DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name:	Honeywell International Inc. Tonawanda - Envirotek
Facility Address:	4000 River Road, Tonawanda, NY 14150
Facility EPA ID #:	NYD038641601

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 #8 and enter "IN" (more information needed) status code.

BACKGROUND

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).

Site Background

Site Location and Description

The Envirotek II facility was a chemical waste treatment and disposal facility that operated was during the 1980's by Envirotek Ltd. This facility occupied a 2.5 acre parcel within the 50 acre former Roblin Steel Plant, which is located at 4000 River Road in the Town of Tonawanda, Erie County, New York (Figure 1).

The Roblin Steel property, which is currently owned by Niagara River World Inc., is designated as a Class 2 Inactive Hazardous Waste Site; it is listed in the New York State Department of Environmental Conservation (NYSDEC) Registry as Site No. 915056 (Figure 2). The Envirotek II Site is also part of the Roblin Steel Site; it does not have a separate Registry number even though the parties responsible for investigating and remediating the site are different from the parties responsible for the remainder of the Roblin Steel Site.

The Roblin Steel property occupies an area between River Road to the east, the Niagara River to the west, Tonawanda Coke Corporation property and the Marathon Ashland Petroleum Company facility to the south, and the Lafarge Corporation ready mix concrete plant and vacant land (also owned by Niagara River World) to the north.

The Envirotek II portion of the Roblin Steel Site has been subdivided into three Operable Units (OUs). An operable unit represents a portion of the site that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from site contamination. The operable units associated with the Envirotek II Site are summarized as follows:

OU1: Waste
This operable unit consisted of waste present in the Boiler House and Waste Pit No. 6 (Figure 3). While operating, Envirotek disposed of hazardous substances and wastes in various pits and buildings throughout the Roblin Steel property. Lead contaminated ink waste was disposed of in the Boiler House, while liquid wastes were dumped into Waste Pit No. 6 (Figure 3).

OU2: VOC Impacted Soil
This operable unit consisted of volatile organic compounds (VOC) contaminated soil in the area of the former Envirotek facility (Figure 3). Numerous leaks and spills associated with the handling and storage of hazardous substances and wastes occurred at the facility when it was operating. These releases resulted in the contamination of fill and soil near and under the former Envirotek II facility (Figure 3).

OU3: Groundwater
This operable unit consists of VOC contaminated groundwater in the area of the former Envirotek II facility. The numerous spills and leaks associated with Operable Unit 2 resulted in groundwater contamination in the area of the former Envirotek facility.

Operational and Disposal History

The operational and disposal history of the Envirotek II site is summarized as follows:

1984: The NYSDEC issued a Resource Conservation and Recovery Act (RCRA) Permit to Envirotek Ltd. to operate a commercial hazardous waste treatment and disposal facility at the site.

1985: Envirotek paid a $7,000 fine for permit violations, and also entered into a Consent Order to reduce its inventory of hazardous wastes.

1988: Envirotek submitted a Facility Closure Plan that the NYSDEC determined to be unacceptable.

1989: Envirotek Ltd. filed for bankruptcy, and later abandoned the facility when Niagara River World Inc. took possession of the Roblin Property and evicted them. On the basis of their inability to develop an acceptable facility closure plan, the NYSDEC revoked Envirotek's permit to operate a hazardous waste treatment and disposal facility.

Remedial History

Following Envirotek's abandonment of their facility in 1989, the United States Environmental Protection Agency (USEPA) conducted a preliminary investigation of the entire Roblin Steel Property. At the Envirotek II Site, unsecured drums and other containers, along with contaminated process vessels and tanks, were observed. Adjacent to one of the former waste chemical processing buildings, soil contaminated by liquid discharge from a processing still was encountered. This area was designated the Still Discharge Area (SDA; Figure 3).

The preliminary USEPA investigation also included smoke testing of the Roblin Plant sewer system associated with the Envirotek facility and sampling of sewer sediments. The investigation also encountered hazardous substances in concrete pits of the former plant rod mill building. These pits were designated 1 through 3, 3A, 4 and 5 (Figure 3).

The USEPA also identified a group of Potentially Responsible Parties (PRP's) who were former Envirotek customers. The USEPA subsequently entered into an Administrative Order on Consent with this PRP group to perform a more detailed site investigation and to conduct a removal action of the drums, tanks and process vessels.

The PRP Group investigation included the following:

- Collection of soil and groundwater samples across the Roblin Steel Property;
- Identification of areas in addition to the SDA where contamination may have occurred as a result of Envirotek activities;
- Determination of the direction and rate of shallow groundwater flow in the area of the Envirotek II Site (Figure 4);
- Evaluation of the nature and extent of chemical contamination associated with Envirotek activities; and
- Determination of the necessity for further investigation and/or remediation of the Envirotek II Site.

The removal action tasks, which were performed in 1990 and 1993, included the following:

- Removal of 980 drums, 3,500 gallons of liquid wastes, 725,000 pounds of solid wastes, and 146 laboratory pack containers;
- Removal of waste from process vessels, tanks and concrete pits with off-site disposal of the wastes;
- Decontamination of the process vessels, tanks, concrete pits, buildings and equipment; and
- Removal of approximately 175 tons of soil from the SDA.

Remedial Investigation

The NYSDEC and the Envirotek II Site PRP Group entered into a Consent Order on September 2, 1997. This order was amended on August 20, 1998. The Order, and its amendment, obligated the responsible parties to implement a Remedial Investigation/Feasibility Study (RI/FS) remedial program. The purpose of the RI was to define the nature and extent of contamination resulting from previous activities at the site. The RI was conducted in 2 phases: the first

phase was conducted between August and October 1999, with the second phase conducted between March and June 2001. The results of the RI are summarized by environmental media as follows:

Waste Material

The waste material sampled during the RI was the ink waste found in the Boiler House. This waste is part of Operable Unit 1. One composite sample of this waste was collected and analyzed for the characteristics of hazardous waste using the Toxicity Characteristic Leaching Procedure (TCLP). A summary of the detected compounds is given in Table 1, which reveal that the ink waste is a characteristic hazardous waste for lead.

