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Special to The New York Times

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The Hyatt and New Departure operations will be combined into a new division to be called Hyatt-New Departure which will have its sales and engineering headquarters at Sandusky, Ohio, nearer to G.M.'s motor factories and other customers the two divisions now supply.

Warren E. Milner, now manager of the Hyatt division, will be general manager of the combined operations.

Hyatt Roller-Bearing Company.

NEWARK, N. J., Nov. 10.—The Hyatt Roller-Bearing Company recorded articles of incorporation in the County Clerk's office to-day. The capital stock is set down as $2,000,000, of which $1,000 is paid in. The stated purpose of the organization is to manufacture articles for railroad use. The incorporators are John W. Hyatt of Newark, Isaac B. Newcombe of New-York, and William H. Newcombe of Brooklyn.

The New York Times
Published: November 11, 1892

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ARMY PLACES ORDERS OF $2,109,544 IN DAY

War Dept. Lists Many Awards for Concerns in This Area

Special to THE NEW YORK TIMES.

WASHINGTON, Aug. 17—The War Department announced yesterday the award of contracts totaling $2,109,544. Firms in the New York area receiving awards were as follows:

NEW YORK

Bendix Aviation Corp., Sidney, switches, magnetos, $4,253.

Brown Lipe Gear Co., General Drop Forge Division, Buffalo, drop forgings, $2,400.

Cement Floor Co., New York, flooring, $5,007.

Garlock Packing Co., Palmyra, seats, water, for manufacture of gun mounts, $2,176.

Gleason Works, Rochester; sharpeners, $1,063.

Hudson River Construction Co., Albany, reconstruction of roads, $4,848.

Mergenthaler Linotype Co., Brooklyn, services and material to cut, burr and scratch teeth on pinions and gears, $21,630.

Nelpin Mfg Co., Inc., Long Island City, gages, $1,456.

Otis Elevator Co., Buffalo, steel castings, $10,353.

Rollway Bearing Co., Inc., Syracuse, roller bearings, $2,620.

Russell, Burdsall & Ward Co., Rochester, steel nuts, $1,584.

NEW JERSEY

General Motors Sales Corp., Hyatt Bearings Division, Harrison, bearings, $8,880.

Johns-Manville Sales Corp., Manville, pipe, $3,387.

Riegel Paper Corp., Hughesville, manila label paper, $4,048.

CONNECTICUT

Associated Spring Corp., Wallace Barnes Company Division, Bristol, retaining springs, $1,325.

Moore Special Tool Co., Inc., Bridgeport, fuse plats, 2,220.

New Departure Division, General Motors Sales Corp., Meriden, bearings, $2,932.

ARMY'S CONTRACTS $8,605,824 FOR DAY

Awards to Many Companies in This Area Are Listed

Special to THE NEW YORK TIMES.

WASHINGTON, Sept. 15—Contracts totaling $8,605,824 were awarded by the War Department today. Firms in the New York area receiving awards were as follows:

NEW YORK

Asco Supply Co., Inc., Glendale; boilers and plumbing supplies; $2,468.

Bendix Aviation Corp., Scintilla Magneto Division, Sidney; parts for magnetoes; $4,668; parts for tanks; $2,571.

Brister & Koester, New York; lumber $15,068.

Bristol & Martin, Inc., New York; gauges; $3,515.

E. I. du Pont de Nemours & C., Niagara Falls; chemicals; $4,305.

Fearless Dishwasher Co., Rochester; double and single tanks; $1,280.

Gilman Fanfold Corp., Niagara Falls; request quotation forms; $2,111.

Hildreth Varnish Co., Brooklyn; glycerine; $21,900.

Ivel Corp., New York; radio E boards, status boards; $8,692.

George Laub's Sons, Buffalo; leather; $4,700.

Machinery Builders, Inc., Long Island City; machines; $12,385.

National Carbide Corporation, New York; calcium carbide; $2,475.

Otis Elevator Company, Buffalo; steel castings; $3,445.

Pallet Sales Corporation, Sussex; pallets; $4,380.

PHC Housing Corporation, New York; pre-fabricated wooden building; $4,578.

Republic Creosoting Company, New York; lumber; $518.

Ringel Bros., Clifton; sheets, chipboard; $12,700.

Standard Gas Equipment Corporation, New York; ranges, bake-ovens and friers; $8,303.

Bowers Manufacturing Company, Buffalo; mixing kettles; $28,350.

Ward LaFrance Truck Corporation, Elmira; breaker assemblies, parts; $1,244.

J. H. Williams & Co., Buffalo; forgings; $10,927.

NEW JERSEY

Bendix Aviation Corporation, Eclipse Aviation Division, Bendix; engine parts; $1,107.

Breeze Corporation, Inc., Newark; parts for tanks; $1,430.

Crescent Insulated Wire and Cable Company, Trenton; steel; $1,740.

General Motors Sales Corporation, Hyatt Bearing Division, Harrison; roller bearings; $1,140.

Hercules Powder Company, Inc., Parlin; nitric acid; $3,125.

Hinde & Dauch Paper Company, Hoboken; boxes; $2,380.

Magna Manufacturing Company, Inc., Haskell; powder; $2,012.

Reigel Paper Corporation, Hughesville; manila paper, $5,538.

Reliable Tool Company, Inc., Irvington; locators, punches, drills; $2,760.

Worthington Pump and Machinery Corporation, Harrison; parts, repair for hydraulic pump; $4,923.

CONNECTICUT

Apex Tool and Cutter Company, Inc., Shelton; cutters; $1,702.

Associated Spring Corporation, Wallace Barnes Company Division, Bristol; springs; $1,012.

Manning, Maxwell & Moore, Inc., Bridgeport; gun parts; $3,963.

JERSEY LAY-OFFS DUE

Steel Tie-Up to Cut Jobs at Hyatt Roller Bearings

Special to The New York Times.

CLARK, N. J., Oct. 5—Because of the steel strike, about 150 workers at the Hyatt Roller Bearings Division of the General Motors Corporation here will be laid off this week, a company spokesman said today.

Thirty others will be laid off at the Harrison plant of the company. The local plant employs 1,800 and the Harrison plant 1,300. The local plant is most seriously affected by the national strike, the spokesman said.

The plant here produces bearings for cars and trucks. The Harrison facility turns out bearings for aircraft and general industrial use.

Last Updated: October 2004

Hyatt Clark Industries Former

EPA ID Number: NJD002457174

Other (Former) Names of Site

General Motors (GM)

Site Facts

The former Hyatt Clark site was comprised of 32 acres of manufacturing areas, 32 acres of parking lots, and 23 acres of woodland at 3100 Raritan Road in, Clark, New Jersey. The plant originally manufactured hard-rubber products, such as automobile steering wheels and door handles. For most of the plant's history, anti-friction roller bearings were also produced for the automotive and railroad industries. The facility had RCRA-permitted tank and container storage units that have been closed. General Motors (GM) constructed the plant in 1938. In 1981, ownership passed from GM to Hyatt Clark Industries. All plant operations ceased in 1987. In 1989, ownership of the plant reverted to GM.

Contamination

The soils and groundwater at the site are contaminated with volatile organic compounds (including tetrachloroethene, trichloroethene, 1,1-dichloroethene), semi-volatile compounds, polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons, and metals. Groundwater contamination extends into bedrock. Contamination resulted from past manufacturing operations, including leaks from above ground and underground chemical storage tanks, and the off-loading of chemicals.

What is Being Done

General Motors is cleaning up the site under the New Jersey Department of Environmental Protection (NJDEP) Property Transfer Program. NJDEP approved a plan to clean up the soil in February 1999. Contaminated soil has been excavated or capped. A deed notice was issued for the property for hazardous constituents remaining at the site above standards for residential use. A system to pump pure chemicals (those that are not dissolved in groundwater) is also underway. Both the groundwater and the chemicals separated from the groundwater are being treated at the site prior to discharge of the treated water to the irrigation/infiltration system on the property. The site was redeveloped as a golf course in 2001.

What Remains to Be Done

An investigation of groundwater both on and off the site is ongoing to determine the

sources of contamination and how far the contaminated groundwater has migrated. Once the investigation is completed, a plan will be developed to control and clean up the groundwater. The future use of the property is restricted to a golf course, clubhouse, driving range, and putting green.

Site Repository

Copies of supporting technical documents and correspondence cited in this fact sheet are available for public review at the following location:

New Jersey Department of Environmental Protection
Division of Solid & Hazardous Waste
Records Center
401 E. State Street, 6th Floor
Trenton, NJ 08625
Telephone (609) 777-3373

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA725)
Current Human Exposures Under Control

Facility Name:	**Former Hyatt Clark Industries (HCI) Site (General Motors New Departure Hyatt Bearing Division)**
Facility Address:	**1300 Raritan Road in Clark/Cranford Township, Union County, New Jersey**
Facility EPA ID#:	**NJD002457174**

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no unacceptable human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all contamination subject to RCRA corrective action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objectives of the RCRA Corrective Action program, the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Current Human Exposures Under Control" EI is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and does not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determination status codes should remain in the RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

The former Hyatt Clark Industries (HCI) site is approximately 87 acres in size and is bounded to the south and east by Raritan Road and Walnut Road, respectively. The northern and eastern portions of the site are bounded by CSX rail lines. The site spans both Clark and Cranford Townships. The areas surrounding the site are industrial and residential. Branches of the Rahway River are located approximately 2,500 feet southeast of the site. The US Gypsum facility, which operates two production wells, is located approximately 400 feet to the southeast of the site.

The site was undeveloped when General Motors (GM) purchased the land in 1937. In 1938, a plant was constructed which originally manufactured hard-rubber products such as automobile steering wheels and door handles. For the majority of the plant's history, antifriction roller bearings, used by the automotive and railroad industries, were the primary product manufactured. Manufacturing processes included hot forming, machining, heat treatment, quenching, drawing, tumbling, deburring, and assembly. In 1981, the facility was bought out by employees, who formed HCI. HCI filed for bankruptcy in August 1987. Shortly thereafter, all plant operations ceased. In 1989, ownership of the site reverted to GM. The site was decommissioned and vacant until it was redeveloped as a golf course in 2001.

The facility obtained 24 permits from the New Jersey Department of Environmental Protection (NJDEP) Bureau of Air Pollution, a New Jersey Pollutant Discharge Elimination System (NJPDES) permit for surface water discharged from cooling water blow-down and stormwater runoff through five outfalls to the Rahway River, and an NJDEP Bureau of Underground Storage Tanks permit. In 1982, a NJDEP, RCRA inspection and investigation was conducted and identified a number of areas where operational losses and apparent spills had occurred. A revised RCRA Part A application was submitted to NJDEP in 1983. When NJDEP requested a RCRA Part B permit application from HCI, it was informed that HCI was operating under protection of federal bankruptcy law, would be ceasing operation, and would not be filing a Part B permit application. Due to the bankruptcy of HCI, a remedial investigation was not performed prior to the transfer of ownership of the site as required under the Environmental Cleanup and Responsibility Act (ECRA) (NJAC 7:1-3). GM signed Administrative Consent Orders in 1989 and 1993 to address the requirements under ECRA. GM performed site and remedial investigations in 1988, 1991, 1994, and 1995. Additional investigations, focusing on groundwater, were performed a 1996 and 1997. A Remedial Action Workplan (RAW) for contaminated soil was submitted in 1998 and approved by NJDEP in 1999. GM implemented the RAW and submitted a Remedial Action Report (RAR) in November 2000. Remedial actions associated with groundwater at the site were addressed separately in a RAW submitted in May 2001.

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   __X__ If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ If data are not available skip to #6 and enter IN (more information needed) status code.

Summary of AOCs: Thirty-two AOCs were identified during remedial investigation. These AOCs were eventually consolidated into 10 AOCs (Ref. 1). A site map (Figure 2-1) depicting the location of each AOC was presented in the RAR (Ref. 4). All AOCs have been inactive since 1987, and GM has decommissioned all surface structures related to each AOC (Ref. 2). Soil remedial activities, which included limited excavation of contaminated soil above New Jersey Non-Residential Direct Contact Soil Cleanup Criteria (NJ NRDCSCC) and installation of a multi-layered (geotextile/soil) cap over the majority of the site, were concluded in 2000 (Ref. 4). A Deed Notice submitted in April 2001 outlined contaminant concentrations left in place at the site above New Jersey Residential Direct Contact Soil Cleanup Criteria (NJ RDCSCC), and restricted intrusive activities at the site (Ref. 5).

AOC 1: AOC 1 was located in the northeastern portion of the facility and consisted of two 5,500-gallon unleaded gasoline underground storage tanks (USTs). The tanks and ancillary piping were emptied and cleaned during a decommissioning program conducted in 1991, and subsequently excavated and removed from the site during the 1994 tank closure program (Ref. 3). Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene were detected in subsurface soil (> two feet below ground surface [bgs]) above NJ NRDCSCC. Approximately three feet of fill material was placed over this area during development of the golf course (Ref. 7). A Deed Notice restricts intrusive activities in this area (Ref. 5). NJDEP has approved a no further action (NFA) determination for this AOC (Ref. 8).

AOC 2: AOC 2 was located in the eastern portion of the facility and contained a 1,000-gallon leaded gasoline UST. The tanks and ancillary piping were emptied and cleaned in 1991, and subsequently excavated and removed from the site in 1994 (Ref. 3). No contaminants were detected above the most stringent NJ soil cleanup criteria[1] during remedial investigation (Ref. 4). Therefore, an NFA determination was approved by NJDEP (Ref. 8). Approximately three feet of fill material was placed over this area during development of the golf course (Ref. 7).

AOC 3: AOC 3 was located in the southern portion of the facility and consisted of a 1,000-gallon leaded gasoline UST and a 1,000-gallon diesel fuel UST. This AOC also extended to the south of the UST area, encompassing the roadway at the southwest corner of the site and a grassy area that contained subsurface fill deposits (Ref. 3). Approximately 6,044 cubic yards of arsenic-contaminated soil were excavated from this AOC in 1999 (Ref. 4). This area was backfilled with

[1] Either the NJ RDCSCC or the New Jersey Impact to Groundwater Soil Cleanup Criteria (NJ IGWSCC), whichever is lower.

clean fill materials. In addition, approximately three feet of additional fill material was placed over this area during development of the golf course (Refs. 4, 7). Residual arsenic contamination is located in surface soil on the adjacent off-site railroad property above NJ NRDCSCC. Polychlorinated biphenyls (PCB) were also detected at one off-site sample location above NJ RDCSCC, but below NJ NRDCSCC. NJDEP has indicated that off-site arsenic soil contamination needs to be delineated to NJ RDCSCC and addressed by a Deed Notice (Ref. 8).

AOC 4: AOC 4 was located along the western site boundary and included the area between the former main manufacturing building and the western property boundary. This AOC contained railroad spurs, a maintenance building, three liquid settling tanks, fuel oil USTs, a scrap pile area, a former chip pit, an electrical switch yard, an electrical substation, and a sump (Ref. 3). Because this AOC contained many operational units, remedial actions for these units were addressed at various times during the 1990s. A few of the operational units were considered to be SWMUs and closed under RCRA requirements. The tanks and ancillary piping were emptied and cleaned during a decommissioning program conducted in 1991 and subsequently excavated and removed from the site during the 1994 tank closure program. The remaining surface structures were demolished in 1998 (Ref. 4). Semi-volatile organic compounds (SVOC), PCBs, metals, and total petroleum hydrocarbons (TPH) were detected in surface and/or subsurface soil above the NJ NRDCSCC (Ref. 5). A multi-layer cap was installed over this AOC and a Deed Notice was filed in 2001 to restrict intrusive activities (Refs. 4, 5).

AOC 5: AOC 5 was located in the northern portion of the site and consisted of three 750,000-gallon wastewater above-ground storage tanks (ASTs), an 8,000-gallon waste oil AST, a propane storage area, a new drum storage pad, a chip tower, a drainage swale, a parshall flume, railroad spurs, and an access road (Ref. 3). The majority of this AOC was not developed until the 1950s and 1960s, with the exception of the railroad spurs, which were present since the original plant was constructed in 1938. A decommissioning program conducted in 1991 included removal of the waste oil AST, west rail siding, and chip hopper. The waste oil AST area was designated as a SWMU and closed under RCRA requirements in 1990. By October 1998, most of the remaining surface structures were demolished or abandoned in place. One 750,000-gallon AST was temporarily left in place for the interim free product (light non-aqueous phase liquids [LNAPL]) recovery system, but was removed prior to completion of the golf course (Refs. 4, 7). A portion of this AOC was capped and another portion of the AOC had approximately 3,975 cubic yards of contaminated surface soil excavated (Ref. 4). Benzo(a)pyrene was detected in surface soil outside the boundaries of the multi-layer cap and areal extent of soil excavation above the NJ NRDCSCC. However, approximately three feet of fill material was placed over this area during development of the golf course; therefore, contaminated soil at this AOC is currently considered subsurface soil (Ref. 7). A Deed Notice restricts intrusive activities in this area (Ref. 5).

AOC 6: AOC 6 was located in the central portion of the facility and included the main manufacturing building, the chip house, and the pang born room (Ref. 3). Following plant shut-down in 1987, the entire main manufacturing area was cleaned, surface structures were demolished, and the debris removed from the site (Ref. 4). SVOCs, PCBs, metals, and TPH were detected in surface and subsurface soil above the NJ NRDCSCC (Ref. 5). AOC 6 is completely covered by the multi-layer cap installed in 1998. A Deed Notice implemented in 2001 restricts intrusive activities in this area (Refs. 4, 5). NJDEP has approved an NFA determination for this AOC (Ref. 8).

AOC 7: AOC 7 was located in the eastern portion of the facility and was the former location of a compactor. The compactor was removed in 1988 and the surrounding contaminated soil was

excavated (Ref. 3). Residual soil concentrations are below the most stringent NJ soil cleanup criteria (Ref. 4). Therefore, an NFA determination was approved by NJDEP (Ref. 8). Approximately three feet of fill material was placed over this area during development of the golf course (Ref. 7).

AOC 8: AOC 8 was located in the eastern portion of the facility and consisted of two skim pits used to separate oils from stormwater discharge (Ref. 3). These skim pits were decommissioned in the early 1990s (Ref. 4). Benzo(a)pyrene was detected in subsurface soil above the NJ NRDCSCC. A Deed Notice restricts intrusive activities in this area (Ref. 5). Approximately three feet of fill material was placed over this area during development of the golf course (Ref. 7). NJDEP has approved an NFA determination for this AOC (Ref. 8).

AOC 9: AOC 9 was located at the eastern boundary of the site and was historically used as an employee parking lot (Ref. 3). Benzo(a)pyrene was detected in surface soil above the NJ NRDCSCC (Ref. 4). Approximately three feet of fill material was placed over this area during development of the golf course; contaminated soil at this AOC is currently considered subsurface soil (Ref. 7). A Deed Notice restricts intrusive activities in this area (Ref. 5). NJDEP has approved an NFA determination for this AOC (Ref. 8).

AOC 10: AOC 10 was located at the southeastern corner of the Butler building (AOC 4) and contained a sump pump (Ref. 3). No contaminants were detected at this AOC above the most stringent NJ soil cleanup criteria (Ref. 4). Therefore, an NFA determination was approved by NJDEP (Ref. 8). AOC 10 is completely covered by the multi-layer cap installed in 1998 (Ref. 4).

Groundwater: Two water-bearing units are present beneath the site: overburden and underlying bedrock. The overburden is comprised of a fill unit, a sand unit, and a till unit. The fill varies in composition from silty clay to coarse gravel and cobbles and extends to a maximum depth of 20 feet. The underlying silty, fine-grained sand unit ranges in thickness from a few feet to 30 feet. The underlying till consists of clay and silt, with local occurrences of large rock clasts and pebbles, and ranges in thickness from two to ten feet. The average depth to groundwater at this site is 12 to 38 feet bgs. Groundwater in the overburden unit generally flows to the southeast towards the Rahway River, except in the vicinity of the product recovery extraction wells where flow is locally towards the wells, when operational. The underlying bedrock unit consists of siltstone and shale of the Passaic Formation. Depth to bedrock varies from approximately 20 feet to 50 feet bgs. The bedrock unit has been divided into a shallow unit and a deep unit. The shallow bedrock unit is defined as the upper 30 feet of bedrock. Goundwater flow direction in the shallow bedrock unit is generally to the southeast, except for localized flow towards the product recovery extraction wells, when operational. Groundwater flow direction in the deep bedrock unit is to the south-southeast (Ref. 6). Volatile organic compounds (VOCs) have been detected in the overburden and bedrock units above New Jersey Ground Water Quality Criteria (NJ GWQC) for Class II-A potable groundwater, since semi-annual groundwater monitoring was initiated in 1994.

In summary, all AOCs are currently inactive and the site has been redeveloped into a golf course, as shown in Figure 1 from a GM letter to USEPA dated November 12, 2001 (Ref. 7). Soil contamination has been addressed by excavating a majority of soil contamination above NJ NRDCSCC, and installing a multi-layered (geotextile/soil) cap. Additional clean fill has also been added throughout the site during development of the golf course. A Deed Notice has been implemented to restrict intrusive activities at the site. Remedial actions associated with soil at the site are complete and a RAR has been submitted to NJDEP. The RAR is currently under review by NJDEP. No additional remedial actions for soil are

planned for the site. Semi-annual groundwater monitoring to evaluate contaminant concentrations in the overburden, shallow bedrock, and deep bedrock units is ongoing.

References:

1. Memorandum from Thomas Sherman, NJDEP, to Linda Grayson, NJDEP, re: Case Transfer of Hyatt Clark Industries, Inc. Dated March 28, 1991.
2. Summary Documentation Report - Facility Decommissioning. Dated May 6, 1991.
3. Remedial Action Workplan. Prepared by URS Greiner. Dated October 1998.
4. Remedial Action Report. Prepared by URS Greiner Woodward Clyde, Inc. Dated November 2000.
5. Letter from Kim Tucker-Billingslea, GM, to Wayne Bevan, NJDEP, re: Former Hyatt Clark Industries, Inc., Clark, NJ, ISRA Case No. 87769 [Deed Notice]. Dated April 20, 2001.
6. Remedial Action Workplan For Groundwater. Prepared by Arcadis Gerahgty & Miller. Dated May 25, 2001.
7. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Alan Straus, USEPA Region 2, re: Former Hyatt Clark Industries Site, Clark New Jersey, EPA I.D. NJD002457174, ISRA Case No. E87769, Responses to USEPA Questions regarding CA725 and CA750. Dated November 12, 2001.
8. Letter from Stephen Maybury, NJDEP, to Kim Tucker-Billingslea, GM Corp., re: Administrative Consent Order in the Matter of Hyatt Clark Industries, Inc. Dated November 19, 2001.

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"[2] above appropriately protective risk-based levels (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			VOCs, LNAPL, PCBs
Air (indoors)[3]		X		
Surface Soil (e.g., <2 ft)	X			SVOCs, metals, PCBs, TPH
Surface Water			X	VOCs
Sediment			X	VOCs
Subsurface Soil (e.g., >2 ft)	X			SVOCs, metals, PCBs, TPH
Air (Outdoor)		X		

____ If no (for all media) - skip to #6, and enter YE, status code after providing or citing appropriate levels, and referencing sufficient supporting documentation demonstrating that these levels are not exceeded.

__X__ If yes (for any media) - continue after identifying key contaminants in each contaminated medium, citing appropriate levels (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter IN status code.

Rationale:

Groundwater

VOC contamination in excess of the NJ GWQC has been reported in the overburden and bedrock units within the facility boundaries. Maximum concentrations reported in the most recent sampling event for which data are available (September 2001), are summarized in Table 1 (Ref. 9). These data indicate chlorinated VOC levels above the NJ GWQC for bromoform, chloroform, cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,1,2,2-tetrachloroethane, tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-

[2] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[3] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

TCA), and vinyl chloride (VC). The highest VOC concentrations occur in wells on the western portion of the facility within approximately 200 feet of the former maintenance building and drum storage area. The highest concentrations are reported in MW-19 in the overburden unit (74 µg/L of TCE and 76 µg/L of PCE), MW-9B in the shallow bedrock unit (880 µg/L of TCE and 54 µg/L of 1,1-DCE), and MW-10B in the deep bedrock unit (530 µg/L of TCE and 130 µg/L of 1,1-DCA). In the RAW for Groundwater (Ref. 2), GM reports that the VOC contamination in the deep bedrock unit underlying the HCI site is likely due to off-site sources, and therefore proposes to exclude this unit from remedial action. Supportive evidence presented in the RAW for off-site sources included contamination in the deep bedrock (MW-10B) at a location upgradient of on-site sources, differences in contaminants between deep bedrock wells and overburden/shallow bedrock wells, and the presence of trichlorofluoromethane in deep bedrock wells that has not been detected in the overburden/shallow bedrock units. NJDEP is currently reviewing the RAW for Groundwater and is developing a position on the source of deep bedrock contamination.

Table 1 - Maximum Concentrations Detected in Groundwater During the September 2001 Sampling Round (µg/L)

Aquifer	Contaminant	Maximum Concentration[1]	Well I.D. / Location	NJ GWQC Class IIA[2]
Overburden	**VOCs**			
	cis-1,2-DCE	280	MW-19 / west side	70
	1,1-DCE	44	MW-19 / west side	2
	1,1-DCA	330	MW-19 / west side	50
	1,2-DCA	6.6	MW-19 / west side	2
	PCE	76	MW-19 / west side	1
	TCE	74	MW-19 / west side	1
	1,1,1-TCA	63	MW-19 / west side	30
	VC	57	MW-19 / west side	5
	PCBs			
	Aroclor 1254	1.4	MW-18 / west side	0.5
Shallow Bedrock	**VOCs**			
	cis-1,2-DCE	410	MW-09B / west side	70
	1,1-DCE	54	MW-09B / west side	2
	1,1-DCA	160	MW-09B / west side	50
	PCE	41	MW-38B / west side	1
	1,1,2,2-tetrachloroethane	1.5	MW-36B / east side	1
	TCE	880	MW-09B / west side	1
	1,1,1-TCA	17	MW-09 / west side	30
	trans-1,2-DCE	220	MW-09B / west side	100
	VC	130	MW-09B / west side	5
Deep Bedrock	**VOCs**			
	Bromoform	36	MW-10B2 / west side	4
	Chloroform	28	MW-85B3 / east side	6
	1,1-DCE	99	MW-31B2 / central	2
	1,1-DCA	130	MW-10B / west side	50
	1,2-DCA	11	MW-10B / west side	2
	PCE	85	MW-31B2 / central	1
	TCE	530	MW-10B / west side	1
	VC	8.2	MW-10B / west side	5
Off-Site US Gypsum Production Wells[3]	**VOCs**			
	1,1-DCE	9.5	USG-2	2
	Chloroform	15	USG-2	6
	PCE	5.3	USG-2	1
	TCE	120	USG-2	1
Off-Site Villa Construction Company Wells (Completed in overburden)	**VOCs**			
	1,1-DCE	17	MW-45	2
	PCE	260	MW-45	1
	TCE	8.5	MW-41	1
	VC	13	MW-41	2
	Metals			
	Lead	23.3	MW-43	10

[1] Groundwater samples collected in September 2001 (Ref. 9), except for the US Gypsum Wells, which were collected in December 1997 (Ref. 2), and the Villa Construction Co. wells, which were sampled in July and August 1998 (Ref. 2).

[2] NJ GWQC is the higher of the GWQC or the Practical Quantitation Level (PQL)

[3] USG-1 completed in shallow and deep bedrock. Completion details for USG-2 are not available.

GM has proposed monitored natural attenuation (MNA) to remediate the dissolved phase VOC contamination in the overburden and shallow bedrock units (Ref. 2). As mentioned previously, the deep bedrock unit is excluded from the proposed remedial action. The proposal includes a monitoring program to track the attenuation results. The first two years of the program will include semi-annual monitoring for VOC and biochemical parameters and annual monitoring for PCBs, followed by three years of annual monitoring of these constituents. A Classification Exception Area (CEA) for the overburden and shallow bedrock units will be developed to provide notice to NJDEP and other agencies that NJ GWQC will not be met. The CEA boundaries encompass the entire site plus an extension 500 feet downgradient of the southern perimeter of the site. The proposed CEA duration is 30 years, but may be revised, along with the boundaries, as the fate and transport model is revised based on newly-collected groundwater monitoring data. The proposals presented in the RAW for groundwater (Ref. 2) regarding MNA and the CEA are currently under NJDEP review.

The VOC contamination also extends to the downgradient (southeastern) border of the facility. The latest monitoring data indicate levels above the NJ GWQC for TCE in the overburden unit (4.6 µg/L in MW-37 and 6.8 µg/L in MW-39); and 1,1-DCE and TCE in the shallow bedrock unit (4.6 µg/L and 24 µg/L in MW-37B) (Ref. 9). Two US Gypsum production wells (USG-1 and USG-2), which supply process water for the manufacture of paper for wallboard, are located downgradient, 1,000 feet to the south (USG-1) and 500 feet to the southeast (USG-2), and extend to depths of 505 and 300 feet bgs, respectively. In addition, it has been demonstrated that these wells are hydraulically connected to the site. Well construction details for USG-1 report an open borehole within the bedrock, indicating that the well extracts water from both the shallow and deep bedrock units (Ref. 7). Continuous water level monitoring has indicated that all on-site deep bedrock wells (MW-10B, MW-10B2, MW-10B3, MW-31B2, MW-31B3, MW-37B2, MW-37B3, MW-84B3, MW-85B3, MW-86B3), as well as shallow bedrock wells MW-37B and MW-39B, respond to pumping of the US Gypsum wells. The remaining shallow bedrock and overburden wells are not hydraulically connected to the US Gypsum wells (Ref. 2)

In December 1997, GM sampled the US Gypsum wells and reported chlorinated VOCs in excess of the NJ GWQC (Ref. 2). GM argues in the RAW that the presence of trichlorofluoromethane, which has not been detected in the overburden/shallow bedrock units on site, suggests that an off-site source has impacted these wells. However, GM's argument is flawed because well construction details for USG-1 indicate that the well extracts water from both the shallow and deep bedrock units (Ref. 1). To further support the position that on-site activities have not impacted the US Gypsum wells, GM performed fate and transport modeling in April 2001 on TCE in the overburden and shallow bedrock units (Ref. 2). The model indicated that plume migration (1 µg/L TCE contour) would take a period of 99 years to extend 500 feet downgradient of the site, which is the approximate location of the closest US Gypsum well USG-2. Based on these results, GM has argued that plume migration to the Rahway River is also unlikely. However, these results have not been verified by off-site monitoring wells. The downgradient extent of the VOC plume has not been delineated.

VOC contamination has also been documented at off-site locations along the southwestern section of the facility. Samples collected in 1998 at six overburden monitoring wells (MW-40, MW-41, MW-42, MW-43, MW-44, MW-45) located on the Villa Construction Company property indicate levels of PCE, TCE, 1,1-DCE, and VC above the NJ GWQC (Table 1). The highest concentrations were detected at MW-45 (260 µg/L of PCE), which is located furthest from the site. However, because the concentration at MW-45 is elevated above those encountered on site, the RAW (Ref. 2) argued that the contamination at MW-45 can be attributed to off-site sources. The origin of the VOC contaminants in the five remaining wells were not discussed in the RAW. These wells are located in close proximity to contaminated zone on the

western side of the facility, which makes on-site sources plausible. The RAW for Groundwater is currently under review by NJDEP.

PCBs have been detected infrequently and generally decreased when low-flow sampling was introduced. The most recent data indicate that PCB concentrations exceeded the NJ GWQC at one well in the overburden aquifer (MW-18, 1.4 µg/L Aroclor 1254) (Ref. 9). Metal concentrations have also exceeded NJ GWQC in the past, but generally decreased to below the limits when low-flow sampling was introduced. Consequently, the groundwater monitoring program no longer includes metal analyses, except for well MW-37B. The most recent monitoring data indicate that metal concentrations at MW-37B were below the NJ GWQC (Ref. 9).

Free product has been detected in the overburden and shallow bedrock units. Samples collected in 1996 indicate that the product is similar to AW Machine Oil 22 and heat transfer oil (Ref. 1). According to the most recent monitoring results, free product is concentrated in the west central portion of the site, with product thicknesses that vary from 0.03 feet at OW-25D to 11.07 feet at OW-25M (Ref. 8). The facility operated a product skimming system from 1992 to 1996 and an Interim Product Recovery (IPR) system from 1997 to early 2001.

In April 2001, operation of the IPR system was terminated because GM was awaiting NJDEP authorization for the application for Reclaimed Water for Beneficial Reuse for effluent discharge (Refs. 4, 5), which is required to realize plans to discharge the groundwater effluent to the on-site lined irrigation pond for subsequent spray irrigation for the golf course. It is also reported that the shutdown occurred to allow for the construction of the Final Product Recovery (FPR) system and the golf maintenance buildings (Ref. 7). As a result of this system shut down, hydraulic control was lost in the overburden and shallow bedrock units during this time.

In September 2001, the facility began operating the Final Product Recovery (FPR) system (Ref. 8). The FPR system includes nine overburden (OW-22, OW-25M, OW-28S, OW-29, OW-47R, OW-49, OW-58, OW-66) and six shallow bedrock extraction wells (OW-28D, OW-52D, OW-53D, OW-58D, OW-59D, OW-77D) (Ref. 8) and an upgraded treatment system (Ref. 6). Effluent from the FPR system is stored in holding tanks and periodically transported to the Rahway Valley Sewage Authority for disposal (Ref. 6). Evaluation of upcoming monitoring data will allow assessment of whether hydraulic control has been re-established since the temporary shutdown of the system.

Air (Indoors)

Based on the volatile nature of the contaminants detected on site and the average depth to groundwater at the site (12 to 38 feet bgs), migration of volatile contaminants in groundwater to indoor air may be a concern at the HCI site. Thus, the maximum detected VOC concentrations in the overburden unit were compared to the State of Connecticut Groundwater Standards for the Protection of Indoor Air under the Industrial/Commercial Scenario (CT I/C VC) to determine whether migration of VOCs to indoor air may be of concern. Table 2 identifies the maximum detected concentration that exceeded the CT I/C VC during the most recent sampling event (2001) (Ref. 9).

Table 2 - Groundwater Exceedences of the CT I/C VC in the Overburden Unit (µg/L)

Contaminant	CT I/C VC	Maximum Detection
1,1-DCE	6	44 (MW-19)
VC	2	57 (MW-19)

The maximum detected concentrations are at the western side of the site (MW-19), beneath the driving range area. No buildings are present in this area of elevated VOC concentration. The buildings present on the site include a maintenance compound, product recovery building, toilet pavilion/pump house, and club house (Ref. 7). The LNAPL and/or dissolved phase groundwater contaminant plumes are not located beneath any of these buildings (Ref. 1). The maintenance compound and product recovery building are located north of the driving range, upgradient of the plumes (Ref. 7). The toilet pavilion/pump house is adjacent to the pond, crossgradient of the plumes (Ref. 7). The club house for the golf course is located in the southern portion of the facility, downgradient of maximum detected concentrations of 1,1-DCE and VC. The current groundwater data from wells MW-18 and MW-17A, which are approximately 200 feet east-northeast (upgradient) of the club house, indicate that 1,1-DCE and VC are not present in groundwater at levels exceeding the CT I/C VC. Thus, volatilization of contaminants to indoor air at this site is not considered a concern at this time.

Surface/Subsurface Soil

Surface and subsurface soil at the site has been impacted by SVOCs, PCBs, and metals above NJ RDCSCC, NJ NRDCSCC, and/or NJ IGWSCC. Although the Deed Notice outlines the residual contamination above the NJ RDCSCC, the current use of the site is non-residential. Given the current industrial use of the site, only contaminants exceeding the NJ NRDCSCC are of concern. Table 3 presents all residual contaminant concentrations present at the site above NJ NRDCSCC (Ref. 3). The contaminant concentrations presented for surface soil and subsurface soil in Table 3 are based upon the original samples depths. However, fill (i.e., approximately 3 feet or more) has been added in many areas of the site such that a majority of the contamination currently resides in the subsurface.

Table 3 - Residual Contamination Present in Soil Above NJ NRDCSCC (mg/kg)

AOC	Contaminant	NJ NRDCSCC	Surface Soil Maximum Detection	Subsurface Soil Maximum Detection
AOC 1	Benzo(a)anthracene	4	--	20
	Benzo(a)pyrene	0.66	--	9.5
	Benzo(b)fluoranthene	4	--	15
	Dibenz(a,h)anthracene	0.66	--	1.5
AOC 3[1]	Arsenic	20	44.3	--
AOC 4	Arsenic	20	128	31.6
	Benzo(a)anthracene	4	90	--
	Benzo(a)pyrene	0.66	40	1.5
	Benzo(b)fluoranthene	4	75	--

AOC	Contaminant	NJ NRDCSCC	Surface Soil Maximum Detection	Subsurface Soil Maximum Detection
	Benzo(k)fluoranthene	4	28	--
	Chrysene	40	87	--
	Copper	600	3,570	--
	Dibenz(a,h)anthracene	0.66	13	--
	Indeno(1,2,3-cd)pyrene	4	29.5	--
	Lead	600	4,910	--
	Total PCBs	2	661	113
	TPH	10,000	328,000	69,800
	Zinc	1,500	11,800	--
AOC 5	Benzo(a)pyrene	0.66	0.81	--
AOC 6	Arsenic	20	73	34.5
	Benzo(a)anthracene	4	13	10
AOC 6	Benzo(a)pyrene	0.66	8.6	8.6
	Benzo(b)fluoranthene	4	13	11
	Benzo(k)fluoranthene	4	8.2	8.2
	Copper	600	1,280	--
	Dibenz(a,h)anthracene	0.66	1.1	--
	Indeno(1,2,3-cd)pyrene	4	4.4	--
	Lead	600	1,100	--
	Total PCBs	2	37.2	3,400
	TPH	10,000	122,000	122,000
AOC 8	Benzo(a)pyrene	0.66	--	0.81
AOC 9	Benzo(a)pyrene	0.66	0.89	--

-- indicates that the contaminant was not detected above NJ NRDCSCC.
[1] The maximum detected concentration is located at an adjacent off-site location (S00604D).

Arsenic concentrations (44.3 and 35.7 mg/kg) were detected above NJ NRDCSCC (20 mg/kg) in two surface soil samples (S00604D and S00604C, respectively) collected as confirmation samples for excavation activities performed at AOC 3 (Ref. 3). The samples were located off site at an adjacent railroad property. Arsenic was not detected in an additional sample (S00604E) collected adjacent to the railroad track. Off-site arsenic impacts will be discussed further in Questions 3 and 4.

Surface Water/Sediment

There have been no documented impacts to on- or off-site surface water or sediment due to activities at the HCI site. A lined man-made pond, located in the northeastern portion of the site, was constructed in 2000 as part of the golf course. Given that a majority of the site has been covered with a multi-layer cap and clean fill, and given that a new surface water drainage system has been installed at the site, surface water runoff into the pond is not considered a concern. Impacted groundwater discharge to surface water in the man-made pond is also not a concern given that a liner was installed during construction and groundwater contamination is generally downgradient or crossgradient of the pond.

The Rahway River is located approximately 2,500 feet downgradient of the site. Based upon visual observation (Ref. 10), the river has very steep embankments and extremely minimal flow in the vicinity of the site. Based upon a review of recent groundwater data, PCE, TCE, and 1,1-DCE have been detected in downgradient shallow and/or deep bedrock wells (MW-37B, MW-37B2, MW-37B3, MW-85B3) at concentrations greater than ten times the NJ GWQC and/or New Jersey Surface Water Quality Criteria (NJ SWQC). In addition, PCE and TCE have been detected in groundwater from the off-site US Gypsum Production Wells (USG-1 and USG-2) at concentrations greater than ten times the NJ GWQC and/or NJ SWQC. Table 4 presents the most recent groundwater concentrations in downgradient shallow and deep bedrock wells at the site, and off-site US Gypsum wells, where concentrations are greater than ten times the NJ GWQC and/or NJ SWQC.

Table 4 - Recently Detected Groundwater Concentrations at Downgradient Monitoring Well Locations (µg/L)

Well	Contaminant	Concentration[1]	NJ GWQC[2]	NJ SWQC
Shallow Bedrock				
MW-37B	TCE	24	1	**1.09**
Deep Bedrock				
MW-37B2	1,1-DCE	24	2	4.81
	TCE	65	1	**1.09**
	PCE	15	1	**0.388**
MW-37B3	1,1-DCE	44	2	4.81
	TCE	160	1	**1.09**
	PCE	43	1	**0.388**
MW-85B3	TCE	47	1	**1.09**
Off Site				
USG-1[3]	TCE	41	1	**1.09**
USG-2	PCE	5.3	1	**0.388**
	TCE	120	1	**1.09**

[1] Groundwater samples collected in September 2001 (Ref. 9), except for the US Gypsum Wells, which were collected in December 1997 (Ref. 2).
[2] NJ GWQC is the higher of the GWQC or the Practical Quantitation Level (PQL)
[3] USG-1 completed in shallow and deep bedrock. Completion details for USG-2 are not available.
Criteria in **bold** are exceeded by ten times.

