These levels exceeded OCDDS effluent quality limitations (5 mg/L for zinc and 2 mg/L for total cyanide) that were later instituted in the July 23, 1981 OCDDS permit, which was the earliest OCDDS permit provided in Pass & Seymour's mailings (Mailing No. 1, pp. 000120, 000161-000163).

In 1982, sanitary sewer sampling was conducted at sewer Nos. 1, 2, 7, and 8. According to the OCDDS permit issued for July 23, 1982 to July 23, 1985, the allowable effluent pH range was 5.5 to 9.0, and the daily maximum discharge limitations were: copper 3 mg/L, cyanide 2 mg/L, nickel 10 mg/L, total chromium 10 mg/L, and zinc 5 mg/L (Mailing No. 1, p. 000129). Sampling results indicated exceedances of zinc concentrations at 8 mg/L and 18 mg/L at sewer No. 1 and sewer No. 8, respectively. Detections of chromium, copper, cyanide, and nickel were all less than the effluent limits. Elevated pH levels were detected at sewer No. 1 (pH = 11.8) and sewer No. 8 (pH = 11.0 and 9.3) (Mailing No. 1, pp. 000172-000174).

Sampling conducted in 1984 at sewer Nos. 1, 7, and 8 showed exceedances of pH (up to 9.5) and no exceedances of the OCDDS permit limitations for metals (Mailing No. 1, pp. 000190-000191). Sampling was also conducted at the zinc line for three consecutive days in June

1984 and samples were analyzed for metals and VOCs. The flow was computed to be over 30,000 gallons per day (gpd). All three sampling events showed no violations of maximum effluent limits for metals. Chloroform, detected at concentrations of 31 µg/L, 120 µg/L, and 170 µg/L, was the only VOC that was detected above the detection limits. The average zinc concentration over the three-day period was 3.7 mg/L which exceeded the monthly allowable concentration of 1.48 mg/L (Mailing No. 1, pp. 000180-000188). In 1985, sampling was conducted over a three-day period with chloroform being the only VOC found above the detection limit. Concentrations of zinc, nickel, copper, cyanide, and total chromium did not exceed standards during this sampling event. The average flow was 63,000 gpd during this period (Mailing No. 1, p. 000189).

Sampling of the sanitary sewer in 1986 was conducted for three consecutive days in October. The maximum detected zinc concentration was 2.3 mg/L with an average of 1.9 mg/L which is greater than the monthly limit of 1.48 mg/L. The average concentration of cyanide (0.7 mg/L) also slightly exceeded the permit limit (0.65 mg/L). It was noted that the only VOC found above the detection limit was chloroform. The average flow rate over this period was approximately 70,000 gpd (Mailing No. 1, p. 000192).

The OCDDS permit issued for the period December 15, 1988 to December 15, 1991 contained effluent limitations for sewer No. 7 and sewer No. 8 and required Pass & Seymour to disconnect all roof pipes from the process wastewater discharge at sewer No. 8 by February 1, 1989 (Mailing No. 1, pp. 000137-000144). As noted earlier, it was not indicated in the documents that were available for review whether this was completed. However, the as-built diagram of the sewers throughout the Pass & Seymour site was included for the year 1988 as requested by OCDDS in this permit (Mailing No. 1, p. 000279). Sampling was conducted spanning a three-day period in June 1988. Average flow over this period was approximately 135,000 gpd. Zinc was the only constituent to exceed the federal metal finishing monthly maximum allowable limit of 1.48 mg/L with an average concentration of 1.82 mg/L over the three-day sampling event. However, this concentration did not exceed the Onondaga County daily effluent limit of 5 mg/L. Chloroform was the only VOC detected (up to 134 µg/L) but did not exceed the federal maximum limit for total toxic organics (2,130 µg/L) (Mailing No. 1, p. 000194). Sampling was also conducted for a three-day period in November 1988. No exceedances of the effluent limits were noted in the analytical data (Mailing No. 1, p. 000193).