One waste sample was collected from Waste Pit No. 6, which is also part of Operable Unit 1. The analytical results from this sample are summarized in Table 1. Ten VOCs were detected in this sample at concentrations significantly above the Technical and Administrative Guidance Memorandum (TAGM) 4046 soil cleanup objectives (Table 1).

Surface Soil

Four surface soil samples were collected during the RI - one from the location of the former Envirotek facility and three from the Roblin Steel property. Only three VOCs were detected in these samples (methylene chloride, tetrachloroethene, and trichloroethene), with the concentration of each contaminant well below its respective TAGM 4046 soil cleanup objective (Table 1).

Subsurface Soil/Fill

A total of twenty-four soil borings were completed in the Still Discharge Area during the RI. Forty-nine samples of fill and subsurface soil were collected from these borings. No distinction, however, was made between fill material and soil so these media are discussed together.

The analytical data for subsurface soil and fill (Table 1) indicated that the Still Discharge Area was extensively contaminated with VOCs. Within this area the most frequently detected VOCs above the TAGM 4046 soil cleanup objectives were 1,1-dichloroethane, 1,2-dichloroethene, tetrachloroethene, 1,1,1-trichloroethane, trichloroethene and xylenes. Of these contaminants, tetrachloroethene and trichloroethene exhibited more exceedances of their respective TAGM 4046 soil cleanup objectives than the other VOCs. The lateral extent of this VOC contamination is shown on Figure 5.

Subsurface soil and fill samples were also collected from two test pits (Figure 3) completed along a former sewer line to determine if the sewer was a route of contaminant migration. The analytical results from these samples are also summarized in Table 1. Four VOCs were detected in these samples (1,2-dichloroethene, methylene chloride, tetrachloroethene, and trichloroethene), with the concentrations of each contaminant well below its respective TAGM 4046 soil cleanup objective (Table 1).

Groundwater

Sixty-nine groundwater samples from the shallow water bearing zone were collected during the RI. A summary of the detected compounds is given in Table 1. Of the VOCs detected, 1,1-dichloroethane, 1,2-dichloroethene, vinyl chloride and tetrachloroethene exhibited more exceedances of their respective ambient groundwater quality standards than the other VOCs. Two groundwater samples from the deep portion of the intermediate water bearing zone were also collected during the RI. None of the VOCs of concern were detected in these samples (Table 1).

The lateral extent of total VOC contamination in shallow groundwater in 1999 is shown on Figure 6. This figure indicates that total VOC contamination is greatest at the former Envirotek facility and decreases significantly downgradient of the site. Figure 6 also indicates that total VOC concentrations in wells near the Niagara River are below the ambient groundwater quality standards. These data indicate that contaminants from the Envirotek II site are not adversely impacting the Niagara River.

Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. Three IRMs were completed at the Envirotek II Site, which are described as follows:

OU1: Waste
This IRM was completed during April and May, 2003. The activities completed at this operable unit included:

- The excavation, decontamination and backfilling of Waste Pit No. 6, which formerly contained soil, liquid and debris impacted with elevated concentrations of VOCs. These materials were transported to Modern Landfill in Model City, New York for disposal;
- The removal of lead-contaminated ink waste from the Boiler House. This waste was transported to CWM Chemical Services in Model City, New York for treatment and disposal;
- The consolidation and off-site disposal of investigation derived waste (soil, water and personal protective equipment) that was generated during the Remedial Investigation.

Post-excavation samples were not required because the ink waste was removed to the concrete floor of the Boiler House, and the soil and debris in Waste Pit No. 6 were removed to the concrete floor and walls of the pit.

OU2: VOC Impacted Soil
This IRM was completed during October, 2003. The activities completed at this operable unit included:

- The excavation of VOC impacted soil and fill. Excavated material that was not suitable for backfill was transported to either Modern Landfill for disposal or CWM Chemical Services for treatment and disposal;
- The collection of post excavation samples to determine the final limits of excavation to meet the TAGM 4046 soil cleanup objectives; and
- The backfilling of excavated areas and the restoration of the site.

The results of the post-excavation samples are shown in Figure 7. These results indicate that the TAGM 4046 soil cleanup objectives were achieved for all samples except PES-13. In this sample the concentration of tetrachloroethene (2.6 ppm) slightly exceeded the TAGM 4046 soil cleanup objective of 1.4 ppm.

OU3: Groundwater
Following the completion of the IRM at Operable Unit 2, selected monitoring wells were sampled to assess the affect of the IRM on groundwater contamination. The results from these samples are shown on Figure 8, and reveal that groundwater contamination has been reduced significantly since the completion of the IRM (compare Figure 6 with Figure 8). In addition, monitored natural attenuation parameters (e.g., dissolved oxygen, oxidation-reduction potential, chloride, methane) provide evidence that biochemical degradation is the mechanism responsible for the natural attenuation of the groundwater plume.

Groundwater data also show that total VOC concentrations have decreased significantly over time in individual wells. For example, in wells ENV-4 (northwest of Pit 1 on Figure 6) and GW-7 (south of the Boiler House on Figure 6) the concentrations have decreased over 99% (Figure 9). Other wells also exhibit decreases in total VOC concentrations but not as remarkable as ENV-4 and GW-7.

Record of Decision

In March 2005 a Record of Decision (ROD) was issued for the Envirotek II Site. The selected remedy for each operable unit is described as follows:

- **Operable Unit 1: Waste** - No Further Action. The IRM waste removal action completed at this operable unit has eliminated the threat to human health and the environment by removing the source of contamination associated with this operable unit;

- **Operable Unit 2: VOC Impacted Soil** - No Further Action. The IRM soil removal action completed at this operable unit has eliminated the threat to human health and the environment by removing the source of contamination associated with this area to acceptable concentrations; and

- **Operable Unit 3: Groundwater** - Monitored Natural Attenuation. Groundwater at the site will be monitored to show the continued degradation of groundwater contamination resulting from the IRM soil removal activity completed at Operable Unit 2.

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 and References:

Sixty-nine groundwater samples from the shallow water bearing zone were collected during the RI. A summary of the detected compounds is given in Table 1. Of the VOCs detected, 1,1-dichloroethane, 1,2-dichloroethene, vinyl chloride and tetrachloroethene exhibited more exceedances of their respective ambient groundwater quality standards than the other VOCs. Two groundwater samples from the deep portion of the intermediate water bearing zone were also collected during the RI. None of the VOCs of concern were detected in these samples (Table 1).