Fate and transport modeling on TCE in the overburden and shallow bedrock units was conducted in April 2001 (Ref. 2). The model indicated that plume migrations (1 µg/L TCE contour) would take a period of 99 years to extend 500 feet downgradient of the site, the approximate location of US Gypsum well USG-2. GM has not taken responsibility for the groundwater contamination in the US Gypsum wells or in the deep bedrock unit. GM argues that contamination in the deep bedrock unit is from a source upgradient of the HCI site. Because of the modeling results and the fact that GM believes contamination in the deep bedrock unit is due to an upgradient source, no monitoring wells have been installed south-southeast of the site to delineate the downgradient extent of VOCs. Therefore, the downgradient extent of the VOC plume is not currently defined. Given that TCE and PCE are present in groundwater at levels well above NJ GWQC (160 times and 43 times, respectively) and NJ SWQC (142 times and 110 times, respectively) at the downgradient property boundary, potential impacts to surface water and sediment in the Rahway River are currently considered unknown.

Air (Outdoors)

No assessment of the impacts to outdoor air has been conducted at the site. Migration of VOCs in groundwater into outdoor air is not expected to be of concern due to the natural dispersion of contaminants once they reach the surface. In addition, contaminated soil is either underneath a multi-layered cap, clean

fill, or in vegetated areas, which significantly reduces the dispersion of contaminated particulates. Thus, the migration of contaminated particulates and/or volatile emissions are not expected to be significant exposure pathways at the site.

References:

1. Remedial Action Plan for Free Product. Prepared by Arcadis Geraghty & Miller. Dated February 7, 2000.
2. Remedial Action Workplan For Groundwater. Prepared by Arcadis Geraghty & Miller. Dated May 25, 2001.
3. Letter from Kim Tucker-Billingslea, BM, to Wayne Bevan, NJDEP, re: Former Hyatt Clark Industries, Inc., Clark, NJ, ISRA Case No.87769 [Deed Notice]. Dated April 20, 2001.
4. March 2001 Semi-Annual Groundwater Monitoring Report. Former Hyatt Clark Industries Site, Clark, New Jersey. Prepared by Arcadis Geraghty & Miller. Dated June 21, 2001.
5. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Wayne Bevan, NJDEP, re: Former Hyatt Clark Industries, Inc., Clark, NJ, Remedial Action Plan for Free Product, ISRA Case No. 87769. Dated August 2, 2001.
6. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Wayne Bevan, NJDEP, re: Former Hyatt Clark Industries, Inc., Clark, NJ, Remedial Action Plan for Free Product, ISRA Case No. 87769. Dated October 18, 2001.
7. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Alan Straus, USEPA Region 2, re: Former Hyatt Clark Industries Site, Clark New Jersey, EPA I.D. NJD002457174, ISRA Case No. E87769, Responses to USEPA Questions regarding CA725 and CA750. Dated November 12, 2001.
8. Letter from Stephen Maybury, NJDEP, to Kim Tucker-Billingslea, GM Corp., re: Administrative Consent Order in the Matter of Hyatt Clark Industries, Inc. Dated November 19,2001.
9. September 2001 Semi-Annual Groundwater Monitoring Report. Former Hyatt Clark Industries Site, Clark, New Jersey. Prepared by Arcadis Geraghty & Miller. Dated November 27,2001.
10. Telephone conference between Alan Straus, USEPA and Kristin McKenney, Booz Allen Hamilton, Inc. re: Hyatt Clark Site. Dated February 12, 2002.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
*Potential **Human Receptors** (Under Current Conditions)*

"Contaminated" Media	Residents	Workers	Day Care	Construction	Trespasser	Recreation	Food[4]
Groundwater	No	No	No	No	–	–	No
~~Air (indoor)~~							
Surface Soil (e.g. < 2 ft)	No	No	No	Yes	Yes	No	No
Surface Water	No	No	--	–	Yes	No	No
Sediment	No	No	--	–	Yes	No	No
Subsurface Soil (e.g., > 2 ft)	–	–	--	No	–	–	No
~~Air (outdoors)~~							

Instruction for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated"Media Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces. These spaces instead have dashes ("–"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale:

Groundwater

[4] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Local groundwater well use searches conducted in 1991, 1993, and 1995 documented groundwater wells located within a one half-mile radius of the site. Results identified 14 groundwater wells in the vicinity of the site, including 9 monitoring wells, 2 industrial use wells, and 3 private wells (Ref. 1). The three private wells are located upgradient of the HCI Site (Ref. 1). The two industrial wells are located at the adjacent US Gypsum facility. Groundwater from these wells is used only for manufacturing operations, and is not used for potable purposes (Ref. 4). The residences in the vicinity are supplied with public water by the Elizabethtown Water Supply Company (Ref. 1). There are no private or public potable water supply wells located within one half-mile of the site; thus, this pathway is not considered complete.

The US Gypsum wells are located approximately 500 and 1,000 feet downgradient of the site to the south and southeast (Ref. 4). The wells extend to depths of 300 and 505 feet bgs and supply process water for the manufacture of paper for wallboard. Well construction details for the well located 1,000 feet from site (USG-1) report an open borehole within the bedrock, indicating that the well extracts water from both the shallow and deep bedrock units (Ref. 5). US Gypsum reported that the well water is not used for drinking, showering, or sanitary purposes, but solely for manufacturing processes. Thus, it appears that US Gypsum employees could potentially have dermal contact with contaminated process water based upon the available file material. However, US Gypsum has advised GM that their health and safety staff were made aware of the testing results from these two production wells and are satisfied that their health and safety protocols adequately address the level of production well water exposure to plant staff. It should be noted that GM maintains that VOCs detected in the US Gypsum production wells are from another off-site source and not from the HCI site. Considering that the well water is not used for potable purposes and that health and safety procedures are in place to limit any potential exposure to production water used at the US Gypsum site, this pathway was not considered to be complete.

The groundwater depth at the HCI site ranges from 12 to 38 feet bgs (Ref. 5). Because most intrusive activities do not occur at depths greater than ten feet, it is unlikely that on-site workers or construction workers would be exposed to contaminated groundwater. In addition, the majority of the site has been capped and a Deed Notice, which restricts intrusive activities, has been implemented, (Refs. 2, 3). Therefore, direct contact with contaminated groundwater is not considered a potentially complete pathway for on- or off-site construction workers.

Surface/Subsurface Soil

The facility has installed a multi-layered cap that covers a majority of the facility (AOC 4 and AOC 6). During development of the golf course, additional fill material (approximately three feet or more) was also placed over portions of the site such that the contaminated soil on site is now considered subsurface soil. A fence surrounds the entire site to prevent off-site receptors from entering. In addition, a Deed Notice has been implemented at the entire site. The Deed Notice outlines all residual contaminant levels at the site that are above the NJ RDCSCC. The Deed Notice restricts intrusive activities at the site in order to prevent exposure to residual contaminant concentrations at the site. The Deed Notice also requires maintenance and monitoring of the capping system in place at the site. There are currently no contaminant concentrations above NJ NRDCSCC in surface soil and the entire site is included in the site-wide Deed Notice; thus, there are currently no complete exposure pathways on site.

A minimal area of inorganic contamination exists just outside the southeastern corner of the site. Two post-excavation confirmation samples (S00604C and S00604D) were collected outside the eastern fenceline along the CSX railroad tracks. The two surface soil samples contained arsenic concentrations (35.7 and 44.3 mg/kg) slightly above the NJ NRDCSCC (20 mg/kg). The locations of these samples are shown on Figure 2-2 of the RAR (Ref. 2). Additional excavation was not conducted at this off-site property because the facility maintains that the off-site contamination is due to past herbicide/pesticide

application at the railroad property and not HCI activities (Ref. 2). In addition, GM indicated that a gas main is located in the area where elevated arsenic concentrations were detected; further limiting sampling and excavation opportunities in the area. Because these samples were located outside the perimeter of the fence, on-site workers from the golf course and recreators (e.g., golfers) are not expected to be exposed to arsenic contamination in this off-site area. A full-time railroad worker is not present on the railroad property (Ref. 6), but workers may periodically perform modification and inspections at the railroad tracks. However, the arsenic contaminated surface soil is not adjacent to the railroad tracks or surrounding ballast area, but is located just outside the site fence line in a highly vegetated area. Thus, railroad workers were not considered a potential receptor of concern. Construction workers (i.e., gas line utility workers) and trespassers, who may be present in this off-site area, are the only potential receptor pathways considered potentially complete at this time.

Surface Water/Sediment

As previously mentioned in Question 2, the Rahway River is located approximately 2,500 feet downgradient of the site. Given that the downgradient extent of the dissolved phase VOC plume has not been documented, the migration of elevated contaminant concentrations from groundwater beneath the site to the river is unknown. Thus, the potential impacts to surface water and sediment in the Rahway River are currently unknown. The Rahway River is classified as a FW2-NT (e.g., fresh water, nontrout). The FW2 classification indicates that the Rahway River's designated uses are maintenance, migration and propagation of the natural and established biota, primary and secondary contact recreation, industrial and agricultural water supply, and public potable water supply after treatment. The NT classification indicates the Rahway River is generally not suitable for trout population because of its physical, chemical, or biological characteristics. Based upon visual observation (Ref. 7), the river has very steep embankments and extremely minimal flow in the vicinity of the site. Because of classification and surface characteristics, a recreator is not expected to be engaged in primary contact recreation (e.g., fishing or swimming) in this portion of the river. Thus, exposure to a recreator is not considered a potentially complete exposure pathway. However, because access to the river is not restricted and the impacts to the river are unknown, a trespasser scenario is considered a potentially complete exposure pathway.

References:

1. Remedial Action Workplan. Prepared by URS Greiner. Dated October 1998.
2. Remedial Action Report. Prepared by URS Greiner. Dated November 2000.
3. Letter from Kim Tucker-Billingslea, GM, to Wayne Bevan, NJDEP, re: Former Hyatt Clark Industries, Inc., Clark, NJ, ISRA Case No. 87769 [Deed notice]. Dated April 20, 2001.
4. Remedial Action Workplan For Groundwater. Prepared by Arcadis Gerahgty & Miller. Dated May 25, 2001.
5. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Wayne Bevan, NJDEP, re: Former Hyatt Clark Industries, Inc., Clark, NJ, Remedial Action Plan for Free Product, ISRA Case No. 87769. Dated October 18, 2001.
6. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Alan Straus, USEPA Region 2, re: Former Hyatt Clark Industries Site, Clark New Jersey, EPA I.D. NJD002457174, ISRA Case No. E87769, Responses to USEPA Questions regarding CA725 and CA750. Dated November 12, 2001.
7. Telephone conference between Alan Straus, USEPA and Kristin McKenney, Booz Allen Hamilton, Inc. re: Hyatt Clark Site. Dated February 12, 2002.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **significant**[5] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks?

__X__ If no (exposures cannot be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code.

Rationale:

Surface Soil

The arsenic contamination detected in surface soil at the two off-site sample locations (S00604C and S00604D) is not restricted to potential receptors (Ref. 3). However, visual observation at the site (Refs. 3, 4) indicates that the impacted area is covered with extremely thick vegetation, measuring approximately two to five feet in height, making direct exposure to surface soil unlikely (Ref. 2). Thus, trespasser exposures to elevated arsenic concentrations in surface soil at this off-site area are not expected to be significant given the thick vegetative cover and minimal extent of contamination.

GM indicates that the elevated arsenic concentrations are located within the vicinity of a gas line (Ref. 1). Thus, utility workers may potentially become exposed to elevated concentrations of arsenic while conducting any necessary maintenance activities at the gas line. However, given the limited extent of contamination above NJ NRDCSCC (i.e., only 2 sample locations), minimal exceedences of the NJ NRDCSCC (i.e., less than 3 times the criteria), and limited exposure time of a potential utility worker in this area, exposure to a utility worker is expected to be insignificant. In addition, it is expected that a utility worker would conduct excavation activities in accordance with Occupational Health and Safety Administration (OSHA) guidelines, and potentially wear personal protective equipment that would further limit potential exposure to elevated arsenic concentrations.

As previously mentioned, GM contends that the arsenic concentrations in the off-site area are due to past railroad activities (i.e., pesticide/herbicide use), and not due to activities at the GM site (Refs. 1, 3).

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[5] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

NJDEP is currently reviewing available documentation to determine whether GM or CSX will be required to conduct additional delineation sampling, in order to implement a Deed Notice.

Surface Water/Sediment

Recently detected VOC concentrations in shallow and deep bedrock wells along the downgradient property boundary are greater than ten times the NJ GWQC and/or NJ SWQC. GM argues that the VOC contamination in the deep bedrock unit is not due to past activities at the HCI site, but due to an upgradient source. NJDEP is currently reviewing available information to determine whether GM's contention is accurate. GM has also performed fate and transport modeling that indicated that contamination in the shallow bedrock unit would migrate approximately 500 feet downgradient of the site within a 99-year time span (Ref. 2). Because GM maintains that the groundwater contamination in the deep bedrock unit is not a result of HCI activities, and groundwater in the shallow bedrock unit is not expected to reach the river, little information is available on the groundwater flow and potential groundwater to surface water discharge downgradient of the site. No monitoring wells have be installed off site to delineate the extent of the dissolved phase VOCs in groundwater; thus, the potential impacts of groundwater contamination downgradient of the site are unknown. However, trespasser exposure to impacted surface water and/or sediment in the river in not expected to be significant for several reasons. Given the distance of the downgradient wells with elevated VOC concentrations to the Rahway River (i.e., approximately 2,500 feet), it is unlikely that concentrations detected in these wells will migrate to the river at similar concentrations. In addition, the contaminants are VOCs. Thus, it is likely that contaminant concentrations would be significantly reduced by the time they reach the river, or volatilize upon reaching the river. As previously mentioned, the portion of the Rahway River downgradient of the site has steep embankments and minimal flow. It is unlikely that a trespasser would frequent this portion of the river on a routine basis. Therefore, although the trespasser is a potentially complete exposure pathway, it is unlikely that a trespasser will be exposed to significant levels of VOC concentrations in surface water and sediment in the Rahway due to potentially contaminated groundwater discharge to surface water from the HCI site.

References:

1. Remedial Action Report. Prepared by URS Greiner. Dated November 2000.
2. Remedial Action Workplan For Groundwater. Prepared by Arcadis Geraghty & Miller. Dated May 25, 2001.
3. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group Environmental Services Remediation Team, to Alan Straus, USEPA Region 2, re: Former Hyatt Clark Industries Site, Clark New Jersey, EPA I.D. NJD002457174, ISRA Case No. E87769, Responses to USEPA Questions regarding CA725 and CA750. Dated November 12, 2001.
4. Telephone conference between Alan Straus, USEPA and Kristin McKenney, Booz Allen Hamilton, Inc. re: Hyatt Clark Site. Dated February 12, 2002.

5. Can the "significant" **exposures** (identified in #4) be shown to be within acceptable limits?

____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale:

This question is not applicable. See response to question #4.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

_X_ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the HCI Site, facility EPA ID#NJD002457174, located at 1300 Raritan Road in Clark/Cranford Township, Union County, New Jersey, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

___ NO - "Current Human Exposures" are NOT "Under Control."

___ IN - More information is needed to make a determination.

Completed by: _____ Date:_____

Angela Sederquist
Risk Assessor
Booz Allen Hamilton

Reviewed by: _____ Date:_____

Kristin McKenney
Senior Risk Assessor
Booz Allen Hamilton

Also Reviewed by: _____ Date:_____

Alan Straus, Remedial Project Manager
RCRA Programs Branch
USEPA Region 2

_____ Date:_____

Barry Tornick, Section Chief
RCRA Programs Branch
USEPA Region 2

Approved by: original signed by: Date: 8/1/2002
Raymond Basso, Chief
RCRA Programs Branch
USEPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the USEPA Region 2, RCRA Records Center, located at 290 Broadway, 15th Floor, New York, New York, and the New Jersey Department of Environmental Protection Office located at 401 East State Street, Records Center, 6th Floor, Trenton, New Jersey.

Contact telephone and e-mail numbers: Alan Straus, USEPA RPM
(212) 637-4160
staus.alan@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Attachments

The following attachments have been provided to support this EI determination.

- Attachment 1 - Summary of Media Impacts Table

Attachment 1 - Summary of Media Impacts Table

Hyatt Clark Industries, Clark/Cranford Township, Union County, New Jersey

AOC	GW	AIR (Indoors)	SURFACE SOIL	SURFACE WATER	SEDIMENT	SUBSURFACE SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
AOC 1	NA	No	No	No	No	Yes	No	• UST and ancillary piping removal/soil excavation • 1-3 feet of clean fill added for final grade • Deed Notice • NFA	SVOCs
AOC 2	NA	No	No	No	No	No	No	• UST removal/soil excavation • 1-3 feet of clean fill added for final grade • NFA	
AOC 3	NA	No	Yes	No	No	No	No	• UST removal/soil excavation • Excavated arsenic contaminated soil • 1-3 feet of clean fill added for final grade • Deed Notice	Arsenic
AOC 4	NA	No	Yes	No	No	Yes	No	• Decommissioned surface structures, removed tanks and ancillary equipment • RCRA Closure of SWMUs • Installed multi-layer cap • Deed Notice	SVOCs, metals, PCBs, and TPH
AOC 5	NA	No	Yes	No	No	No	No	• Decommissioned surface structures, removed tanks and ancillary equipment • RCRA Closure of SWMUs • 1-3 feet of clean fill added for final grade • Deed Notice	SVOCs and PCBs

AOC	GW[1]	AIR (Indoors)	SURFACE SOIL	SURFACE WATER	SEDIMENT	SUBSURFACE SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
AOC 6	NA	No	Yes	No	No	Yes	No	• Decommissioned surface structures • Installed multi-layer cap • Deed Notice	SVOCs, metals, PCBs, and TPH
AOC 7	NA	No	No	No	No	No	No	• Decommissioned surface structures • Excavated impacted soil • 1-3 feet of clean fill added for final grade • NFA	
AOC 8	NA	No	No	No	No	Yes	No	• 1-3 feet of clean fill added for final grade • Deed Notice • NFA	SVOCs
AOC 9	NA	No	Yes	No	No	No	No	• Demolition of the parking lot • 1-3 feet of clean fill added for final grade • Deed Notice • NFA	SVOCs
AOC 10	NA	No	No	No	No	No	No	• Decommissioned surface structures • Installed a multi-layer cap • NFA	
Site-Wide Groundwater	Yes							• Implemented free product removal plan (IPR and FPR) • Submitted Remedial Action Workplan (May 2001) • Semi-annual groundwater monitoring	VOCs and LNAPL

[1]- Groundwater has been investigated on a site-wide basis, not on an AOC basis.

September 29, 2005

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name:	*Former Hyatt Clark Industries, Inc.*
Facility Address:	*1300 Raritan Road, Clark, New Jersey*
Facility EPA ID #:	NJD002457174

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

Unless specifically noted, all directional references in this report use true north. Project north references are noted by the word "project" in parentheses. Project north is approximately 47 degrees west of true north.

The former Hyatt Clark Industries (HCI) Site is approximately 87 acres in size and is bounded to the (project) south and east by Raritan Road and Walnut Road, respectively. The (project) northern and eastern portions of the Site are bounded by Conrail rail lines. The Site spans both Clark and Cranford Townships. Land use in the surrounding half mile radius is mixed. To the (project) south lies a U.S. Gypsum plant with other commercial and residential properties. To the (project) east, along Walnut Avenue, are industrial, commercial, and residential properties. Land use to the (project) north of the site is primarily residential. (Project) west of the site is the Karnak Chemical Corporation and other commercial and residential properties. Branches of the Rahway River are located approximately 2,500 feet southeast of the Site. The US Gypsum facility, which operates two production wells for nonpotable process use, is located across Raritan Road to the southeast of the Site.

The Site was undeveloped when General Motors (GM) purchased the land in 1937. In 1938, a plant was constructed and originally manufactured hard-rubber products such as automobile steering wheels and door handles. For the majority of the plant's history, antifriction roller bearings, used by the automotive and railroad industries, were the primary product manufactured. Manufacturing processes included hot forming, machining, heat treatment, quenching, drawing, tumbling, deburring, and assembly. In 1981, the facility was bought out by employees, who formed HCI. HCI filed for bankruptcy in August 1987. Shortly thereafter, all plant operations ceased. In 1989, ownership of the Site reverted to GM. The Site was decommissioned and vacant until it was redeveloped as a golf course which opened in August 2002.

The facility obtained numerous air permits from the New Jersey Department of Environmental Protection (NJDEP) Bureau of Air Pollution, a New Jersey Pollutant Discharge Elimination System (NJPDES) permit for surface water discharged from cooling water blow-down and stormwater runoff through five outfalls to the Rahway River, and an NJDEP Bureau of Underground Storage Tanks permit. In 1982, a NJDEP, RCRA inspection and investigation was conducted and identified a number of areas where operational losses and apparent spills had occurred. A revised RCRA Part A application was submitted to NJDEP in 1983. When NJDEP requested a RCRA Part B permit application from HCI, it was informed that HCI was operating under protection of federal bankruptcy law, would be ceasing operation, and would not be filing a Part B permit application.

Due to the bankruptcy of HCI, a remedial investigation was not performed prior to the transfer of ownership of the Site to GM as required under the Environmental Cleanup and Responsibility Act (ECRA) (NJAC 7:1-3). GM signed an Administrative Consent Order in 1989 to address the requirements under ECRA. The Site is currently regulated under the NJDEP Industrial Site Recovery Act (ISRA). GM performed site and remedial investigations from 1988 through 1995. Additional investigations, focusing on groundwater, were performed in 1996, 1997, and 1999. GM also conducted an above-ground facilities decommissioning program from 1989 through 1991. The decommissioning activities included removal and disposal of all wastes (including asbestos) and equipment, cleaning and inspection of all areas, and subsequent demolition, removal, and disposal of above-ground structures. In September 1994, all USTs were removed from the Site.

No private or industrial wells for water supply were identified during extensive well searches based on NJDEP well records and a door-to-door survey from 1991 through 2005 (see Figure 1). In summary, there are no domestic or public supply wells downgradient of the Site within a one-mile radius (URS 1998).

A Remedial Action Workplan (RAW) for contaminated soil was submitted in 1998 and approved by NJDEP in 1999. GM implemented the RAW and submitted a Remedial Action Report (RAR) in November 2000. The soil remedy for the Site is a multi-layer containment system and a deed notice. Construction of the containment system was completed in April 2000. In accordance with NJDEP Technical Regulations, a deed notice was filed with the Union County clerk on November 13, 2002 and rerecorded on April 15, 2003. The

containment system reduces migration of constituents from soil to groundwater by creating a barrier to precipitation infiltration through the soil column. The system consists of 6 inches to 5 feet of general grading fill; a geotextile cushion layer; 40-mil LLDPE membrane; geosynthetic drainage composite consisting of high-density polyethylene geonet with geotextile filter fabrics bonded top and bottom; 2.5 feet minimum to a maximum of 18 feet barrier protection layer; and, topsoil. Implementation of institutional controls (deed notice) restricts future activities at the Site to use as a golf course and ensures that the integrity of the containment system is maintained and direct contact with soil is prevented. Site inspections have been conducted to ensure the integrity of the containment system and to observe continued compliance with the Deed Notice. The inspections show that the containment system has been maintained and is in excellent condition.

A Remedial Action Workplan (RAW) for contaminated groundwater was submitted in 2001. The proposed remedial action for dissolved-phase concentrations of volatile organic compounds (VOCs) in overburden and shallow bedrock groundwater is monitored natural attenuation (MNA). A Classification Exception Area (CEA) restricting the use of groundwater in the vicinity of the Site that does not meet the applicable unrestricted use criteria (Appendix A) will be implemented upon NJDEP approval.

In 1992, GM initiated oil recovery from wells using a product skimming system. Approximately 2,400 gallons of light non-aqueous phase liquid (LNAPL) were recovered using the product skimming system. In 1997, the interim free product recovery (IPR) system was installed at the Site. The IPR system consists of total-fluids-pumping from a network of recovery wells. The IPR system was converted into the final product recovery (FPR) system in 2001 as part of the final remedy for the Site. Total product recovered with the IPR System as of June 2005 is approximately 34,400 gallons. Treated water from the FPR system is currently discharged under NJPDES Permit No. NJ 8000352.

References

URS. 1998. Remedial Action Workplan for Soil. Former Hyatt Clark Industries, Inc. Site. October.

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ If data are not available skip to #6 and enter"IN" (more information needed) status code.

Rationale:

Potential Sources of Groundwater Contamination

GM has conducted comprehensive remedial investigations to identify potential source areas for groundwater impacts (including VOC sources). GM believes it has mitigated all potential sources of VOC groundwater contamination at the HCI Site. GM has presented the following information to demonstrate that VOC sources of dissolved phase impacts to groundwater have been mitigated, as listed in the references section: ARCADIS 1997, 1998; GM 1998a, 1998b, 1999, 2005; URS 1990, 1996, 1997, 1998a, 1998b, 1999a, 1999b, 2000..

GM implemented several source investigation and remediation activities at the Site. The initial activities were associated with the facility decommissioning. During decommissioning GM removed potential above ground sources including drums, tanks, and piping. Underground storage tanks were removed and clean closure was completed for each tank. Utilities and other appurtenances were also properly removed or cleaned and abandoned.

GM conducted a sampling program to investigate potential source areas in soil. Approximately 1,300 samples were collected and analyzed for VOCs among other analytes. In addition, every soil sample collected was field screened with a PID and olfactory observations were noted. The results of the investigation showed that a VOC source is not present in soil. As presented in the NJDEP approved Soil RAW (URS 1998), remediation for VOCs in soil was not necessary.

GM has demonstrated that free product at the Site is not a source of the chlorinated VOC contamination in the groundwater. Samples of the product have been analyzed for VOCs among other analytes. The results indicate that the product is not the source of chlorinated VOCs in groundwater. Most of the product is located in the west central portion of the Site. Overburden and shallow bedrock monitoring wells that are within the delineated free product area generally do not have exceedences of chlorinated VOCs in the groundwater. Chlorinated VOCs in overburden and shallow bedrock groundwater occur primarily in the southwest section of the Site near the former maintenance building and drum storage area where chlorinated VOCs were used and stored. The spatial separation between the groundwater impacted by chlorinated VOCs and the areas containing product also indicates that the product is not the source of the chlorinated VOCs.

Concentrations of VOCs in groundwater do not indicate the presence of free or residual sources of dense nonaqueous-phase liquid (DNAPL) sources at the Site. The absence of DNAPL has been confirmed during 12 monitoring events since March 1998. DNAPL has not been detected based on more than 800 recorded measurements. The maximum concentrations of VOCs detected in on-site groundwater are at least an order of magnitude less than 1 % of the solubility for each compound detected. These maximum concentrations are not indicative of a free or residual DNAPL source of chlorinated VOCs.

Even though the investigation results indicated that product is not the source of chlorinated VOCs in groundwater, GM is recovering product through active and passive methods consistent with the NJDEP Technical Requirements for Site Remediation.

GM also conducted a comprehensive investigation of the deep bedrock hydrogeology and groundwater quality. The investigation included a thorough study of the bedrock structure to facilitate the understanding of groundwater fate and transport. The investigation included the installation of 6 pilot holes to depths ranging from 350 to 500 feet, geophysical logging including borehole image process system, selective zone sampling, monitoring well installation, and continuous water level monitoring. The result of the investigation, summarized in the RAW for Groundwater, establishes a clear connection between the upgradient source and the impacts observed in the deep bedrock beneath the site. The connection is based on the historic pumping of the Hyatt Clark water supply wells, current and historic pumping of the Gypsum wells, the VOC signature of the deep bedrock groundwater, and an upgradient source located along a preferential groundwater flow path (i.e. along bedrock strike). The strike directly connects the upgradient site and the HCI Site. The strike path extends linearly from the Site through the MW-10 cluster, the MW-31 cluster and MW-85B3 (N.J. geodetic N53E).

The VOC signature of the deep bedrock groundwater beneath the HCI Site and the off-site upgradient site is shown using pie diagrams. The pie diagrams illustrate the signature of dissolved phase VOCs in groundwater. Pie diagrams were prepared for the overburden, shallow bedrock, and the deep bedrock groundwater beneath the HCI Site, the off-site upgradient source and the US Gypsum production wells (Figures 2 and3). Relative proportions of PCE, TCE, 1,1,1-TCA, 1,2-DCE, and 1,1-DCE/DCA concentrations were used to create a chemical signature for each well. The radius, and therefore the size of the pie diagram is proportional to the total VOC concentration. If trichlorofluoromethane was detected it is noted by "FREON PRESENT" adjacent to the diagrams. Trichlorofluoromethane was never detected in the on-site overburden and shallow bedrock groundwater.

The VOC signatures show that the signatures from the deep bedrock beneath the HCI Site are similar to the signatures from the groundwater at the off-site upgradient source and dissimilar to the signature from on-site groundwater in the overburden and shallow bedrock. In addition, the concentrations at the off-site source are much greater than the concentrations at the HCI Site, which also shows that source of these VOCs is off-site. The VOC signatures and the concentration gradient show a clear connection between the off-site upgradient source and the impacted deep bedrock groundwater beneath the HCI Site.

GM has submitted information concerning historical pumping of the three abandoned production wells at the Site. These three production wells were installed in the 1940s and abandoned in April 1990. During peak production, each well pumped approximately 1 million gallons per day. The pumping of the HCI production wells, combined with the United States (US) Gypsum production wells, which are downgradient of the HCI Site and are currently operating, enhanced movement along strike from the upgradient off-site source to the HCI Site.

Groundwater Conditions

The geology at the Site consists of an uppermost overburden unit consisting of heterogeneous fill composed of various materials ranging from silty clay to coarse gravel and cobbles. Generally, the thickness of the fill is approximately 10 feet in the vicinity of the former main building. The underlying unit is composed of water-saturated, silty fine sand, with a varying thickness from only a few feet to almost 30 feet in the (project) northwest corner of the Site. Underlying the silty fine sand unit is till/weathered bedrock, ranging from approximately 2 to 10 feet thick. The till is a reddish-brown clay or silt, derived from the Passaic Formation. The till is very dense and can contain large rock clasts or pebbles of gneiss, quartzite, sandstone, and quartz. The upper surface of the bedrock tends to be weathered with clay filled fractures alternating with seams of competent rock and silty clay. The depth to bedrock ranges from approximately 20 to 50 feet below land surface. The bedrock elevation is highest in the central portion of the Site. All strike and dip values show a very similar trend, northeast-southwest strike and gentle northwest dip. Groundwater at the Site exists in the overburden, shallow bedrock, and deep bedrock. The average depth to groundwater at the Site is between 10 to 40 feet bgs.

Overburden groundwater at the Site area is controlled by discharge to the Rahway River (i.e., groundwater is flowing to the southeast). Localized depressions in the water table are centered at overburden pumping wells

in the interim free product recovery (IPR) system. Outside the pumping influences, groundwater flow conforms to the regional flow, generally southeast towards the Rahway River.

Shallow bedrock was defined to be approximately the upper 30 feet of the bedrock. Similarly to the overburden groundwater, localized depressions in the water table are due to the pumping associated with the IPR system and installation of the containment system. Outside the pumping influences, groundwater flow conforms to the regional flow towards the southeast.

Groundwater in the deep bedrock flows to the south-southeast. Two US Gypsum production wells, which supply process water for the manufacture of paper for wallboard, are located downgradient 1,000 feet to the south (USG-1) and 500 feet to the southeast (USG-2), and extend to depths of approximately 500 and 300 feet bgs, respectively. Continuous water level monitoring has indicated that all on-site deep bedrock wells respond to pumping of the US Gypsum wells (ARCADIS 1999 ; Appendix B), indicating that the US Gypsum wells are hydraulically connected to deep bedrock groundwater at the Site. Recent records show that the majority of pumping occurs from USG-1, while USG-2 is pumped intermittently based on demand. Well construction details for USG-1 and USG-2 show that they were constructed as an open borehole within the bedrock, indicating that the wells extract water from both the shallow and deep bedrock units (GM 2001).

Summary of Groundwater Remedial Investigations

The initial groundwater investigation from 1988 through 1991 was focused on defining the overburden groundwater quality and investigating the extent of free product (URS 1995). The primary constituents detected in the overburden groundwater were chlorinated VOCs, and the highest concentrations of chlorinated VOCs were detected in the southwestern portion of the Site.

A subsequent groundwater remedial investigation was conducted from 1995 through 1996 to investigate shallow bedrock (defined to be approximately the upper 30 feet of the bedrock) groundwater quality and further delineate free product beneath the Site (ARCADIS 1997). Consistent with the results of the initial investigation, the highest concentrations of chlorinated VOCs in the shallow bedrock groundwater and the most free product were detected in the (project) western portion of the Site.

A supplemental groundwater remedial investigation was conducted in 1997 to mainly delineate and recover free product (ARCADIS 1999). In addition, the natural attenuation potential in groundwater was assessed and the two US Gypsum production wells were sampled to evaluate groundwater quality in the vicinity of the Site. Chlorinated VOCs were the only constituents that exceeded the NJDEP Class IIA groundwater quality standards (GWQS) in the US Gypsum production wells; but groundwater from these wells is not used for potable purposes.

Semi-annual groundwater monitoring was initiated in 1997, and semi-annual reports were filed with NJDEP since 1999. The groundwater samples were analyzed for Priority Pollutant VOCs, semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCB), pesticides, metals and cyanide, total phenols, and total petroleum hydrocarbons (TPH). In March 2000, a modified program was implemented that no longer monitored pesticides, metals, cyanide, total phenols, and TPH. Semi-annual groundwater monitoring to evaluate contaminant concentrations in the overburden, shallow bedrock, and deep bedrock units is ongoing (ARCADIS 2005). Water level and product thickness measurements are also collected during the semi-annual groundwater monitoring events.

A deep bedrock investigation and water-level monitoring study was conducted in March 1999, and the results showed that the US Gypsum wells influence water levels in all deep bedrock wells and do not significantly influence water levels in the overburden and shallow bedrock with the exception of the shallow bedrock monitoring wells MW-37B and MW-39B located at the southern portion of the Site (ARCADIS 1999).

In 1998, off-site monitoring wells were installed in the overburden and sampled in response to the results of a groundwater investigation conducted by Villa Construction Company on its property located adjacent to and (project) west of the Site. These off-site monitoring wells were analyzed for the same parameters as the semi-

annual groundwater monitoring program. Four VOCs were detected in the off-site wells that exceed the NJDEP Class IIA GWQS, but the VOC signature for the off-site groundwater sample with the highest concentration of tetrachloroethene (PCE) did not match the VOC signatures in samples collected from on-site wells. Differences between VOC concentrations in samples from off-site wells and samples from on-site wells indicated that the VOC concentrations observed off-site were not related to on-site impacts (ARCADIS 1999).

A supplemental deep bedrock investigation was performed subsequently to provide additional groundwater quality and hydraulic data along strike and dip for the deep bedrock (ARCADIS 2001). In addition, GM reviewed the NJDEP file for the Terminal Avenue site located approximately 2,500 feet west (upgradient) of the Site, which began operations in 1960. Based on investigative work conducted at the Terminal Avenue site (EcolSciences 2004), TCE has been detected in overburden groundwater at concentrations greater than 200,000 ug/L and trichlorofluoromethane at concentrations greater than 2,000 ug/L. GM believes that the information collected from the on-site investigations and from those conducted at the Terminal Avenue site demonstrates that deep bedrock groundwater quality at the HCI Site is primarily from an off-site source. Evidence to support an off-site contribution to the deep bedrock groundwater quality includes the high TCE and other chlorinated VOC concentrations in the deep bedrock at a location (MW-10B) upgradient of on-site sources, differences in contaminants between deep bedrock wells and overburden/shallow bedrock wells, and the presence of trichlorofluoromethane in deep bedrock wells that has not been detected in the overburden/shallow bedrock units (ARCADIS 2001).

As stated in the NJDEP September 2004 letter (NJDEP 2004), NJDEP agreed that an off-site contribution to the contamination at the HCI Site exists at depth. In the same letter, NJDEP also requested that GM install off-site monitoring wells to further characterize upgradient ground water quality even though NJDEP acknowledged that it may be difficult to quantify accurately the degree of off-site contribution. Even though GM believes that such data should be collected as part of the investigation associated with the Terminal Avenue site, GM has agreed to install two wells downgradient of the Terminal Avenue site without waiting for the further investigation of the Terminal Avenue site, in the interest of providing NJDEP with additional off-site upgradient data.

References:

ARCADIS Geraghty & Miller. 1997. Groundwater Remedial Investigation Report. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 1998. Supplemental Groundwater Remedial Investigation. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 1999. Groundwater Summary and Work Plan. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 2001. Remedial Action Workplan for Groundwater. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 2005. March 2005 Interim Groundwater Monitoring Report. Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. June 30.

General Motors Corporation (GM). 1998a. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group, to Christopher Blake, NJDEP Bureau of Northern Case Management: Responses to NJDEP comments dated February 10, 1998.

General Motors Corporation (GM). 1998b. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group to Wayne Bevan, NJDEP Industrial Site Evaluation: Responses to the NJDEP comments dated August 13, 1998; responses to comments on Item I - Supplemental Remedial Investigation and Interim RAW dated January 9, 1998; Item II - Response to NJDEP Letter of February 10, 1998; Item III - Remedial Investigation Report dated April 29, 1998; Item IV - Additional Responses to NJDEP Letter of February 10, 1998.

General Motors Corporation (GM). 1999. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group to Wayne Bevan, NJDEP Industrial Site Evaluation: Responses to the NJDEP comments regarding the Remedial Action Workplan dated October 23, 1998 and the Groundwater Summary and Workplan dated June 13, 1999.

General Motors Corporation (GM). 2001. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group, to Alan Straus, USEPA Region 2: Responses to USEPA Questions regarding CA725 and CA750. November 12.

General Motors Corporation (GM). 2005. Letter from Kim Tucker-Billingslea, GM Worldwide Facilities Group, to Christopher Blake, NJDEP Bureau of Northern Case Management: Responses to NJDEP comments dated April 8, 2005.

New Jersey Department of Environmental Protection (NJDEP). 2004. Letter to GM Kim Tucker-Billingslea, GM Worldwide Facilities Group. September 7.

URS Consultants. 1990. RCRA Closure Report. Former Hyatt Clark Industries, Inc. Site.

URS. 1995. Remedial Investigation Report. March.

URS Greiner. 1996. Underground Storage Tank Closure Report. Former Hyatt Clark Industries, Inc. Site.

URS Greiner. 1997. Evaluation of TPH Soil Excavation and In-Situ Remediation. Former Hyatt Clark Industries, Inc. Site.

URS Greiner. 1998a. Evaluation of TPH Soil Excavation in the OW-22 and OW-25 Area. Former Hyatt Clark Industries, Inc. Site.

URS Greiner. 1998b. Summary of PCB Contamination in Soils Proposed Remedial Action. Former Hyatt Clark Industries, Inc. Site.

URS Greiner Woodward Clyde. 1999a. Monthly Progress Report No. 1 For the Soils Remediation Action. Former Hyatt Clark Industries, Inc. Site.

URS Greiner Woodward Clyde. 1999b. Monthly Progress Report No. 2 For the Soils Remediation Action. Former Hyatt Clark Industries, Inc. Site.

URS. 2000. Remedial Action Report. Former Hyatt Clark Industries, Inc. Site.

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

___ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

___ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Semi-annual rounds of groundwater quality data have been collected at the Site since 1997. The results for the four most recent rounds of semi-annual monitoring (Fall 2003 to Spring 2005) are discussed in this section (ARCADIS 2003, 2004a, 2004b, 2005). The information for chemicals exceeding the drinking water screening criteria is summarized in Table 1.

Drinking water screening criteria used to identify contaminated groundwater are based on Federal maximum contaminant levels (MCLs) and risk-based drinking water criteria for constituents without MCLs. The risk-based drinking water criteria are calculated using standard default exposure factors for estimating reasonable maximum exposures (RME) via daily drinking water consumption, and target cancer risk of 10^{-5} and a noncancer hazard quotient (HQ) of 1. The drinking water screening criteria are shown on Table 1 and in the attached Figures 4 through 6 for groundwater quality data box figures.

Overburden

Based on the four most recent rounds of monitoring, 9 VOCs detected in overburden groundwater samples exceeded the drinking water screening criteria. All of these compounds are chlorinated VOCs. The maximum detected concentrations of these VOCs in the overburden groundwater and their locations are shown in Table 1.

Historically, SVOCs have only been detected infrequently in overburden groundwater samples, and most of the detected concentrations are below the NJDEP Groundwater Quality Standards (GWQS), with some sporadic exceptions. As proposed in the Groundwater Summary and Work Plan (ARCADIS 1999), and approved by NJDEP in its letter dated 29 August 2000, the semi-annual groundwater monitoring program no longer includes SVOC analyses.