Sampling conducted for three consecutive days in 1989 also did not result in any exceedances of the effluent limits. The only VOC detected was chloroform (Mailing No. 1, p. 000195). Flows in this period increased to approximately 164,000 gpd. Sampling conducted for three consecutive days in August 1990 resulted in an exceedance of the federal limit for zinc but not the OCDDS limit (Mailing No. 1, p. 000202). A letter from Pass & Seymour to the OCDDS explained the exceedance to be a result of an operator not adhering to correct maintenance procedures. Re-sampling was conducted in December 1990 and no exceedances occurred. For both 1990 sampling periods, chloroform was the only detected VOC. Sampling results for three three-day periods in 1991 (May, September, and October) showed no exceedances of standards and chloroform was the only VOC detected (Mailing No. 1, pp. 000206-000208).

The OCDDS permit issued for February 5, 1990 to February 5, 1993 (Mailing No. 1, pp. 000149-000160) contained effluent limitations for sewer No. 1 and sewer No. 7. It also allowed for the discharge of boiler blowdown water along with sanitary wastewater, rinse water from the zinc plating process, rinse water from the copper plating process, and wastewater from the Jensen parts washing equipment. Sampling was conducted in 1992 for three-day consecutive periods in May, July, and November (Mailing No. 1, pp. 000209-000219). A zinc exceedance was detected in May 1992 with an average concentration (1.66 mg/L) over the three days greater than the federal metal finishing standards monthly maximum allowable concentration of 1.48 mg/L but less than the OCDDS daily discharge limit of 5 mg/L. The only detected VOCs included chloroform and trichloroethene in the July and November sampling events. The concentrations of total toxic organics (sum of detected VOCs) during these events were less than the federal daily limit (2,130 µg/L).

In 1993, sampling was conducted by OCDDS in sewer No. 6 and sewer No. 7. It was noted that sewer No. 6 consisted of process and sanitary wastewater while sewer No. 7 consisted of only process wastewater (Mailing No. 1, pp. 000222-000223). Samples collected were analyzed for pH, TSS, oil and grease, TKN, TP, phenol and heavy metals (primarily copper, zinc and cyanide). Samples were collected in October and November 1993. Results did not indicate exceedances at either sewer location in both sampling periods. In 1994, samples were collected from these sewers in one four-day sampling event in May. Samples were collected and analyzed for the same constituents as in 1993. Results indicated that the only exceedance was a pH of 10.72 (permit range 5.5 to 9.5) on May 20, 1994 (Mailing No. 1, pp. 000220-000225). Flows for the 1993 and 1994 sampling events were not indicated.

OCDDS notices of violations (NOVs) incurred during the period 1989 to 1994 are discussed in Section 4.1.

4.2.2 Migration Potential of Contaminants

The potential contaminants of concern at the Pass & Seymour facility include zinc which was discharged into the sanitary sewer from the metal plating process and was found to exceed effluent limitations on numerous occasions, and the following SVOCs (PAHs) which were detected at concentrations exceeding the NYSDEC RSCOs in soil near the former drum storage area: benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and chrysene.

Spills of wastes that were stored in drums prior to disposal at an off-site location, possible leachate from the on-site landfill, as well as discharges of process wastewater from the zinc, copper, and nickel plating processes into the sanitary sewer can potentially migrate into the lake system. Two accidental spills at the Pass & Seymour facility were documented by NYSDEC to have occurred during the time this facility was in operation. It was also noted that spills occurred at the drum storage area near Building No. 15, at the former fuel tank area near Building No. 12, and at the PCB transformer pads near Building No. 14. Remediation was required in each of these areas during closure. Since no methods of containment or diversion of surface water runoff were believed to have been used on-site, there is a potential for contaminant migration to have occurred via surface water runoff. It is also possible that contaminants could have migrated off-site from air transport and deposition.

Descriptions of on-site drum storage facilities, fuel tank storage facilities, and a description of the on-site landfill (scrap porcelain disposal area) were not included in the documents that were available for review.