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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).

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:

The groundwater analytical results obtained between 1988 and 2004 indicate that natural attenuation of VOCs is occurring at the site. Figure 8 illustrates that the total VOC concentration at the site decreases significantly downgradient of the former Envirotek facility, and also shows that total VOC concentrations have decreased significantly since the completion of the IRM at Operable Unit 2 (compare with Figure 6). In addition, monitored natural attenuation parameters (e.g., dissolved oxygen, oxidation-reduction potential, chloride, methane) provide evidence that biochemical degradation is the mechanism responsible for the natural attenuation of the groundwater plume.

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 lateral extent of total VOC contamination in shallow groundwater prior to the IRM at Operable Unit 2 is shown on Figure 6. This figure indicates that total VOC contamination is greatest at the former Envirotek facility and decreases significantly downgradient of the site. Figure 6 also indicates that total VOC concentrations in wells near the Niagara River are below the ambient groundwater quality standards. Figure 8 shows that the lateral extent of total VOC contamination has decreased significantly since the completion of the IRM at Operable Unit 2. These data indicate that contaminants from the Envirotek II site are not impacting the Niagara River.

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[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.

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 judgement/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:

N/A

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

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

[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.

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:

N/A

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 "area of groundwater contamination."

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

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

Rationale and Reference:

The March 2005 Record of Decision for the Envirotek II Site selected monitored natural attenuation as the remedy for operable unit 3 (groundwater). As part of this remedy a site management plan (SMP) will be developed and implemented. A component of the SMP is the continued monitoring of site groundwater. The monitoring network includes wells ENV-1, ENV-3R, ENV-4, ENV-7, ENV-8, ENV-9 and GW-3 (Figure 6), with all samples analyzed for chlorinated VOCs by USEPA Method 8260. The NYSDEC is currently negotiating a consent order with the Envirotek PRP Group that would obligate the group to implement the selected ROD remedy.

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[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.

8. Check the appropriate RCRAInfo 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).

__X__ 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 **Honeywell International Inc. Tonawanda - Envirotek** facility, **EPA ID # NYD038641601**, located at **4000 River Road, Tonawanda, NY**. 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: Glenn M May Date: 9-22-06
Glenn M. May, Project Manager
Engineering Geologist II
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Supervisor: Date: 9/22/06
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Locations where References may be found:

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New York State Department of Environmental Conservation
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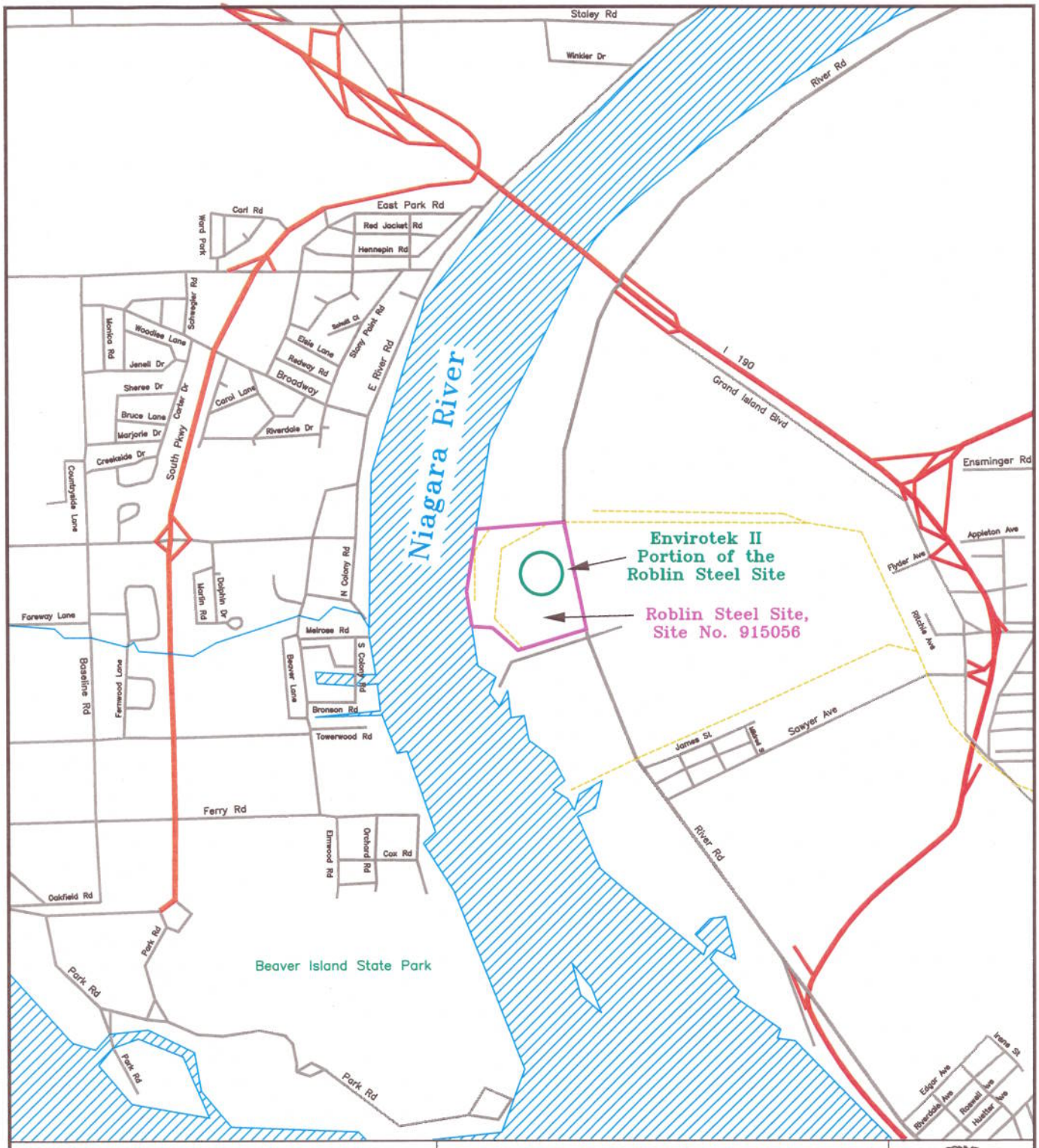
TABLE 1
Nature and Extent of Contamination
September 1988 - October 2004 for Groundwater