Historically, PCBs have been detected infrequently, but they have been detected at concentrations greater than the GWQS in some samples. Because of their very low solubility, the detection of PCBs in groundwater was suspected to be associated with particulates in the sample and not to be representative of the dissolved-phase concentrations. PCB concentrations decreased when low-flow sampling methods were used. In addition, PCBs were not detected in overburden wells along the facility boundary at concentrations greater than the screening criteria. The maximum detected concentration of total PCBs in the overburden groundwater that exceed the drinking water screening criteria and its location are shown in Table 1.

[1] Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Historically, some metals detected in overburden groundwater samples have exceeded the GWQS. Results from previous sampling rounds and filtered groundwater samples indicate that the majority of the metals concentrations exceeding the screening criteria were the result of turbidity in the sample and not representative of the dissolved-phase concentrations. Metal concentrations generally decreased when low-flow sampling methods were used. As proposed in the Groundwater Summary and Work Plan (ARCADIS 1999), and approved by NJDEP in their letter dated 29 August 2000, the semi-annual groundwater monitoring program no longer includes metal analyses, except for MW-20 where LNAPL was formerly observed. As requested by NJDEP, all the above-mentioned parameters, including metals, were sampled when LNAPL was no longer observed at this well.

Therefore, concentrations of VOCs and PCBs in overburden groundwater meet the definition of contamination, while SVOCs, pesticides, and metals do not meet the definition of contamination.

Shallow Bedrock
Based on the four most recent rounds of monitoring, 6 VOCs detected in shallow bedrock groundwater samples exceeded the drinking water screening criteria. All of these compounds are chlorinated VOCs. The maximum detected concentrations of these VOCs in the shallow bedrock groundwater and their locations are shown in Table 1.

Historically, SVOCs were not detected frequently nor were they detected in shallow bedrock groundwater samples at concentrations greater than the GWQS, with the exception of two concentrations of bis (2-ethylhexyl) phthalate, a common laboratory contaminant. As proposed in the Groundwater Summary and Work Plan (ARCADIS 1999), and approved by NJDEP in their letter dated 29 August 2000, the semi-annual groundwater monitoring program no longer includes SVOC analyses.

Historically, PCBs have been detected infrequently, but they have been detected at concentrations greater than the GWQS in some samples. Because of their very low solubility, the detection of PCBs in groundwater was thought to be associated with particulates in the sample and not to be representative of the dissolved phase concentrations. PCB concentrations decreased when low-flow sampling methods were used. The maximum detected concentration of total PCBs in the shallow bedrock groundwater and its location are shown in Table 1.

Historically, some metals detected in shallow bedrock groundwater samples have exceeded the GWQS. Results from previous sampling rounds and subsequent dissolved groundwater samples indicate that the majority of the metals concentrations exceeding the screening criteria were the result of turbidity in the sample and not representative of the dissolved-phase concentrations. Metal concentrations generally decreased when low-flow sampling methods were used. As proposed in the Groundwater Summary and Work Plan, and approved by NJDEP in their letter dated 29 August 2000, the semi-annual groundwater monitoring program no longer includes metals analysis, except for one well (MW-37B). Metals concentrations in Well MW-37B did not exceed the screening criteria for the latest four rounds of sampling.

Therefore, concentrations of VOCs and PCBs in shallow bedrock groundwater meet the definition of contamination, while SVOCs, pesticides, and metals do not meet the definition of contamination.

Deep Bedrock
As discussed in Question 1, GM believes that groundwater monitoring data at and upgradient of the Site indicate that the deep bedrock groundwater quality at the Site is strongly influenced by an off-site source, and any site-related influence is insignificant in comparison. Currently, NJDEP is evaluating the relative significance of influences from the Site and from other adjacent sites.

Based on the four most recent rounds of monitoring, 5 VOCs detected in deep bedrock groundwater samples exceeded the drinking water screening criteria. All of these compounds are chlorinated VOCs. The maximum detected concentrations of these VOCs in the deep bedrock groundwater and their locations are shown in Table 1.

SVOCs have not been detected in deep bedrock groundwater samples, with one exception, bis (2-ethylhexyl) phthalate, a common laboratory contaminant. PCBs have not been detected in deep bedrock groundwater samples. Metals have not been detected at concentrations greater than the drinking water screening criteria except for three detections of lead in Spring 1999. The semi-annual groundwater monitoring program no longer includes SVOC and metals analysis for deep bedrock groundwater.

In addition to on-site groundwater sampling, four off-site wells (two US Gypsum production wells and two off-site upgradient residential wells) were sampled in December 1997 to evaluate bedrock groundwater quality in the vicinity of the Site. The two US Gypsum production wells (300 and 500 feet deep) were sampled given their proximity to the Site, approximately 500 and 1,000 feet across Raritan Road to the southeast (downgradient of the Site). Chlorinated VOCs were the only constituents that exceeded GWQS. The constituent with the highest concentration was TCE (120 ug/L). Trichlorofluoromethane was also detected in the samples from the US Gypsum wells. This compound has never been detected on the HCI Site in the overburden or the shallow bedrock groundwater, suggesting that an off-site source has impacted these wells. The two off-site residential wells, located approximately 2,000 feet northwest (upgradient) of the Site, were also sampled in January 1999 for VOCs and trichlorofluoromethane. These compounds were not detected in samples from the residential wells in both events.

Therefore, concentrations of VOCs in deep bedrock groundwater meet the definition of contamination, while SVOCs, PCB, pesticides, and metals do not meet the definition of contamination.

Light Non-Aqueous Phase Liquid (LNAPL)
As discussed in the Remedial Action Plan for Free Product (ARCADIS 2000), LNAPL containing PCBs has been observed at the overburden groundwater table and within the overburden saturated zone and shallow bedrock. The LNAPL is addressed as part of the on-going product recovery and installation of the containment system (ARCADIS 2005).

References:

ARCADIS Geraghty & Miller. 1999. Groundwater Summary and Work Plan. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 2000. Remedial Action Work Plan for Free Product. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 2001. Remedial Action Workplan for Groundwater. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 2003. September 2003 Interim Groundwater Monitoring Report. Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. December 19.

ARCADIS Geraghty & Miller. 2004a. March 2004 Interim Groundwater Monitoring Report. Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. June 25.

ARCADIS Geraghty & Miller. 2004b. September 2004 Interim Groundwater Monitoring Report. Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. December 17.

ARCADIS Geraghty & Miller. 2005. March 2005 Interim Groundwater Monitoring Report. Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. June 30.

EcolSciences Inc. 2004. Phase II Site Investigation Block 58, Lot 4, 100 Terminal Avenue, Township of Clark, Union County, New Jersey.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

_X_ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

___ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

___ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Semi-annual groundwater quality data in overburden, shallow bedrock, and deep bedrock groundwater for the six most recent rounds of monitoring (Fall 2002 to Spring 2005) are presented in Figures 4 to 6. Only chemicals with at least one concentration exceeding the drinking water screening criterion are shown on the figures. The concentrations that are higher than the screening criteria are highlighted.

Overburden and Shallow Bedrock

As presented in the Remedial Action Work Plan (ARCADIS 2001) and recent Groundwater Monitoring Reports (ARCADIS 2003, 2004a, 2004b, 2005), regional flow in the overburden and shallow bedrock groundwater at the Site is generally to the southeast. However, pumping in the LNAPL recovery wells, installed in 1997 as part of the IPR System, has altered the gradient such that flow in the southwestern portion of the Site in the overburden and shallow bedrock groundwater is drawn to the vicinity of these wells (ARCADIS 2003, 2004a, 2004b, 2005). The IPR system was converted into the final product recovery (FPR) system in 2001 as part of the final remedy for the Site, and continues to provide hydraulic control of overburden and shallow bedrock groundwater. As a result, contamination in the following overburden wells is not expected to migrate beyond the existing area of contamination under current conditions (MW-21, MW-38, MW-19, MW-18, MW-20 and MW-8).

Contaminated overburden groundwater located outside the influence of the LNAPL pumping wells (i.e., migration would not be controlled by pumping), include the following: MW-35 (PCBs), MW-37R (TCE), MW-39 (TCE), MW-41 (1,1-DCE, PCE, TCE, and VC), and MW-45 (1,1-DCE and PCE). Contaminant concentrations present in MW-37R and MW-45 are stable. Figure 4 shows the semi-annual monitoring data at the on-site overburden groundwater wells. It can be seen in this figure that concentrations in MW-35, MW-39 and MW-41 are gradually decreasing. In addition, contaminant concentrations in the wells at the Site boundary (i.e., MW-37R, MW-39, MW-13, and MW-12) are either stable or decreasing. Thus, the migration of contaminated groundwater in the overburden is stabilized.

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

Contaminated shallow bedrock groundwater located outside the influence of the LNAPL pumping wells include the following instances: MW-7 (PCBs), MW-9 (1,1-DCE, PCE, TCE, VC and PCBs), MW-9B (1,1-DCE, cis-1,2-DCE, PCE, trans-1,2-DCE, TCE, and VC), MW-35B (PCBs), MW-37B (1,1-DCE and TCE), MW-38B (1,1-DCE, cis-1,2-DCE, PCE, TCE, and VC), and MW-39B (TCE). Contaminant concentrations in MW-7, MW-9, MW-9B, MW-35B, MW-38B, and MW-39B are generally stable. Figure 5 shows the semi-annual monitoring data at the shallow bedrock groundwater wells. It can be seen in this figure that contaminant concentrations in the wells at the Site boundary (i.e., MW-37B, MW-39B, MW-4, and MW-36B) are either stable or decreasing. Thus, the migration of contaminated groundwater in the shallow bedrock groundwater is stabilized.

Overburden and shallow bedrock groundwater wells exhibiting PCB contamination are all delineated downgradient by wells with concentrations below the screening criteria. Overburden and shallow bedrock groundwater wells exhibiting VOC contamination are not all delineated downgradient by wells with concentrations below the screening criteria. As such, a groundwater model was used as part of the proposed CEA determination to estimate the maximum distance which VOC concentrations in overburden and shallow bedrock groundwater would extend downgradient of the Site (ARCADIS 2001). Simulations indicate that the downgradient distance of the plume of contamination would be limited to 500 ft after 99 years. The CEA boundary map and other CEA information are presented in Appendix A. Therefore, based on concentration trends and modeling predictions, contaminated overburden and shallow bedrock groundwater is expected to remain within 500 ft of the Site boundary.

Deep Bedrock

Contaminated deep bedrock groundwater, though attributed primarily to an off-site source, is also stabilized because it is captured by the two US Gypsum production wells. Based on the 2004 pumping information, USG-1 and USG-2 pumped at an average rate of approximately 143 and 80 gpm, respectively. A study was performed to determine the degree to which the US Gypsum wells influence groundwater flow and the extent to which the wells capture/contain impacted deep bedrock groundwater from beneath the HCI Site. The results of the analysis indicate that pumping of the US Gypsum wells captures the impacted deep bedrock groundwater from beneath the HCI Site. A detailed discussion of the study is provided in Appendix B and C, and the findings are summarized below.

Water-level measurements were collected from deep and shallow bedrock monitoring wells at the HCI Site. A comparison of the water-level measurements to the pumping records from USG-1 and USG-2 shows that there is a clear hydraulic connection between the deep bedrock groundwater beneath the HCI Site and both US Gypsum wells. Water-level measurements were also collected at the HCI Site and at the US Gypsum facility to prepare deep bedrock groundwater elevation contour maps. The water-level contour maps indicate that groundwater flow direction in the deep bedrock is south-southeast toward the US Gypsum wells. Groundwater elevations at the downgradient (southern) boundary of the HCI Site range between 38 and 40 feet msl and the water level in the USG-1 was approximately 16 feet msl (during pumping). A discussion of the water-level measurements, the pumping records from the US Gypsum wells, and the water-level contour maps is provided in Appendix B.

Two groundwater modeling techniques were used to further demonstrate capture of the deep bedrock groundwater by the US Gypsum wells. A discussion of these groundwater modeling techniques and their results is provided in Appendix C. The first model illustrates the well head protection area for the US Gypsum wells using the methods required by the New Jersey Geological Survey (NJGS). Results of the model indicate that the capture zone for these wells encompasses a significant area up- and down-gradient of the HCI Site. The second technique used a MODFLOW groundwater flow model with particle tracking to illustrate the general pattern of groundwater flow from the HCI Site to the US Gypsum Wells, assuming isotropic horizontal hydraulic conductivity. To account for horizontal anisotropy associated with the regional structure of the bedrock (Passaic Formation), the MODFLOW

model was also used with anisotropic horizontal hydraulic conductivity having a ratio of 10:1 to simulate preferential flow along strike. This ratio is the same as the ratio used in the NJGS Well Head Protection Area model for this bedrock formation. As such, this anisotropic version of the MODFLOW model is a blend of the first two modeling techniques, and provides a more integrated picture of how groundwater in the deep bedrock flows to the US Gypsum pumping wells. The results of these models are consistent with the hydraulic gradient measurements which show that pumping of the US Gypsum production wells would capture impacted deep bedrock groundwater from beneath the HCI Site. In particular, the anisotropic MODFLOW model predicts a hydraulic head difference between the downgradient boundary of the HCI Site and USG-1 that is within a factor of two of the measured head difference between monitoring wells at the downgradient Site boundary and the water level in USG-1.

In addition, Figure 6 shows the semi-annual monitoring data at the deep bedrock groundwater wells. It can be seen in this figure that contaminant concentrations are generally stable. Thus, the migration of contaminated groundwater in the deep bedrock groundwater is stabilized. In addition to the monitoring to support the CA750 determination discussed in answer to Question 7, GM is planning further characterization of deep bedrock groundwater upgradient (between the AT&T and the Hyatt Clark site) and side-gradient (east of MW-85B3) as part of its continuing effort to develop information necessary to support an appropriate remedy decision for groundwater at the Hyatt Clark site.

LNAPL

Data from previous studies have sufficiently characterized the extents of the LNAPL (ARCADIS 2002, 2004b, 2005). The LNAPL is expected to remain within the existing areas shown in Figure 7, as no significant migration of LNAPL has been observed since monitoring began. In addition, the existing FPR system will continue to provide mass removal and further hydraulic control of LNAPL. Thus, the migration of LNAPL is stabilized.

References:

ARCADIS Geraghty & Miller. 2001. Remedial Action Workplan for Groundwater. Former Hyatt Clark Industries, Inc. Site.

ARCADIS Geraghty & Miller. 2002. Response Letter to NJDEP Request.

ARCADIS Geraghty & Miller. 2003. September 2003 Semi-Annual Groundwater Monitoring Report, Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. December 19.

ARCADIS Geraghty & Miller. 2004a. March 2004 Interim Groundwater Monitoring Report, Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. June 25.

ARCADIS Geraghty & Miller. 2004b. September 2004 Interim Groundwater Monitoring Report, Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. December 17.

ARCADIS Geraghty & Miller. 2005. March 2005 Interim Groundwater Monitoring Report, Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. June 30.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

___ If yes - continue after identifying potentially affected surface water bodies.

X If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

___ If unknown - skip to #8 and enter "IN" status code.

Rationale:

The nearest point of surface water is the Rahway River, which is located approximately 2,500 ft southeast of the Site (ARCADIS 2001). Given that the general groundwater flow directions in the overburden and shallow bedrock groundwater zones are to the southeast, the potential exists for overburden and shallow bedrock groundwater to discharge into the Rahway River. Potential impacts to the Rahway River were predicted using a groundwater fate and transport model (ARCADIS 2001). The model predicted that the VOC concentrations (based on TCE) at the downgradient site boundary (average of 8.2 ug/L) would attenuate to less than 1 ug/L within about 500 feet of the Site. Therefore, contaminated groundwater from overburden and shallow bedrock does not discharge into the Rahway River.

The deep bedrock groundwater at the Site also generally flows to the southeast but is captured by the US Gypsum production wells as discussed in Question 3. Thus, deep bedrock groundwater does not discharge into the Rahway River or other surface water bodies.

References:

ARCADIS Geraghty & Miller. 2001. Remedial Action Workplan for Groundwater. Former Hyatt Clark Industries, Inc. Site.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

___ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

___ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

___ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Footnotes:

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be **"currently acceptable"** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be **"currently acceptable"**) - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

Footnotes:

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

   _X_ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

   _____ If no - enter "NO" status code in #8.

   _____ If unknown - enter "IN" status code in #8.

Rationale:

As discussed in Question 1, semi-annual groundwater monitoring to evaluate contaminant concentrations in the overburden, shallow bedrock, and deep bedrock unit was initiated in 1997 and is currently ongoing. Data collected from this groundwater monitoring program will be used to confirm that the existing area of groundwater contamination at the Site remains the same. A program for monitoring the extent and thickness of LNAPL is also ongoing (ARCADIS 2005) to confirm that the existing area of LNAPL remains the same and the current recovery system continues to be effective in providing hydraulic control. In addition, pumping records for US Gypsum production wells will be compiled annually to ensure that the contaminated deep bedrock groundwater remains to be captured by these production wells.

References:

ARCADIS Geraghty & Miller. 2005. March 2005 Interim Groundwater Monitoring Report, Former Hyatt Clark Industries, Inc. Site, Clark, New Jersey. June 30.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

YE

YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the *Former Hyatt Clark Industries, Inc.*, EPA ID # *NJD002457174* located in *Clark, New Jersey*. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

___ NO - Unacceptable migration of contaminated groundwater is observed or expected.

___ IN - More information is needed to make a determination.

Completed by: General Motors Corporation
Worldwide Facilities Group

Reviewed by: Lucas Kingston, Hydrogeologist
Booz Allen Hamilton (for EPA Region 2)

Also reviewed by: _____ Date:_____
Alan Straus, RPM
RCRA Programs Branch
EPA Region 2

_____ Date:_____
Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: Original singed by: Date: September 30, 2005
Adolph Everett, Chief
RCRA Programs Branch
EPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at Environ Corp., Princeton, New Jersey office.

Contact telephone and e-mail numbers: Kim Tucker-Billingslea
(248) 753-5800
kim.tucker-billingslea@gm.com

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Table 1: Maximum Detected Groundwater Concentrations Exceeding Drinking Water Screening Criteria
Former Hyatt Clark Industries, Inc., Clark, New Jersey

Aquifer	Chemical	Max. Conc (mg/L)	Well ID	Sample Date	Drinking Water Screening Criteria (mg/L)		NJDEP GWQS (mg/L)
Overburden	Carbon Tetrachloride	7.2E-02	MW-8	9/23/2004	5.0E-03	mcl	2.0E-03
	1,1-Dichloroethane	4.4E-01	MW-8	9/23/2004	3.7E+00	nc	5.0E-02
	1,2-Dichloroethane	6.0E-03	MW-19	9/29/2003	5.0E-03	mcl	2.0E-03
	1,1-Dichloroethene	1.2E-01	MW-8	9/23/2004	7.0E-03	mcl	2.0E-03
	cis-1,2-Dichloroethene	8.1E-01	MW-20	9/22/2004	7.0E-02	mcl	7.0E-02
	trans-1,2-Dichloroethene	2.9E-01	MW-20	3/12/2004	1.0E-01	mcl	1.0E-01
	Tetrachloroethene	3.0E-02	MW-41	9/15/2004	5.0E-03	mcl	1.0E-03
	1,1,1-Trichloroethane	4.9E-01	MW-8	9/23/2004	2.0E-01	mcl	3.0E-02
	Trichloroethene	4.2E-01	MW-20	9/22/2004, 9/30/2003	5.0E-03	mcl	1.0E-03
	Vinyl Chloride	4.5E-01	MW-20	9/30/2003	2.0E-03	mcl	5.0E-03
	PCBs (total)	2.9E-02	MW-18	9/15/2004	5.0E-04	mcl	5.0E-04
Shallow Bedrock	Benzene	1.0E-03	MW-37B; MW-39B	3/9/2004; 3/10/2004	5.0E-03	mcl	1.0E-03
	1,1-Dichloroethane	2.0E-01	MW-9B	3/11/2004	3.7E+00	nc	5.0E-02
	1,2-Dichloroethane	3.0E-03	MW-38B	9/30/2003	5.0E-03	mcl	2.0E-03
	1,1-Dichloroethene	8.2E-02	MW-9B	3/11/2004	7.0E-03	mcl	2.0E-03
	cis-1,2-Dichloroethene	4.5E-01	MW-9B	9/22/2004	7.0E-02	mcl	7.0E-02
	trans-1,2-Dichloroethene	2.4E-01	MW-9B	9/22/2004	1.0E-01	mcl	1.0E-01
	Tetrachloroethene	4.4E-02	MW-38B	9/20/2004	5.0E-03	mcl	1.0E-03
	1,1,1-Trichloroethane	3.6E-02	MW-9B	3/11/2004	2.0E-01	mcl	3.0E-02
	Trichloroethene	3.8E-01	MW-9B	9/29/2003	5.0E-03	mcl	1.0E-03
	Vinyl Chloride	1.7E-01	MW-9B	9/22/2004, 9/29/2003	2.0E-03	mcl	5.0E-03
	PCBs (total)	1.5E-03	MW-7	9/26/2003	5.0E-04	mcl	5.0E-04
Deep Bedrock	Chloroform	1.9E-02	MW-85B3	9/25/2003	8.0E-02	mcl	6.0E-03
	1,1-Dichloroethane	9.5E-02	MW-10B	9/29/2003	3.7E+00	nc	5.0E-02
	1,2-Dichloroethane	8.0E-03	MW-10B	9/29/2003	5.0E-03	mcl	2.0E-03
	1,1-Dichloroethene	8.6E-02	MW-31B2	9/30/2003	7.0E-03	mcl	2.0E-03
	Tetrachloroethene	6.8E-02	MW-31B2	9/30/2003	5.0E-03	mcl	1.0E-03
	Trichloroethene	5.3E-01	MW-31B2	9/30/2003	5.0E-03	mcl	1.0E-03
	Vinyl Chloride	1.0E-02	MW-10B	9/20/2004	2.0E-03	mcl	5.0E-03

Notes:

1. The groundwater data included in this table are from the four most recent rounds of semi-annual monitoring - September 2003, March and September 2004, and March 2005. Chemicals exceeding either the drinking water screening criteria or NJDEP GWQS are included in this table.
2. The Drinking Water Screening Criteria hierarchy is the Federal MCL (mcl), and then the lower of the integrated Drinking Water Criteria at a target cancer risk of 1E-05 (c) and a target hazard quotient of 1 (nc).
3. The NJDEP GWQS, shown for reference only, are based on the higher of the Groundwater Quality Standards for Class II-A groundwater and the Interim Specific and Generic Criteria.

REPORT UPON

OVERFLOW ANALYSIS

TO

PASSAIC VALLEY SEWERAGE COMMISSIONERS

PASSAIC RIVER OVERFLOWS

MIDDLESEX STREET, HARRISON
NPDES. NO. 014/H-005

1976

ELSON T KILLAM ASSOCIATES INC
Environmental and Hydraulic Engineers 46 ESSEX STREET MILLBURN NEW JERSEY 07041

PASSAIC VALLEY SEWERAGE COMMISSIONERS

PASSAIC RIVER OVERFLOWS

MIDDLESEX STREET, HARRISON
NPDES NO. 014/H-005

TABLE OF CONTENTS

List of Illustrations

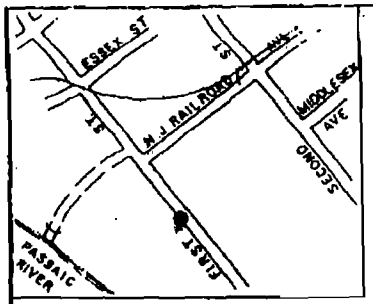
ELSON T. KILLAM ASSOCIATES, INC.

OVERFLOW DATA EXTRACT

MIDDLESEX STREET OVERFLOW CHAMBER
NPDES NO. 014/H-005
HARRISON

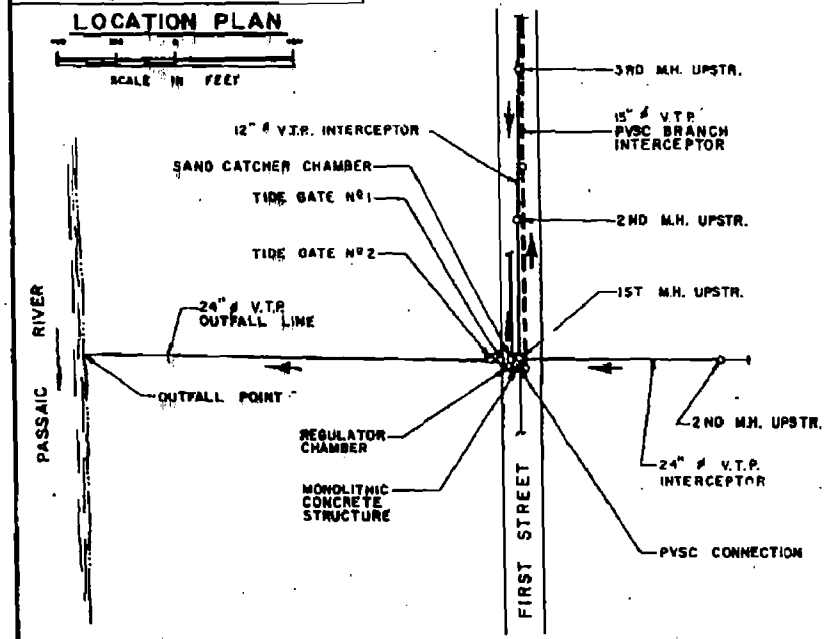
Chamber Location and Description

Overflow Chamber Status:	Active
Overflow to:	Passaic River
Character of District Served:	primarily industrial with some residential development
Overflow Location (See Plate A):	in west side of First Street, 150 feet south of Otis Elevator Co. main gate
District Outlet Sewer (See Plates A and B):	24" diameter VTP sewer
Outfall to River (See Plates A and B):	24" diameter VTP sewer
Outfall Condition:	clear and functioning
Tidal Effects:	some tidal intrusions noted
Surcharge Effects:	surcharge observed due to capacity limitations and/or tide gate closure
Overflow and Regulator Operation (See Plates B and C):	Under normal dry weather flow conditions, the flow is diverted to the PVSC interceptor via the regulator. During periods of rainfall, a portion of the combined flow enters the interceptor, with the balance overflowing the stop logs and being discharged through the outfall line into the Passaic River.



LOCATION PLAN

SCALE IN FEET



PLAN

SCALE IN FEET

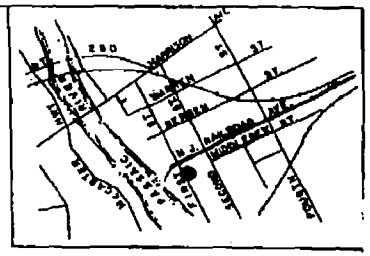
ELEVATIONS BASED ON 11.204 AS ESTABLISHED BY THE GEODETIC CONTROL SURVEY CAPTION AND DESCRIPTION PENDING.

NOTE

ALL SIDE PIPELINES EXCEPT PVSC BRANCH INTERCEPTOR ARE OMITTED IN PROFILE FOR CLARITY.

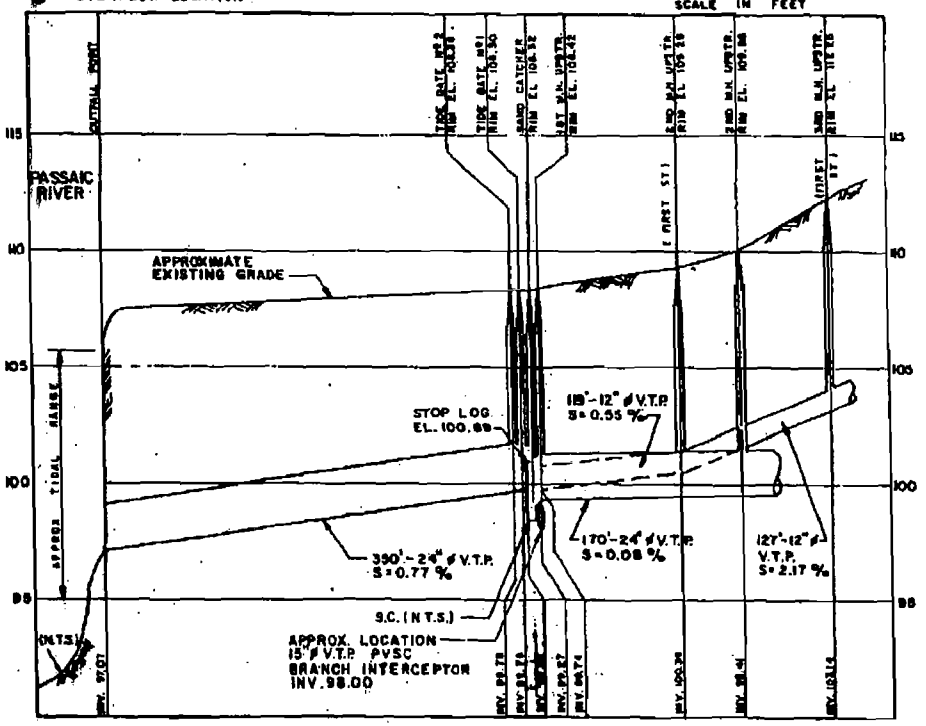
LEGEND

- → DIRECTION OF FLOW
- S.C. = SAND CATCHER
- T.G. = TIDE GATE
- UP STR. = UPSTREAM
- DN. STR. = DOWNSTREAM
- N.T.S. = NOT TO SCALE
- V.T.P. = VITRIFIED TILE PIPE
- ● = OVERFLOW LOCATION



KEY MAP

SCALE IN FEET



PROFILE

HORIZ. SCALE IN FEET

VERT. SCALE IN FEET

PASSAIC VALLEY SEWERAGE COMMISSIONERS

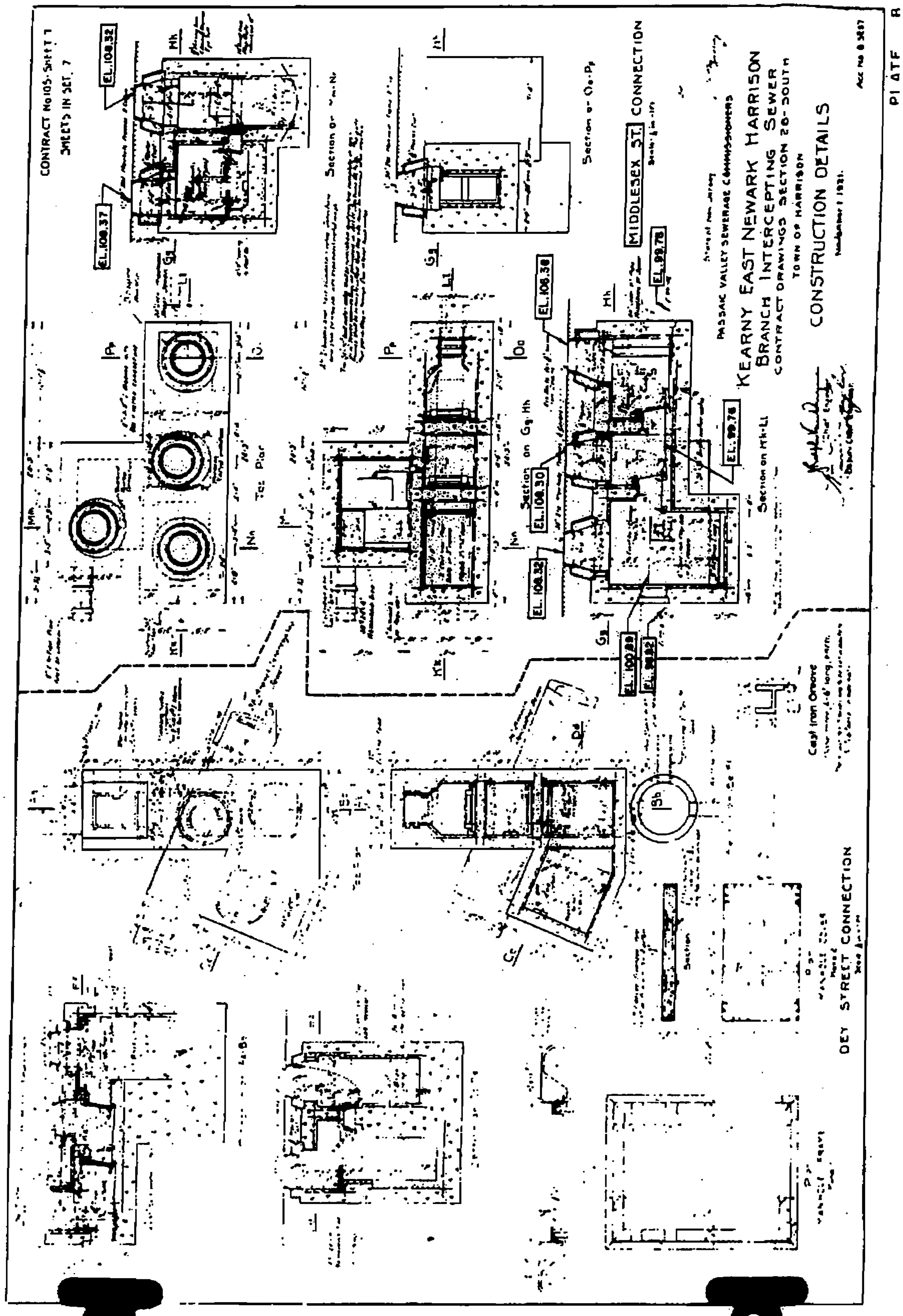
OVERFLOW CHAMBER Nº 014/H-005

MIDDLESEX STREET, HARRISON

PLAN AND PROFILE

ELMER T. KILLAM ASSOCIATES, INC.

PLATE A



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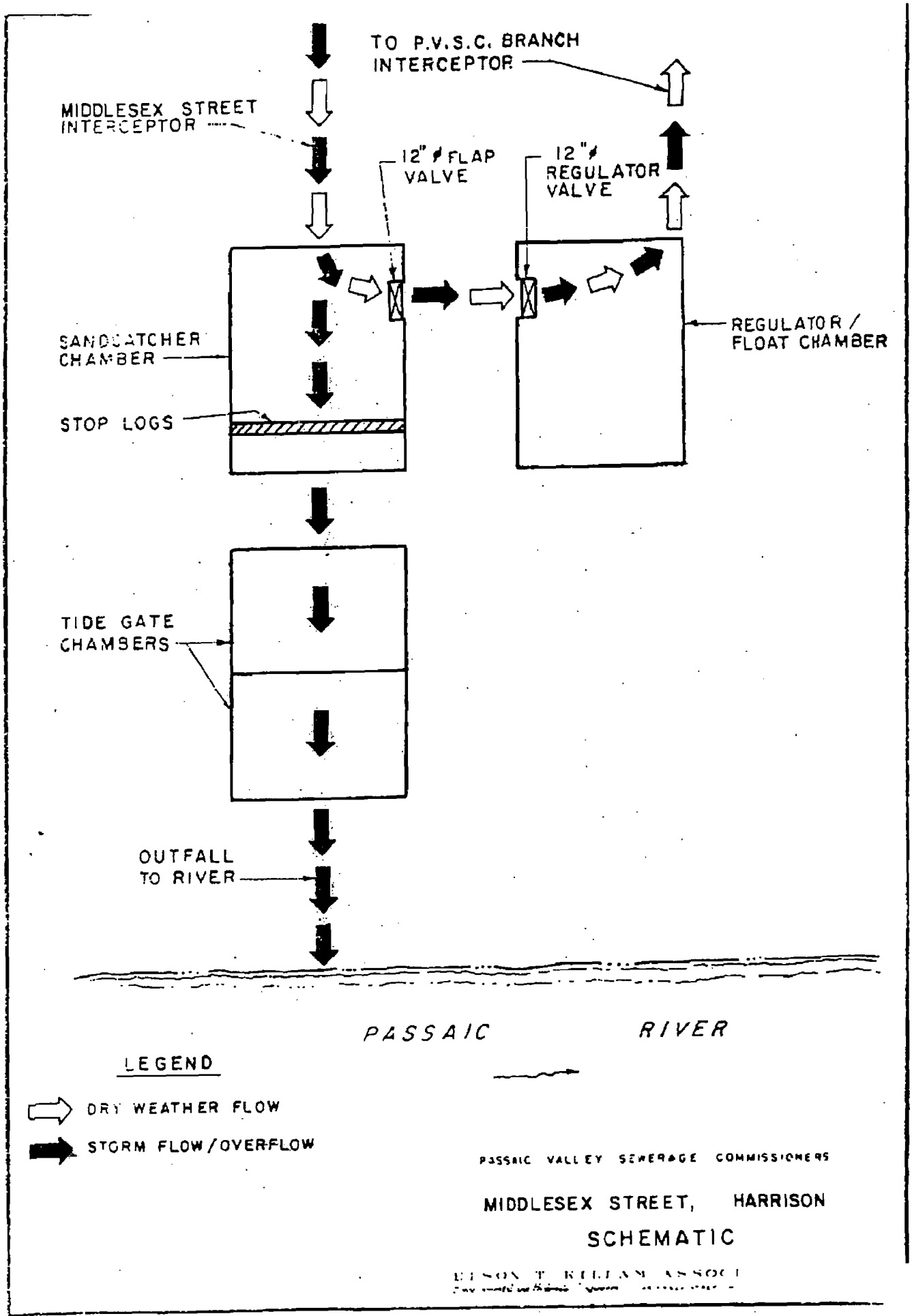


PASSAIC VALLEY SEWERAGE COMMISSIONERS

MIDDLESEX STREET, HARRISON

SCHEMATIC

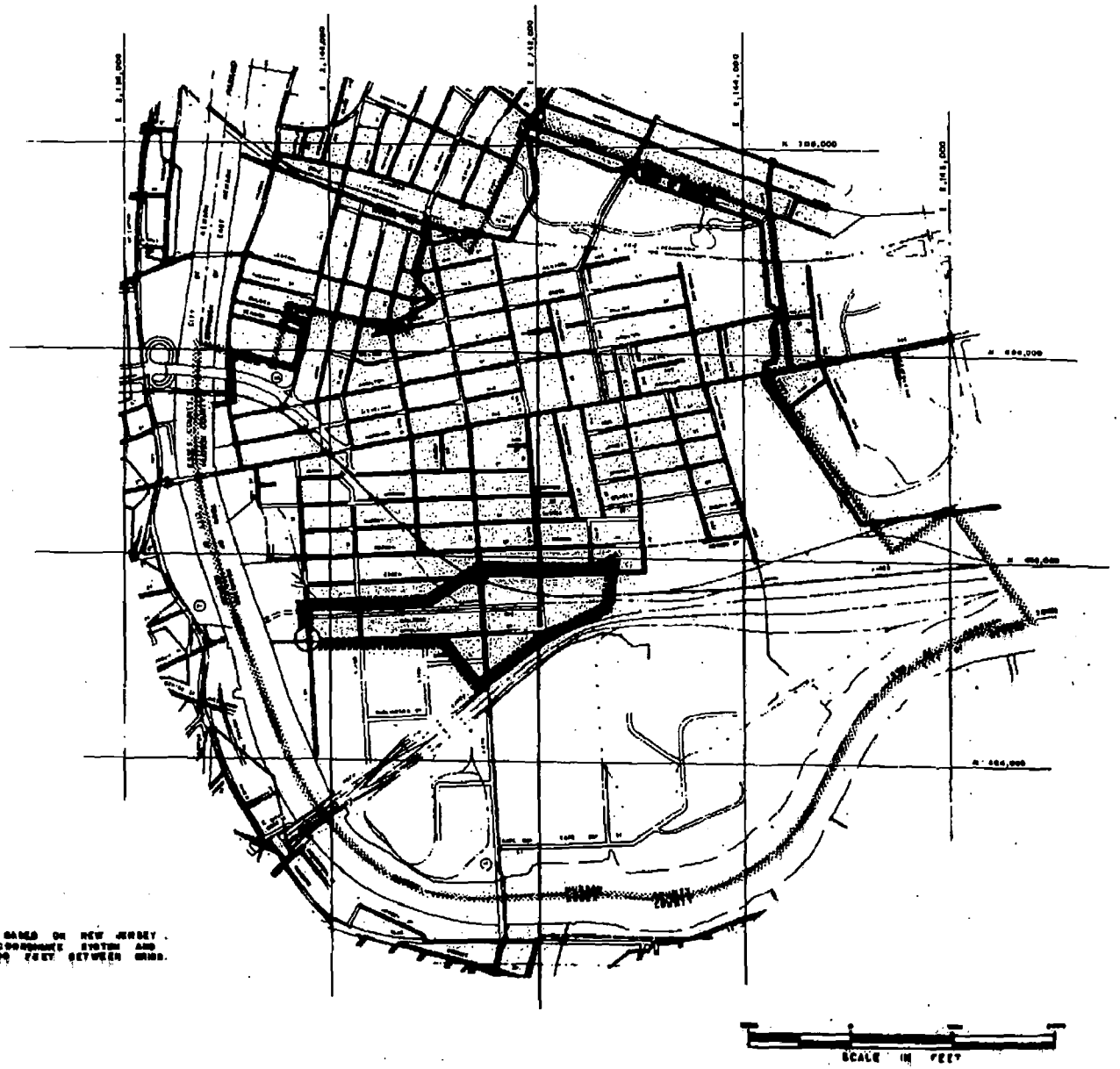
MIDDLESEX STREET OVERFLOW CHAMBER (NPDES NO. 014/H-005) (Cont'd.)