5.0 POTENTIAL FOR ADVERSE IMPACTS TO LAKE SYSTEM DUE TO A RELEASE OR THREAT OF A RELEASE

5.1 Hazardous Substance Characteristics

Based on information provided by Pass & Seymour, several potential contaminants of concern have been identified, including zinc and the following PAHs: benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and chrysene. The sources of contamination identified at the Pass & Seymour facility include spills from the former fuel tank area and from the PCB transformer area, leaking drums in the former drum storage area, and insufficient pretreatment of rinse water from the metal finishing process prior to discharge into the OCDDS sanitary sewer system. These sources have resulted in contamination of soil on-site and exceedances of wastewater effluent limitations. It is noted that soil remediation occurred on-site and that industrial wastewater is no longer generated.

A discussion of hazardous substance characteristics for the primary contaminants of concern, PAHs and zinc, is provided below.

Mobility

Polycyclic aromatic hydrocarbons typically have relatively low mobilities. These compounds are usually categorized as dense non-aqueous phase liquids (DNAPLs) and will migrate down through the soil column and pool at aquitards or bedrock surfaces. Solubilities for PAHs decrease rapidly as the number of benzene rings increases. Fluoranthene, with three rings, is relatively insoluble (0.265 mg/L) (Verschueren, 1983). Benz(a)anthracene, with four rings, is insoluble (0.009-0.014 mg/L) and chrysene, also with four rings, is insoluble (0.0015-0.0022 mg/L) (ATSDR, 1988). PAHs have high adsorption coefficients and will adsorb onto sediment particles, especially organic matter, so that sediment transport is an important fate process for these compounds. There is some evidence that photooxidation can be an important fate mechanism for PAHs. However, the process may be inhibited by adsorption onto organic matter so that in waters with high suspended matter contents, e.g. eutrophic waters, the relative importance of photooxidation as a fate mechanism is dependent on the environmental conditions (USEPA, 1979).

Zinc has been classified as one of the most mobile of the heavy metals. This is because compounds of zinc with the common ligands of surface waters are soluble in neutral and acidic solutions. Zinc forms many soluble compounds with organic and inorganic ligands and tends to adsorb to clay minerals, organic matter and hydrous oxides. This implies that sediment transport is an important fate process for these compounds. There is no evidence suggesting that photolysis of zinc compounds in aquatic environments has an effect on its fate. Precipitation of zinc compounds is important only in reducing environments or heavily polluted environments. In these type of environments, zinc tends to form ZnS in the summertime, thus adsorbing to the sediments. However, during the winter, zinc is present in the water column where it tends to adhere to suspended solids and thus is transported through the water system via the suspended solids. Also, the mobility of zinc in aquatic environments is controlled by the speciation of the ion (USEPA, 1979).

Toxicity

The PAHs, chrysene and benz(a)anthracene, each have four aromatic rings and fluoranthene has three aromatic rings. Chrysene is a carcinogen in animals following long-term dermal application. However, there are no studies correlating human chrysene exposure and tumor development, although there are numerous studies indicating human cancer from exposure to a mixture of PAHs that include chrysene (ATSDR, 1988). Chrysene is classified as a probable human carcinogen based on animal bioassays (IRIS, 1997). PAHs, including chrysene, accumulate in the sediment of water bodies and in aquatic organism. Similar to chrysene, benz(a)anthracene is carcinogenic by the oral route as well (ATSDR, 1988).

The toxicity of zinc in the environment is directly impacted by calcium concentrations in the environment. Zinc toxicity is inversely related to calcium concentrations. Thus, toxicity of zinc decreases with increasing calcium concentrations (USEPA, 1979).

Persistence

Semi-volatile organic compounds, particularly the longer-ringed PAHs such as benz(a)anthracene and chrysene, are relatively persistent in the environment. The dissolved fraction of SVOCs can undergo rapid photolysis in surface waters. However, the strong adsorption characteristics tend to inhibit photolysis. In groundwater, SVOCs are persistent.

Zinc tends to have a moderately low persistence in the environment. This is because zinc tends to be sorbed by hydrous metal oxides, clay minerals and organic materials in the environment. Zinc concentrations tend to be greater in sediment than in the water column. Water bodies containing a pH level greater than 7 tend to completely sorb all zinc whereas in water bodies with a pH below 6 little to no sorption of zinc occurs (USEPA, 1979).