GROUNDWATER (SHALLOW)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Operable Unit 3				
Volatile Organic Compounds (VOCs) (Prior to the IRM Soil Removal at OU2)	Benzene	ND - 42.0	1.0	11 of 69
	Chloroethane	ND - 79.0	5.0	4 of 69
	1,1-Dichloroethane	ND - 4,800	5.0	14 of 69
	1,2-Dichloroethane	ND - 750.0	5.0	4 of 69
	1,1-Dichloroethene	ND - 300.0	5.0	4 of 69
	1,2-Dichloroethene	ND - 54,000	5.0	30 of 69
	Ethylbenzene	ND - 2,000	5.0	7 of 69
	Methylene Chloride	ND - 6,100	5.0	8 of 69
	Tetrachloroethene	ND - 40,000	5.0	9 of 69
	Toluene	ND - 8,600	5.0	10 of 69
	1,1,1-Trichloroethane	ND - 21,000	5.0	4 of 69
	Trichloroethene	ND - 29,000	5.0	14 of 69
	Vinyl Chloride	ND - 3,400	2.0	16 of 69
	Xylenes	ND - 6,800	5.0	11 of 69

TABLE 1
Nature and Extent of Contamination (continued)

GROUNDWATER (INTERMEDIATE)	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Operable Unit 3				
Volatile Organic Compounds (VOCs) (Prior to the IRM Soil Removal at OU2)	Benzene	ND	1.0	0 of 2
	Chloroethane	ND	5.0	0 of 2
	1,1-Dichloroethane	ND	5.0	0 of 2
	1,2-Dichloroethane	ND	5.0	0 of 2
	1,1-Dichloroethene	ND	5.0	0 of 2
	1,2-Dichloroethene	ND	5.0	0 of 2
	Ethylbenzene	ND	5.0	0 of 2
	Methylene Chloride	ND	5.0	0 of 2
	Tetrachloroethene	ND	5.0	0 of 2
	Toluene	ND	5.0	0 of 2
	1,1,1-Trichloroethane	ND	5.0	0 of 2
	Trichloroethene	ND	5.0	0 of 2
	Vinyl Chloride	ND	2.0	0 of 2
	Xylenes	ND	5.0	0 of 2

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
[b] SCG = standards, criteria, and guidance values;
[c] TCLP = Toxicity Characteristic Leaching Procedure;
[d] ND = contaminant analyzed but not detected.



Tonawanda West &
Buffalo NW
Quadrangles

Scale Depends on Final Plotted Size

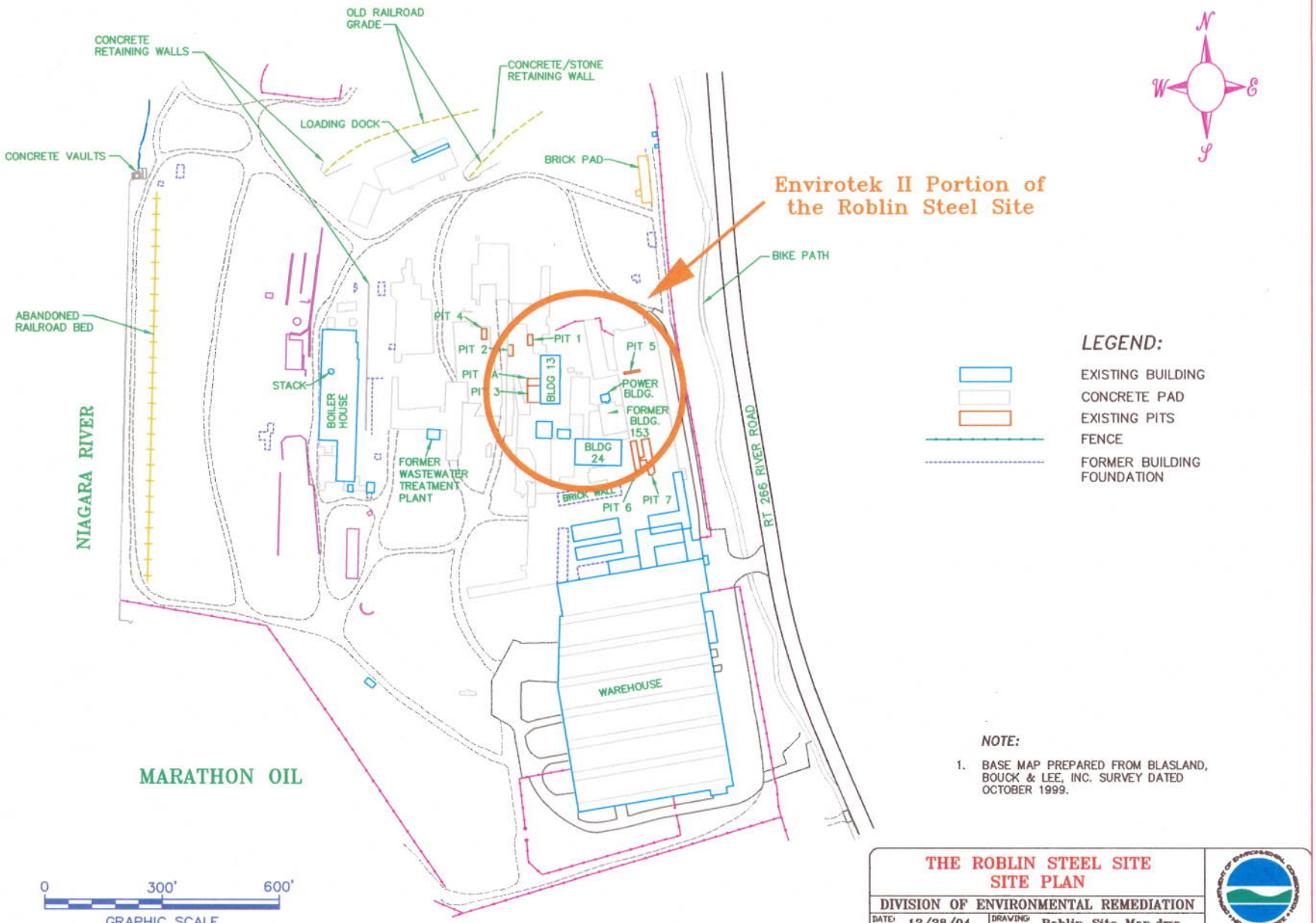
SITE LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 11/18/04 | DRAWING: Location.dwg