Condition of Regulator:	appears inoperable
Special Actions Required:	none
Overflow Stop Log/Dam Condition:	stop logs located in downstream end of sand catcher just before opening to first tide gate chamber
Tide Gate Condition:	both tide gates noted as leaking

Note: During the investigation, the Overflow chambers were examined, verifying information and dimensions pertinent to this study. The verified information has been recorded on Plate B (See boxed annotations).

Area Served and Dry Weather Flow

Combined Area Served (See Plate D):	0.097 square miles-62 acres
Average Daily Flow Seasonal Dry Weather: Seasonal Wet Weather:	 0.72 MGD (estimated) 0.98 MGD (estimated)
Estimated Combined Flow to Produce an Overflow:	3.6 MGD
Approximate Length of Combined Sewers Serving District:	5,800 linear feet



LEGEND

- MUNICIPAL BOUNDARY
- COUNTY BOUNDARY
- MANHOLE
- TERMINAL MANHOLE
- PVSC TRUNK SEWER
- LOCAL SEWER
- FORCE MAIN
- PUMPING STATION
- SIPHON AND SIPHON CHAMBER
- DELINEATION OF SUB AREA
- MIDDLESEX STREET OVERFLOW CHAMBER
- MIDDLESEX STREET COLLECTION SYSTEM

BASIS

PLAN GRID IS BASED ON NEW JERSEY STATE PLANE COORDINATE SYSTEM AND IS SHOWN 5000 FEET BETWEEN GRIDS.

SCALE IN FEET

PASSAIC VALLEY SEWERAGE COMMISSIONERS

MIDDLESEX STREET, HARRISON

PLAN OF COLLECTION SYSTEM

ELSON T. KILLAM ASSOCIATES, INC.

Consulting and Municipal Engineers

PLATE 1

MIDDLESEX STREET OVERFLOW CHAMBER (NPDES NO. 014/H-005) (Cont'd.)

Breakdown of Combined Sewers:

Size Range	Linear Feet
8"-15" diameter	3,400
18"-24" diameter	2,400

Storm Water Overflows

Flow Measurement and Sampling Equipment Installed in:	sand catcher chamber
Samples Collected:	Four 125-ml. samples each 3.75 minutes, compositing a 500-ml. sample each 15-minute period.
Activation of Sampler:	upon flow over stop logs/dam
Period of Observation:	April, 1975 through July, 1975
No. of Rainfall Occasions During Period:	25
No. of Overflows Observed:	17
No. of Meter Installations During Overflows:	15
No. of Overflows Recorded During Period:	5
Note: See Table 1	Table 1 presents pertinent data regarding rainfall characteristics, overflow measurements, and wastewater quality observed.

TABLE 1
OVERFLOW OBSERVATIONS

MIDDLESEX STREET, HARRISON, N.J. NPDES NO. 014/H-005

	RAINFALL					OVERFLOW				SAMPLING - WATER QUALITY											
				Average	Maximum			Average			Number	TSS				COD				BOD			
	Rain Date	Amount (In.)	Duration (Hrs.)	Intensity (In/Hr.)	Intensity (In/Hr.)	Duration (Hrs.)	Peak Rate (MGD)	Rate (MGD)	Volume (MG)	Sampling Duration (Hrs.)	of Samples	1st	Max	Min	Avg	1st	Max	Min	Avg	1st	Max	Min	Avg
												(mg/l)				(mg/l)				(mg/l)			
	4-24/25	0.64	9.00	0.071	0.14	1.00	2.8	1.4	0.1														
**	4-25/26	0.35	7.50	0.047	0.09		NO OUTFLOW - TIDE																
	5-1	0.06	4.00	0.015																			
	5-2	0.12	0.75	0.160	0.06	0.27	0.2	0.1	Neg.														
**	5-4/5	1.05	25.75	0.041	0.14		NO OUTFLOW - TIDE																
	5-6	0.21	1.20	0.175																			
	5-7	T					NO OVERFLOW																
	5-12/13	0.47	5.75	0.082						1.75	7	66	66	10	32.0	296	296	28	86.3	84	84	10	31.2
**	5-13	1.05	4.50	0.233	0.93		NO OVERFLOW - TIDE			4.25	17		NO RESULTS			117	117	28	47.4	7	25	2	8.6
	5-16	0.63	5.17	0.122	0.28	3.95	4.4	1.1	0.2														
	5-21	0.05	2.00	0.025																			
	5-25	0.32	1.75	0.183																			
	5-30	0.22	8.75	0.025	0.14		NO OVERFLOW																
*	6-1	1.60	12.00	0.133	2.09	1.80	14.1	6.6	0.5														
	6-2	0.06					NO OVERFLOW																
	6-5	0.18	1.50	0.120	0.14		NO OVERFLOW																
*	6-5/6	1.60	11.00	0.145	1.42	2.00	12.6	5.1	0.4	2.00	8	46	130	24	58.6	113	121	85	108.7	47	58	36	49.8
**	6-6	0.57	1.67	0.342	1.37		NO OUTFLOW - TIDE																
	6-12/13	1.85	25.00	0.074																			
	6-16	0.10	1.00	0.100																			
	6-19	0.81	0.63	1.279																			
	6-24	0.36	1.25	0.288																			
	6-28	0.75	2.30	0.326																			
	6-29	0.45	0.67	0.675																			
	7-6	0.14	1.50	0.093																			

*Tide Effect: Tidal levels higher than stop plank elevation caused tide gates to remain closed during part of the rainfall, resulting in only a partial overflow to river.

**Tide Effect: Tidal levels higher than stop plank elevation caused tide gates to remain closed during most of the rainfall, resulting in no overflow to river.

(8)

MIDDLESEX STREET OVERFLOW CHAMBER (NPDES NO. 014/H-005) (Cont'd.)

Range of Rainfall Observed:	Trace-1.85 inches
Range of Rainfall Duration:	0.63-25.75 hours
Range of Average Rainfall Intensity:	0.015-1.279 inches/hour
Range of Average Rainfall Intensity vs. Duration producing no overflow (Table 1 and Plate E):	0.120 inches/hour for 1.5 hours— 0.025 inches/hour for 8.75 hours
Range of Average Rainfall Intensity vs. Duration producing an overflow (Table 1 and Plate E):	0.16 inches/hour for 0.75 hours— 0.071 inches/hour for 9.00 hours
Estimated Time of Concentration (Tc) to Overflow Chamber:	17 minutes
Range of Maximum Rainfall Intensity (i.e., during Tc) producing an overflow (Table 1):	0.06-2.09 inches/hour
Note: Overflow Prediction	Plate E presents the relationship of Average Intensity vs. Duration of Rainfall to describe conditions of overflow. The curve indicates a range of Intensities vs. Duration for which an overflow might be expected to occur.

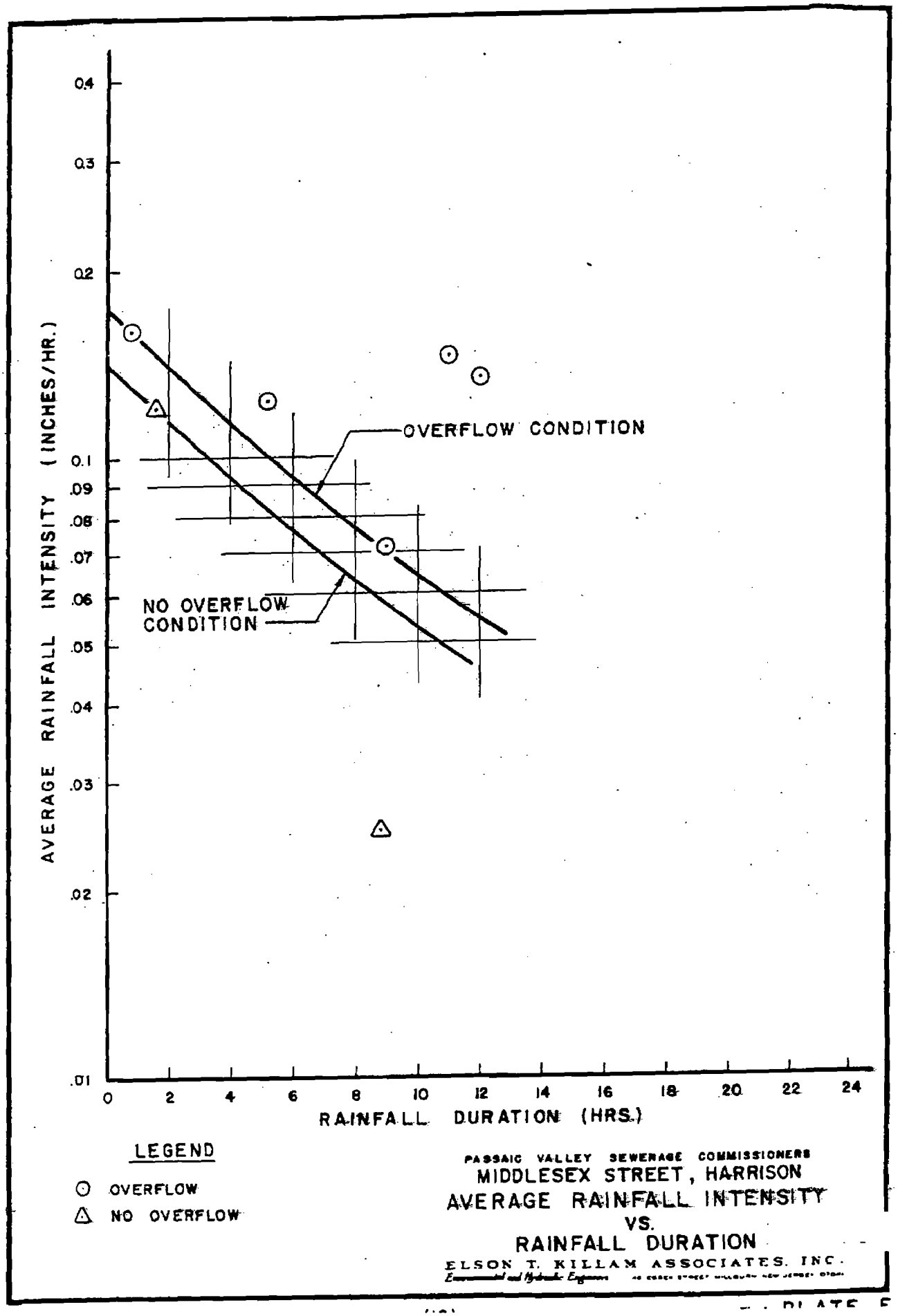
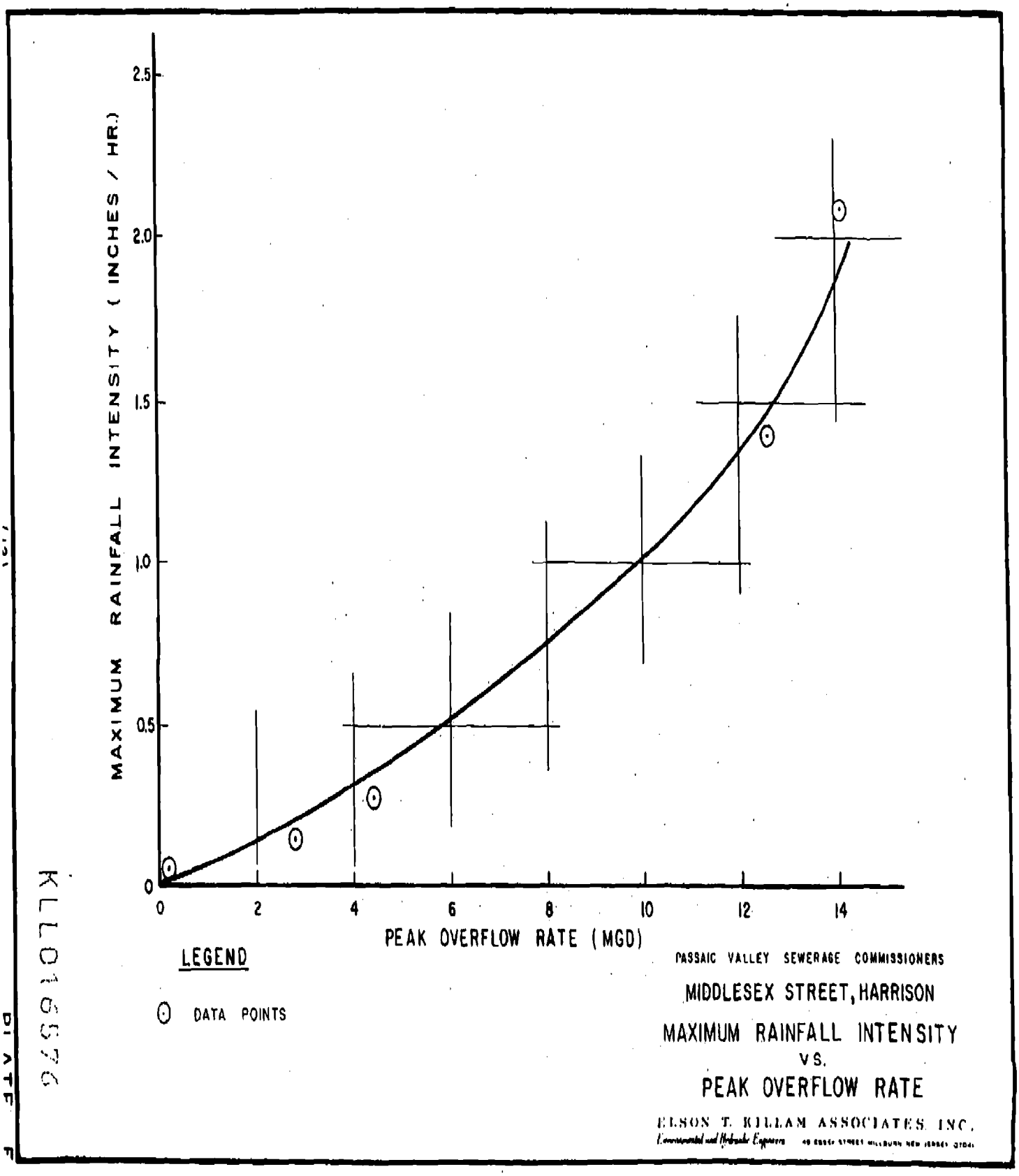


PLATE E

MIDDLESEX STREET OVERFLOW CHAMBER (NPDES NO. 014/H-005) (Cont'd.)

Range of Overflow Duration Observed:	0.27-3.95 hours
Range of Peak Rate of Overflow Observed:	0.2-14.1 MGD
Range of Overflow Volume Observed:	Neg.-0.5 MG
Data for Maximum Observed Overflow:	Date: 6-1-75 Volume: 0.5 MG Peak Rate: 14.1 MGD Duration: 1.80 hours

Note: Overflow Rate Estimation — Plate F presents the relationship of Maximum Rainfall Intensity vs. Peak Overflow Rate.



MIDDLESEX STREET OVERFLOW CHAMBER (NPDES NO. 014/H-005) (Cont'd.)

Storm Water Overflow Characteristics

Note:	Samples of Sanitary Flow (Baseline), as well as of Combined Flow during overflow, were analyzed, with results tabulated in the Appendix.
Parameters:	pH, TSS, VSS, COD, TOC, BOD, and Lithium determined for each sample. (See Appendix).
Parameters used in Analysis:	TSS, COD, and BOD.
Notes:	Data presented graphically for rainfall of June 5-6, 1975. TSS, COD, and BOD, as well as flow data for storm and baseline.

Water quality data in Table 1 (Overflow Observations) are arranged to indicate the results of the first 15-minute sample, as a reference to possible initial strength at the onset of an overflow, as well as to indicate the maximum and minimum concentrations during the overflow period. An arithmetic mean (average) concentration is also listed for each characteristic, based on the number of samples obtained during the period of overflow.

MIDDLESEX STREET OVERFLOW CHAMBER (NPDES NO. 014/H-005) (Cont'd.)

Storm Sampling (mg/l):		Maximum	Minimum	Average
	TSS	59	32	45
	COD	109	47	81
	BOD	50	9	30

Total Pounds for Observed Overflow:	Overflow Volume:	0.4	MG
(6/5 - 6/6/75)	TSS	99	lbs.
	COD	333	lbs.
	BOD	172	lbs.

Baseline Sampling (mg/l):		Maximum	Minumum	Average
	TSS	114	12	42
	COD	216	24	72
	BOD	167	12	44

APPENDIX

ELSON T. KILLAM ASSOCIATES, INC.

MIDDLESEX STREET OVERFLOW (014/H-005)

CONTENTS OF APPENDIX

PVSC Reference # B-40

Date: 2/13/75

Elson T. Killam Associates - Infiltration Studies
Middlesex Street, Harrison, In sandcatcher
1450-2/11/75 to 1140 -2/12/75

Sampler#354 Set #4
O.F. # 014/H-005

19 Samples

Baseline

SAMPLE	pH	TSS	VSS	%Vol.	COD	TOC	TOC/COD	BOD	BOD/COD	LIth:
1	7.5	104	4	38.5	216	60	27.8	167	77.3	0.01
2	7.7	114	22	19.3	110	28	25.4	83	75.4	0.01
3	7.8	36	36	100.0	102	20	19.6	85	83.3	0.01
4	7.6	38	38	100.0	90	28	31.1	36	40.0	0.01
5	7.5	42	42	100.0	61	15	24.6	24	39.4	0.01
6	7.6	14	14	100.0	65	12	18.5	41	63.2	0.01
7	7.7	0	--	-----	61	17	27.9	30	49.2	0.01
8	7.7	14	14	100.0	53	12	22.7	16	30.2	0.01
9	7.7	62	62	100.0	76	11	14.5	28	36.9	0.01
10	7.7	32	32	100.0	57	15	26.3	35	61.4	0.01
11	7.8	0	---	----	53	13	24.5	37	69.8	0.01
12	7.8	34	34	100.0	45	15	33.3	12	26.7	0.02
13	7.9	54	0	0.0	41	13	31.7	20	48.8	0.01
14	7.9	28	28	100.0	45	10	21.2	15	33.3	0.02
15	7.9	28	28	100.0	37	10	27.0	21	56.8	0.01
16	8.0	24	24	100.0	24	14	58.3	15	62.5	0.01
17	7.9	0	--	----	33	10	30.3	13	39.4	0.0
18	8.0	12	12	100.0	82	19	23.2	69	84.1	0.01
19		NO SAMPLE		—	—	—	—	—	—	—
20		NO SAMPLE		—	—	—	—	—	—	—
21	8.0	32	32	100.0	121	30	24.8	95	78.5	0.01
							27.0		55.6	

KLL016581

P.V.S.C. Reference # K-128

Date November 27, 1974

Elson Killam Associates-Infiltration Studies

Otis Elevator CO., Middlesex Street, Harrison. First manhole upstream Sancatcher 2:37 P. M. 11/15/74 to 1:17 A. M. 11/26/74

BASELINE

Sample #	pH	T.S.S.	V.S.S.	%Vol.	C.O.D.	T.O.C.	T.O.C./C.O.D.	B.O.D/C.O.D.	B.O.D	mg Li
1	7.5	12	12	100.0	120	38	31.7	90.0	108	.01
2	7.5	16	16	100.0	164	48	29.3	61.0	100	.01
3	2.6	48	40	83.3	312	60	19.2	14.4	45	.01
4	2.1	4	4	100.0	92	36	39.1	23.9	22	.01
5	6.5	28	26	92.9	108	25	23.1	48.1	52	.01
6	6.9	16	16	100.0	112	25	22.3	57.1	64	.01
7	7.0	8	8	100.0	92	19	20.7	75.0	69	.01
8	7.0	22	22	100.0	64	15	23.4	----	60	.01
9	7.2	16	16	100.0	68	15	22.1	35.3	24	.01
10	7.3	12	12	100.0	124	16	12.9	55.6	69	.01
11	7.2	268	212	79.1	264	56	21.2	54.2	143	.01
1/3 Fill 12	7.6	16	16	100.0	92	38	41.3	94.6	87	..
				AVERAGE			25.5			

KLL016582

PVSC Reference # D-280

Date: 4/29/75

Elson T. Killam Associates - Infiltration Studies
Middlesex Street, Harrison - Sandcatcher
4/24/75

Sampler # 324 Set #57
Chamber # OA/H - 005

Rainfall of 4/24/75.

STORM CONDITIONS

24 SAMPLES

SAMPLE	pH	TSS	VSS	%Vol.	COD	TOC	TOC/COD	BOD	BOD/COD %
1	AMOUNTS INSUFFICIENT FOR ANALYSIS.								
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

PVSC Reference # E-180

Date: 5/20/75

Elson T. Killam Associates - Infiltration Studies
Middlesex Street, Harrison - Sandcatcher
5/12/75 - 5/13/75

Sampler # 397 Set #5
Chamber # 014/R-005

Rainfall of 5/12/75 - 5/13/75

STORM CONDITIONS

8 SAMPLES

Sample	pH	TSS	VSS	%Vol.	COD	TOC	TOC/COD%	BOD	BOD/COD%
1	7.3	66	66	100.0	296	88	29.7	84	28.4
2	7.2	10	10	100.0	100	20	20.0	23	23.0
3	7.3	0	-	-	52	10	19.3	48	92.3
4	7.4	0	-	-	40	10	25.0	10	25.0
5	7.4	0	-	-	32	7	21.9	12	37.5
6	7.4	24	24	100.0	28	7	25.0	10	35.7
7	No sample -- Bottle Leaked				-	-	-	-	-
8	-	28	28	100.0	56	12	21.4	-	-
						Average	23.2		40.3

KH 016584

PVSC Reference # E-227

Date: 5/23/75

Elson T. Killam Associates - Infiltration Studies
Middlesex Street, Harrison - Sandcatcher
5/13/75 - 72

Sampler # 397 Set #5
Chamber # 014/H-005

Rainfall of 5/13/75

STORM CONDITIONS

17 SAMPLES

SAMPLE	pH	TSS	VSS	%Vol.	COD	TOC	TOC %	BOD	BOD %
1	7.2	0	-	-	117	40	34.2	7	6.0
2	7.2	0	-	-	101	22	21.8	25	24.9
3	7.2	0	-	-	65	16	24.6	13	20.0
4	7.2	0	-	-	53	12	22.7	10	18.9
5	7.2	0	-	-	40	9	22.5	7	17.5
6	7.2	0	-	-	44	12	27.3	12	27.3
7	7.2	0	-	-	40	8	20.0	7	17.5
8	7.1	0	-	-	36	7	19.4	4	11.1
9	7.3	0	-	-	32	7	21.9	9	28.1
10	7.2	0	-	-	28	7	25.0	7	25.0
11	7.3	0	-	-	28	7	25.0	5	17.8
12	7.2	0	-	-	57	7	12.3	2	3.5
13	7.2	0	-	-	40	9	22.5	7	17.5
14	7.3	0	-	-	32	9	28.1	8	25.0
15	7.4	0	-	-	32	9	28.1	6	18.3
16	7.4	0	-	-	28	10	34.5	9	32.1
17	7.7	0	-	-	32	10	31.3	-	-
						Average	24.8		18.3

PVSC Reference # F-138

Date: 6/9/75

Elson T. Killam Associates - Infiltration Studies
Middlesex Street, Harrison - Sandcatcher
18:45 - 6-5-75

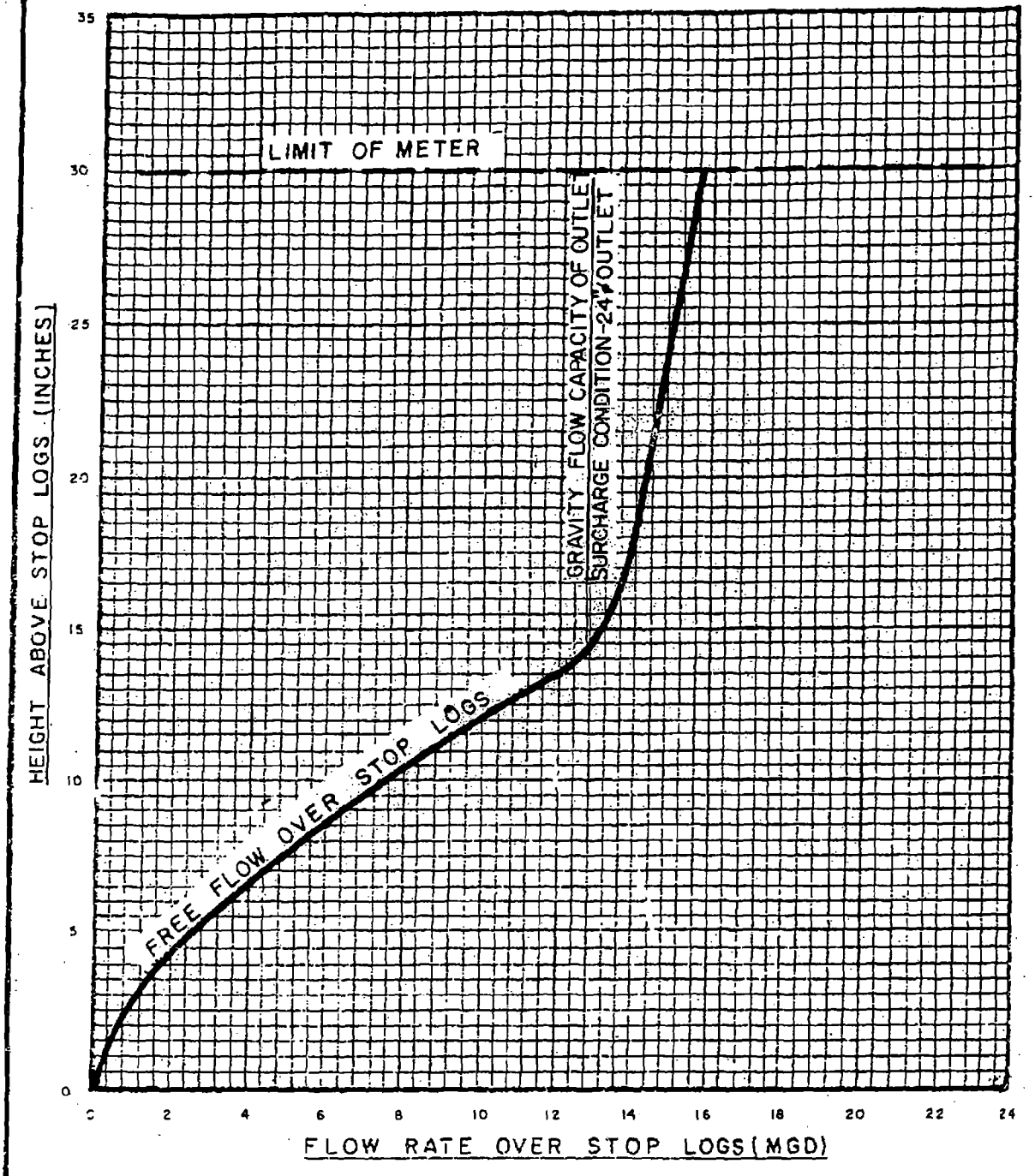
Sampler No. 363
Chamber No. 014/H-005
Set No. 84

Rainfall of 6/5/75

STORM CONDITIONS

13 SAMPLES

SAMPLE	pH	TSS	VSS	%Vol.	COD	TOC	TOC (COD)%	BOD	BOD (COD)%
NO SAMPLES	1 to 5	-	-	-	-	-	-	-	-
6	7.2	8	0	0.0	81	21	26.0	57	70.3
7	7.0	44	0	0.0	109	23	21.1	50	45.8
8	6.8	0	-	-	101	22	21.8	55	54.4
9	6.8	0	-	-	113	24	21.2	47	41.6
10	6.9	0	-	-	85	21	24.7	36	42.4
11	6.8	46	0	0.0	97	24	24.8	56	57.8
12	6.7	0	-	-	93	23	24.7	45	48.3
13	6.9	66	0	0.0	85	21	24.7	47	55.3
14	6.8	54	0	0.0	117	27	23.1	44	37.6
15	6.6	24	0	0.0	121	30	24.8	53	43.8
16	6.7	50	0	0.0	101	27	26.7	57	56.3
17	6.9	130	32	24.6	109	30	27.5	55	50.5
18	6.9	40	0	0.0	166	40	24.1	58	34.9
							24.2		49.2



PASSAIC VALLEY SEWERAGE COMMISSIONERS

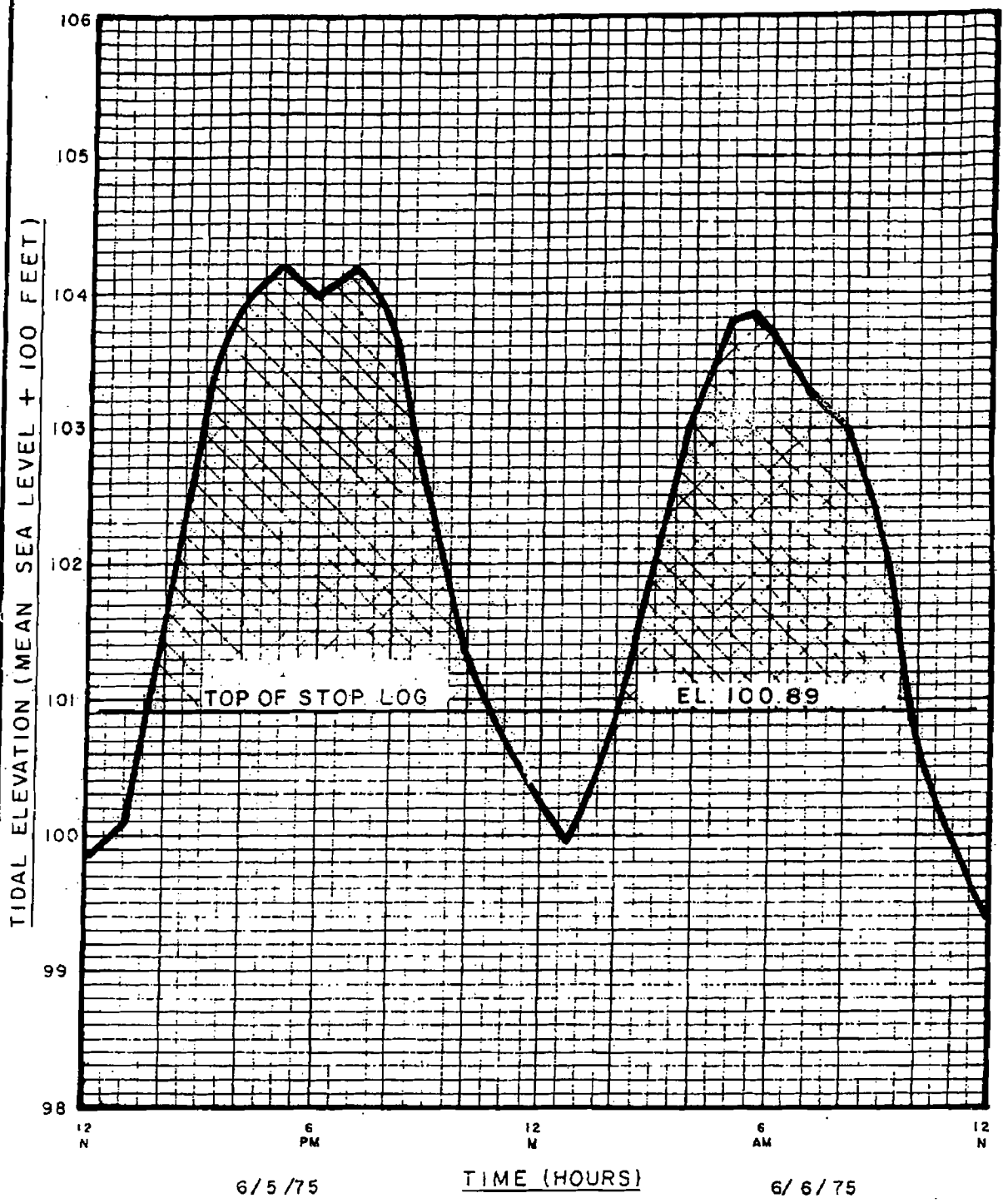
OVERFLOW CHAMBER Nº014/H-005

MIDDLESEX STREET, HARRISON

FLOW RATE OVER STOP LOGS

ELSON T. KILLAM ASSOCIATES INC.

Environmental and Hydraulic Engineers



NOTE

TIDAL ELEVATIONS INDICATE SURCHARGE CONDITIONS. (CROSS-HATCHED AREA)

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014/H-005

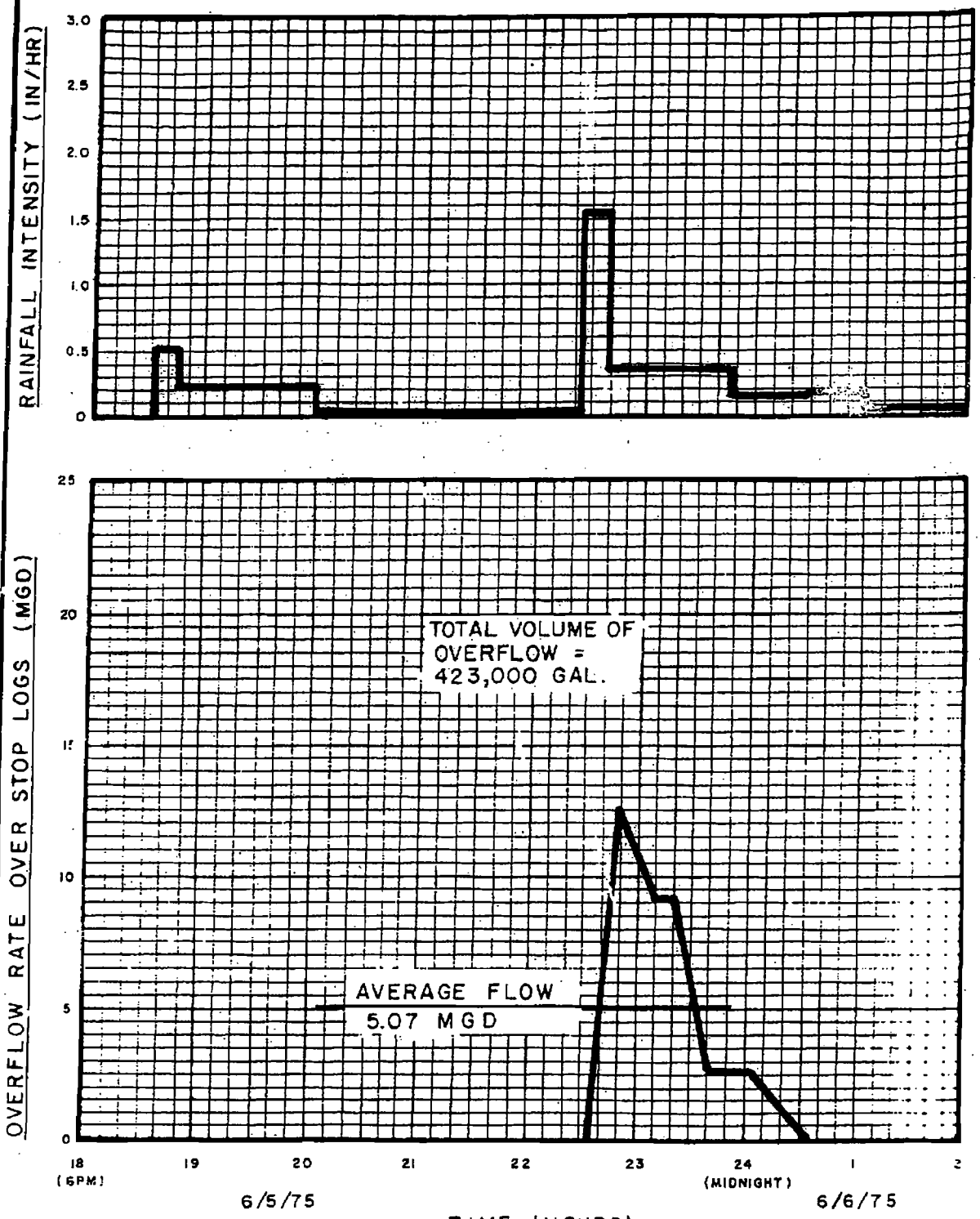
MIDDLESEX STREET, HARRISON

TIDAL ELEVATION

RAINFALL OF 6/5-6/75

ELSON T. KILLAM ASSOCIATES INC.

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HOURS.

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº014/H-005

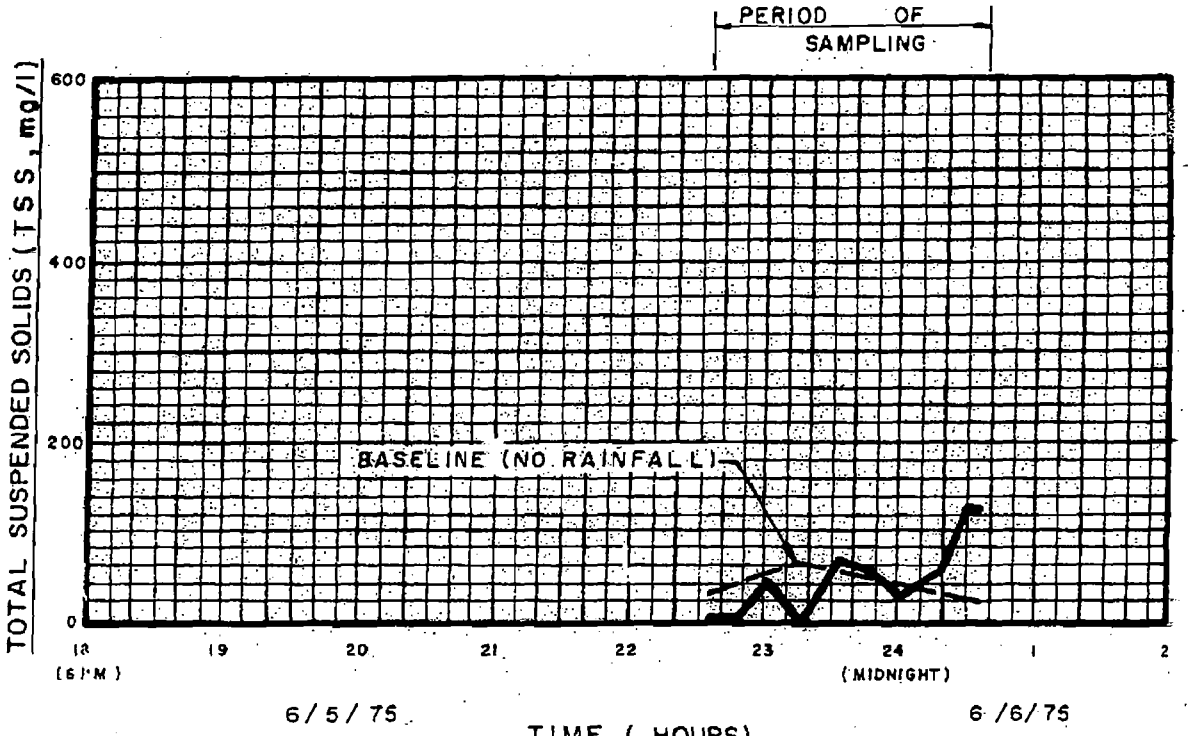
MIDDLESEX STREET, HARRISON

RAINFALL INTENSITY & OVERFLOW RATE

RAINFALL OF 6/5-6/75

ELSON T. KILLAM ASSOCIATES INC.