Bioaccumulation

PAHs have shown rapid uptake rates in aquatic organisms from zooplankton to fish. PAHs with two to four rings are readily metabolized and excreted by organisms (USEPA, 1979).

Zinc is capable of being bioaccumulated by all organisms. This is due to the fact that zinc is an essential nutrient. Both marine and freshwater fish accumulate zinc through consumption of food and water (USEPA, 1979).

5.2 Quantity of Substances

Estimates of the quantities of hazardous and non-hazardous wastes disposed of were included in Mailings No. 1 and No. 2 and were presented in Section 2.3 and Table 1. Zinc, which was produced from the zinc plating process during manufacture of metal subassembly parts, was identified as a potential contaminant of concern due to numerous exceedances of wastewater effluent limits. As previously discussed (see Sections 4.1 and 4.2.1), concentrations of zinc in wastewater samples were typically below 5 mg/L (although concentrations up to 18 mg/L were detected in 1982) and average wastewater flow rates ranged from approximately 30,000 gpd to 160,000 gpd. Based on a maximum flow and a concentration of 5 mg/L, an estimate of the loading of zinc to the sewer system is 7 lb/day. Zinc-contaminated sludge was also generated from the process, however, concentrations of zinc in the sludge were not indicated. It is believed that zinc sludge was disposed off-site at permitted facilities.

PAHs were determined to be elevated in soil in the former drum storage area. It was stated that this soil was excavated and disposed of off-site but the quantity of soil and an estimate of the mass of PAHs removed were not included. Soil in the former fuel tank storage area was found to be contaminated with chlorinated solvents and the quantity of contaminated soil which was disposed of off-site was documented to be at least 120 tons (Mailing No. 1, p. 000097). Similarly, PCB contamination was documented in the location of the former transformer pad and contaminated soil and concrete debris were disposed of off-site at an estimated quantity of 19,278 kg or about 21 tons (Mailing No. 1, p. 000088).

Quantities of substances spilled and chemical compounds released to the environment via air emissions are documented in prior sections of the report.

5.3 Levels of Contaminants

Soil samples were collected in the location of the on-site landfill (scrap porcelain disposal area) and analyzed for inorganics (TCLP metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). As shown in Table 2, analytical results indicated metals to be below TCLP standards. Thus, the release of contaminants from the on-site disposal area is not suspected to be a significant current source of inorganic contamination into the lake system.

PAHs were detected in the location of the former drum storage area. It was not noted in the submitted documents as to what hazardous waste materials were contained in these drums prior to off-site disposal other than oil compounds. Pass & Seymour stated that "the source of semi-volatile compounds is not known since only empty drums containing oil compounds were stored at this location" (Mailing No. 1, p. 000010). However, analysis of the soil in this area resulted in exceedances of NYSDEC RSCOs for the following PAHs: benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and chrysene. These results are presented in Table 3.

Analytical data from samples collected after excavation of chlorinated solvent-contaminated soils from the former fuel tank storage area are presented in Table 4. Data from samples in this area collected prior to excavation were not included in the documents available for review. Post-excavation data indicate that detections of methylene chloride, trichloroethene, and tetrachloroethene were less than NYSDEC RSCOs. PCB data from samples collected at the former PCB transformer pad area are presented in Table 5.

Elevated concentrations of zinc were detected during routine sewer sampling conducted at the Pass & Seymour facility. Pass & Seymour received NOVs due to the presence of zinc in process wastewater that was in exceedance of federal metal finishing process limits and OCDDS permit limits. Results are presented in Section 4.

5.4 Impacts on Special Status Areas

The Pass & Seymour site is situated in an area where direct adverse impact to regulated wetlands or protected streams could occur. Geddes Brook, located approximately 2,500 feet west of the site, is a Class C water body with C(T) standards (6 NYCRR Part 895.4) and, thus, is considered a "protected stream" (6 NYCRR Part 608).