SITE: Envirotek II Portion/Roblin Steel Site

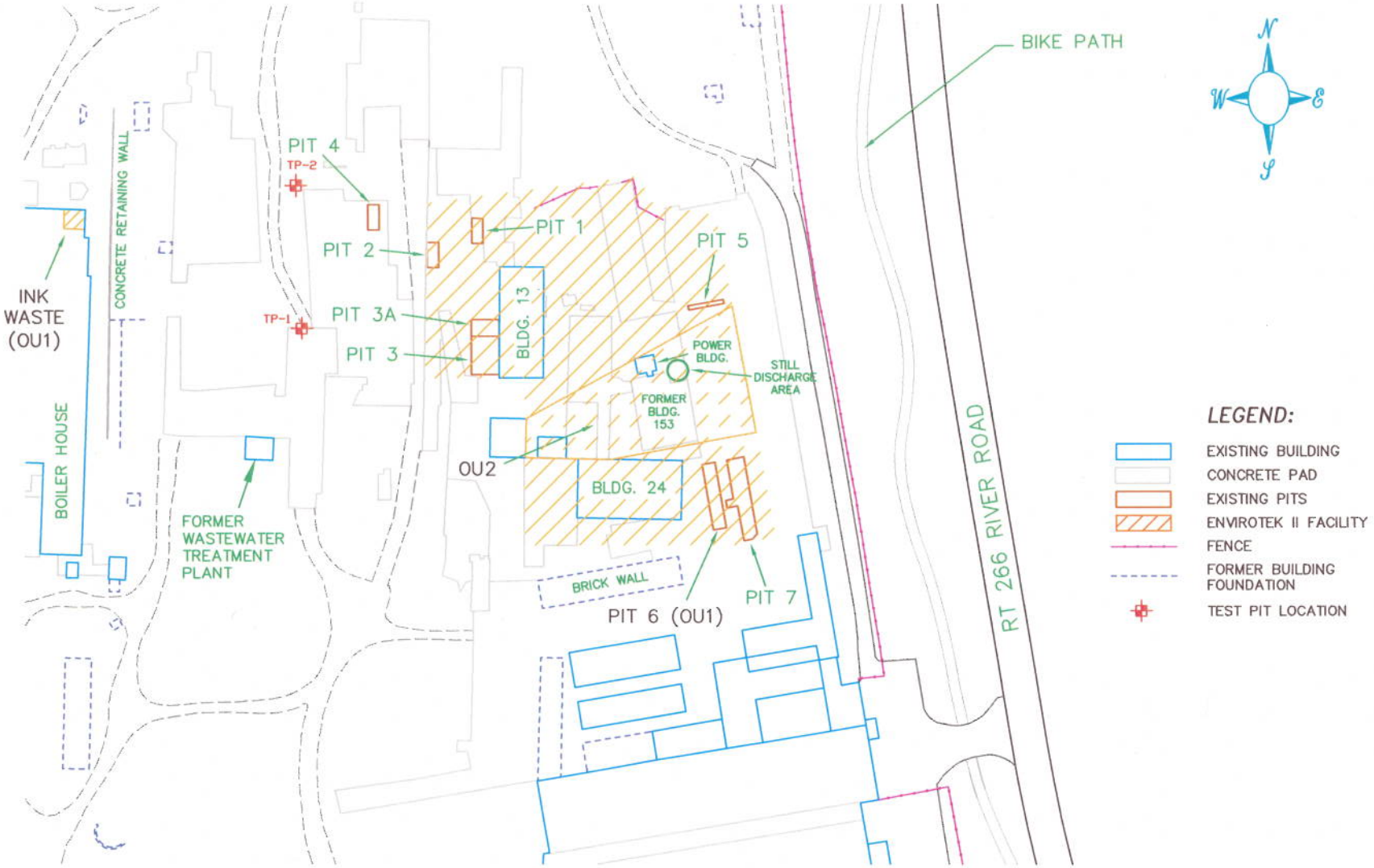
Figure 1



NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.

THE ROBLIN STEEL SITE SITE PLAN	
DIVISION OF ENVIRONMENTAL REMEDIATION	
DATE: 12/28/04	DRAWING: Roblin Site Map.dwg
SITE NAME: Envirotek II Portion/Roblin Steel Site	Figure 2



NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.

0 150' 300'