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HOURS
2. PLOT REPRESENTS CONCENTRATION OF TSS FLOWING TO RIVER OVER STOP LOGS

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº014 /H-005

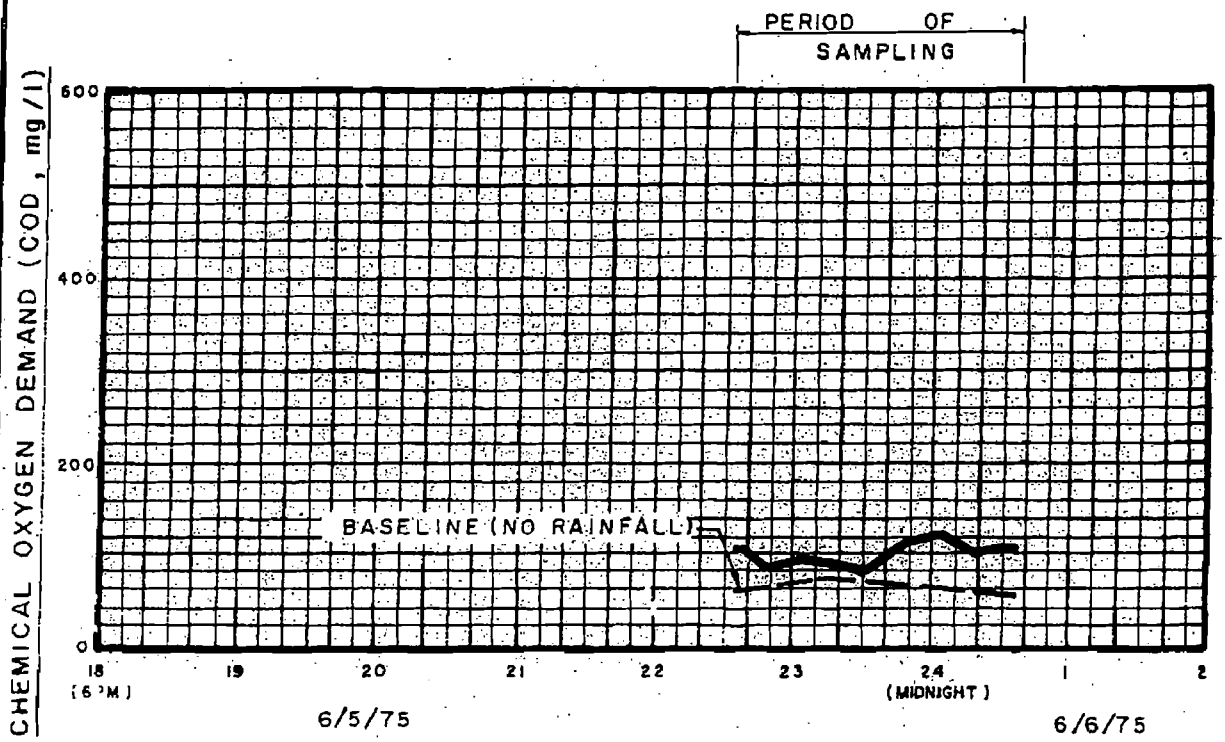
MIDDLESEX STREET, HARRISON

TOTAL SUSPENDED SOLIDS

RAINFALL OF 6/5-6/75

ELSON T. KILLAM ASSOCIATES, INC.

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HOURS
2. PLOT REPRESENTS CONCENTRATION OF COD FLOWING TO RIVER OVER STOP LOGS

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014/H-005

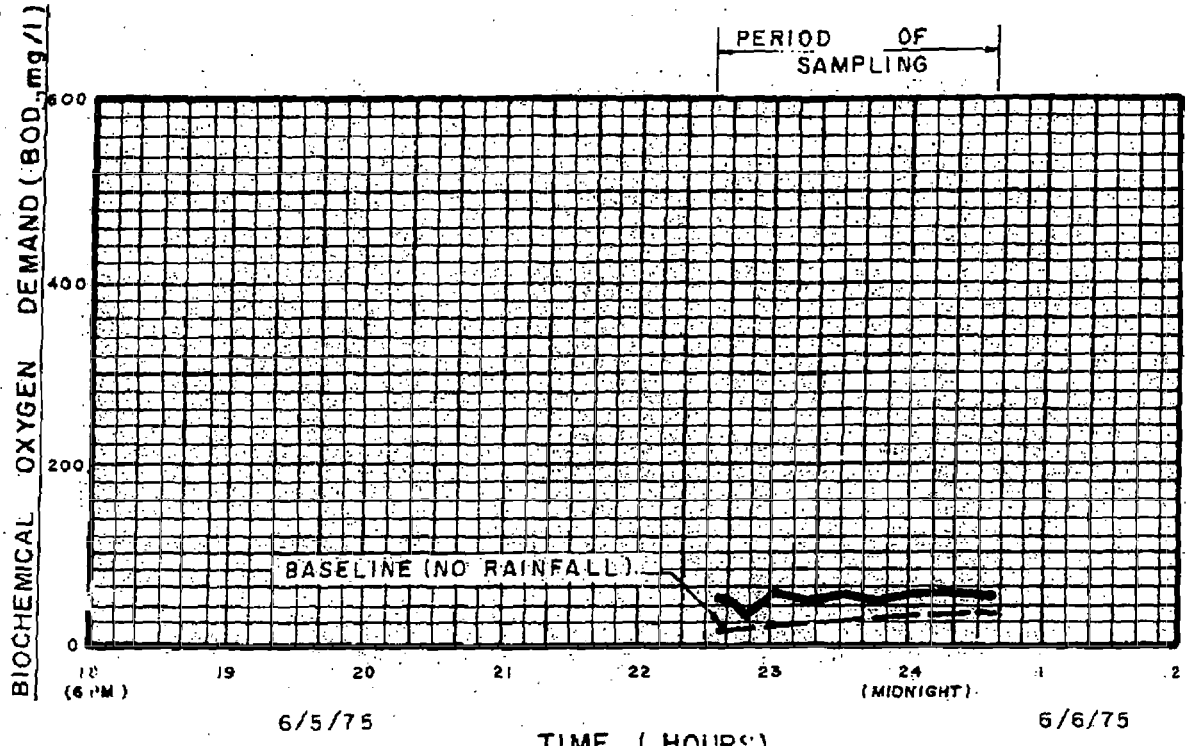
MIDDLESEX STREET, HARRISON

CHEMICAL OXYGEN DEMAND

RAINFALL OF 6/5-6/75

ELSON T. KILLAM ASSOCIATES

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HOURS
2. PLOT REPRESENTS CONCENTRATION OF BOD FLOWING TO RIVER OVER STOP LOGS

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014/H-005

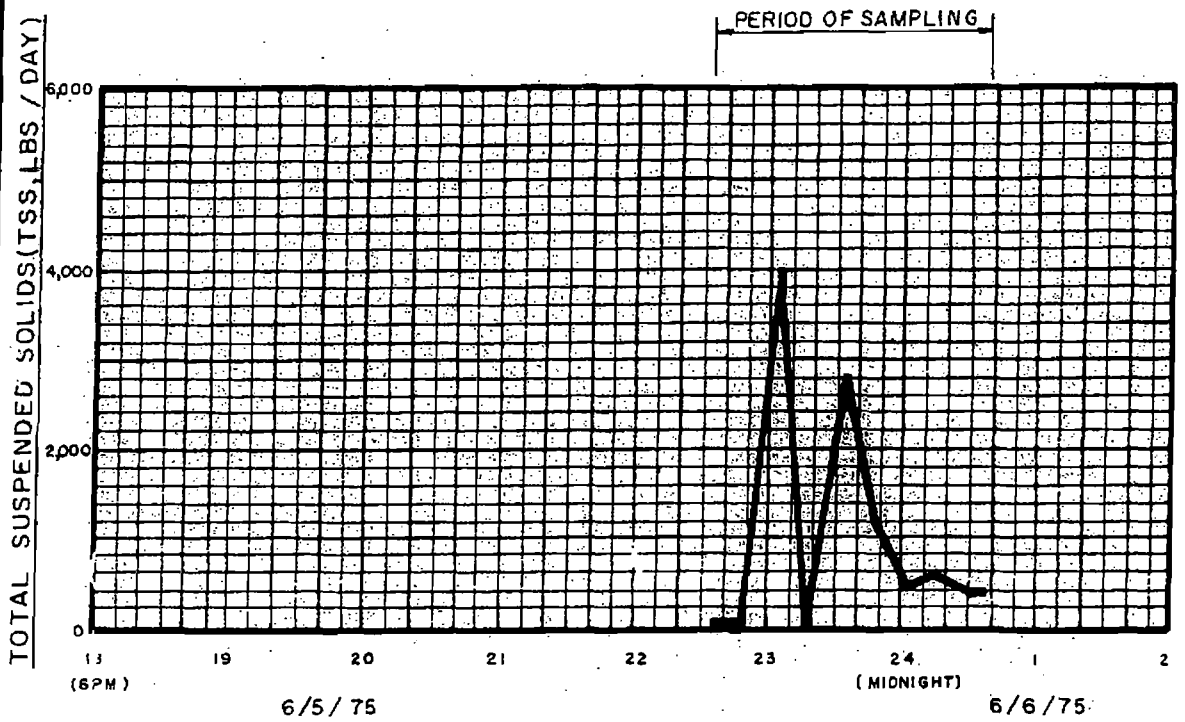
MIDDLESEX STEET, HARRISON

BIOCHEMICAL OXYGEN DEMAND

RAINFALL OF 6/5-6/75

ELSON T. KILLAM ASSOCIATES, INC.

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HRS.
2. FLOW RATE WAS COMBINED WITH TSS CONCENTRATION TO OBTAIN LBS / DAY OF TSS

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014/H-005

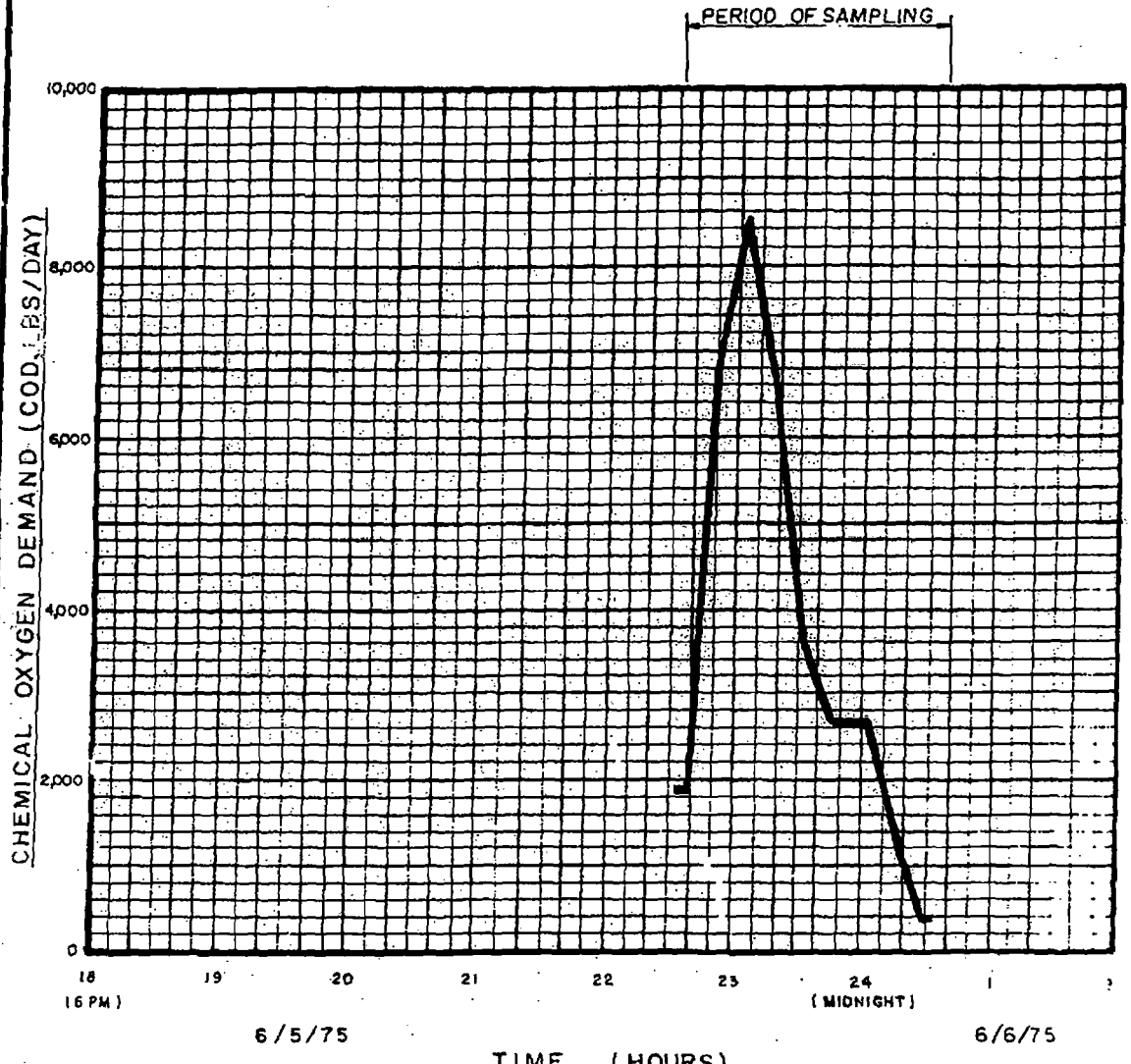
MIDDLESEX STREET, HARRISON

TOTAL SUSPENDED SOLIDS

RAINFALL OF 6 /5-6/75

ELSON T. KILLAM ASSOCIATES, INC.

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HRS.
2. FLOW RATE WAS COMBINED WITH COD CONCENTRATION TO OBTAIN LBS / DAY OF COD

KLL016594

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014 / H-005

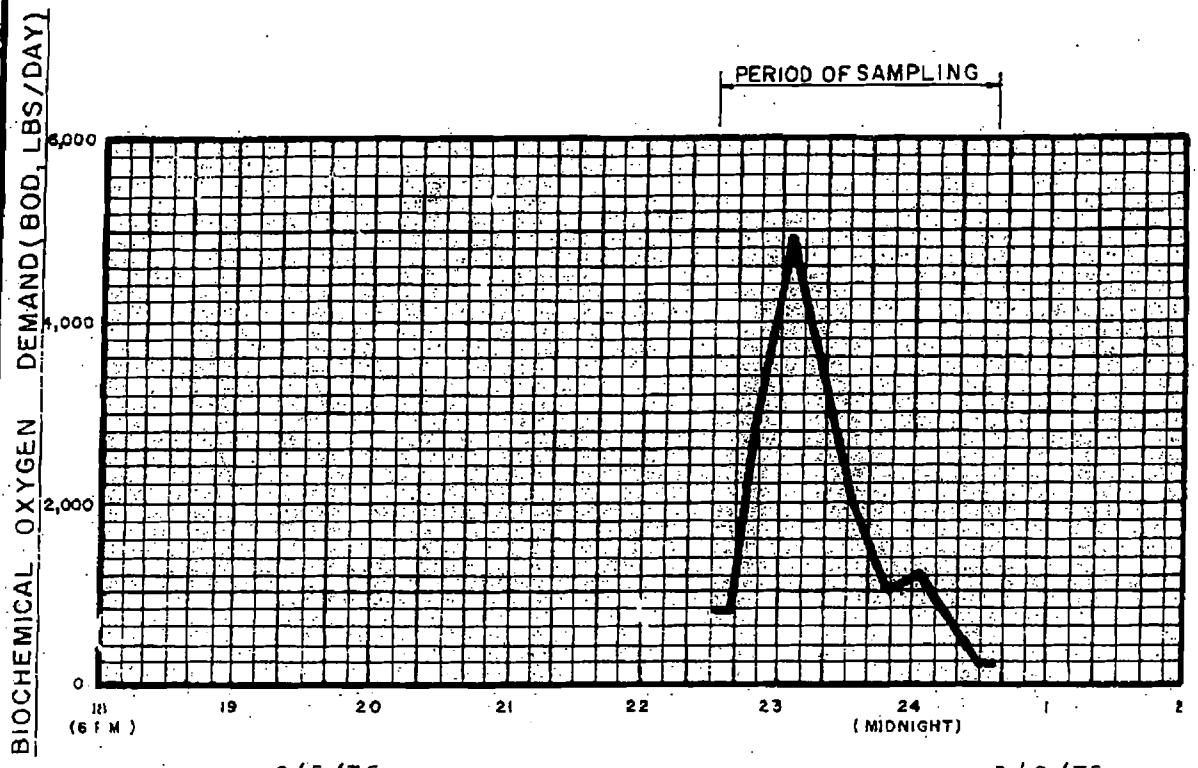
MIDDLESEX STREET, HARRISON

CHEMICAL OXYGEN DEMAND

RAINFALL OF 6 /5-6/ 75

ELSON T. KILLAM ASSOCIATES, INC.

Environmental and Hydraulic Engineers



NOTES:

1. TIME SHOWN IS BASED ON MILITARY TIME, 1-24 HRS.
2. FLOW RATE WAS COMBINED WITH BOD CONCENTRATION TO OBTAIN LBS / DAY OF BOD

KLL016595

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014 /H-005

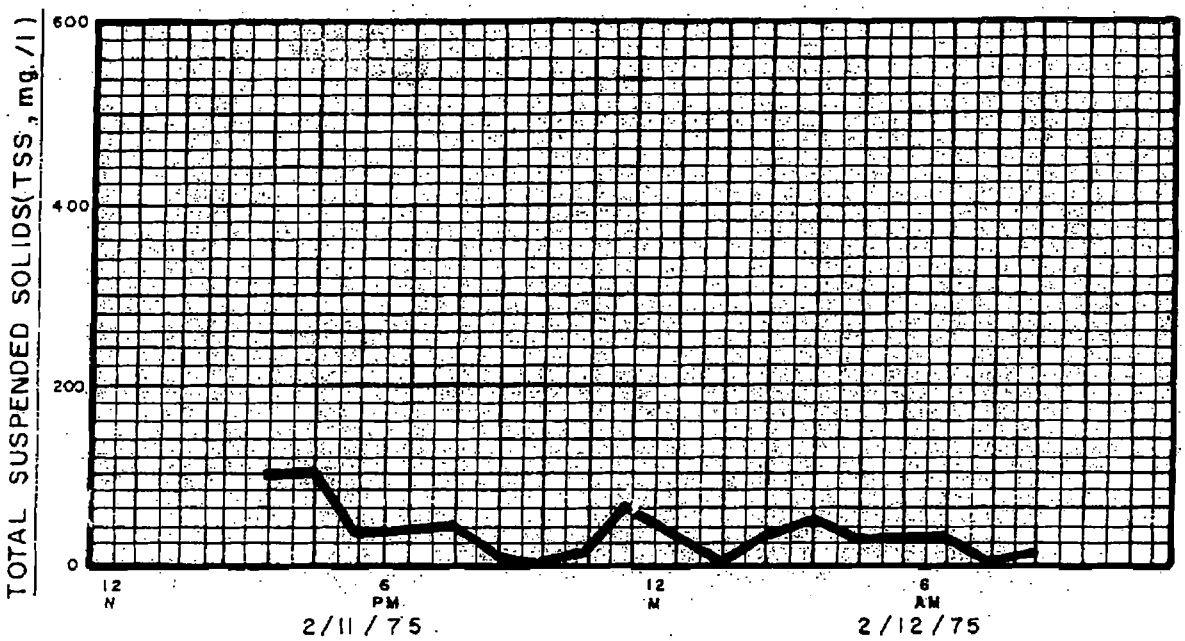
MIDDLESEX STREET, HARRISON

BIOCHEMICAL OXYGEN DEMAND

RAINFALL OF 6 /5-6/75

ELSON T. KILLAM ASSOCIATES, INC.

Environmental and Hydraulic Engineers



TIME (HOURS)

NOTES:

1. SAMPLING STARTED 2:50 PM 2/11/75
   SAMPLING ENDED 9:00 A M 2/12/75
2. SAMPLES TAKEN EACH 15 MIN. PERIOD, COMPOSITED EACH HOUR; RESULTS ARE PLOTTED HOURLY.
3. SAMPLING REPRESENTS TYPICAL NON-RAINFALL TSS CONDITIONS IN 24 HOURS.

KLL016596

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014/H-005

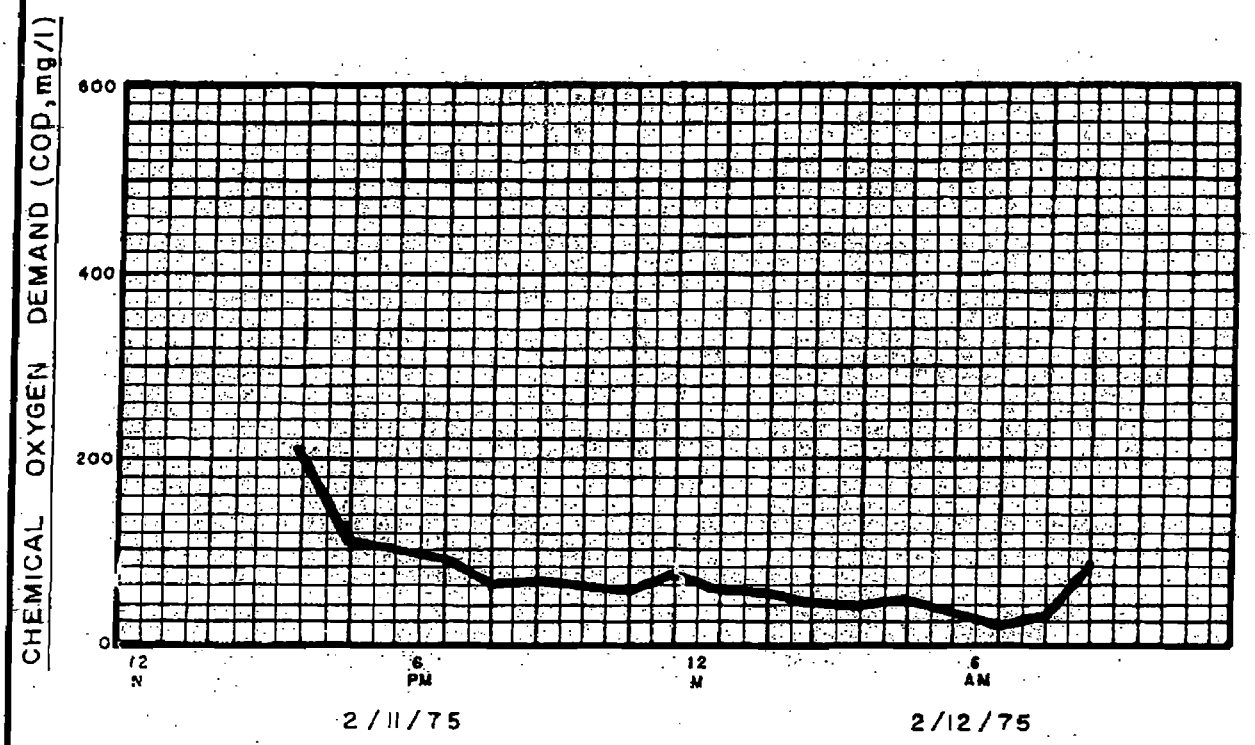
MIDDLESEX STREET, HARRISON

TOTAL SUSPENDED SOLIDS

NO RAINFALL

ELSON T. KILLAM ASSOCIATES INC

Environmental and Hydraulic Engineers



NOTES:

1. SAMPLING STARTED 2:50 PM 2/11/75
   SAMPLING ENDED 9:00 A.M. 2/12/75
2. SAMPLES TAKEN EACH 15 MIN. PERIOD, COMPOSITED EACH HOUR; RESULTS ARE PLOTTED HOURLY.
3. SAMPLING REPRESENTS TYPICAL NON-RAINFALL C.O.D. CONDITIONS IN 24 HOURS.

KLL016597

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER No. 014/H-005

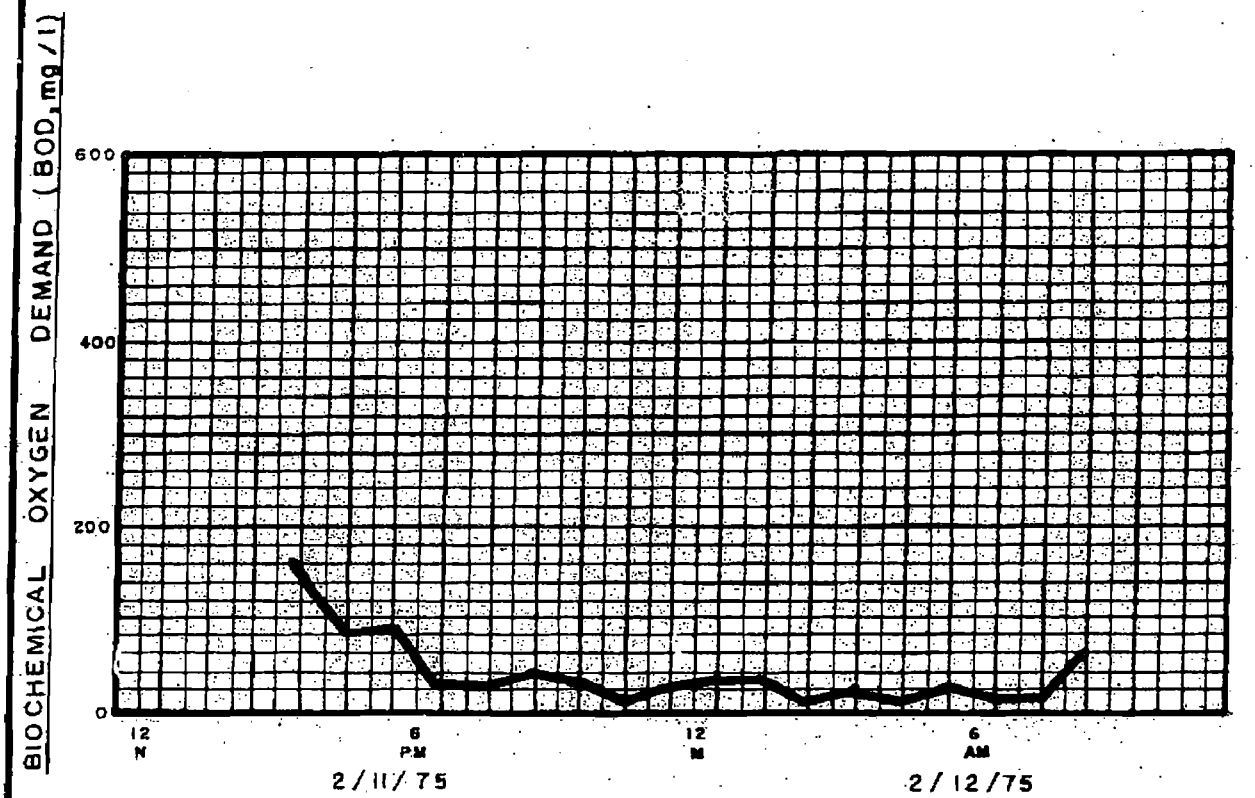
MIDDLESEX STREET, HARRISON

CHEMICAL OXYGEN DEMAND

NO RAINFALL

ELSON T. KILLAM ASSOCIATES INC

Consulting and Municipal Engineers



NOTES:

1. SAMPLING STARTED 2:50 PM 2/11/75
   SAMPLING ENDED 9:00 A.M. 2/12/75
2. SAMPLES TAKEN EACH 15 MIN. PERIOD, COMPOSITED EACH HOUR; RESULTS ARE PLOTTED HOURLY.
3. SAMPLING REPRESENTS TYPICAL NON-RAINFALL BOD CONDITIONS IN 24 HOURS.

KLL016598

PASSAIC VALLEY SEWERAGE COMMISSIONERS

OVERFLOW CHAMBER Nº 014/H-005

MIDDLESEX STREET, HARRISON

BIOCHEMICAL OXYGEN DEMAND

NO RAINFALL

ELSON T. KILLAM ASSOCIATES, INC.

Environmental and Hydraulic Engineers

The New York Times
nytimes.com

December 18, 1984

THE REGION; Wage Pact Keeps A Company Open

UPI

An agreement early today giving blue- collar workers raises of $20 a week kept the employee-owned Hyatt Clark Industries from closing its doors.

A company lawyer said news of the tentative three-year contract prompted General Motors, which buys $300 million in bearings from Hyatt Clark each year, to rescind threats to take its business elsewhere. G.M. buys 85 percent of Hyatt Clark's output.

The chief management negotiator, Desmond Massey, said the 1,250 members of Local 736 of the United Automobile Workers would receive 50-cent hourly wage increases in the first two years and 55 cents in the final year. Mr. Massey said he had been told the union would vote on the pact before the end of the week.

The New York Times
nytimes.com

January 20, 2002

In the Region/New Jersey; Golf Course Complex Is Rising on Former G.M. Site

By RACHELLE GARBARINE

THE contrast is striking. On one side of Raritan Road here in central New Jersey, white fumes spew from a factory's smokestack and drift like snow clouds through the sky. On the other side, green acres extend for miles.

Mingled with the greenery are a 9-hole golf course, an 18-hole miniature course and a lighted 40-station driving range. Posts also mark the spot where a clubhouse and restaurant will rise in the next five months and complete the Hyatt Hills Golf Course and Complex on almost 88 former industrial and polluted acres that spill into neighboring Cranford.

The parcel's transformation from brownfield to greenfield is the result of a partnership forged over more than 10 years of negotiations and debate between the two Union County townships and the property owner, the General Motors Corporation. The site was once home to the Hyatt-Clark Industries factory, which for decades made steering wheel parts and ball bearings for the giant automaker.

Basically, G.M. is paying for recycling the site into the golf complex as well as for some startup costs and is cleaning the land of contaminates, under a state-approved plan. The project is to cost $50 million to $70 million, all but $10 million of it for the cleanup. The company also retains ownership of the site and remains subject to any environmental liability.

General Motors is leasing the 88 acres -- 67.1 in Clark and 20.7 in Cranford -- to the nonprofit Hyatt Hills Golf Course Commission. Under an agreement signed last year with G.M., the commission will operate and maintain the complex, which is to open in June, and the two municipalities will share the profits it generates. Profits are estimated at $900,000 the first year and up to $1.2 million a year after that.

The once-fallow site has been transformed into "something attractive and green, not only environmentally but monetarily, which is a rare combination," said Robert S. Ellenport, a former mayor of Clark and a driving force behind the project.

As such, it also "will help stabilize taxes for both communities," added J. Robert Hoeffler, a former mayor of Cranford who was also an early architect of the project. Both men are unpaid co-chairmen of the golf course commission.

The property is one of a more than a dozen of G.M.'s old industrial sites throughout the country that have been or are being studied for reuse, including another in New Jersey, in Ewing.

Karen DuPerry, senior project manager at the company, said turning the Hyatt Hills site into an entertainment center not only cleaned it but met her company's goals of working cooperatively with the local communities "to put it back to productive reuse" and onto the tax rolls.

"It is the best possible use," said Barbara Bilger, Cranford's current mayor.

THE project is also an example of the reuse of brownfields in a state whose industrial roots left it pockmarked with tainted sites. There are 1,327 brownfields in the state, nearly 400 of which have been cleaned up, according to the New Jersey Department of Environmental Protection.

In 1938, General Motors opened the factory on land in the outskirts of the then-developing suburbs of Cranford and Clark. The company operated the plant through 1981 and then sold it to employees who ran it until 1987, when they declared bankruptcy. In 1989, when the factory reverted back to General Motors, it was a rundown shell.

A year later, G.M. demolished the building and the site became a gray barren stretch that the company and the communities wanted to see turned into something else. The question then was what.

Reaching this point has not been easy and required "getting everyone involved on the same page and behind a coherent program," said Daniel J. McCarthy, a Cranford lawyer representing the commission. The cleanup also has taken longer than expected, putting the project two to three years behind schedule.

Challenges included resolving conflicting visions of the site's future. They included turning it into stores and residences, a retail center or soccer fields. Those visions also had to be balanced with the townships' goals that the redevelopment generate revenue but not overburden municipal resources like roads, sewers and schools and at the same time provide open space.

Mr. Ellenport said opposition to the current plan came mainly from Clark residents who bemoaned the loss of what they felt would be more revenue from the other uses. But whatever revenue those uses generated, he said, would not have covered what they would have cost in increased municipal services, not to mention adding more traffic to already clogged roads.

"With the golf complex, we get the benefits without the expense," he said.

Mr. Hoeffler added that the driving range, miniature golf and clubhouse restaurant would be what drives the profits for the complex.

UNDER the terms of the operating agreement the commission will use revenue from the complex to pay operating expenses and real estate taxes, which will be phased in over 10 years. Until then, G.M. will pay the difference. Taxes from the golf complex are expected to equal the $285,000 a year General Motors now pays on the site. The commission will also reimburse G.M. for the startup costs over an agreed-upon schedule.

The townships will share any remaining profits. If the complex is mismanaged or loses money during a prescribed timetable, G.M. has the option to

take over the complex, or sell it, a possibility Gerry Holmes, a company spokesman, said was "very remote."

Still, some residents remain wary, including William Caruso, a former Clark councilman. "It looks nice, but all the calculations are based on 'if the complex makes money, if it is successful,' " he said, stressing the word "if."

John F. Laezza, Clark's business administrator, said he was certain the complex "will not operate at a loss." But he questioned whether the profit projections might be too high.

Another hurdle was quelling residents' worries over the site's environmental issues, including how it would be cleaned and if contaminates would seep into the aquifer. The site contains complex chlorinated and hydrocarbon compounds as well as metals like chrome.

Under state law, the level to which a site is cleaned is based on its reuse, with the stiffest standards for a site recycled to housing. If it is redeveloped for an industrial or recreational use, the standards are less stringent and less expensive.

That the Hyatt Hills site is being cleaned according to a state-approved plan will hopefully calm residents' concerns, Mr. Laezza said. To the people who say General Motors took the least costly route, Mr. Laezza said he reminded them the company "could have just fenced in the site and let it become overgrown with weeds and mosquitoes."

In cleaning the site, G.M. covered part of it, mainly where the old plant stood, with an impermeable cap to stop wastes from seeping out rather than carting them off the site. Three to eight feet of clean soil was also added. Mr. Holmes said G.M. also agreed to retain ownership of the site because the state was making the company conduct ongoing remedial measures, such as maintaining the cap and monitoring ground water contamination.

He said his company's reuse plan was not governed only by financial considerations. "We feel it's a legacy, and that no matter what happens to the property in the future it is will always be known as the former G.M. site," Mr. Holmes said. "This is a use the communities wanted and will not leave them with a negative."

Mr. Hoeffler said a study done for the commission confirmed that the area would support the golf complex. The study showed, among other things, that 1.4 million people with a median household income of $57,121 live within a 10-mile radius of the site, that some 38,000 golfers live within five miles of it and that the demand for public golf exceeds the supply in the area. Fees have not yet been determined.

A decade ago, Mr. Ellenport said, naysayers called the project "a pipe dream." But as he stood on a patch of grassland and surveyed the site under the light of a winter sunset, he added that by June people would be golfing and playing there.

Made in NEW JERSEY

Library of Congress Catalog Card Number: 54-11930

DESIGNED BY EDWARD CALMAN

Title page photograph courtesy Fairchild Aerial Surveys, Inc.

MANUFACTURED IN THE UNITED STATES OF AMERICA

T. Campbell.

By 1875 Watts, Campbell ranked second in Newark only to Hewes & Phillips in total output of steam engines, machinist tools and sugar machinery. Quantities of sugar crushers and refiners went from the Ogden Street plant to Cuba in the late nineteenth century. The days of sugar machinery manufacture are over for Watts, Campbell Company, but the 103-year-old company still is a vital, albeit small, machinery maker.

Interestingly enough, sugar machinery led to the establishment in 1892 of another big New Jersey industry, Hyatt Roller Bearing Company. Roller bearings are closely allied to the machine industry, naturally, since much of the high machine speed of the twentieth century rides on roller bearings made in New Jersey.

Making of machines calls upon all types of skills.

John Wesley Hyatt is a name like that of Seth Boyden; indeed, Hyatt may well be said to have extended Boyden's brilliancy from the nineteenth into the twentieth century. They were men of a similar cut. Seth Boyden started his rise on patent leather; John Wesley Hyatt began his on celluloid. Either could do anything with machinery—and did.

Hyatt's "lathe for turning spheres," invented in the early 1870's, made billiard balls and ball bearings, but he did not start work on roller bearings until 1885. That year the head of a sugar refinery asked Hyatt to design a bearing which could take heavy sugar machinery useage without breaking. Hyatt responded with his patented roller bearing and began mass-producing the bearings in 1892 in a Newark factory.

Three years later a young engineer, Alfred P. Sloan, Jr., took a job as draftsman at Hyatt's plant and in 1899 he succeeded Hyatt as general manager. Soon after, the company moved across the Passaic River to Harrison, and hitched its destiny to the horseless carriage. In 1900 the Olds company ordered 120 rear axle roller bearings and both Hyatt Company and Alfred P. Sloan were on their way.

Eventually Sloan became chairman of the board of General Motors, and Hyatt Company became Hyatt Bearings Division of General Motors Corporation, with about 4,000 persons now employed in two plants in Harrison and Clark Township. Modern transportation moves on roller bearings—in the air, on the highways, on the railroads—and Hyatt is securely established in the machine age.

Speed—that's it; that's the story of twentieth century. Everything went faster than ever before. Newspapers printed more and bigger papers; *The Newark News* announced in December, 1912, that it had bought a "Leviathan of the publishing world"—a high-speed printing press, that is—from Walter Scott & Company, noted Plainfield printing press manufacturer (still noted, by the way, for high-speed presses). *The News* said its new Scott could print 72,000 papers an hour—and complicated? Why that machine had 175,000 parts in it!

Nearby, American Type-Founders of Jersey City (formed in 1892 by an amalgamation of twenty-five small type manufacturers) set out to build a high-speed flat-bed cylinder press to improve commercial printing at lower costs. It hired William M. Kelly in 1912 and in 1914 it offered its famed Kelly press to

when many automobile plants produced airplanes.

Across state in Trenton, the Mercer Automobile Company also scorned the mass market, and for almost twenty years produced one of the most famous sports cars in American automobiling history. Mercer had important men of Trenton behind it, including the Roeblings and the Kusers, and much of the time had between 200 and 300 employees on the payroll —payroll, that is, not on the assembly line; Mercer didn't assemble automobiles, it virtually carved them out of raw materials.

Under such circumstances it is not surprising that daily production of cars seldom mounted above four or five a day, that Mercer models brought upwards of $4,000 in a day when Ford pushed his Tin Lizzie price down toward the $500 level. Mercer cars went into the best garages all over the world, including garages on the estates of Mary Pickford and Jack Dempsey. The Mercer was a car in keeping with the lavish era of John Held, Jr., and F. Scott Fitzgerald and flappers and hip flasks. But the company died forever in 1925, before the Tumultuous Twenties drained away in the 1929 crash.

As the Crane, Simplex and Mercer automobiles struck the fancy of the discerning, New Jersey manufacturers also began to recognize the value of being a subsidiary producer of automobile parts and accessories. Newark's leather factories, and then its simulated leather factories, produced a very heavy percentage of all automobile upholstery coverings in the 1910-1920 decade. Tung-Sol in Newark manufactured a major share of headlight bulbs after 1910, and still is a major bulb supplier. Three Newark factories made horns, including the "Klaxon," a name at one time practically synonymous with "horn."

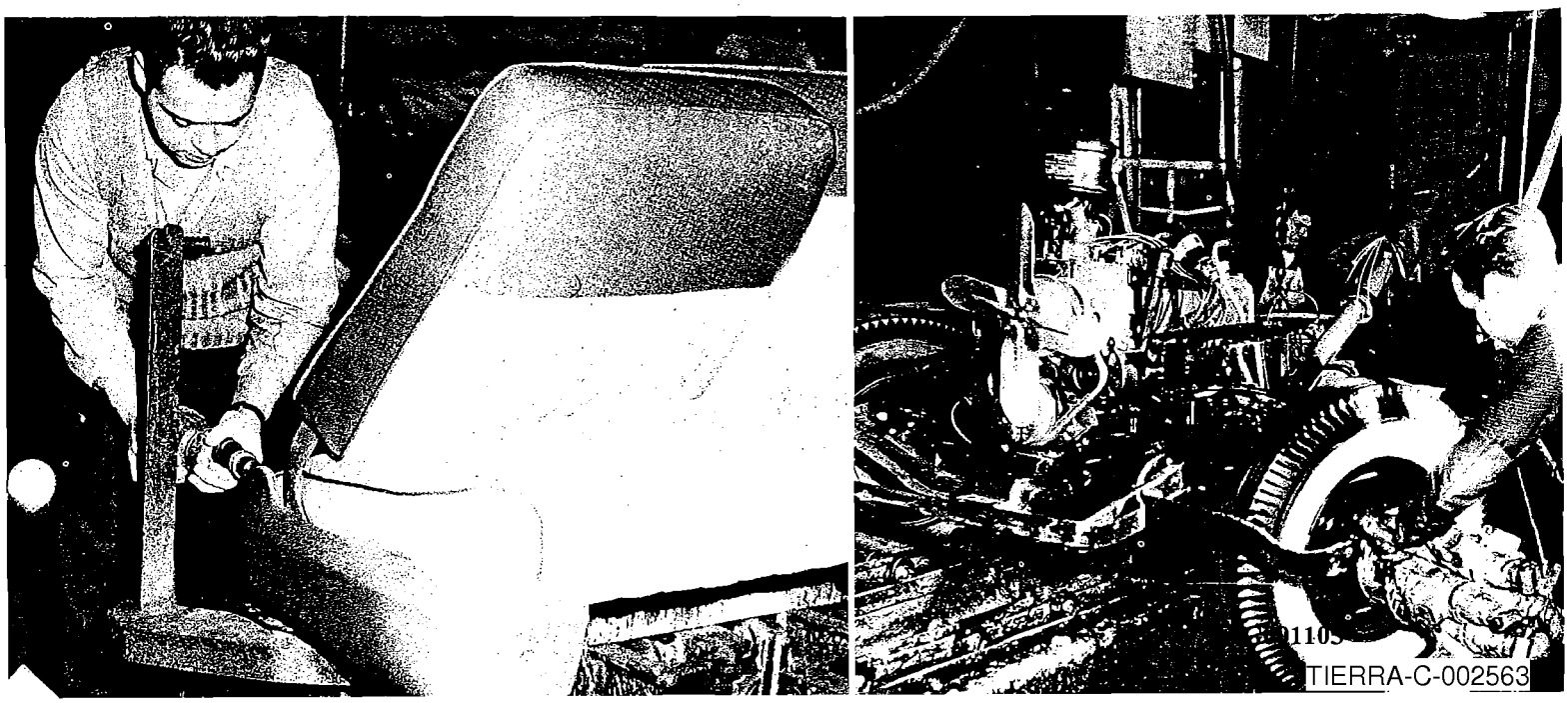
Naturally the old carriage factories of Camden, Trenton and Newark sought to stay in business even after wheezing motors replaced prancing steeds. Not many could meet the pace after automobile bodies changed from mere buggies to the longer, unique styles with hood in front, fenders on the sides, and all that sort of advanced thing.