According to the Syracuse West National Wetlands Inventory map (USDOI, 1978), a federal wetland exists approximately 1,000 feet southwest of the Pass & Seymour facility and is designated as PEM5E (Palustrine, Emergent, Narrow-Leaved, Seasonal, Saturated). The following federal wetlands are also located within close proximity to the Pass & Seymour site: POWF1 (Palustrine, Open Water, Semipermanent, Hyperhaline) is located approximately 1,000 feet northwest, L1OWZx (Lacustrine, Limnetic, Open Water, Intermittently Exposed/Permanent, Excavated), which is the Old Erie Canal, is located approximately 1,000 feet north, and PEM1E (Palustrine, Emergent Persistent, Seasonal Saturated) is located approximately 2,500 feet northeast. Geddes Brook, located 2,500 feet west of the site, is designated as R2OWH (Riverine, Lower Perennial, Open Water Permanent). A New York State freshwater wetland, which is designated SYW 15 and extends into the flow path of Geddes Brook, is located less than 1,000 feet west of and downgradient of the Pass & Seymour facility.

As of August 1996, the New York State "Natural Heritage Sensitive Element" nearest to the Pass & Seymour site was located approximately 2¼ miles northwest of the site, adjacent to Ninemile Creek and upstream of the confluence with Geddes Brook. Thus, it is not likely that this area would be affected by contamination from the Pass & Seymour site.

Surface water and groundwater discharges from the Pass & Seymour site could adversely affect the downgradient wetlands and Geddes Brook. No groundwater data and surface water data were included in the documents reviewed. A sediment sample collected by NYSDEC in a ditch near the Pass & Seymour site indicates that select metals in surface sediment exceed NYSDEC screening criteria (cadmium, copper, lead, mercury, silver, and zinc). Further investigation is required to conclude that the site was not a significant source of contamination to the Onondaga Lake system.

6.0 SUMMARY OF CONCERNS

Based on the data and information provided by Pass & Seymour and NYSDEC, the following concerns are identified:

- High levels of SVOCs were detected in the former drum storage area. Pass & Seymour indicated that "the source of the semi-volatile compounds was not known since only empty drums containing oil compounds were stored at this location" (Mailing No. 1, p. 000010). SVOCs of concern include benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and chrysene. These constituents typically have low mobilities and tend to migrate downward through the soil column and pond on impervious subsurface layers. Soil contaminated in this area was excavated, however, the depth and area of excavation and the depth of samples collected were not apparent from the documents available for review. Cleanup criteria used to determine the extent of the remediation were not indicated. It is possible that contamination may exist below the excavated area. Additional sampling would be required to perform a complete environmental assessment of the area.

- The Pass & Seymour on-site scrap porcelain disposal area was investigated for inorganics in soil/waste. Inorganics were detected at levels below TCLP standards, however, information was not provided regarding groundwater quality at this location. It is possible that during the 40 years of disposal at this location, inorganics may have migrated to the groundwater. Migration of inorganics via surface water runoff may be a potential source of off-site contamination. Information on surface water runoff patterns and the physical characteristics of the disposal area (e.g., berms, cover vegetation) was not provided.

- Zinc was identified as a potential contaminant of concern in process wastewaters discharged to the sewer due to the exceedances of federal and OCDDS effluent limitations. In 1982, a counterflow process was introduced into Pass & Seymour's effluent pretreatment system to reduce the amount of zinc present in its discharge. Prior to 1982, zinc concentrations discharged into the system were typically higher. This is of potential concern because elevated zinc concentrations could have been discharged to the Onondaga Lake system for up to 52 years (1930 to 1982).

- No information was submitted by Pass & Seymour regarding hazardous waste disposal prior to 1980. It was noted that "the precise nature, volume and disposal methods before 1980 is not known. Generally waste liquids were drummed and local haulers (identity not now known) removed [drums] from the facility" (Mailing No. 2, p. 1). A description of material handling was not provided and accidental spills may have occurred besides the two documented by NYSDEC in 1991 and 1994. Storage facility characteristics and off-site runoff prevention measures, if any, were not indicated in the documents that were available for review.

- A hazardous waste storage area located to the west of Building No. 18 was indicated on a hazardous waste site plan that was submitted (area D in Figure 5), however, a physical description of this area and analytical data from this area were not available for review. Area D may be a potential area for concern because it is located exterior of the main building and off-site waste migration preventative measures, if any, were not indicated.

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