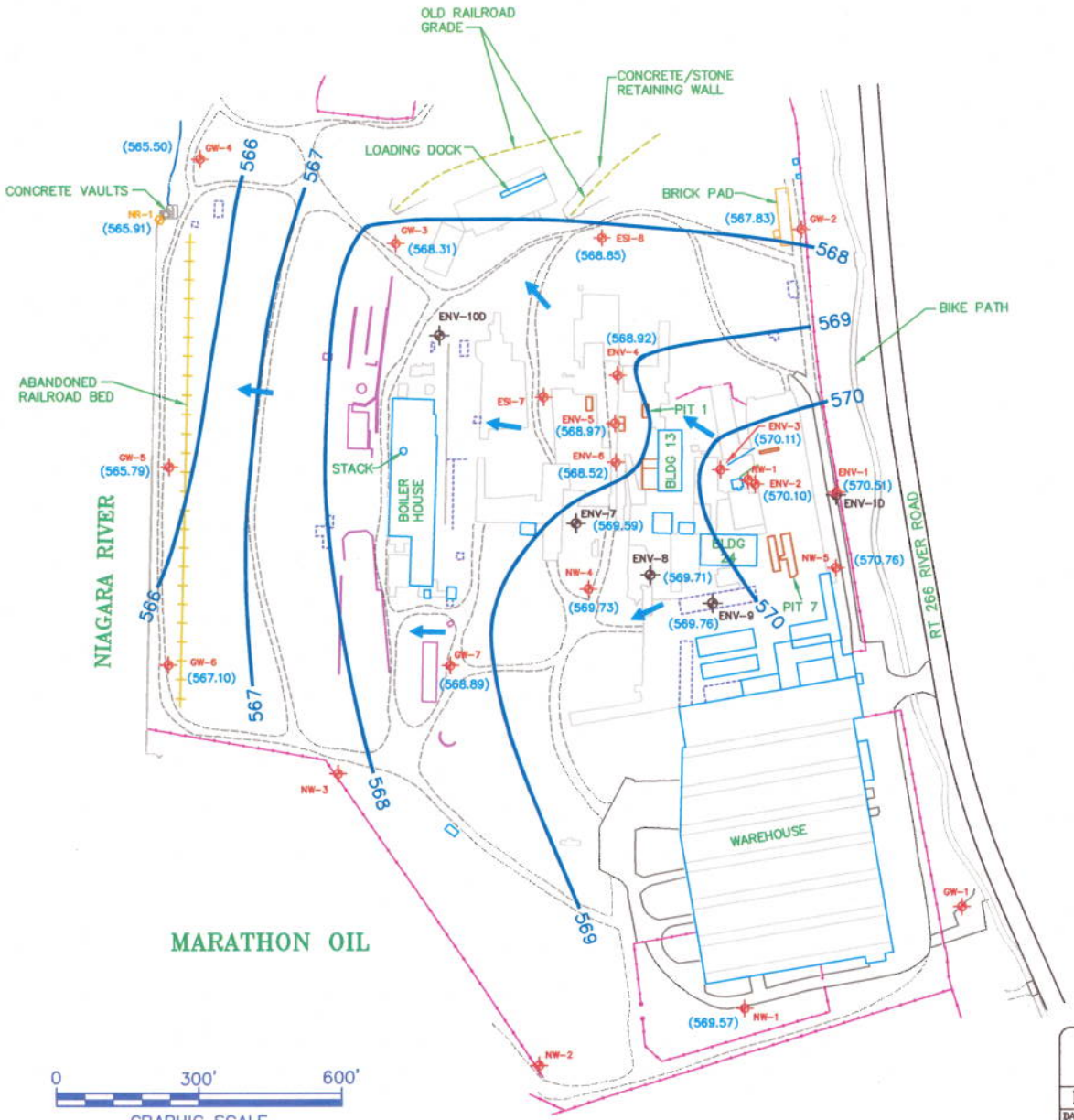
GRAPHIC SCALE

ENVIROTEK II FACILITY
SITE PLAN

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/28/04 DRAWING: Roblin Site Map.dwg

SITE NAME:
Envirotek II Portion/Roblin Steel Site **Figure 3**



N
W
E
S

LEGEND

- FENCE
- EXISTING BUILDING
- CONCRETE PAD
- FORMER BUILDING FOUNDATION
- ENV-1 — EXISTING MONITORING WELL
- ENV-9 — NEW MONITORING WELL
- NR-1 — STAFF GAUGE
- (570.76) — GROUNDWATER ELEVATION IN FEET (AMSL)
- 569 — GROUNDWATER ELEVATION CONTOUR IN FEET (AMSL)
- GROUNDWATER FLOW DIRECTION

NOTES:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.
2. MONITORING WELL DESIGNATIONS:
   GW: NYSDEC MONITORING WELL
   ENV: BBL MONITORING WELL
   NW: NIAGARA RIVER WORLD MONITORING WELL
   ESI: EMPIRE SOILS INVESTIGATIONS MONITORING WELL
3. STAFF GAUGE ON SHEET PILING ALONG NIAGARA RIVER.
4. MONITORING WELL ESI-7 WAS DAMAGED AND NOT USEABLE DURING THE 7/16/01 WATER LEVEL MEASUREMENT EVENT.
5. MONITORING WELLS ENV-7, -8, AND -9 WERE INSTALLED IN MARCH 2001, AND MONITORING WELL GW-1 WAS REPAIRED AND RETROFITTED IN MARCH 2001.

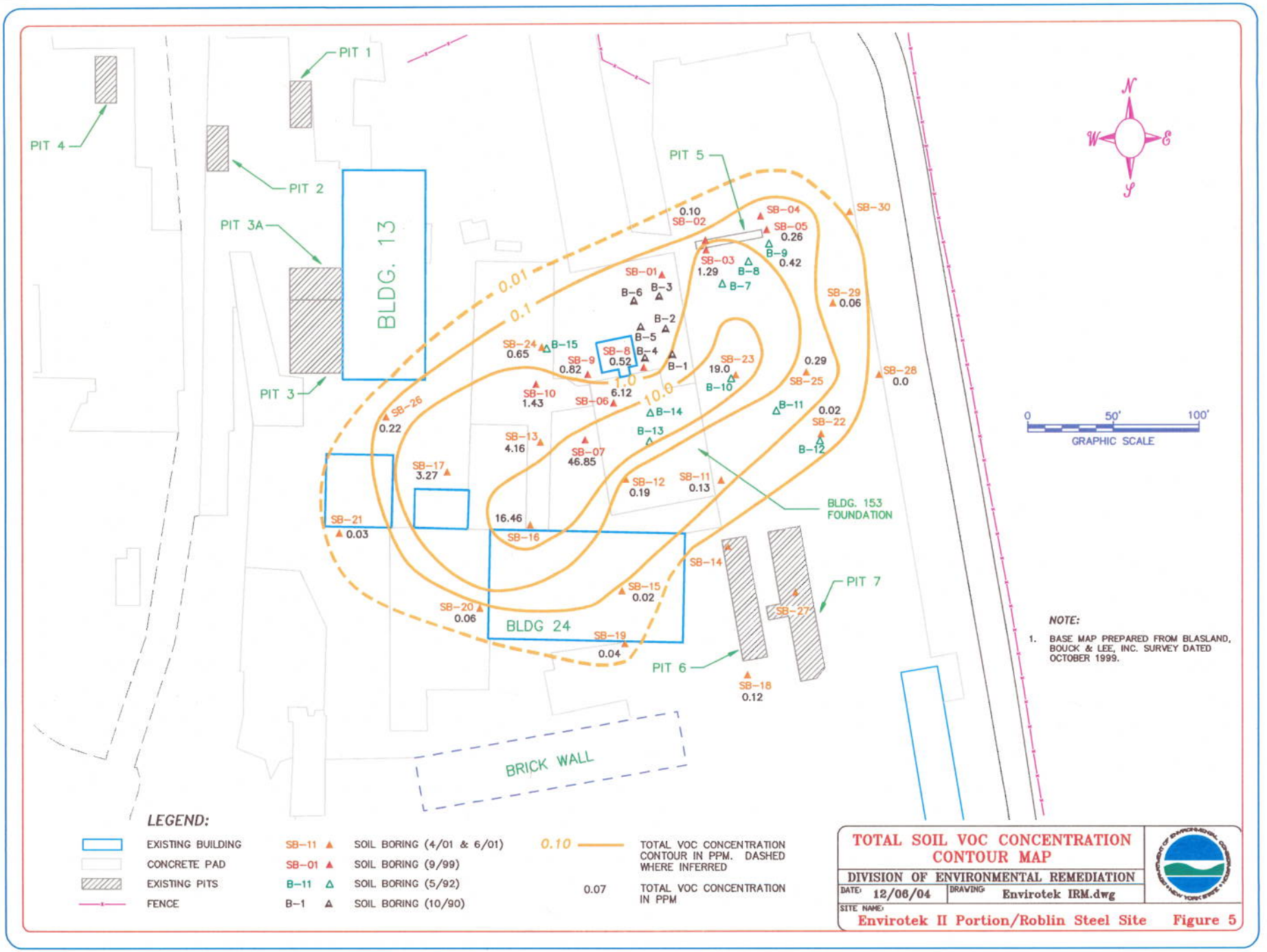
GROUNDWATER CONTOUR MAP (07/16/01)