A few fine carriage makers did become noted makers of distinguished automobile bodies, notably Fitzgibbon & Crisp of Trenton, established 1849; J. M. Quinby of Newark, founded in 1834, the second oldest carriage house in the country, and Cope Company of Irvington, founded in 1868 but snappy enough in 1918 to advertise in an automobile journal: "SOME BODY for somebody!"

Nevertheless, New Jersey—and all other states—spun around like satellites in the orbit of Michigan's automobile sun. Yet, when General Motors banded together a group of small automobile manufacturers into one firm in 1908, the new corporation took out its charter in New Jersey, not because GM had any intention of centralizing operations in the state, but rather because New Jersey's corporation laws had then gone into almost total eclipse. General Motors was merely one of many huge concerns which naturally took advantage of lax corporation laws on the west side of the Hudson River.

General Motors had better reason than most for incorporating in New Jersey, even if it did not realize fully in 1908 the role about to be played in GM affairs by a young industrialist forging to the front in Harrison. That young man, Alfred P. Sloan, Jr., had gone to work for Hyatt Roller Bearing Company in 1895, and in 1900 sold the Olds Motor Works on the advisability of using Hyatt roller bearings in the

Finishing Mercury seat at Metuchen (left) *and adding Pontiac wheel at Linden speed cars along.*



Oldsmobile. Soon Cadillac and Buick used Hyatt bearings, too. And if Sloan had nothing to do with organizing General Motors, he at least prevented friction in three of the company's principal auto makers.

Sloan played no favorites; in 1909 Henry Ford placed such a huge order for Hyatt bearings that Sloan gave him a handsome discount. Then, in 1916, Sloan and his father (major Hyatt underwriter in the early days when no one wanted roller bearings) sold out to W. C. Durant, founder of General Motors and GM president in 1916. Seven years later Alfred P. Sloan, Jr., became president of General Motors, with his Harrison roller bearing plant a mere division —important, true, but still a division—of GM.

As Sloan went up, Durant came down, crushed by a spectacularly unfortunate and expensive purchase of an electric automobile lamp patent which had no validity in the courts. Durant needed money, got it from New York bankers who drove one of the hardest bargains in economic history. The bankers gained control of the company in return for the loan, and immediately eased W. C. Durant out of the company which his energy and intelligence had brought into being.

Back came Durant with customary gusto, to found Durant Motors, Incorporated, in 1921. He acquired a plant in Long Island City, but his eyes kept looking at Elizabeth, where John N. Willys of the Willys-Overland Company poured millions of dollars into a huge assembly plant for the Chrysler Motor Company, division of Willys.

Willys had a real white elephant by the tail, and knew it. He had acquired control of the $327,000 plant built in 1917 and 1918 by Fred Duesenberg, founder of Duesenberg Motors Corporation. Willys put $16,000,000 into his acquisition, stretched the Duesenberg buildings out to 1,440 feet in length, with more than 2,100,000 square feet of floor space, one of the largest individual factory units ever built in the United States.

Sadly enough, Willys Company lacked the money to utilize this "model of manufacturing efficiency"; the tremendous plant was sold at public auction in July, 1922, for $5,525,000, reputed to be the largest sum of money and the largest manufacturing plant ever involved in a New Jersey sale under the hammer. The buyer had to be someone who thought big; it had to be W. C. Durant.

Durant announced in October, 1922, that his Durant 4 and his new Star automobiles would be made in Elizabeth, pointing out that 500,000 Stars had already been sold. The first Star rolled out of the plant in November, 1922, and "the plant shook itself, like a giant recovering from a paralytic stroke," in the words of an Elizabeth Daily Journal reporter.

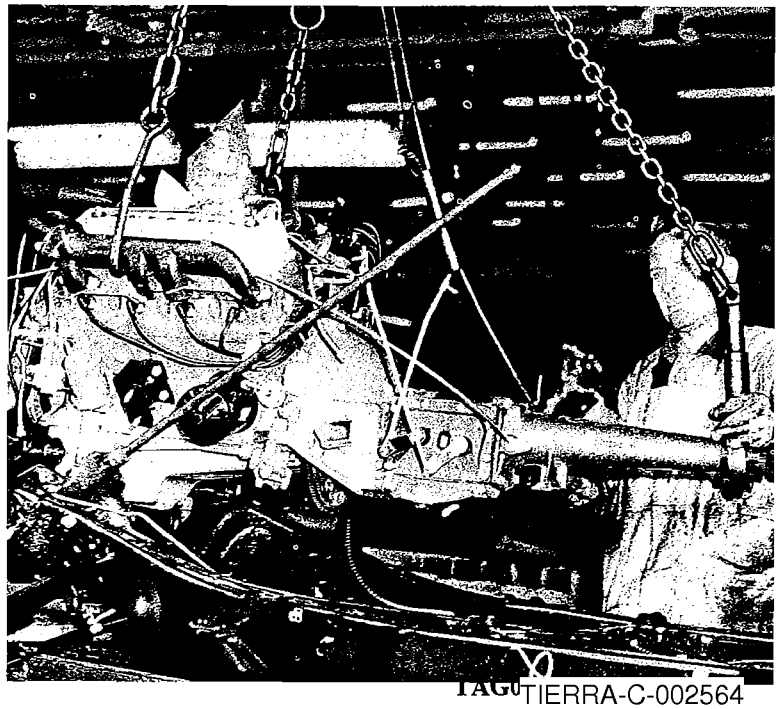
The following Spring the Elizabeth plant sent 300 Stars and 125 Durants rolling from Elizabeth to Lebanon, Pennsylvania, in a driveaway billed as "one of the biggest in history." Somehow, though, the "giant" never completely recovered from the crushing economic "paralytic stroke" and Durant Motors quietly collapsed in the late 1920's. Actually, the giant building really began to be a profitable venture only in the 1930's, when the first of more than thirty varied individual industries began to occupy the sprawling plant (now called Waverly Terminal).

Durant's complete collapse cleared the way for the ultimate role history had seemingly retained for New Jersey, the final assembly into automobiles of parts made in Michigan and elsewhere. Leading the way into the state was Henry Ford, riding high in his four-cylinder Model T.

Ford had a soft spot in his heart for New Jersey, first because of the gratitude he always held for Edison's early encouragement, and secondly because of memories of racing his six-cylinder "Wonder" down on the Cape May hard sand beaches in 1905 against the best automobiles in the world, driven by the best racers in the world, including Louis Chevrolet, the noted French driver.

A soft spot in one's heart naturally is not basis enough on which to build assembly plants; Ford recognized that the five buildings he erected in the Kearny marshes in 1918 would pay handsome dividends. Eventually upwards of 8,000 men worked in the Kearny plant, turning out more than 700 cars every day. Late in 1928, when the Model T became

Where engine meets chassis, to get another Mercury rolling.



Permit No.: NJ0021016

Name of Permittee:

Passaic Valley Sewerage Commission

Effective Date: February 28, 1975

Expiration Date: June 30, 1977

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT TO DISCHARGE

In reference to the application received from the above-mentioned permittee for a permit authorizing the discharge of pollutants in compliance with the provisions of the Federal Water Pollution Control Act, as amended by the Federal Water Pollution Control Act Amendments of 1972, P. L. 92-500, October 18, 1972 (33 U.S.C. §§1251-1376) (hereinafter referred to as "the Act"),

Passaic Valley Sewerage Commissioners (P.V.S.C.)

(hereinafter referred to as "the Permittee")

is authorized by the Regional Administrator, Region II, U.S. Environmental Protection Agency, to discharge from:

the P.V.S.C. Sewage Treatment Plant, 600 Wilson Avenue, Newark, New Jersey, and other locations noted herein

to receiving waters named Upper New York Bay, Third River, Newark Bay, Passaic River, and other receiving waters noted herein in accordance with the following conditions.

A. GENERAL CONDITIONS

1. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties as provided for in Section 309 of the Act. Facility modifications, additions, and/or expansions that increase the plant capacity must be reported to the the permitting authority and this permit then modified or reissued to reflect such changes. Any anticipated change in the facility discharge, including any new significant industrial discharge or significant changes in the quantity or quality of existing industrial discharges to the treatment system that will result in significant new or increased discharges of pollutants must be reported to the Regional Administrator. Modifications to the permit may then be made to reflect any necessary changes in permit conditions, including any necessary effluent limitations for any pollutants not identified and limited herein. In no case are any new connections, increased flows, or significant changes in influent quality permitted that will cause violation of the effluent limitations specified herein.

2. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

   a. violation of any terms or conditions of this permit;

   b. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or,

   c. a change in any condition that required either a temporary or permanent reduction or elimination of the permitted discharge.

3. Notwithstanding 2 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee shall be notified.

4. The permittee shall allow the head of the State water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

a. to enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;

b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit;

c. to inspect at reasonable times any monitoring equipment or monitoring method required in this permit;

d. to sample at reasonable times any discharge of pollutants;

e. to inspect the operation of the treatment facilities.

5. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations; nor does it obviate the necessity of obtaining State or local assent required by law for the discharge authorized.

6. This permit does not authorize nor approve the construction of any onshore or offshore physical structures of facilities or the undertaking of any work in any navigable waters.

7. Except for data determined to be confidential under Section 308 of the Act, all monitoring reports required by this permit shall be available for public inspection at the offices of the head of the State water pollution control agency and the Regional Administrator. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

8. The diversion or bypass of any discharge from the treatment works by the permittee is prohibited, except: (1) where unavoidable to prevent loss of life or severe property damage; or (2) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the terms and conditions of this permit. The permittee shall notify the Regional Administrator in writing within 72 hours of each diversion or bypass in accordance with the procedure specified above for reporting non-compliance. Within 30 days after such incident the permittee shall submit to EPA for approval a plan to prevent recurrence of such incidents. Normal operation of overflows and bypasses (listed in Section C-1) should not be reported under the requirements of this condition. The notification and plan herein required apply only to discharges resulting from unusual situations such as breakdowns, power failures, and bypasses occurring during dry weather periods. A summary description of discharges from bypass points should be submitted with the permittee's quarterly self-monitoring reports.

9. If for any reason the permittee does not comply with or will be unable to comply with any effluent limitation (treated effluent discharges) specified in this permit, or should any unusual or extraordinary discharge of wastes occur from the facilities herein permitted, the permittee shall immediately notify the Regional Administrator and appropriate State agency by telephone and provide the same authorities with the following information in writing within five days of such notification:

   a. A description of the non-complying discharge including its impact upon the receiving waters.

   b. Cause of non-compliance.

   c. Anticipated time the condition of non-compliance is expected to continue, or if such condition has been corrected, the duration of the period of non-compliance.

   d. Steps taken by the permittee to reduce and eliminate the non-complying discharge.

   e. Steps to be taken by the permittee to prevent recurrence of the condition of non-compliance.

10. Permittee shall take all reasonable steps to minimize any adverse impact to navigable waters resulting from non-compliance with any effluent limitation specified in this permit. The permittee will also provide accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

11. Except as provided in permit condition 8 on bypassing, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance.

12. Nothing in this permit shall be construed to preclude the institution of any legal action nor relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

13. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator and the State water pollution control agency.

14. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

15. The permittee shall require the municipalities using the PVSC treatment works to report the following conditions to the permittee; the permittee shall then provide notice of the following to the Regional Administrator:

    a. any new introduction of pollutants into such treatment works from a source which would be a new source as defined in section 306 of the Act if such source were discharging pollutants;

    b. any new introduction of pollutants which exceeds 10,000 gallons on any 1 day into such treatment works from a source which would be subject to section 301 of the Act if such source were discharging pollutants; and,

    c. any substantial change in volume or character of pollutants being introduced into such treatment works by a source introducing pollutants into such works at the time of issuance of the permit.

    Such notice shall include information on the quality and quantity of effluent to be introduced into such treatment works; and an anticipated impact of such change in the quantity or quality of effluent to be discharged from such publicly owned treatment works.

16. The permittee shall require any industrial user of such treatment works to comply with the requirements of section 204(b), 307, and 308 of the Act. For compliance with section 204(b) of the Act, the permittee shall comply with Special Condition #3 of Federal Construction Grant No. C-34-369, and shall establish a system of user charges and industrial cost recovery in accordance with proposed regulations amending 40 CFR, Part 35, published in the Federal Register dated May 22, 1973, or any subsequent revisions.

    For compliance with section 307 of the Act, the permittee shall meet the data collection, and other requirements of section C-2, "Schedule of Compliance for Industrial Discharge Information" in this permit.

17. The permittee shall require any industrial user of storm sewers owned by the PVSC to comply with the requirement of section 308 of the Act.

18. The United States Army Corps of Engineers conducts maintenance dredging of navigable waters and their tributaries pursuant to certain permit programs. The permittee should be aware of its possible responsibilities under the maintenance dredging program. Under these laws, any person, firm or other entity discharging suspended solids into a navigable waterway of the United States or into a tributary, which contributes to the necessity for maintenance dredging of that waterway may be required to participate in the maintenance dredging program.

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B. REQUIRED EFFLUENT LIMITATIONS AND MONITORING AND OPERATIONAL REQUIREMENTS

1.A. REQUIRED EFFLUENT LIMITATIONS

During the period beginning on the effective date of this permit and lasting until the date of expiration of this permit, discharges shall be limited and monitored by the permittee as specified below:

a. A significant removal of settleable solids shall be achieved.

b. See Table I.

c. The permittee shall act to significantly reduce the concentration of floating solids prior to discharge and, except as specifically authorized in this permit, the permittee shall not discharge visible foam.

d. The effluent values for pH shall remain within the limits of 6.0 to 9.0.

e. From information supplied by the permittee, the design average daily flow of 225 MGD is regularly being exceeded. The preceding effluent limitations will be the determining factors in judging if this facility is adequately treating its wastewater.

1.B. ADDITIONAL EFFLUENT LIMITATION

Starting on May 15, 1975,* the chlorination facilities shall be operated continuously year round. A chlorine residual concentration of not less than 0.5 mg/l shall be maintained in the effluent at all times unless the permittee demonstrates compliance with the following:

The geometric mean of the fecal coliform bacteria values for effluent samples collected in a period of 30 consecutive days shall not exceed 200 per 100 milliliters. The geometric mean of these values for effluent samples collected in a period of seven consecutive days shall not exceed 400 per 100 milliliters.

* Subject to change to an earlier date if so determined by the New Jersey Department of Environmental Protection after conclusion of their administrative hearing procedure presently underway.

2. FACILITY OPERATION AND QUALITY CONTROL

All waste collection, control, treatment and disposal facilities shall be operated in a manner consistent with the following:

a. At all times, all facilities shall be operated as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants.

b. The permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

c. Routine maintenance of treatment facilities that results in degradation of effluent quality shall be scheduled during non-critical water quality periods and shall be carried out in a manner approved by the permitting authority.

d. Under no circumstances shall the permittee allow introduction of the following wastes into the waste treatment system:

aa. Wastes which create a fire or explosion hazard in the treatment works.

bb. Wastes which will cause corrosive structural damage to treatment works.

cc. Solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment works.

dd. Wastewaters, at a flow rate and/or pollutant discharge rate which is excessive over relatively short time periods so as to cause a loss of treatment efficiency. This condition does not constitute an exception to condition C-4(A)(1)(2).

3. SELF-MONITORING AND REPORTING REQUIREMENTS

a. The permittee shall effectively monitor the operation and efficiency of all treatment and control facilities and the quantity and quality of the treated discharge. Monitoring data required by this permit shall be summarized on an average calendar month basis. Individual reports are to be submitted on a quarterly basis. Duplicate original copies of the discharge monitoring report form (EPA Form 3320-1), properly completed and signed by the permittee, must be submitted within 28 days after the end of each report period to the

Regional Administrator and the State Agency at the following addresses:

U.S. Environmental Protection Agency
Region II
Status of Compliance Branch
26 Federal Plaza
New York, New York 10007

Director
Division of Water Resources
New Jersey Department of
Environmental Protection
Labor & Industry Building
P.O. Box 1390
Trenton, New Jersey 08625

Quarterly reports will be required for periods beginning on the first day of the first month following the issuance of this permit. The data collected and submitted shall include the following parameters and testing frequencies:

See Table I

Samples and measurements of the effluent taken to achieve compliance with the monitoring requirements specified above shall be taken at the point of combined flow into the outfall sewer.

Samples and measurement of the influent wastewater taken to meet the monitoring requirements specified above shall be taken at the point of plant inflow.

b. Sampling and Analysis Methods

Other measurements of oxygen demand can be substituted for Biochemical Oxygen Demand (BOD) where the permittee can demonstrate long-term correlation of the method with BOD values. Substitution of such measurements must receive prior approval of the permitting authority.

The analytical and sampling methods used shall conform to the latest edition of the reference methods listed below. (These are interim references to be replaced by Sec. 304(g) guidelines when available.) However, different but equivalent methods are allowable if they receive the prior written approval of the permitting authority.

1. STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATERS, 13th edition, 1971, American Public Health Association, New York, New York 10019.

2. A.S.T.M. STANDARDS, PART 23, WATER; ATMOSPHERIC ANALYSIS, 1972, American Society for Testing and Materials, Philadelphia, Pa. 19103.

3. METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, April 1971, U.S. Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, Ohio 45202.

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements.

4. RECORDING

The permittee shall record for all samples the date and time of sampling, the sampling method used, the date analyses were performed, the identity of the analysts, and the results of all required analyses and measurements.

All sampling and analytical records mentioned in the preceding paragraph shall be retained for a minimum of three years. The permittee shall also retain all original recordings from any continuous monitoring instrumentation, and any calibration and maintenance records, for a minimum of three years. These periods will be extended during the course of any unresolved litigation, or when so requested by the Regional Administrator.

5. SOLIDS DISPOSAL

Collected screenings, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes (or runoff from the wastes) into navigable waters or their tributaries.

The permittee shall cooperate with the U.S. Environmental Protection Agency in the development of a sludge management program aimed at eliminating ocean disposal of sludge, and shall cooperate with other operating agencies in exploring solutions to sludge management and disposal problems.

TABLE I

SELF-MONITORING REQUIREMENTS (Discharge 001) 1/

Parameter	Minimum Monitoring Requirements Measurement Frequency	Sample Type
tal Flow, mgd	Continuous	N/A
D , mg/l	Daily	24-hr composite
D , lbs/day*	-	-
ttleable Solids, ml/l	6 per day	Grab
spended Solids, mg/l	Daily	24-hr composite
spended Solids, lbs/day*	--	-
esidual Chlorine, mg/l 2/	6 per day	Grab
ecal Coliform, N per 100 ml 2/	Daily	Grab
H	6 per day	Grab

1/ Except where indicated influent and effluent measurement and testing are required.

2/ Only effluent testing required.

* To be calculated using actual flow and actual testing results for parameters noted.

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SECTION C

Special Conditions and Schedules for Compliance with Permit Limitations

Contents

Compliance Reporting Requirements (1)

The Permittee shall comply with the following schedules and shall report to the Regional Administrator and the State Agency within 14 days following each date on the schedules detailing its compliance or non-compliance (2) with the schedule date and requirements.

C-1 Descriptive Listing of Discharge Points

A. Discharge Points Owned by the Permittee

Discharge Serial Number and Receiving Water	Discharge Description and Location (Approximate U.S.G.S. Coor.)
#001 Upper New York Bay	Outfall for treated effluent, extends 3200 feet from shore to a depth of 40-60 feet. (40°42'45"N, 74°03'42" W)
#002 Newark Bay	Newark Bay Bypass for treated effluent. (40°42'45N, 74°07'24"W)
#003 Confluence of Third River and Passaic	Yantacaw St. Bypass, Clifton (40°49'17"N, 74°7'53" W)
#004 Confluence of Third River and Passaic River	Yantacaw Pumping Station Overflow, Clifton (40°49'16" N, 74°7'56" W)
#005 Passaic River	Wallington Pump Station Bypass, Wallington (40°51'26" N, 74°7'9"W)
#006 Passaic River	North Arlington Branch Overflow North Arlington (40°47'12"N 74°7'51"W)
#007 Passaic River	Hudson St. Overflow, Paterson (40°55'27" N, 74°10'7" W)

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B. Discharge Points Not Owned by the Permittee which work in conjunction with the Permittee's System and which are to be included as part of Section C-4 ,wet weather flow study.

Discharge Serial Number and Receiving Water	Discharge Description and Location (approximate U.S.G.S. Coord.)
#008 Passaic River	East Newark, Central Avenue Overflow (40°35'03" N, 74°09'55" W)
#009 Passaic River	Garfield, Garden State Bypass (40°53'10" N, 74°07'44" W)
#010 Passaic River	New Street, Harrison Overflow (40°44'49"N, 74°09'56" W)
#011 Passaic River	Cleveland Street, Harrison Overflow (40°44'45"N, 74°09'56" W)
#012 Passaic River	Harrison Avenue, Harrison Overflow (40°44'42" N, 74°09'56" W)
#013 Passaic River	Dey Street, Harrison Overflow (40°44'33" N, 74°09'53" W)
#014 Passaic River	Middlesex Street, Harrison Overflow (40°44'33" N, 74°09'53" W)
#015 Passaic River	Bergan Street, Harrison Overflow (40°44'25" N, 74°09'49" W)
#016 Passaic River	Worthington Ave., Harrison Overflow (40°44'21" N, 74°08'41" W)
#017 Passaic River	Stewart Ave., Kearny Overflow (40°46'46" N, 74°07'55" W)

#018 Passaic River	Washington Ave., Kearny Overflow (40°46'37" N, 74°08'00" W)
#019 Passaic River	Bergen Ave., Kearny Overflow (40°45'43" N, 74°09'40" W)
#020 Passaic River	Nairn Ave., Kearny Overflow (40°45'33" N, 74°09'46" W)
#021 Passaic River	Marshall Street, Kearny Overflow (40°45'24" N, 74°09'51" W)
#022 Passaic River	Johnston Ave., Kearny Overflow (40°45'16" N, 74°09'52" W)
#023 Franks Creek thence to Passaic River	Ivy Street, Franks Creek Overflow, Kearny (40°45'34" N, 74°08'30" W)
#024 Franks Creek thence to Passaic River	Bergen St., Franks Creek Overflow, Kearny (40°45'09" N, 74°08'14" W)
#025 Franks Creek thence to Passaic River	Tappan St., Franks Creek Overflow, Kearny (40°45'01" N, 74°08'12" W)
#026 Franks Creek, a tributary of the Passaic River	Duke St., Franks Creek Overflow, Kearny (40°44'58" N, 74°08'10" W)
#027 Passaic River	Lodi force main bypass, Passaic (45°51' 25" N, 74°07'13" W)
#028 Passaic River	Verona Ave., Newark Bypass (40°46'35" N, 74°09'07" W)
#029 Passaic River	Delavan Ave., Newark Bypass (40°46'11" N, 74°09'29" W)

#031 Passaic River	Third Ave., Newark Bypass (40°45'28" N, 74°09'55" W)
#032 Passaic River	Fourth Ave., Newark Bypass (40°45'22" N, 74°09'56" W)
#033 Passaic River	Clay Street, Newark Bypass (40°45'03" N, 74°09'58" W)
#034 Passaic River	Orange Street, Newark Bypass (40°44'47" N, 74°10'01" W)
#035 Passaic River	Bridge Street, Newark Bypass (40°44'41" N, 74°10' 00" W)
#036 Passaic River	Rector Street, Newark Bypass (40°44'29" N, 74°09'56" W)
#037 Passaic River	Saybrook Place, Newark Bypass (40°44'26" N, 74°09'44" W)
#038 Passaic River	City Dock, Newark Bypass (40°44'07" N, 74°09'44" W)
#039 Passaic River	Jackson Street, Newark Bypass (40°43'59" N, 74°09'19" W)
#040 Passaic River	Polk Street, Newark Bypass (40°43'59" N, 74°09'14" W)
#041 Passaic River	Freeman Street, Newark Bypass (40°44'02" N, 74°08'46" W)
#042 Passaic River	Curtis Pl., Paterson Overflow (40°55'11" N, 74°10'34" W)
#043 Passaic River	Mulberry St., Paterson Overflow (40°55'12" N, 74°10'33" W)

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#045 Passaic River	West Broadway, Paterson Overflow (40°55'14" N, 74°10'31" W)
#046 Passaic River	Bank St., Paterson Overflow (40°55'18" N, 74°10'27" W)
#046 Passaic River	Bridge St., Paterson Overflow (40°55'23" N, 74°10'14" W)
#047 Passaic River	Montgomery St., Paterson Overflow (40°55'29" N, 74°10'03" W)
#048 Passaic River	Straight St., Paterson Overflow (40°55'33" N, 74°09'59" W)
#049 Passaic River	Franklin St., Paterson Overflow (40°55'36" N, 74°09'57" W)
#050 Passaic River	Keepe St., Paterson Overflow (40°55'37" N, 74°09'56" W)
#051 Passaic River	Warren St., Paterson Overflow (40°55'40" N, 74°09'55" W)
#052 Passaic River	Sixth Avenue, Paterson Overflow (40°56'03" N, 74°10'01" W)
#053 Passaic River	East 5th St.and Fifth Ave., Paterson Overflow (40°56'11" N, 74°09'48" W)
#054 Passaic River	East 11th St., Paterson Overflow (40°56'13" N, 74°09'26" W)
#055 Passaic River	Fourth Ave., Paterson Overflow (40°56'14" N, 74°09'22" W)

#056 Passaic River	S.U.M. Park, Paterson Overflow (40°55'05" N, 74°10'46" W)
#057 Passaic River	North West St., Paterson Overflow (40°55'17" N, 74°10'39" W)
#058 Passaic River	Arch Street, Paterson Overflow (40°55'24" N, 74°10'14" W)
#059 Passaic River	Jefferson St., Paterson Overflow (40°55'26" N, 74°10'11" W)
#060 Passaic River	Stout St., Paterson Overflow (40°55'29" N, 74°10'09" W)
#061 Passaic River	North Straight St., Paterson Overflow (40°55'35" N, 74°10'00" W)
#062 Passaic River	Bergen St., Paterson Overflow (40°55'44" N, 74°09'57" W)
#063 Passaic River	Short St., Paterson Overflow (40°55'53" N, 74°10'05" W)
#064 Passaic River	Second Ave., Paterson Overflow (40°56'18" N, 74°08'35" W)
#065 Passaic River	Third Ave., Paterson Overflow (40°56'10" N, 74°08'30" W)
#066 Passaic River	33 Street and Tenth Ave., Paterson Overflow (40°55'25" N, 74°08'28" W)
#067 Passaic River	20th Ave., Paterson Overflow (40°54'21" N, 74°07'59" W)
#068 Passaic River	Market Street, Paterson Overflow (40°54'08" N, 74°08'05" W)

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#069 Passaic	Passaic Tail Race, Passaic Bypass (40°51'27" N, 74°07'13" W)
#070 Passaic River	Dundee Island Lateral, Passaic Overflow (40°51'52" N, 74°06'40" W)
#071 Passaic River	Woodward Ave., Rutherford Overflow (40°49'52" N, 74°07'15" W)
#072 Passaic River	Pierrepont Ave., Rutherford Overflow (40°49'40" N, 74°07'18" W)
#073 Passaic River	Rutherford Ave., Rutherford Overflow (40°49'20" N, 74°07'25" W)
#074 Passaic River	Second River Joint Meeting, Neward Bypass (40°46'36" N, 74°09'05" W)

Addendum

#030 Passaic River	Herbert Place, New ark Bypass (40°45'55" N, 74°09'35" W)

C-2. SCHEDULE OF COMPLIANCE FOR INDUSTRIAL DISCHARGE INFORMATION

It is apparent that other pollutants attributable to inputs from major contributing industries using the municipal system are also present in the facility's discharge. At such time as sufficient information becomes available to establish limitations for such pollutants, this permit may be revised to specify effluent limitations for any or all of such other pollutants in accordance with best practicable industrial technology requirements or water quality standards.

A. Not later than August 31, 1975 , the permittee shall initiate whatever actions are needed to enable the permittee to enforce all pre-treatment requirements necessary to insure compliance with the terms and conditions of this permit as well as to insure compliance by all major contributing industries with the pre-treatment standards and any other applicable regulations promulgated pursuant to Sections 307 and 308 of the Act.

By August 31, 1975, the permittee shall notify the Regional Administrator and State Agency of the actions it intends to take to comply with the above requirement.

The permittee shall require each major contributing industry to submit to the permittee periodic notice (at intervals not to exceed 9 months) regarding specific actions taken to achieve full compliance with the requirements of Section 307. On the last day of the months of March and September, the permittee shall submit to the permit issuing authority a report summarizing the progress of all known major contributing industries subject to the requirements of Section 307 towards achieving full compliance with such requirements. Such reports shall include, at least, the following information:

(1) A narrative summary of actions taken by the permittee to develop, promulgate, and enforce its own industrial waste regulations, as well as its own legislation and thereby ensure that all major contributing industries comply with the requirements of Section 307.

(2) The number of major contributing industries using the treatment works, divided into SIC group categories.

(3) The number of major contributing industries known to be in full compliance with the requirements of Section 307, or not subject to these requirements; e.g., discharge only compatible pollutants.

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(4) A list identifying by name those major contributing industries known to be presently in violation of the requirements of Section 307.

These semi-annual reports must be filed with the permitting authority by March 31 and September 30 of each year until compliance is achieved. Submission would be required again only if a major contributing industry reverts to violating the requirements of Section 307.

B. Immediately upon issuance of this permit, the permittee shall establish and implement a procedure to obtain from all major contributing industries specific information on the quality and quantity of effluents introduced by such industrial users. The following information shall be reported to the permitting agency on a semi-annual basis beginning March 31, 1975; semi-annual reports reflecting no change from the previous reporting period may simply relate this fact without submitting repetitive data. These reports should follow the format outlined in the Appendix to this compliance schedule. All required data must be submitted before March 31, 1976.

It shall be the responsibility of the Permittee to compute and include in the semi-annual reports the "best practicable" effluent limitations and to determine and implement necessary pre-treatment requirements (as provided for in 40 CFR Part 128) for the major contributing industries. In computing the allowable industrial inputs, the permittee shall utilize the applicable industrial effluent guidelines as published in the Federal Register.* In the first semi-annual report (due March 31, 1975), the permittee shall propose a schedule for determining the required pre-treatment information and, after approval by the permitting authority, shall implement the schedule. After receipt of the pre-treatment data, this permit may be amended to reflect the PVSC'S effluent requirements for incompatible pollutants.

NOTE: A major contributing industry is one that: (a) has a flow of 50,000 gallons or more per average workday; (b) has a flow greater than 5% of the flow carried by the municipal system receiving the waste; (c) has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307 (a) of the Act; or (d) has significant impact, either singly or in combination with other contributing industries, on the treatment works or the quality of its effluent.

* If the permittee is unable to compute effluent limitations for any industrial source category, the permittee shall so notify the permit issuing authority. After such notification, the permit issuing authority will either assume the responsibility for such calculations or will assist the permittee in computing effluent limitations for that industrial source category.

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APPENDIX TO INDUSTRIAL COMPLIANCE SCHEDULE

To comply with the industrial discharge reporting requirements outlined above, the following procedure should be utilized for each major contributing industry:

Using the following format, a description of each major contributing industry discharging to the municipal system should be prepared. A separate set of six questions should be completed for each major industrial user.

See "Section IV" of "Standard Form A" (attached).

It is the responsibility of the permittee to obtain the required information for all major industrial contributors to his facility, including those contributing via another system. Actual data should be provided, if available; otherwise the best estimate should be provided and the response marked "interim." If certain of the requested information does not apply, it should be marked "N.A."

Specific instructions follow: (Question numbers refer to those on the sheet entitled "Standard Form A - Municipal".)

QUESTION 1 - MAJOR CONTRIBUTING FACILITY: - Give the name and address that designates the location of the industrial facility.

QUESTION 2 - PRIMARY STANDARD INDUSTRIAL CLASSIFICATION CODE: - Using four-digit standard industrial classification (SIC) codes, indicate the type of industrial facility that is discharging into the municipal system. Standard industrial classification (SIC) code numbers and descriptions may be found in the 1972 edition of the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, which is available from the Government Printing Office, Washington, D.C. Do not use previous editions of the manual. Copies are also available for examination at State water pollution control offices, Regional Offices of the U.S. Environmental Protection Agency, and at most public libraries.

QUESTION 3 - PRINCIPAL PRODUCT OR RAW MATERIAL: Specify either the principal product or the principal raw material and the maximum quantity per day produced or consumed. Quantities are to be reported in the units of measurement given in Table B for particular SIC cate-

gories. Enter the letter-number code from the "Code" column in Table B for the units selected under "Units." For SIC categories not listed, use the units of measurements normally used by that industry.

QUESTION 6: Indicate the characteristics of the wastewater from the contributing industry in terms of parameters that will adequately identify the waste, such as BOD, COD, Cr, Zn, pH units, degrees Fahrenheit, etc. The characteristics should be indicative of the waste stream after any pre-treatment is provided by the industrial facility but prior to entering the municipal system.

In addition to parameter names, report values in units specified in Table A. The first column, "Parameter & Units," indicates the preferred units for reporting data for a given parameter. The second column, "Method," lists the preferred analytical method, if any, for determining the required parameter values. The next three columns, "References," give the page numbers in standard reference works where a detailed description of the recommended analytical technique given under "Method" can be found. These standard references are:

1. STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATERS, 13th edition, 1971, American Public Health Association, New York, New York 10019.

2. A. S. T. M. STANDARDS, PART 23, WATER; ATMOSPHERIC ANALYSIS, 1972, American Society for Testing and Materials, Philadelphia, Pa. 19103.

3. EPA METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, April 1971, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, Ohio 45202.

Copies of these publications are available from the above sources, or for review in the Regional Offices of the U. S. Environmental Protection Agency or the State Water Control Board.

The last column, "Data Reporting Level," indicates that nearest significant figure (digit) to which the data must be reported. For example, the figure X for chloride indicates that chloride data must be reported to the nearest whole milligram per liter. This level should not be confused with "detectable limits"; applicable detection limit information can be obtained from the appropriate reference source.

Additional information obtained through the permittee's "Waste Effluent Survey" description shall be submitted for each major industry. Such additional information should include:

(1) A brief description of industrial operations.

(2) The quantity of water used by the industry for the preceding year, classified according to source; i.e., purchased water, well water, river water.

(3) A description of the date and timespan of samples reported in answer to Question number 6 of "Section IV."

(4) A description of the industry's flow variation, including hours of discharge and maximum, minimum and average flow rates.

Attachment KJ0021016

FOR AGENCY USE

STANDARD FORM A—MUNICIPAL

SECTION IV. INDUSTRIAL WASTE CONTRIBUTION TO MUNICIPAL SYSTEM Page of

Submit a description of each major industrial facility discharging to the municipal system, using a separate Section IV for each facility described. Indicate the 4 digit Standard Industrial Classification (SIC) Code for the industry, the major product or raw material, the flow (in thousand gallons per day), and the characteristics of the wastewater discharged from the industrial facility into the municipal system. Consult Table III for standard measures of products or raw materials. (see instructions)

1. Major Contributing Facility (see instructions)

Name	401a	
Number& Street	401b	
City	401c	
County	401d	
State	401e	
Zip Code	401f	

2. Primary Standard Industrial Classification Code (see instructions) 402

3. Principal Product or Raw Material (see instructions)

		Quantity	Units (See Table III)
Product	403a	403c	403d
Raw Material	403b	403e	403f

4. Flow Indicate the volume of water discharged into the municipal system in thousand gallons per day and whether this discharge is intermittent or continuous.

404a _____ thousand gallons per day

404b ☐ Intermittent (int) ☐ Continuous (con)

5. Pretreatment Provided Indicate if pretreatment is provided prior to entering the municipal system 405 ☐ Yes ☐ No

6. Characteristics of Wastewater (see instructions)

406a	Parameter Name							
406b	Parameter Number							
406c	Value							

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C-3. SEWER SYSTEM EVALUATION AND REHABILITATION COMPLIANCE SCHEDULE

A. The permittee has, in accordance with 40 CFR 35.927, initiated a Sewer System Evaluation and Rehabilitation Program. The permittee shall, by August 31, 1976, submit to both the Regional Administrator and the NJDEP the results of Phase I (Infiltration/Inflow Analysis) of this program.

B. If it is determined by the results obtained from the Infiltration/Inflow Analysis that the Sewer System Evaluation and Rehabilitation Program is to continue, the permittee shall, within one month of approval of the Analysis (Phase I) Report by the USEPA and the NJDEP, submit a program for Phase II (Field Investigation and Survey), together with a proposed Engineering Contract for said work and an application for a Federal grant for this work. Within two months of approval by the USEPA of this program, contract and a grant, the permittee shall execute the contract and start Phase II of the program.

C. Upon completion by the permittee of Phase II of the Sewer System Evaluation and Rehabilitation Program and after approval by the Regional Administrator and the NJDEP of the results of Phase II, this permit may be revised to incorporate a compliance schedule for construction or rehabilitation (Phase III) recommended by Phase II.

C-4. WET WEATHER FLOW STUDY COMPLIANCE SCHEDULE

A. Operation of Systems with Combined Sewers

i. General Requirements

1. The permittee shall operate the treatment works, including the treatment plant and total sewer system, to minimize discharge of the pollutants listed in the permit from combined sewer overflows or bypasses.

2. No new sources of stormwater inflow shall be connected to any separate sanitary sewers in the sewer system.

ii. Preliminary Requirements

1. Report on Maximum Treatable Flow Rates

The permittee must report to the Regional Administrator and the State agency by August 31, 1975, the maximum treatable flow rates for the treatment plant or any complete unit process. The maximum treatable flow rates must be at least equal to one of the following:

a. The maximum hydraulic flow rate for which the treatment plant was designed, or the maximum hydraulic flow rate for which the treatment plant can provide partial treatment.

b. The maximum flow rate that can be delivered to the plant without causing seriously adverse conditions, such as substantial property damage, in the interceptor and lateral sewer system.

The permittee shall operate the system so as to achieve the maximum treatable flow.

2. In lieu of the above, The permittee may submit a detailed operational plan designed to minimize pollutant discharges from the treatment and sewer system. The permittee must demonstrate that, if implemented, the plan would provide for a lower discharge of pollutants from the system during wet weather than that occurring if the hydraulic flow were treated during wet weather at the limiting flow rate in B. 1. above. The treatment plant and sewer system shall be operated in accordance with this plan.

3. The permittee shall also report by February 28, 1977, to the permit issuance authority a proposed method for estimating the number and location of new sewer connections which will be served by combined sewers for the duration of the permit. The permittee shall also report by February 28, 1979, a proposed method for estimating the impact of the additional flows generated by these new sewer connections on the volume of discharges from the combined sewer system. This method shall be used in the development of the operational plan required in Section iii, below.

iii. Operational Plan

An interim operational plan designed to minimize the discharge of pollutants from combined sewer overflows and bypasses must be submitted by the permittee to the Regional Administrator and the State Agency by June 30, 1976. The plan will provide for optimal coordinated operation of the sewage treatment plant and contributing sewer systems. The plan will specifically:

1. Refine the estimate of maximum treatable flow.

2. If applicable, report the number, location, types, and kinds of regulators and their respective operating history, maintenance program, and performance efficiency.

3. Report the calculated or estimated storage capacities of the sewer system upstream from all control devices such as pump stations and regulators, or combined sewer discharges.

4. Provide operational procedures for utilizing at least 80% of the available capacity of interceptors and trunk lines upstream of any control devices such as pump stations, or regulators prior to any discharge from a combined sewer overflow or bypass; or provide, if such storage capacity utilization cannot be achieved with existing control devices, the operational procedures for maximizing the use of storage prior to any combined sewer discharge.

5. Provide a method to determine if the upstream storage capacity was utilized prior to any discharge from the combined sewer system.

3. The permittee shall also report by February 28 (1976, SUPERCEDED) to the permit issuance authority a proposed method for estimating the number and location of new sewer connections which will be served by combined sewers for the duration of the permit, and a proposed method for estimating the impact of the additional flows generated by these new sewer connections on the volume of discharges from the combined sewer system. This method shall be used in the development of the operational plan required in Section iii, below. INSERTION see revision

iii. Operational Plan

An interim operational plan designed to minimize the discharge of pollutants from combined sewer overflows and bypasses must be submitted by the permittee to the Regional Administrator and the State agency by June 30, 1976.
The plan will provide for optimal coordinated operation of the sewage treatment plant and contributing sewer systems. The plan will specifically:

1. Refine the estimate of maximum treatable flow.

2. If applicable, report the number, location, types, and kinds of regulators and their respective operating history, maintenance program, and performance efficiency.

3. Report the calculated or estimated storage capacities of the sewer system upstream from all control devices such as pump stations and regulators, or combined sewer discharges.

4. Provide operational procedures for utilizing at least 80% of the available capacity of interceptors and trunk lines upstream of any control devices such as pump stations, or regulators prior to any discharge from a combined sewer overflow or bypass; or provide, if such storage capacity utilization cannot be achieved with existing control devices, the operational procedures for maximizing the use of storage prior to any combined sewer discharge.

5. Provide a method to determine if the upstream storage capacity was utilized prior to any discharge from the combined sewer system.

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6. Analyze the effect on the total volume of combined sewer discharges of new sewer connections anticipated for the duration of the permit. If these additional connections are expected to increase the total volume of discharges for like meteorological conditions, the plan must provide a method for the prevention of this increase by regulation or control of new connections and/or an offsetting of any added flows by such means as sewage and inflow reduction, in-system flow routing, and treatment and enlargement of sewer and treatment capacity.

B. Monitoring of Systems with Combined Sewers

i. General Requirements

Point sources so noted in Section C-1, are overflows resulting when the hydraulic flow capacity of the system has been exceeded.

These discharge points may be utilized for wet weather overflows or bypasses to the extent specified by the approved preliminary report and interim operational plan. For all overflows the permittee is required to take the following actions:

In conjunction with the permittee's Infiltration/Inflow Analysis the permittee shall take measurements at overflow stations and at bypass points to determine overflows due to both infiltration and inflow. Such overflows shall be related to rainfall wherever possible, and time-duration curves shall be developed to establish both peak rates and total quantity overflowed insofar as may be possible. Sampling of such overflows shall be undertaken to determine the quality of the bypassed storm water flows and its effect on the River. The results of such analyses shall be included in the report required August 31, 1976.
(see Condition C-3(A) on Infiltration/Inflow Analysis).

ii. Reporting Results

Included in the report required above, or in a separate report to be submitted by June 30, 1977, the permittee shall make recommendations concerning the alternative plans for corrective action along with recommendations for alleviating and/or treating overflow discharges including estimates of cost for implementing the alternative plans. The alternative strategies to be evaluated shall include, as a minimum:

a. dual use treatment facilities;

b. storing and/or treating initial or final sewer system flushes;

c. storage and subsequent treatment of discharges;

d. improvements in the sewer system.

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C-5 FACILITIES UPGRADING COMPLIANCE SCHEDULE

A. The permittee shall, before August 1, 1976, complete and submit to both the Regional Administrator and the State Agency, a detailed design report and plans and specifications, together with a Step 3 Grant Application, for the Phase I* modifications to the treatment facilities. 3/ Within one year after approval by the USEPA and the NJSDEP of Phase I, the permittee shall submit a detailed design report and plans and specifications for Phase II* modifications to the treatment facilities. 3/

B. Construction grant project number C-34-369-02, contracts numbered 480, 481, 484, 485, 487, 494, 491, 496A and 496B, is expected to be certified to the USEPA by the NJSDEP in a short time. Upon being awarded the Federal grant, the PVSC must advertise for receipt of bids in a timely manner. The following schedule shall be followed: one or more contracts must be advertised for bids within three months after receipt of the Federal grant. All nine contracts must be advertised for bids within seven months after receipt of the Federal grant.

Upon receipt by the USEPA of additional NJSDEP certified construction grant applications for completion of the facility upgrading, this permit shall be revised to include the appropriate schedules for advertising the remaining contracts.

*Facilities upgrading to be accomplished in two major construction phases. Phase I involved construction of new secondary settling facilities, biological units, pumping stations, maintenance building, etc., and the major part of the sludge handling facilities. Phase II involves the demolition of existing primary settling facilities and the construction of new primary settling facilities and the remaining sludge handling facilities.

NOTES:

1/ If the time period allotted for the completion of an interim requirement specified above is greater than 9 months, then the permittee shall submit a report detailing its progress toward completion of the interim requirement at the end of the first 9-month period and at the end of each succeeding 9-month period (including, of course, the report, specified above, required within 14 days following the specified completion date).

2/ Each notice of non-compliance shall include the following information:

A. a short description of the non-compliance;

B. a description of any actions taken or proposed to be taken by the permittee to comply with the elapsed schedule requirement without further delay;

C-5. FACILITIES UPGRADING COMPLIANCE SCHEDULE

SUPERCEDED per revision

A. The permittee shall, before February 28, 1976, complete and submit to both the Regional Administrator and the State agency, a detailed design report and plans and specifications, together with a Step 3 Grant Application, for the Phase I* modifications to the treatment facilities. 3/ Within one year after approval by the USEPA and the NJDEP of Phase I, the permittee shall submit a detailed design report and plans and specifications for Phase II* modifications to the treatment facilities. 3/

B. The permittee shall, within two months after receiving an offer of a grant from USEPA and approval from both the Regional Administrator and the State agency of the documents required above, advertise for the receipt of bids, in accordance with the detailed schedule submitted with the Step 2 grant application, approved by the USEPA. Within one month after approval by USEPA and NJDEP of bids received, the permittee shall award the construction contracts for the approved work.

*Facilities upgrading to be accomplished in two major construction phases. Phase I involved construction of new secondary settling facilities, biological units, pumping stations, maintenance building, etc., and the major part of the sludge handling facilities. Phase II involves the demolition of existing primary settling facilities and the construction of new primary settling facilities and the remaining sludge handling facilities.

NOTES:

1/ If the time period allotted for the completion of an interim requirement specified above is greater than 9 months, then the permittee shall submit a report detailing its progress toward completion of the interim requirement at the end of the first 9-month period and at the end of each succeeding 9-month period (including, of course, the report, specified above, required within 14 days following the specified completion date).

2/ Each notice of non-compliance shall include the following information:

A. a short description of the non-compliance;

B. a description of any actions taken or proposed to be taken by the permittee to comply with the elapsed schedule requirement without further delay;

C. a description of any factors which tend to explain or mitigate the non-compliance; and,

D. an estimate of the date permittee will comply with the elapsed schedule requirement and an assessment of the probability that permittee will meet the next schedule requirement on time.

2/ It is recommended that sufficient flexibility must be maintained so that modifications to design parameters, necessitated by the results of the sewer system evaluation and wet weather study, may be made.

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This permit shall become effective on February 28, 1975.

This permit and the authorization to discharge shall be binding upon the permittee and any successors in interest of the permittee and shall expire on June 30, 1977. The permittee shall not discharge after the above date of expiration. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information, forms, and fees as are required by the agency authorized to issue NPDES permits no later than December 31, 1976.

By authority of Gerald M. Hansler, P. E.
(Regional Administrator)

JAN 20 1975
Date

Meyer Scolnick
Meyer Scolnick, Director
Enforcement and Regional
Counsel Division

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TIERRA-C-002599

ANNUAL REPORT

by

Chief Engineer

S. A. LUBETKIN

to the

PASSAIC VALLEY SEWERAGE COMMISSIONERS

FOR OPERATIONS DURING

THE YEAR

1975

SPECIAL REPORT #5 (FROM JANUARY-FEBRUARY 1975 REPORT)

THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT

As everyone knows, or should know by now, all dischargers into "navigable" waters of the United States are required to apply for a NPDES Permit from the USEPA. This is required by the Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, Section 402(a)(1) et seq, (33 U.S.C. Par. 1251-1376). The "navigable" waters are defined in the Act as "the waters of the United States, including the territorial seas" Sec. 502(7).

This refers to any discharges from industries, municipalities, sewer authorities, etc., which may contain polluting materials. This requirement is probably the best single requirement in the Act, as it will enable the USEPA, once and for all, to make an accurate assessment of the total pollution in the United States.

The Permit itself can be quite an extensive document, depending upon the particular discharge being permitted.

Generally speaking, each permit locates the discharge and the receiving waters. It defines the allowable quality and quantity, and if the discharge exceeds legal standards, it sets a "Schedule of Compliance" with interim dates of performance. It sets up monitoring and report requirements so that the USEPA is able to tell if violations occur and that compliance schedules are being met.

In addition, if the permittee is a municipality or a public authority, there are many other requirements such as mandatory controls of connected industrial discharges, pretreatment requirements, cost recovery requirements, infiltration requirements, etc.

The PVSC had received its NPDES Permit effective February 28, 1975 and had started implementing the vast data gathering necessary to translate the Federal Guidelines into regulations. In order to fully comply, cooperation is needed from both industrial users and municipal users. To inform the major industries what was expected from them, the PVSC had set two days of meetings (March 25 and 26) with four separate meetings of three hours each (this was necessary, since all industries could not be accommodated at once). Attendance was by invitation only (because of the limitation on space).

The municipalities were informed by letter of what was required of them, and a similar conference will be held at a later date to discuss PVSC rules and regulations.

The following are the critical dates and requirements of the Passaic Valley Sewerage Commissioners' Permit:

(1) Self-monitoring reports are to be on a quarterly basis and must be submitted within 28 days after the end of each report period. The first report period started March 1, 1975 and ended May 31, 1975, with subsequent report periods ending August 31, November 30, and February 28/29. (This is EPA Form 3320-1)

(2) On March 31 and September 30 of each year, PVSC must submit a report summarizing the progress of all non-complying major industries subject to pretreatment requirements with details, as included in the Permit.

The first report (March 31, 1975) contained a proposed schedule for determining the required pretreatment information. After approval by EPA, PVSC shall implement the schedule.

(3) The following compliance schedules are in the Permit and a report must be made to EPA within 14 days following each date on the schedule:

(a) August 31, 1975 - PVSC must initiate whatever actions are needed to enable PVSC to enforce all pretreatment requirements necessary, and PVSC must notify the Regional Administrator and the State Agency of actions it intends to take to comply with this (pretreatment standard) regulation.

(b) August 31, 1975 - PVSC must report to EPA on the maximum treatable flow rates for the treatment plant or any complete unit process.

(c) February 28, 1976 - PVSC shall report to EPA on a proposed method for estimating the number and location of new sewer connections, which will be served by combined sewers, and a proposed method for estimating the impact of additional flows generated by these sewer connections on the volume of discharges from the combined sewer.

(d) February 28, 1976 - PVSC shall submit a detailed design report, together with plans and specifications, together with a Step 3 Grant Application, on upgrading their facilities.

(e) June 30, 1976 - PVSC shall submit to the EPA an interim operational plan designed to minimize the discharge of pollutants from combined sewer overflows and by-passes.

(f) August 31, 1976 - PVSC shall submit the results of its Phase I Infiltration/Inflow Analysis.

(g) August 31, 1976 - PVSC shall submit to EPA the analysis of overflows and by-passes due to rain fall, including the duration curves to determine quality of by-pass storm water and its effect on the river.

(h) December 31, 1976 - PVSC shall apply for a renewal of the NPDES Permit, which expires June 30, 1977.

(i) June 30, 1977 - PVSC shall make a report with recommendations concerning alternate plans for corrective action for alleviating and/or treating of overflow discharges, including cost estimates.

ANNUAL REPORT

by

Chief Engineer

S. A. LUBETKIN

to the

PASSAIC VALLEY

SEWERAGE COMMISSIONERS

FOR OPERATIONS DURING

THE YEAR

1976

SPECIAL REPORT #4
(FROM AUGUST-SEPTEMBER 1976)

PVSC REGULATIONS AND A MODEL SEWER ORDINANCE FOR MUNICIPALITIES DISCHARGING INTO THE PVSC SYSTEM

As everyone knows, the treatment facilities of the PVSC must be updated to comply with the Federal standards established under P.L. 92-500. Over the last several years the Commissioners have taken the necessary action which will result in the construction of new secondary treatment facilities.

The costs for such facilities are very great. Our estimates are in the area of $500,000,000. On those portions of the construction plan which have already been approved, we have been fortunate to obtain commitments of 75% Federal funding. However the Federal funds which are available are subject to grant conditions and included in the grant conditions is the Federal requirement, as a prerequisite to our receiving the Federal funds, that sewer use ordinances must be adopted by all of the municipalities serviced by the PVSC's treatment plant.

Apart from the requirements of the grant conditions, under the provisions of the Federal Water Pollution Control Act of 1972, a new system of discharge permits was initiated. In order to continue the PVSC discharge into New York Harbor, PVSC must comply with the terms of the discharge permit issued by the Federal Government. Included in the conditions of the PVSC discharge permit (NJ0021016) is the requirement for the adoption of sewer use ordinances. It is to be noted that the Federal statute provides that any violation of a discharge permit condition constitutes a civil and criminal offense.

At their board meeting of April 8, 1976, the Passaic Valley Sewerage Commissioners adopted the "Rules and Regulations of the PVSC Concerning Sewer Connection Permits". On April 12, 1976 copies of the Rules and Regulations were sent to each user municipality along with a letter of explanation.

Although the PVSC had, in the past, conducted several conferences with its user municipalities to keep them apprised of the Federal Regulations, another one was held on May 20, 1976 wherein the PVSC, Federal and State regulations were reviewed and they were notified that PVSC would have its staff prepare a model ordinance to assist the municipalities in conforming with PVSC regulations.

We prepared such an ordinance, which incorporated all of the requirements of the United States Environmental Protection Agency as well as the New Jersey Department of Environmental Protection, and submitted it to the United States Environmental Protection Agency as well as to the New Jersey Department of Environmental Protection,which in turn, have commented upon and finally approved it.

Since, not only is PVSC required to make periodic reports to the USEPA of non-compliance with permit conditions, but the flow of Federal Funding for the PVSC project would be interrupted by non-compliance with the grant conditions, PVSC requested that we be informed within 30 days of the name of the individual within each municipality that would act as liaison between that municipality and the PVSC and further, a timetable concerning the adoption of the ordinance.

This, of course, is important since any interruption in the Federal flow of such a large amount of money would require the PVSC to impose the costs directly upon the municipalities, since the PVSC would have construction contracts, which must be paid.

This proposed ordinance, reproduced on the following pages, which works in conjunction with PVSC Rules and Regulations Concerning Sewer Connection Permits (also included for reference), was sent to each user municipality on September 29, 1976 for the purpose of having the ordinance introduced and adopted by them.

It is to be noted that as of December 31, 1976, fifteen of the thirty participating municipalities responded to PVSC indicating the ordinance would be passed. PVSC will follow up on the remaining municipalities for compliance during 1977.

PROPOSED MODEL ORDINANCE FOR MUNICIPALITIES

AN ORDINANCE REGULATING THE USE OF SEWERS AND THE DISPOSAL OF WASTE WATER AND PROVIDING PENALTIES FOR THE VIOLATION THEREOF.

BE IT ORDAINED by the of of County, as follows:

1. Whenever used in the within ordinance, the following terms shall have the following meaning:

a. "Flotable oil" is oil, fat or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. A wastewater shall be considered free of flotable fat if it is properly pretreated and the wastewater does not interfere with the collection system.

b. "Industrial wastes" shall mean the wastewater from industrial processes, trade, or business as distinct from domestic or sanitary wastes.

c. "Industrial Cost Recovery". A charge to industrial users based on its use of PVSC facilities to repay the capital cost outlay of the Federal Share given PVSC under the provisions of applicable Federal law allocable to the treatment of the wastes from the industrial user.

d. "Industrial User", Any non-governmental user of PVSC facilities identified in the Standard Industrial Classification Manual 1972 as amended and supplemented under Divisions A,B,D,E or I. A user may be excluded if it is determined that it introduces primarily segregated sanitary wastes.

e. "Industrial Waste". The liquid waste from an industrial process, as distinct from sanitary waste. All wastes, except storm waters and sanitary wastes.

f. "Major Industry". An industrial user of PVSC facilities that: (a) has a flow of 50,000 gallons or more per average work day; (b) has in its waste, a toxic pollutant in toxic amounts; or, (c) is found by USEPA, NJDEP or PVSC to have significant impact, either singly or in combination with other contributing industries, in the PVSC treatment works or upon the quality of the effluent from the PVSC treatment works.

g. "Natural outlet" shall mean an outlet, including storm sewers and combined sewer overflows, into a watercourse, pond, ditch, lake or other body of surface or groundwater including the Passaic River or any of its tributaries.

h. "NJDEP" New Jersey Department of Environmental Protection.

i. "NPDES" National Pollution Discharge Elimination System.

j. "Person" shall mean any individual, firm, company, society, association, corporation (public or private) or group.

k. "pH". The reciprocal of the logarithm of the hydrogen ion concentration. The concentration is the weight of hydrogen ions, in grams, per liter of solution. Neutral water has a pH value of 7 (a hydrogen concentration of 10^{-7}). Lower pH's are acid, higher pH's are alkaline.

l. "Pretreatment". Treatment given to industrial waste, prior to its discharge, directly or indirectly, to the PVSC facilities, by the industry, in order to remove illegal and/or undesirable constituents or to reduce the strength of the waste.

m. "PVSC" Passaic Valley Sewerage Commissioners

n. "Public Sewer" shall mean a common sewer controlled by a governmental agency, public utility, or the municipality.

o. "Sanitary Sewer", shall mean a sewer that carries liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities of ground, storm and surface waters that are not admitted intentionally.

p. "Sanitary Waste". Waste derived principally from dwellings, office buildings, and sanitary conveniences, When Segregated from industrial wastes, may come from industrial plants or commercial enterprises.

q. "Sewage" is the spent water of a community. The preferred term is "wastewater.

r. "Sewer" shall mean a pipe or conduit that carries waste water or drainage water.

s. "Slug" shall mean any discharge of water or wastewater which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration or flows during normal operation.

t. "Storm drain" (sometimes called "storm sewer") shall mean a drain or sewer for conveying water, groundwater, subsurface water, or unpolluted water from any source.

u. "Strength of Waste". A measurement of suspended solids, and/or Biochemical Oxygen Demand and/or Chemical Oxygen Demand, and/or any other parameter determined by PVSC as a fair indicator of the relative use, other than volumetric, of PVSC facilities by industrial wastes.

v. "Suspended Solids" shall mean total suspended matter that either floats on the surface of, of is in suspension in, water, wastewater, or other liquids and that us removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Water and Wastewater" and referred to as nonfilterable residue.

w. "Toxic Wastes in Toxic Amounts" shall be defined by USEPA in 40 CFR 129 (38 F.R. 24342, 9-7-73) and any superceding revisions.

x. "USEPA" United States Environmental Protection Agency

y. "Unpolluted water" is water of quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the sanitary sewers and wastewater treatment facilities provided.

z. "User Charge". A charge to users consisting of two parts. The first part established by PVSC based on volume and, where applicable, on strength and/or flow rate to pay for the use of the PVSC facilities. The second part established by the municipality to pay for the use of the local sewer system and to pay for administrative of the billing and collection of the funds.

aa. "Wastewater" shall mean the spent water of a community. From the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surface water, and storm water that may be present.

bb. "Wastewater Facilities" shall mean the structures, equipment, and processes required to collect, carry away, and treat domestic and industrial wastes and dispose of the effluent.

cc. "Wastewater treatment works" shall mean the PVSC facilities.

2. It shall be unlawful to discharge into any natural outlet within the municipality any wastewater or other polluted waters, except where suitable treatment has been provided and where a National Pollution Discharge Elimination System permit has been obtained from the appropriate governmental authority, where required.

3. No unauthorized person shall uncover, make any connections with or opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a permit from the appropriate municipal official.

4. Application for sanitary connections for dwellings, groups of dwellings or industrial or commercial establishments with only sanitary waste, shall be made directly to the municipality. A fee shall be paid to the municipality to process the application as otherwise provided by ordinances of the municipality. The governing body of the municipality shall designate some suitable person to maintain a record of the number of sanitary applications and connections that are added and removed from the system and shall make an annual report to the Passaic Valley Sewerage Commissioners no later than February 1 of each year. When a direct connection to a PVSC sewer is requested by the applicant, the request shall first be endorsed with the approval of the governing body of the municipality and then submitted to the PVSC for their action.

5. Each existing industrial user which is presently connected directly or indirectly to the wastewater facilities of the municipality shall make application for a permit no later than 1977, whether the connection be for industrial waste or storm water. Applications for future connections must be made and approved before a certificate of occupancy may be issued. The application shall be made to the municipality by the industry that generates the waste, however, the application must be signed by the owner of the property whereon the industry is located. After approval of the application by the municipality, the application shall be forwarded to PVSC for classification and issuance of the permit by PVSC.

Any existing industrial user which proposes to make any change in its facility or its processing, which significantly affects the quality or the quantity of its discharge into the system, shall submit to the municipality an Industrial Sewer Waste Revision Application showing the contemplated changes. Any new tenant or occupant of an existing industrial user shall submit an Industrial Sewer Waste Revision Application. The application, if approved by the municipality, shall be sent to the PVSC, accompanied by the written approval of the municipality. Existing industrial users that have applied for permits may continue their discharge until their application has been processed by PVSC, except for any dischanges which constitute prohibited waste as otherwise provided in the within ordinance or unless notified by PVSC to cease and desist their discharge. No certificate of occupancy shall be issued for an industrial use until an industrial permit has been issued by the PVSC and no person shall occupy any building or structure for the purpose of a new industrial use until an industrial permit has been issued by the PVSC.

6. Industrial users shall be classified by PVSC as follows:

Category I:

Class I-A permit shall not be issued to an industry defined as a major industry and when issued shall allow the industry to discharge with no modification or pretreatment of flow.

Class I-B permit is one issued to an industry classified as a major industry. This permit shall allow the industry to discharge with no modifications or pretreatment of flow, however, PVSC may require the installation of monitoring equipment.

Category II:

Class II-A permit shall allow an industry to discharge pretreated wastes in accordance with standards established in the permit.

Class II-B permit shall allow an industry to continue to discharge, subject to change of characteristics of its waste by pretreatment or other means in accordance with a schedule as established by the PVSC in the permit.

Category III:

The permit is denied and the discharge of prohibited materials must be halted or modified by a date established by the PVSC and in accordance with conditions contained in the permit denial.

7. The PVSC classification of an application is subject to change by PVSC upon written notification from PVSC to the applicant by certified mail. Any change shall be accompanied by a detailed explanation of the reason for the change.

8. Any industry aggrieved by a permit classification by the PVSC shall have a right to appeal to the PVSC. Such an administrative appeal shall be taken within thirty (30) days of notification by PVSCto the industry of its decision. The notice of appeal shall be delivered personally to the offices of PVSC at 600 Wilson Avenue, Newark, New Jersey or shall be sent by certified mail, return receipt requested. The taking of an appeal shall not stay the provisions of a Class III denial. During the time of appeal, however, the Class II permits shall be stayed, however, the staying shall not release any industry from meeting any requirements of any schedule set by the New Jersey Department of Environmental Protection or the United States Environmental Protection Agency.

9. Upon the filing of an appeal the PVSC shall set the date and time for a hearing before the Commissioners. The applicant shall have the right to present evidence, shall have the right to be represented by counsel and shall have the right of cross examination. Upon the conclusion of the hearing, the Commissioners shall make findings of fact and conclusions.

10. All applications for industrial permits shall be submitted on forms to be supplied by PVSC and shall comply with the instructions on said form.

11. All costs and expenses incidental to the installation and connection of the building sewer shall be borne by the applicant, and the applicant shall indemnify the municipality or PVSC from any loss or damage that may be occasioned by the installation of the building sewer. All sewer connections shall be in accordance with the requirements of the municipality as otherwise provided by ordinance. In the case of the connection into PVSC sewer the connection shall be in accordance with the conditions contained in the approval of the PVSC.

12. No person shall make connection on roof downspouts, foundation drains, areaway drains, or other sources of surface runoff or groundwater to a building sewer or drain, which in turn is connected directly or indirectly to a public sanitary sewer unless approved by the municipality for purpose of disposal of polluted surface drainage.

13. In addition to the application for the permit as hereinabove provided, each industrial user must complete an industrial survey form which will be supplied by PVSC and, from time to time, shall update the form when required by the PVSC.

14. Whenever an industry is classified as a major industry, it shall install an approved, sealed, automatic monitoring system if required by PVSC.

15. No uncontaminated water shall be discharged into the PVSC system except with the prior written consent of the municipality (and PVSC). (There will be two separate provisions, one for municipalities with separate systems and one for municipalities with combined systems.)

16. When pretreatment standards are adopted by the United States Environmental Protection Agency for any given class of industries, then any industry within that class must conform to the United States Environmental Protection Agency timetable for adherence to pretreatment requirements as well as all other applicable requirements promulgated by the United States Environmental Protection Agency in accordance with the provisions of the law. Additionally, such industries shall comply with such more stringent standards necessitated by local conditions as determined from time to time by the PVSC.

17. All industrial users shall provide immediate access to its facilities at any time during normal working hours or at any other time that there is a discharge into the PVSC system or into any waters under the jurisdiction of the PVSC. Access shall be for the purpose of checking the quality of the discharge, taking samples and making tests of the discharge or for the purpose of permitting enforcement of the within ordinance. The access shall be made available to the employees of PVSC, New Jersey Department of Environmental Protection, United States Environmental Agency and/or the municipality. All users shall provide access to property and premises for inspection for the purpose of determining if there is any violation of the terms or provisions of the within ordinance.

18. The following wastes are prohibited and may never be discharged into waste water facilities of the municipality and PVSC:

a. Wastes that may create a fire or explosion hazard in the sewer or wastewater facility, such as gasoline, fuel oil, cleaning solvents, etc.

b. Wastes that may impair or cause to impair the hydraulic capacity of the sewer system, such as ashes, sand, metal, precipitates, etc.

c. Wastes that may create a hazard to people, the sewer system, the treatment process, or the receiving water, such as dangerous levels of toxic materials.

d. Wastes at a flow rate which is excessive over a relatively short time period so that there is a treatment process upset and substantial loss of treatment efficiency.

e. Wastes below a pH of 5 unless the line is designed to accommodate such waste.

f. Any discharge of radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by PVSC in compliance with applicable State or Federal Regulations.

19. The following wastes may not be discharged without special permission from the PVSC, upon a determination by the PVSC that the discharge would not be detrimental to the system:

a. Any discharge in excess of 150°F (65°C).

b. Any discharge containing more than 100mg/l of mineral oil or grease.

c. Any discharge containing floatable oil or grease.

d. Any discharge of heavy metals, or any other toxic materials in toxic amounts, which amounts are to be established by PVSC.

e. Any discharge quantities of flow or concentration which shall constitute a "slug".

f. Wastes with pH outside the limits of 5.0 to 9.0.

20. Each major industrial user shall construct or otherwise have available a sampling point for sampling waste water before it enters the municipal sewer system. Other industrial users may be required to construct such sampling point, if ordered so to do by the municipality or the PVSC.

21. No discharge into the wastewater facilities of PVSC shall be permitted from any source which causes physical damage, interferes with the treatment process, or results in a violation of effluent limitations or other conditions contained in the National Pollution Discharge Elimination System Permit to Discharge issued to the PVSC by the United States Environmental Protection Agency.

22. When required by the municipality, USEPA, NJDEP or the PVSC, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable structure together with such necessary meters and other appurtenances to the building sewer to facilitate observation, sampling and measurement of the wastes. Such structure, when required, shall be accessibly and safely located and shall be constructed in accordance with plans approved by the governmental agency requiring it. The structure shall be installed by the applicant at his expense and shall be maintained by him so as to be safe and accessible at all times.

23. All persons subject to the within ordinance shall be required to provide information to the municipality and PVSC as needed to determine compliance with the ordinance. These requirements may include:

1. Wastewaters discharge peak rate and volume over a specified time period.

2. Chemical analyses of wastewaters.

3. Information on raw materials, processes, and products affecting wastewater volume and quality.

4. Quantity and disposition of specific liquid, sludge, oil, solvent or other materials important to sewer use control.

5. A plot plan of sewers of the user's property showing sewer and pretreatment facility location.

6. Details of wastewater pretreatment facilities.

7. Details of systems to prevent and control the losses of materials through spills to the municipal sewer.

24. All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this ordinance shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, or other method or procedure as may be approved by PVSC. Sampling methods, location, times, durations, and frequencies are to be determined on an individual basis subject to the approval of the municipality, and/or PVSC.

25. All users shall be required to comply with the requirement of user charges regulations and industrial costs recovery system regulations to be adopted by the PVSC in accordance with the requirements of the USEPA. The effective date for the implement of user costs regulations and industrial costs recovery system regulations shall be established by resolution of the PVSC. The effective date shall be certified by the PVSC and the said written certification shall be filed in the office of the municipal clerk.

26. No person shall intentionally, break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is part of the waste water facilities.

27. The governing body shall appoint or designate some suitable person to administer the within ordinance.

28. All users of the wastewater facilities shall comply with the requirements of the written rules and regulations of the PVSC which have been adopted and which from time to time shall have been adopted, which regulations shall become effective upon filing of certified copies in the office of the municipal clerk after the effective dates of the within ordinance.

29. Violations of any of the provisions of the within ordinance or any permit issued under the authority of the within ordinance may result in the termination of the permit and/or the termination of the authority to discharge into the system.

30. Any person violating any of the provisions of the within ordinance shall, upon conviction, be subject to a fine not to exceed five hundred dollars ($500.00) and/or imprisonment not to exceed ninety (90) days, or both. Each and every day in which a violation of any provision of this ordinance exists shall constitute a separate violation.

31. If any portion of the within ordinance shall be declared to be unconstitutional, invalid or inoperable, in whole or in part, by a court of competent jurisdiction, the remaining portion not declared to be unconstitutional, invalid or inoperable, shall remain in full force and effect.

32. No ordinance heretofore adopted by the municipality shall be effected by the within ordinance except that if any provisions of any prior ordinance is in conflict with the provisions of the within ordinance, the provisions of the within ordinance shall control.

33. This ordinance shall take effect upon final passage and publication in accordance with the provisions of law.

RULES AND REGULATIONS OF THE PVSC CONCERNING SEWER CONNECTION PERMITS

1) DEFINITIONS

As used in this regulation, the following words and terms shall have the meaning set forth below:

Industrial Cost Recovery - A charge to industrial users based on its use of PVSC facilities to repay the capital cost outlay of the Federal Share given PVSC under P.L. 92-500 allocable to the treatment of the wastes from the industrial user.

Industrial User - Any non-governmental user of PVSC facilities identified in the Standard Industrial Classification Manual 1972 as amended and supplemented under Divisions A, B, D, E, or I. A user may be excluded if it is determined that it introduces primarily segregated sanitary wastes.

Industrial Waste - The liquid waste from an industrial process, as distinct from sanitary waste. All wastes, except storm waters and sanitary wastes.

Major Industry - An industrial user of PVSC facilities that:

(a) has a flow of 50,000 gallons or more per average work day;
(b) has in its waste, a toxic pollutant in toxic amounts; or,
(c) is found by USEPA, NJDEP or PVSC to have significant impact, either singly or in combination with other contributing industries, on the PVSC treatment works or upon the quality of the effluent from the PVSC treatment works.

Municipality - The municipality wherein an industry or other user discharging to PVSC facilities is located.

NJDEP - New Jersey Department of Environmental Protection

NPDES - National Pollution Discharge Elimination System

pH - The reciprocal of the logarithm of the hydrogen ion concentration. The concentration is the weight of hydrogen ions, in grams, per liter of solution. Neutral water has a pH value of 7 (a hydrogen ion concentration of 10^{-7}). Lower pH's are acid, higher pH's are alkaline.

Pretreatment - Treatment given to industrial waste, prior to its discharge to the PVSC facilities, by the industry, in order to remove illegal and/or undesirable constituents or to reduce the strength of the waste.

Property Owner - Owner of the property wherein an industry discharging to the PVSC facilities is located.

PVSC - Passaic Valley Sewerage Commissioners

Sanitary Waste - Waste derived principally from dwellings, office buildings, and sanitary conveniences. When segregated from industrial wastes, may come from industrial plants or commercial enterprises.

Strength of Waste - A measurement of suspended solids, and/or Biochemical Oxygen Demand, and/or Chemical Oxygen Demand, and/or any other parameter determined by PVSC as a fair indicator of the relative use, other than volumetric, of PVSC facilities by industrial wastes.

Toxic Wastes in Toxic Amounts - Defined by USEPA in 40 CFR 129 (38 F.R. 24342, 9-7-73) and any subsequent revisions.

USEPA - United States Environmental Protection Agency

User Charge - A charge to users, established by PVSC, based on volume and, where applicable, on strength and/or flow rate to pay for the use of the PVSC facilities.

2) Any person, corporation or municipality, or other governmental agency desiring to make any sewerage connection or discharge or to continue to discharge sewerage, which includes or consists of industrial waste, into the PVSC treatment facilities, must make application therefor in writing on forms provided by the PVSC. All existing industrial users are required to make such application by June 1, 1977. Any new facilities shall be required to make application prior to the connection.

3). There shall be two major forms of Application:

(a) Sanitary Application - application from dwellings, groups of dwellings, or industrial or commercial establishments with only sanitary waste.

(b) Industrial Application - for industrial waste or storm water from an industrial site.

Sanitary applications shall be made by the owner of the property to the municipality, and no approval by PVSC is necessary unless a direct connection into a PVSC sewer is being requested. However, the municipality shall keep a record of the number of connections that are added and removed and shall make an annual report to the PVSC no later than February 1 of each year.

Industrial applications shall be made by the industry that generates the waste; however, the application must also be signed by the owner of the property wherein the industry is located. The industry shall be responsible for the quality and quantity of the waste, but the industry and owner of the property shall be jointly and severally responsible for any user charges or industrial cost recovery charges, and such charges when not paid may be made a lien against the property, and interest may be charged.

4) Any existing facility which proposes to make any change in its facility or its processing, which significantly affects either the quality or the quantity of its discharge into the sewerage system, shall be required to submit an Industrial Sewer Waste Revision Application showing the changes contemplated. Any new tenant or occupant of an existing facility shall be required to submit an Industrial Sewer Waste Revision Application. The application must be accompanied by a written approval of the particular municipality and owner of the property that are responsible for such sewerage.

5) Existing industries that have applied for permits may continue their discharge until their application has been processed by PVSC, unless in violation of Section 18, "Prohibited Wastes" of these regulations, or unless notified by PVSC to cease and desist their discharge.

6) Applications for Industrial Permits issued by PVSC shall be classified in one of these categories and the applicant and municipality shall be notified as expediently as possible:

Category I:

Class I-A permit which shall not be issued to an industry defined as a major industry is issued allowing industry to continue to discharge with no modification or pretreatment of flow.

Class I-B permit is issued allowing industry to continue to discharge with no modification or pretreatment of flow, but industry is considered a major industry and may be required to install monitoring equipment.

Category II:

Class II-A permit allows industry to continue to discharge pretreated wastes in accordance with standards established in the permit.

Class II-B permit allows industry to continue to discharge subject to change of characteristics of its waste by pretreatment or other means in accordance with a schedule as established or to be established in the permit.

Category III:

Permit denied and the discharge of illegal material must be halted or modified by a date established by PVSC.

PVSC reserves the right to change any Class permit to any other class permit, or to cancel permits upon notification by certified mail giving six months notice and giving the reason for the change.

7) Class I-A, I-B, and II-A permits shall be for an indefinite period of time unless cancelled or modified by PVSC.

8) Class II-B shall be for a period of time specified in the notice of classification requiring the industry to modify its discharge so that a Class II-A permit may be issued.

9) If an industry receives a Class II permit and disagrees with the findings of PVSC, it may appeal to the PVSC and request a hearing. The appeal shall be sent "Certified Mail" to the PVSC, 600 Wilson Avenue, Newark, N. J., 07105, within thirty days of notification by PVSC of the granting of the permit or of any modification of an existing permit. The Permittee shall obtain a return receipt showing date the appeal application was received by PVSC. During the time of appeal, the Class II permit requirements are stayed; however, the staying of such requirements shall not release any industry from the obligation of meeting any requirements and any time schedule set by NJDEP or USEPA.

10) Any appeal request shall be heard by the Commissioners. The findings of the Commissioners may be submitted to USEPA and/or NJDEP and upon approval by either or both shall either be incorporated in a new permit or the existing permit shall be reaffirmed.

11) An application submitted by a corporation must be signed by the principal executive officer of that corporation or by an official of the rank of corporate vice president or above who reports directly to such principal executive officer to make such applications on behalf of the corporation. In the case of a partnership, the application must be signed by a general partner or proprietor. If the owner of the property is a corporation, other than the applicant, then the application must also be signed by the property owner as per the above.

Where an application involves a governmental discharge, the person signing on behalf of a municipal,county or intra-State regional governmental unit; if the applicant is a State or multi-State agency, the application must be signed by that agency's principal executive officer or one who reports directly to him and is authorized to make applications on behalf of the governmental unit. Applications submitted by an agency of the United States should be signed by an official who is authorized to evaluate environmental factors on an agency-wide basis.

12) Each user municipality shall designate an official who shall have the responsibility to supervise and enforce municipal connections and sewer requirements. The name of such designated official shall be submitted to the PVSC by the municipality.

13) In addition to the application, each industrial user must complete an industrial survey form which is supplied by PVSC, unless the industrial user has previously completed and submitted such a form to the PVSC.

14) When the industry is classified as a Major Industry, it will install an approved, sealed, automatic monitoring system if requested to make such installation by PVSC.

15) No uncontaminated water (e.g. cooling water, etc.) shall be discharged into the PVSC system except with the prior written consent of the PVSC.

16) When pretreatment standards are adopted by USEPA for any given class of industries, then that industry must immediately conform to the USEPA timetable for adherence to Federal (and therefore PVSC) pretreatment requirements, and any other applicable requirements promulgated by USEPA in accordance with Section 307 of P.L. 92-500. Additionally, such industries shall comply with any more stringent standards necessitated by local conditions as determined from time to time by the PVSC.

17) A PVSC inspector or authorized employee of PVSC, NJDEP, USEPA, or the municipality, must be given immediate access to any industry at any time during normal working hours or at any other time that an industry is discharging into either the PVSC system or into any of the waters under jurisdiction of the PVSC in order that the inspector may check the quality of the discharge, take samples, tests, and measurements.

18) The following wastes may never be discharged into the PVSC system:

(a) Wastes that may create a fire or explosion hazard in the sewer, or wastewater facility, such as gasoline, fuel oil, cleaning solvents, etc.

(b) Wastes that may impair the hydraulic capacity of the sewer system, such as ashes, sand, metal, etc.

(c) Wastes that may create a hazard to people, the sewer system, the treatment process, or the receiving water, such as dangerous levels of toxic materials.

19) The following wastes may not be discharged without special permission, available on a case by case basis after the applicant proves the discharge not to be detrimental by reason of small volume:

(a) Any discharge in excess of 150°F (65°C).

(b) Any discharge containing more than background level of radioactivity.

(c) Any discharge containing more than 25 mg/l of mineral oil or grease.

(d) Any discharge containing floatable oil or grease.

(e) Any discharge of heavy metals, cyanides or any other toxic materials in toxic amounts, which amounts are to be established by PVSC.

(f) Any discharge quantities of flow or concentration which shall constitute a "slug". A "slug" shall mean a discharge of a rate of flow or concentration of any given constituent which exceeds for any period of 15 minutes more than five times the average daily concentration.

(g) Wastes with pH outside the limits of 5.0 to 9.0.

20) Each major industrial user shall construct or otherwise have available a sampling point for sampling wastewater before it enters the municipal sewer system. Other industrial users may be required to construct such sampling point.

21) No discharge into the treatment facilities of PVSC shall be permitted from any source which causes physical damage, interferes with the treatment process, or results in a violation of effluent limitations or other conditions contained in the National Pollution Discharge Elimination System Permit to Discharge issued to PVSC by the USEPA.

22) Wherein required by USEPA, NJDEP, or the PVSC permit, each industrial user shall monitor its flow and maintain records in accordance with 40 CFR 136.3 or subsequent amendments.