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/28/04 | DRAWING: Roblin Site Map.dwg

SITE NAME: Envirotek II Portion/Roblin Steel Site

Figure 4



NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.

LEGEND:

- EXISTING BUILDING
- CONCRETE PAD
- EXISTING PITS
- FENCE
- SB-11 ▲ SOIL BORING (4/01 & 6/01)
- SB-01 ▲ SOIL BORING (9/99)
- B-11 △ SOIL BORING (5/92)
- B-1 ▲ SOIL BORING (10/90)
- 0.10 TOTAL VOC CONCENTRATION CONTOUR IN PPM. DASHED WHERE INFERRED
- 0.07 TOTAL VOC CONCENTRATION IN PPM

TOTAL SOIL VOC CONCENTRATION CONTOUR MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/06/04 DRAWING: Envirotek IRM.dwg

SITE NAME: Envirotek II Portion/Roblin Steel Site Figure 5

LEGEND

- FENCE
- EXISTING BUILDING
- CONCRETE PAD
- FORMER BUILDING FOUNDATION
- ENV–1 EXISTING MONITORING WELL
- ENV–9 NEW MONITORING WELL
- NR–1 STAFF GAUGE
- 0.126 TOTAL VOC CONCENTRATION IN PPM
- 10.0 TOTAL VOC CONCENTRATION CONTOUR IN PPM FOR SEPTEMBER 1999

NOTES:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.
2. MONITORING WELL DESIGNATIONS:
   GW: NYSDEC MONITORING WELL
   ENV: BBL MONITORING WELL
   NW: NIAGARA RIVER WORLD MONITORING WELL
   ESI: EMPIRE SOILS INVESTIGATIONS MONITORING WELL

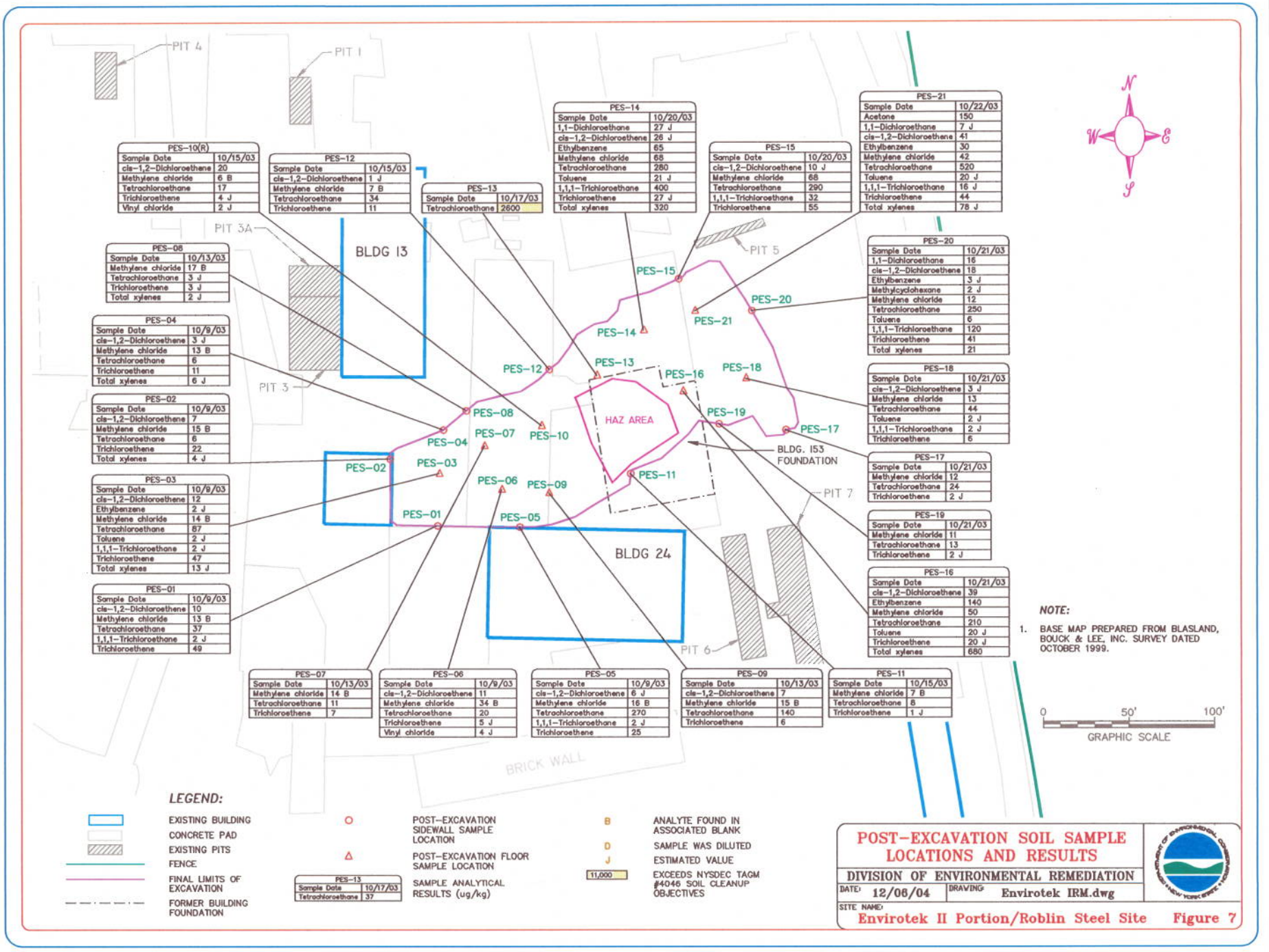
TOTAL GROUNDWATER VOC CONCENTRATION MAP FOR 1999