23) If the industrial user violates any of the terms of the permit or regulations, he shall be subject to civil and/or criminal penalties and fines in accordance with judicial procedures as provided for in Section 309 of P.L. 92-500.

24) Violation of any of the terms of the permit or regulations, or of any municipal ordinance, may result in the termination of the permit and/or termination of authorization to discharge into the PVSC system.

25) The within rules and regulations shall be effective August 1, 1976.

INDUSTRIAL SEWER CONNECTION APPLICATION

Name _____

Number & Street _____

Municipality _____

Primary Standard Industrial Classification Code _____

Principal Product _____

Principal Raw Material _____

Flow (Indicate the volume of waste discharged to the PVSC system in thousand gallons per day and whether the discharge is intermittent or continuous) _____

_____

_____

_____

_____

The undersigned being the _____ (owners, lessee, tenant, etc.) of the above property does hereby request a permit to _____ (install, use) an industrial sewer connection to discharge into the _____ (size) inch _____ (municipality, PVSC) sewer located at _____.

The size of the connection is _____ inches.

A plan of the property showing accurately all sewers and drains now existing, together with existing or proposed sampling point, is attached hereto as Exhibit "A".

Details of the connection to the public sewer is shown as Exhibit "B".

A schedule of all process waters and industrial wastes produced or expected to be produced at said property, including a description of the character of each waste, daily volume, maximum rates of discharge, duration of discharge, and a representative analysis is attached as Exhibit "C".

KLL005070

The name and telephone number of the person to call for further details is _____

In consideration of the granting of this permit, the undersigned agrees:

(1) To furnish any additional information relating to the installation or use of the industrial sewer for which this permit is being sought, if requested by PVSC.

(2) To accept and abide by all the rules and regulations of the PVSC and of the approving municipality.

(3) To operate and maintain any waste pretreatment facilities, if such facilities are required by the USEPA, the NJDEP, or the PVSC, in an efficient manner at all times, at no expense to PVSC.

(4) To cooperate at all times with the PVSC and their authorized representatives in their inspection, sampling and studying of the industrial wastes, and any facilities for pretreatment.

(5) If the industry is classified as a major industry (USEPA definition) then, if requested by PVSC, install sampling or monitoring equipment as approved by PVSC.

(6) To pay user charges and industrial cost recovery charges when such charges are promulgated by PVSC.

(7) To notify PVSC immediately in the event of an accident, negligence or other occurrence that occasions a discharge to the sewer of any waste not covered by the permit or of a discharge to any of the streams under the jurisdiction of the PVSC.

(8) To comply with all applicable Federal and State statutes and regulations as well as the terms of any National Pollutant Discharge Elimination System Permit to Discharge issued by the United States Environmental Protection Agency to the PVSC.

DATE: _____ SIGNED: _____
(Applicant)

_____
(Title)

If a corporation, attach resolution giving authority to make application.

KLL005071

TAG001206

TIERRA-C-002626

The undersigned hereby certifies that it is the owner of the property and agrees that it will be responsible for all user charges and/or industrial cost recovery for any industrial waste emanating from the above property, and failure to pay such costs when levied shall subject the property to a lien on such property not to be lifted until all such costs plus interest shall be paid.

DATE: _____ SIGNED: _____

TITLE: _____

If a corporation, attach resolution giving authority to sign application.

The _____ hereby approves the above application and certifies to PVSC that it will be responsible for payment for the wastewater discharge from the above plant into the PVSC system in accordance with the rules and regulations of the PVSC.
(municipality)

DATE: _____ SIGNED: _____
(Authorized Municipal Official)

TITLE: _____

APPROVED AT PVSC BOARD MEETING OF _____

SIGNED: _____

Clerk of the Passaic Valley Sewerage Commissioners

KLL005072

Return to:
PASSAIC VALLEY SEWERAGE COMMISSIONERS
600 Wilson Avenue
Newark, N.J. 07105
(201) 344-1800

Date: .....

Plant Ref. No. .....

WASTE EFFLUENT SURVEY

(For Industries Served by the Passaic Valley Sewerage Commissioners)

Plant Name: .....

Address: ..... Zip.....

Person and Title to whom any further inquiries should be directed: .....

.....

Phone No.: .....

Number of Employees: .....

Number of Working Days Per Week: .....

Number of Shifts Per Day: .....

Area of Property: ..... Acres, or ..... Sq. Ft.

Type of Industry and 4 digit U. S. Standard Industrial Classification No.: .....

.....

Finished Product(s): .....

Average Production: .....

Raw Materials Used: .....

Brief Description of Operations: .....

.....

.....

.....

.....

KLL005073

TAG001208

TIERRA-C-002628

Water received in *Gallons* (Note: multiply cu. ft. x 7.48)

Purchased water in 19___ from: .....

1st Quarter .....

2nd Quarter .....

3rd Quarter .....

4th Quarter .....

Total Purchased 19___: .....

Well Water

1st Quarter .....

2nd Quarter .....

3rd Quarter .....

4th Quarter .....

Total well water received in 19___: .....

River Water

1st Quarter .....

2nd Quarter .....

3rd Quarter .....

4th Quarter .....

Total river water taken in 19___: .....

TOTAL OF ALL WATER RECEIVED IN 19___: .....

Water Use in 19___:

Water to Product (include evaporated and lost water): .....

Water to Sanitary Sewer: .....

Water to Storm Sewer, River or Ditch: .....

TOTAL WATER USE IN 19___: .....

Name of River, Stream, or Tributary, and location of storm sewer or ditch outlet to river, stream, or tributary: .....

KLLC05074

TAG001209

ANSWER THE FOLLOWING QUESTIONS ONLY IF THE PLANT WASTE INCLUDES WASTE ATTRIBUTABLE TO INDUSTRIAL OPERATIONS

(Note: Analyses should be based on a 24-hour composite sample)

Characteristics of Plant Waste discharged to sanitary or combined sewer, after treatment if any. Indicate units of measure where applicable (e.g. Mg/l).

a) pH: ..... b) Turbidity: .....

c) Temperature: ..... d) Radioactive? Yes ..... No .....

e) Solids Concentration:

1) Total Solids ..... Volatile ..... Mineral .....

2) Suspended Solids ..... Volatile ..... Mineral .....

f) Oil and Grease Concentration:

1) Floatable Oils .....

2) Emulsified Oils .....

g) Chlorides .....

h) Chemical Oxygen Demand (C.O.D.): .....

i) 5-day Bio-chemical Oxygen Demand (B.O.D.): .....

j) Total organic carbon (T.O.C.): .....

k) Metallic Ions—Name and concentration (Important—list each metal in waste, e.g., chromium hex. and triv. Antimony, Lead, Mercury, Copper, Vanadium, Nickel; give concentration and total daily discharge of each metal.)

.....

.....

l) Toxic Material—Name and concentration e.g., cyanide salts, etc.): .....

.....

m) Solvents—Name and concentration: .....

.....

n) Resins—Name and concentration (Lacquers, Varnishes, Synthetics): .....

.....

o) Date and time span of sample .....

Explain hours, method of discharge of waste to Sanitary Sewer and peak rate of flow, e.g., (continuing for 8 hours per day, 5 days per week at 100 gal./day rate) (batch twice a day for 20 minutes at 100 gal./min.) (Continuous 24 hours steady or with peaks at 2 P.M., peak rate 3 M.G.D.) etc.

.....

.....

.....

KLLC05075

TAG001210

TIERRA-C-002630

Characteristics of Plant Discharge to Storm Sewer, River, or Ditch, after treatment if any. Indicate units of measure where applicable (e.g., Mg/l).

a) pH: ..... b) Turbidity: .....

c) Temperature: ..... d) Radioactive? Yes ..... No .....

e) Solids Concentration:

1) Total Solids ..... Volatile ..... Mineral .....

2) Suspended Solids ..... Volatile ..... Mineral .....

f) Oil and Grease Concentration:

1) Floatable Oils .....

2) Emulsified Oils .....

g) Chlorides .....

h) Chemical Oxygen Demand (C.O.D.): .....

i) 5-day Bio-chemical Oxygen Demand (B.O.D.): .....

j) Total Organic Carbon (T.O.C.): .....

k) Metallic Ions—Name and concentration (Important—list each metal in waste, e.g., chromium hex. and triv. Antimony, Lead, Mercury, Copper, Vanadium, Nickel; give concentration and total daily discharge of each metal.):

.....

.....

l) Toxic Material—Name and concentration (e.g., cyanide salts, etc.): .....

.....

m) Solvents—Name and concentration: .....

.....

n) Resins—Name and concentration (Lacquers, Varnishes, Synthetics): .....

.....

o) Date and time span of sample: .....

Do you pretreat any waste before discharge? .....

If so, describe process and disposal of residue removed: .....

.....

.....

.....

Certification of Laboratory doing sampling and making analyses shall be given. Procedures shall be those shown in the 13th edition of Standard Methods for the Examination of Water and Wastewater, where applicable. If no procedure is applicable, the laboratory is to describe method and procedure used in analyses.

.....

Signature and title of person preparing report

KLL005076

TAG001211

TIERRA-C-002631

FOCUS - 1 of 7 DOCUMENTS

THE HARTZ MOUNTAIN CORPORATION, a New Jersey Corporation, and STERNCO DOMINION REAL ESTATE CORPORATION, a New Jersey Corporation, Plaintiffs, v. THE GENERAL MOTORS CORPORATION, a Delaware Corporation, Defendant.

Civ. No. 94-4814 (WHW)

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW JERSEY

1998 U.S. Dist. LEXIS 23664

August 26, 1998, Decided
August 26, 1998, Filed

NOTICE: NOT FOR PUBLICATION

COUNSEL: [*1] Dennis M. Toft, Wolff & Samson, Roseland, NJ, Attorneys for Plaintiffs.

Curtis L. Michael, Horowitz, Rubino & Patton, Secaucus, NJ, Attorneys for Plaintiffs.

John F. Lynch, Carpenter, Bennett & Morrissey, Newark, NJ, Attorneys for Defendant.

JUDGES: William H. Walls, United States District Judge.

OPINION BY: William H. Walls

OPINION

Walls, District Judge

Plaintiffs, **Hartz Mountain** Corporation and Sternco Dominion Real Estate Corporation (collectively "Hartz"), have filed this action against **General Motors** Corporation ("GM") for recovery of cleanup costs they have and will incur in response to the contamination of property located at 700 Frank E. Rodgers Boulevard, Harrison, New Jersey (the "Site"). Plaintiffs assert numerous causes of action including claims for contribution under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601 *et seq.* (Count 1) and the New Jersey Spill Compensation and Control Act ("Spill Act"), N.J.S.A. § 58:10-23.11 *et seq.* (Count 2). Plaintiffs move for partial summary judgment declaring GM liable under CERCLA and the Spill Act. They also move to strike the defendant's Sixth Affirmative Defense that Hartz assumed the risk of environmental [*2] liability as a result of the "as is" provision in the sales agreement between the parties. Under Fed. R. Civ. P. 78, the Court decides this motion without oral argument. For the following reasons, the Court grants Hartz's motion for partial summary judgment and strikes the Sixth Affirmative Defense.

Factual Background

The Site has been used for industrial purposes since the 1890s. The Hyatt Roller Bearings Company ("Hyatt") began operations at the Site in 1897 and continued producing roller bearings there until the late 1960s. In 1918, Hyatt became a division of GM. The manufacturing processes carried out at the Site included machining, heat-treating, bearing assembly and fabrication, and recovery of machining fluid and scrap. These operations generated various waste materials such as hydraulic, lubricating, and soluble oils, scrap metal shavings ("chips") from the machining processes, off specification products, and sludge from the grinding solutions.

Hyatt phased out its manufacturing operations between 1966 and 1968. In a contract executed on August 26, 1970, Sternco Industries, Inc. [1] agreed to purchase the plant from GM for $ 1,460,000. Before the sale closed, Sternco inspected the [*3] premises and developed concern about the Site's condition. Repairs were necessary and GM's remaining equipment needed to be removed. At a meeting held on December 1, 1970, the parties negotiated a $ 75,000 reduction in the purchase price. In consideration, Sternco waived "all claims which it might have had concerning the condition of the property, the items left on the property, the condition of the utilities, ect. and agree[d] to take the entire property in an 'as is condition[.]'" Curtis L. Michael Certif., Exh. 24. The sale closed on December 11, 1970. The following year Sternco Dominion Real Corporation leased the plant to Sternco Industries which later merged into the entity now known as The Hartz Corporation.

1 The contract purchaser was designated as Sternco Industries, Inc. However, at the closing, the contract was assigned to and title was taken in the name of Sternco Dominion Real Estate Corporation, a plaintiff in this action.

Hartz commenced its manufacturing and distribution operations at the Site shortly after the sale, by engaging in the following processes: packaging and light manufacturing for its pet product businesses; assembly, fabrication, and repair of its "Carpet [*4] Magic" brand carpet cleaning machines; research and development; warehousing and shipping.

In 1993, Hartz announced that it intended to discontinue its operations at the Site. This triggered the application of the New Jersey Cleanup Responsibility Act, which was subsequently amended by the Industrial Site Recovery Act ("ISRA"). Under the statute, Hartz was required to conduct an environmental investigation of the property before any sale. Hartz retained Metcalf & Eddy, Inc., an engineering/consulting firm, to assist in its ISRA compliance efforts.

Metcalf & Eddy identified various areas of concern ("AOCs"), including, *inter alia,* floor sumps, subsurface tunnels, Hyatt's former chip pit, Hyatt's former chip reclamation room, catch basins, and the combined sewer system. Testing and sampling results revealed that many of the AOCs were substantially contaminated with polychlorinated biphenyls ("PCBs"), volatile organic compounds (especially chlorinated solvents), petroleum hydrocarbons, and metals (particularly lead, arsenic, and cadmium). *See* W. Leigh Short, Ph.D. Certif., Exh. 2 at 14. In addition, ATC Environmental Inc. ("ATC"), on behalf of a prospective purchaser, investigated the contamination [*5] in the interior of the facility. Of the nineteen "wipe" samples taken of the walls, ledges, and floors of the buildings, ATC identified thirteen with a PCB content in excess of regulatory standards. *See* Michael Certif., Exh. 31. Hartz initiated a multi-phased remedial investigation and environmental cleanup. Through June 1996, Hartz had removed eighty tons of PCB-contaminated sediments, debris, and oil/grease from the storm water catch basins, the combined sewers and the equipment tunnels. In addition, it excavated 2100 tons of soil contaminated with petroleum hydrocarbons, volatile organic compounds, PCBs, and metals. *See* Keith W. Ryan Certif. P 26. By the end of May 1997, Hartz had expended approximately $ 1,675,000 for the remediation measures necessary to comply with ISRA requirements. *Id.* P 34.

Legal Standard for Summary Judgment

Summary judgment is appropriate where the moving party establishes that "there is no genuine issue of material fact and that [it] is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). The moving party must show that if the evidentiary material of record were reduced to admissible evidence in court, it would be insufficient to permit the [*6] non-moving party to carry its burden of proof. *See Celotex v. Catrett,* 477 U.S. 317, 318, 106 S. Ct. 2548, 91 L. Ed. 2d 265 (1986).

Once the moving party has carried its burden under Rule 56, "its opponent must do more than simply show that there is some metaphysical doubt as to the material facts in question." *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.,* 475 U.S. 574, 106 S. Ct. 1348, 89 L. Ed. 2d 538 (1986). The opposing party must set forth specific facts showing a genuine issue for trial and may not rest upon the mere allegations or denials of its pleadings. *See Sound Ship Building Co. v. Bethlehem Steel Co.,* 533 F.2d 96, 99 (3d Cir. 1976), *cert. denied,* 429 U.S. 860, 97 S. Ct. 161, 50 L. Ed. 2d 137 (1976).

At the summary judgment stage the court's function is not to weigh the evidence and determine the truth of the matter, but rather to determine whether there is a genuine issue for trial. *See Anderson v. Liberty Lobby, Inc.,* 477 U.S. 242, 249, 106 S. Ct. 2505, 91 L. Ed. 2d 202 (1986). In doing so, the court must construe the facts

and inferences in the light most favorable to the non-moving party.

Analysis

Hartz seeks partial summary judgment finding GM liable under CERCLA and the Spill Act. Count One of its Complaint asserts a cost recovery action under section 107(a) of CERCLA as well as a contribution claim [*7] under section 113(f). The Court initially notes that as the current owner of the Site, Hartz is a potentially responsible person that only may maintain a section 113(f) contribution action. *See New Castle County v. Halliburton Nus Corp.,* 111 F.3d 1116 (3d Cir. 1997). Section 113(f)(1) of CERCLA provides:

> Any person may seek contribution from any other person who is liable or potentially liable under section 9607(a) of this title . . . . In resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court determines appropriate.

42 U.S.C. § 9613(f)(1). Hartz may not bring a cost recovery action under section 107(a) because this remedy is only available to innocent parties that have incurred cleanup costs. *See Halliburton Nus,* 111 F.3d at 1120. Consequently, Hartz cannot hold GM jointly and severally liable. It may instead rely solely on section 113(f) which may only result in GM's "several" liability for its portion of the response costs, calculated according "to such equitable factors as the court determines are appropriate."

Similarly, although Count Two raises Spill Act claims for cost recovery under section 58:10-23.11g(c) [*8] and for contribution under section 58:10-23.11f(a), Hartz's exclusive remedy is contribution, not joint and several liability. This is consistent with the strong parallels between CERCLA and the Spill Act and precedent in this district. *See SC Holdings, Inc. v. A.A.A. Realty Co.,* 935 F. Supp. 1354, 1365-66 (D.N.J. 1996). It follows that Counts One and Two are interpreted as claims for only contribution under CERCLA and the Spill Act; the cost recovery causes of action are stricken.

I. *CERCLA Liability*

CERCLA was enacted "[t]o provide for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and the cleanup of inactive hazardous waste disposal sites." Pub.L. No. 96-510, 94 Stat. 2767 (1980). The principal purpose of the statute is "to force polluters to pay for costs associated with remedying their pollution." *United States v. Alcan Aluminum Corp., BASF,* 964 F.2d 252, 258 (3d Cir. 1992). "CERCLA is a remedial statute which should be construed liberally to effectuate its goals." *Id.*

A plaintiff seeking contribution must prove the same elements as required in a section 107(a) cost recovery action: (1) that hazardous substances were [*9] disposed of at a "facility" as defined in section 101(9); (2) that there has been a "release" or "threatened release" of hazardous substances from the facility into the environment; (3) that plaintiff has incurred "response costs" because of the release or threatened release; and (4) that the defendant falls within one of four categories of "responsible parties." [2] *United States v. CDMG Realty Co.,* 96 F.3d 706, 712 (3d Cir. 1996). If plaintiffs prove that there is no genuine issue of fact as to the existence of each of these elements, they are entitled to summary judgment on GM liability. *See T & E Indus., Inc. v. Safety Light Corp.,* 680 F. Supp. 696, 708 (D.N.J. 1988).

> 2 GM contends that plaintiffs must also establish that Hartz's response was necessary and consistent with the national contingency plan ("NCP"). GM devotes much of its brief to challenging these aspects of plaintiffs' case. It is true that to recover any actual costs, plaintiffs must establish that the costs incurred were both necessary and in compliance with the NCP. *See Amland Properties Corp. v. Aluminum Co. of America,* 711 F. Supp. 784, 790 (D.N.J. 1989). However, an initial finding of liability at this stage does [*10] not require such a showing. *See Southland Corp. v. Ashland Oil, Inc.,* 696 F. Supp. 994, 999 (D.N.J. 1988) (partial summary judgment may be granted on issue of liability against former owner of contaminated property without proof that response costs were both necessary and consistent with the NCP). The Court will reserve decision on whether each specific remedial expenditure was necessary and consistent with the criteria set forth in the NCP until it decides the apportionment of the cleanup costs at the damages trial. *See Cadillac Fairview / California, Inc. v. Dow Chemical Co.,* 840 F.2d 691, 695 (9th Cir. 1988)

> (failure to comply with the NCP is relevant to assessment of damages, not liability). This is proper when further response costs will be incurred in the future and the factual record is not yet complete with regard to the consistency and necessity of all expenditures. *See County Line Inv. Co. v. Tinney,* 933 F.2d 1508, 1513 (10th Cir. 1991); *T & E Indus., Inc. v. Safety Light Corp.,* 680 F. Supp. 696, 709 (D.N.J. 1988).

A "responsible person" under CERCLA includes "any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous [*11] substances were disposed of." 42 U.S.C. § 9607(a)(2). GM argues that it has shown a genuine issue of fact as to whether any hazardous substance was disposed of at the Site during its ownership. The Court disagrees. It is undisputed that GM owned and operated the facility located at the Site for over fifty years. Throughout this period, it engaged in intensive industrial production. Heat treating and quenching operations were a common facet of the bearing manufacturing process. Such heat intensive operations required the use of hydraulic fluids because of their fire retardant properties. GM has admitted that between 1958 and 1963, Hyatt purchased 249,250 pounds of Pydraul F-9 and 26,610 pounds of Pydraul A-200 from Monsanto Industrial Chemicals Company ("Monsanto"). *See* Michael Certif., Exh. 3, Admission No. 53. Pydraul was a commonly used hydraulic fluid at industrial plants during this time. *See, e.g., Amland Properties Corp. v. Aluminum Co. of America,* 711 F. Supp. 784 (D.N.J. 1989); *Stroh Die Casting Co., Inc. v. Monsanto Co.,* 177 Wis. 2d 91, 502 N.W.2d 132 (Wisc. App. 1993). Sales records also confirm that Hyatt's Harrison plant purchased Pydraul during these years. *See id.,* Exh. 16. Pydraul F-9 [*12] and Pydraul A-200 both contain heavy concentrations of PCBs, which CERCLA defines as a "hazardous substance." *See* 42 U.S.C. § 9601(14)(A); 33 U.S.C. 1321(b)(2)(A); 40 C.F.R. § 116.4 (1997). Pydraul F-9 consists of approximately 48% Aroclor 1248 while Pydraul A-200 is comprised of 66% Aroclor 1248 and 33% Aroclor 1242. *See* Michael Certif., Exh. 16.

In its responses to Requests for Admissions, GM concedes that on occasion Hyatt spilled hydraulic oils during its bearing manufacturing processes. *See* Michael Certif., Exh. 3, No. 35. In addition, former Hyatt employees have described spills and leaks from machines during the grinding and heat treating operations. *See* Michael Certif., Exh. 13 at 14, 28; Michael Certif., Exh. 11 at 70; Savage Certif., Exh. 2 at 21. The spilling or leaking of a hazardous substance inside an industrial plant constitutes a "disposal" under CERCLA. [3] *See Yellow Freight System, Inc. v. ACF Indus., Inc.,* 909 F. Supp. 1290, 1297 (E.D. Mo. 1995) ("Placement of hazardous wastes inside an enclosed manufacturing facility may constitute disposal of such waste into or on any land so as to satisfy the CERCLA definition."); *United States v. Fleet Factors Corp.,* 821 F. Supp. 707, 722-23 (S.D. Ga. 1993) [*13] (spilling of hazardous chemicals from a drum onto an industrial plant floor constitutes a disposal); *Amland Properties,* 711 F. Supp. at 792 ("the spilling of PCBs within the plant . . . amount[s] to a CERCLA disposal"); *Emhart Indus., Inc. v. Duracell Int'l Inc.,* 665 F. Supp. 549 (M.D. Tenn. 1987) ("the spilling of PCBs during their use by Duracell in the manufacturing process . . . constitute[s] disposal under CERCLA"). If PCBs were spilled in the 1950s and 1960s and absorbed into the soil, they are unlikely to have biologically degraded and should still be detectable today. *See* Short Certif., Exh. 2 at 5.

3 CERCLA adopts the definition of "disposal" provided in the Solid Waste Disposal Act:

> the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

42 U.S.C. 6903(3).

Samples collected by Metcalf & Eddy and ATC revealed substantial levels of PCB contamination in the various AOCs and the interior of the buildings. Significant concentrations [*14] of Aroclor 1248, Aroclor 1254, and Aroclor 1260 were identified in excess of applicable regulatory limits. *See* Savage Certif., Exh. 20. The test results show that Aroclor 1248, the PCB compound that constitutes close to one-half of Pydraul F-9 and approximately two-thirds of Pydraul A-200, was by far the most prevalent PCB-containing compound found at the Site. *See id.* Plaintiffs' expert, W. Leigh

Short, Ph.D., has concluded in his report ("Short Report") that the PCBs, as well as the other hazardous substances at the Site, are attributable to previous Hyatt operations including grinding, cutting, quenching, and heat treating processes, and not to the practices and procedures of Hartz. *See* Short Certif., Exhs. A and B.

GM presents several arguments in an attempt to demonstrate that there is a genuine issue of material fact as to whether Hyatt used and disposed of PCB laden Pydraul at the Harrison facility. Defendant argues that the Monsanto sales records demonstrate only that the Harrison plant purchased Pydraul from 1958 to 1963, not that it actually utilized the hydraulic fluid during the course of its operations. However, GM has failed to produce any evidence from which a reasonable [*15] fact finder could infer that Hyatt purchased over 250,000 pounds of Pydraul at its Harrison plant without actually using it there.

GM postulates that the Pydraul could have been purchased through the Harrison plant but used at a different Hyatt plant in Clark, New Jersey. The only evidence presented to support this speculation is deposition testimony from Dana Edelman, a student participant in a Hyatt cooperative program who worked primarily at the Clark facility in the mid-1950s. *See* Michael Supp. Certif., Exh. A at 8-9. Edelman testified that the Clark and Harrison facilities "each had their separate purchasing departments, but I think for a while the Clark department still answered to a head purchasing agent here in Harrison." Savage Certif., Exh. 1 at 39-40. Edelman's quasi-conjectural testimony as to the possibility that the purchase of materials may have been coordinated through the Harrison plant is inconsequential and does not suggest that the Pydraul was not actually used at the Site. Mere speculation on the part of a previous employee does not defeat a motion for summary judgment. *See Sterling Nat'l Mortgage Co., Inc. v. Mortgage Corner, Inc.,* 97 F.3d 39, 45 (3d Cir. 1996). [*16] GM has failed to come forth with any additional evidence to establish the existence of such a head purchasing agent, the period during which such a position existed, or the frequency that supplies were purchased by Harrison for exclusive use at Clark. Absent such proof, it not reasonable to infer that Hyatt would have used the Pydraul only at its Clark facility when substantially similar heat treating and quenching operations occurred at both plants. *See id.* at 42.

Defendant also relies on testimony from former Hyatt employees who do not recall whether Pydraul was used at the Harrison plant. *See* Savage Certif., Exh. 1 at 41; Exh. 3 at 12; Exh. 5 at 38-39. However, most of these individuals only worked at Harrison briefly during the relevant time period, 1958-63, and none denies that Hyatt used Pydraul at the facility. [4] That former employees could not recall the type of hydraulic fluid used over thirty years ago does not satisfy GM's burden to demonstrate a triable issue as to whether Pydraul was utilized. GM has produced no testimony, affidavits, or other evidence to refute the use of Pydraul at the Site.

> 4 Indeed, one former employee, Norbert Douglas, also denied that PCB containing [*17] materials were used at Clark although GM concedes that Pydraul was used there. *See* Savage Certif., Exh. 5 at 39. This raises doubts as to the accuracy of his recollection.

GM also argues that the lack of any significant levels of Aroclor 1242 indicates that the source of the PCBs was not necessarily Pydraul. However, the chemical compounds found in the samples are perfectly consistent with the composition and relative amounts of the two types of Pydraul purchased. From 1958-63, Hyatt bought ten times more Pydraul F-9, which contains no Aroclor 1242, than Pydraul A-200, which is comprised of only one-third Aroclor 1242. One would not then expect significant amounts of Aroclor 1242 to be detectable. That other PCB compounds such as Aroclor 1254 and 1260 are also present at the Site merely suggests that there were other sources of PCB contaminants. It in no way refutes Hartz's evidence that the PCB contamination is partly attributable to Hyatt's operations and its heavy use of Pydraul.

GM has also presented its own expert report, prepared by Jerald Jacobi and Duane Lenhardt, Ph.D. ("Jacobi Report"), which challenges the findings of Dr. Short, plaintiff's expert. The Jacobi Report accuses [*18] the Short Report of being "biased and incomplete" because it does not consider possible alternative sources of the contamination such as Hartz's operations, flood-transported contamination from offsite industrial plants and railroad tracks, and discharges from third-party operations. *See* Jacobi Certif., Exh. B at E-l, 3-14. However, the Jacobi Report carefully avoids denying that Hyatt operations contributed to the contamination. The report does not dispute Short's conclusion that the

identified contaminants are common waste products associated with Hyatt's operations. That Hartz processes and equipment may have also led to the disposal of PCBs and other hazardous substances is an issue that may be addressed when the court allocates response costs among the parties. This alone, though, does not preclude a finding of liability at this stage because the "disposal" of even one drop of PCB-containing fluid is sufficient to make GM liable in a contribution action. *See Alcan Aluminum,* 964 F.2d at 259-60 (there is no quantitative threshold for the level of hazardous substances that must disposed to trigger CERCLA liability).

Consequently, based on the substantial evidence submitted, the Court [*19] concludes that any reasonable fact finder would find GM to be a "responsible party" under CERCLA. Plaintiffs have produced unrefuted expert testimony that the hazardous substances identified at the Site, including the PCBs and chlorinated volatile organic compounds, are expected byproducts from Hyatt's previous operations in Harrison. The facts overwhelming demonstrate that Hyatt used PCB laden Pydraul fluid in conjunction with its heat intensive processes, that these fluids regularly spilled and leaked, and that they contaminated the property, seeping into the soil and the sewer system. *See* Ryan Certif. P 20(k). The Court notes that the locations of the more concentrated levels of hazardous chemicals correspond to areas used exclusively by Hyatt such as the former chip pit (AOC-8) [5] , the subsurface tunnels (AOC-11), and the subsurface process room [6] . *See* Short Certif., Exh. B at 20; Gilbert D. Kaye Supp. Certif. P 4. The highest quantities of PCBs were located in the interior of former Hyatt Building 12, where Hyatt conducted much of its heat treating operations. *See* Short Certif. Exh. A P 4. This provides further support for the inescapable conclusion that some portion of the disposal [*20] occurred during GM's ownership.

5 Hyatt used the chip pit to store scrap metals produced as byproducts during the bearing manufacturing process. *See* Jacobi Certif., Exh. B at 4-10. According to Edelman, there was a sump in the chip pit that was used to discharge accumulated waste liquid. *See* Michael Certif., Exh. 8 at 85-86. A drawing of the Hyatt facility depicts a manufactured hole in the sump through which wastes could have been discharged to the underlying soil and groundwater. *See* Kaye Certif., Exh. F. After excavating the sump, Metcalf & Eddy discovered a "slug" of volatile organic compounds, *see* Keith W. Ryan Certif. P 21, which Dr. Short concluded was produced by Hyatt's former operations. *See* Short Certif., Exh. 2 at 10-11. Defendant's argument that the hole may not have necessarily been used to discharge waste materials but instead could have provided access for an underground power line is mere speculation not buttressed by any affirmative evidence in the record.

6 The subsurface process room corresponds to the chip reclamation room identified in GM's 1955 site plan. *See* Keith Ryan Certif. P 9(c).

Defendant does not dispute that the other elements of proof under CERCLA have been [*21] established. The Site is clearly within the definition of a "facility" as provided in section 101(9) of CERCLA because it is a "site or area where a hazardous substance has been deposited, stored, or disposed of, or placed, or otherwise come to be located"; there has certainly been a "release" of PCBs and other hazardous substances into the environment as evidenced by the samples and test results; and Hartz has expended at least $ 1,675,000 in response to this release. Hartz has established a prima facie claim for contribution under CERCLA.

II. *Spill Act Liability*

The Spill Act is New Jersey's analogue to CERCLA and incorporates CERCLA's definition of "hazardous substances" with the exclusion of sewage and sewage sludge. *See* N.J.S.A. § 58:10-23.11b.k; *New Jersey Dep't of Envtl. Protection & Energy v. Gloucester Envtl. Mgmt. Servs.,* 821 F. Supp. 999, 1009 (D.N.J. 1993). The law developed under the Spill Act is for the most part identical to CERCLA law. *See Fishbein Family Partnership v. PPG Indus., Inc.,* 871 F. Supp. 764, 772 (D.N.J. 1994). Like CERCLA, the Spill Act is intended to assess liability for damages sustained as a result of the discharge of hazardous substances into the environment. [*22] *See* N.J.S.A. § 58:10-23.11a. A party may bring a private cause of action for contribution under the Spill Act and need only prove that "a discharge occurred for which the contribution defendant or defendants are liable pursuant to [N.J.S.A. § 58:10-23.11g.]" N.J.S.A. § 58:10-23.11f.a(2). One is liable for cleanup and removal costs without regard to fault if that party "has discharged a hazardous substance, or is in any way responsible for any hazardous substance[.]" N.J.S.A. §

58:10-23.11g.c(1). Ownership of the property at the time of the discharge of hazardous substances is sufficient to render a party "in any way responsible" for the contamination. *See Dept. of Envtl. Protection v. Ventron Corp.,* 94 N.J. 473, 502, 468 A.2d 150 (1983). The Spill Act defines "discharge" as "any intentional or unintentional action or omission resulting in the releasing, spilling, leaking, pumping, emitting, emptying or dumping of hazardous substances into the waters or onto the lands of the State . . . ." N.J.S.A. § 58:10-23.11b.

Because the analysis of the Spill Act contribution claim is the same as that under CERCLA, the Court finds that plaintiffs have established a prima facie case for contribution under the [*23] Spill Act. At trial, the Court will determine whether the response costs incurred by Hartz are consistent with the NCP and will apportion the cleanup and removal costs based on "equitable factors" in accordance with the Spill Act. N.J.S.A. § 58:10-23.11f.a(2).

III. *As Is Contractual Provision*

As an affirmative defense, GM asserts that it has no obligation to reimburse Hartz for the cost of remediating the contamination because the contract of sale included an "as is" provision by which Hartz assumed any potential environmental liabilities. *See* GM's Sixth Affirmative Defense. As a preliminary matter, the Court notes that under section 107(e) of CERCLA, although a responsible party may not escape its underlying environmental liability, it may by contract shift the ultimate financial responsibility for cleanup costs. *See Hatco Corp. v. W.R. Grace & Co.-Conn.,* 59 F.3d 400, 404 (3d Cir. 1995); *Beazer East, Inc. v. Mead Corp.,* 34 F.3d 206, 211 (3d Cir. 1994), *cert. denied,* 514 U.S. 1065, 115 S. Ct. 1696, 131 L. Ed. 2d 559 (1995). However, the sales contract here did not include an indemnity or hold harmless provision. Instead, it contained the following "as is" provision:

> In consideration for reduction in the purchase price, [*24] Sternco waives all claims which it might have concerning the condition of the property, the items left on the property, the condition of the utilities, etc. and agrees to take the entire property in "as is condition" and the provisions of the contract are hereby amended to so provide.

Michael Certif., Exh. 24.

This Court, as well as other courts in this district, have consistently found that standard "as is" provisions do not transfer liability for cleanup costs from the seller of the contaminated property to the buyer. *See New West Urban Renewal Co. v. Westinghouse Electric Corp.,* 909 F. Supp. 219 (D.N.J. 1995); *Allied Corp. v. Frola,* 730 F. Supp. 626 (D.N.J. 1990); *Southland Corp. v. Ashland Oil, Inc.,* 696 F. Supp. 994 (D.N.J. 1988). Absent an express statement that the buyer assumes potential environmental liabilities, an "as is" provision is no defense to a contribution claim under CERCLA or the Spill Act. "[I]n order to preclude recovery of response costs, there must be a clear provision which allocates these risks to one of the parties . . . In order for the Court to interpret a contract as transferring CERCLA liability, the agreement must at least mention that one person is assuming [*25] environmental-type liabilities." *New West Urban Renewal,* 909 F. Supp. at 223-24 (quoting *Mobay Corp. v. Allied-Signal, Inc.,* 761 F. Supp. 345, 358 (D.N.J. 1991)). The "as is" clause at issue here nowhere explicitly states that in exchange for the $ 75,000 reduction in price, Hartz assumed liability for any potential response cost should contamination be discovered at the Site. Nor did Hartz explicitly agree to indemnify GM for any response costs. There is no indication that Hartz intended to assume the liability for cleanup expenditures necessitated by Hyatt's previous operations. "Had the parties intended such a transfer, it would have been easy to so provide. They did not, and the Court can not and will not alter the terms of a clearly written contract." *Id.* at 224. The cases relied upon by defendant involved disclaimers which were worded more broadly than the standard "as is" clause at issue in this case and are consequently inapposite. *See Niecko v. Emro Mktg. Co.,* 973 F.2d 1296 (6th Cir. 1992) (buyer "assume[d] all responsibility for any damages caused by the conditions on the property upon transfer of title"); *FMC Corp. v. Northern Pump Co.,* 668 F. Supp. 1285 (D. Minn. 1987) [*26] (sales agreement released seller from all claims, demands, or causes of action that buyer "has, had, or may have").

Defendant argues that it is unreasonable to expect that the clause would refer specifically to potential CERCLA liabilities because the sale occurred ten years before the statute's enactment. Although the contract obviously could not have mentioned the statute by name, in order to shift the allocation of risk, "some clear transfer

or release of future 'CERCLA-like' liabilities is required." *Southland,* 696 F. Supp. at 1002. The contract is devoid of such a reference. To hold that a responsible party may escape CERCLA liability through the inclusion of a standard "as is" clause in a sales agreement would contravene the statute's purpose "to force polluters to pay for costs associated with remedying their pollution." *Alcan Aluminum,* 964 F.2d at 258.

With regard to the common law claims, "[j]ust as an 'as is' clause does not defeat strict liability under CERCLA, so too does it not alter common law strict liability." *Frola,* 730 F. Supp. at 630. A party may only assume the risk of an abnormally dangerous condition on a property if it does so knowingly and voluntarily. *See T&E Indus. v. Safety Light Corp.,* 123 N.J. 371, 390, 587 A.2d 1249 (1991). [*27] Neither the "as is" provision nor any other portion of the sales agreement between Hartz and GM disclosed the contaminated nature of the Site. "[A] party ignorant of the presence of an abnormally dangerous condition [cannot] be held to have contractually assumed the risk posed by that condition merely by signing an 'as is' purchase contract." *Id.* (quoting *Amland Properties,* 711 F. Supp. at 803 n.20); *see also Prospect Indus. Group v. Singer Co.,* 238 N.J. Super. 394. 403, 569 A.2d 908 (Law Div. 1989) (where purchaser did not know of invisible PCB contamination when it entered into sales contract and took title, "as is" provision provided no defense to strict liability claim against vendor).

GM argues that Hartz did knowingly assume the risk because it was aware that the Site had been used for heavy industrial manufacturing and pre-closing inspections had revealed the poor condition of the facility. However, defendant has produced no evidence that plaintiff purchased the property with knowledge that it was contaminated with PCBs or any other hazardous substances. Familiarity with the depleted condition of the premises and equipment does not mean that Hartz was aware of environmental contamination. [*28] Consequently, GM may not raise assumption of the risk as a defense to liability under the common law. *See Amland,* 711 F. Supp. at 803.

The Court grants plaintiff's motion for partial summary judgment striking defendant's Sixth Affirmative Defense

Conclusion

For the foregoing reasons, the Court grants plaintiffs' motion for partial summary judgment finding GM liable for contribution under CERCLA (Count I) and the Spill Act (Count 2) and striking defendant's Sixth Affirmative Defense.

SO ORDERED:

/s/ William H. Walls

William H. Walls, U.S.D.J.

26 Aug 1998

Dated

ORDER

Walls, District Judge

This matter arises on the motion of Plaintiffs **Hartz Mountain** Corporation and Sternco Dominion Real Estate Corporation for partial summary judgment declaring defendant **General Motors** Corporation liable to contribute to cleanup costs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601 *et seq.* (Count 1) and the New Jersey Spill Compensation and Control Act ("Spill Act"), N.J.S.A. § 58:10-23.11 *et seq.* (Count 2). Plaintiffs also move for partial summary judgment striking the Sixth Affirmative Defense. Upon consideration of the submissions of the parties [*29] and for the reasons stated in the accompanying opinion, the Court rules as follows:

The Court **grants** plaintiffs' motion for partial summary judgment and finds that defendant is partly responsible for the disposal and discharge of hazardous substances at the facility and is consequently liable for contribution under CERCLA (Count 1) and the Spill Act (Count 2). The proper allocation of the response costs among the parties will be decided after a damages trial.

The Court **grants** plaintiffs' motion for partial summary judgment as to the Sixth Affirmative Defense and strikes this defense, finding that plaintiffs did not assume the risk of environmental liability as a result of the "as is" provision in the sales agreement.

SO ORDERED:

/s/ William H. Walls

William H. Walls, U.S.D.J.

Dated

26 August 1998