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/28/04 DRAWING: Roblin Site Map.dwg

SITE NAME: Envirotek II Portion/Roblin Steel Site

Figure 6



PES-10(R)	
Sample Date	10/15/03
cis-1,2-Dichloroethene	20
Methylene chloride	6 B
Tetrachloroethane	17
Trichloroethene	4 J
Vinyl chloride	2 J

PES-12	
Sample Date	10/15/03
cis-1,2-Dichloroethene	1 J
Methylene chloride	7 B
Tetrachloroethane	34
Trichloroethene	11

PES-13	
Sample Date	10/17/03
Tetrachloroethane	2600

PES-14	
Sample Date	10/20/03
1,1-Dichloroethane	27 J
cis-1,2-Dichloroethene	26 J
Ethylbenzene	65
Methylene chloride	68
Tetrachloroethane	280
Toluene	21 J
1,1,1-Trichloroethane	400
Trichloroethene	27 J
Total xylenes	320

PES-15	
Sample Date	10/20/03
cis-1,2-Dichloroethene	10 J
Methylene chloride	68
Tetrachloroethane	290
1,1,1-Trichloroethane	32
Trichloroethene	55

PES-21	
Sample Date	10/22/03
Acetone	150
1,1-Dichloroethane	7 J
cis-1,2-Dichloroethene	41
Ethylbenzene	30
Methylene chloride	42
Tetrachloroethane	520
Toluene	20 J
1,1,1-Trichloroethane	16 J
Trichloroethene	44
Total xylenes	78 J

PES-08	
Sample Date	10/13/03
Methylene chloride	17 B
Tetrachloroethane	3 J
Trichloroethene	3 J
Total xylenes	2 J

PES-04	
Sample Date	10/9/03
cis-1,2-Dichloroethene	3 J
Methylene chloride	13 B
Tetrachloroethane	6
Trichloroethene	11
Total xylenes	6 J

PES-02	
Sample Date	10/9/03
cis-1,2-Dichloroethene	7
Methylene chloride	15 B
Tetrachloroethane	6
Trichloroethene	22
Total xylenes	4 J

PES-03	
Sample Date	10/9/03
cis-1,2-Dichloroethene	12
Ethylbenzene	2 J
Methylene chloride	14 B
Tetrachloroethane	87
Toluene	2 J
1,1,1-Trichloroethane	2 J
Trichloroethene	47
Total xylenes	13 J

PES-01	
Sample Date	10/9/03
cis-1,2-Dichloroethene	10
Methylene chloride	13 B
Tetrachloroethane	37
1,1,1-Trichloroethane	2 J
Trichloroethene	49

PES-20	
Sample Date	10/21/03
1,1-Dichloroethane	16
cis-1,2-Dichloroethene	18
Ethylbenzene	3 J
Methylcyclohexane	2 J
Methylene chloride	12
Tetrachloroethane	250
Toluene	6
1,1,1-Trichloroethane	120
Trichloroethene	41
Total xylenes	21

PES-18	
Sample Date	10/21/03
cis-1,2-Dichloroethene	3 J
Methylene chloride	13
Tetrachloroethane	44
Toluene	2 J
1,1,1-Trichloroethane	2 J
Trichloroethene	6

PES-17	
Sample Date	10/21/03
Methylene chloride	12
Tetrachloroethane	24
Trichloroethene	2 J

PES-19	
Sample Date	10/21/03
Methylene chloride	11
Tetrachloroethane	13
Trichloroethene	2 J

PES-16	
Sample Date	10/21/03
cis-1,2-Dichloroethene	39
Ethylbenzene	140
Methylene chloride	50
Tetrachloroethane	210
Toluene	20 J
Trichloroethene	20 J
Total xylenes	680

PES-07	
Sample Date	10/13/03
Methylene chloride	14 B
Tetrachloroethane	11
Trichloroethene	7

PES-06	
Sample Date	10/9/03
cis-1,2-Dichloroethene	11
Methylene chloride	34 B
Tetrachloroethane	20
Trichloroethene	5 J
Vinyl chloride	4 J

PES-05	
Sample Date	10/9/03
cis-1,2-Dichloroethene	6 J
Methylene chloride	16 B
Tetrachloroethane	270
1,1,1-Trichloroethane	2 J
Trichloroethene	25

PES-09	
Sample Date	10/13/03
cis-1,2-Dichloroethene	7
Methylene chloride	15 B
Tetrachloroethane	140
Trichloroethene	6

PES-11	
Sample Date	10/15/03
Methylene chloride	7 B
Tetrachloroethane	8
Trichloroethene	1 J

NOTE:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.

0 50' 100'

GRAPHIC SCALE

LEGEND:

- EXISTING BUILDING
- CONCRETE PAD
- EXISTING PITS
- FENCE
- FINAL LIMITS OF EXCAVATION
- FORMER BUILDING FOUNDATION
- POST-EXCAVATION SIDEWALL SAMPLE LOCATION
- POST-EXCAVATION FLOOR SAMPLE LOCATION
- SAMPLE ANALYTICAL RESULTS (ug/kg)

PES-13	
Sample Date	10/17/03
Tetrachloroethane	37

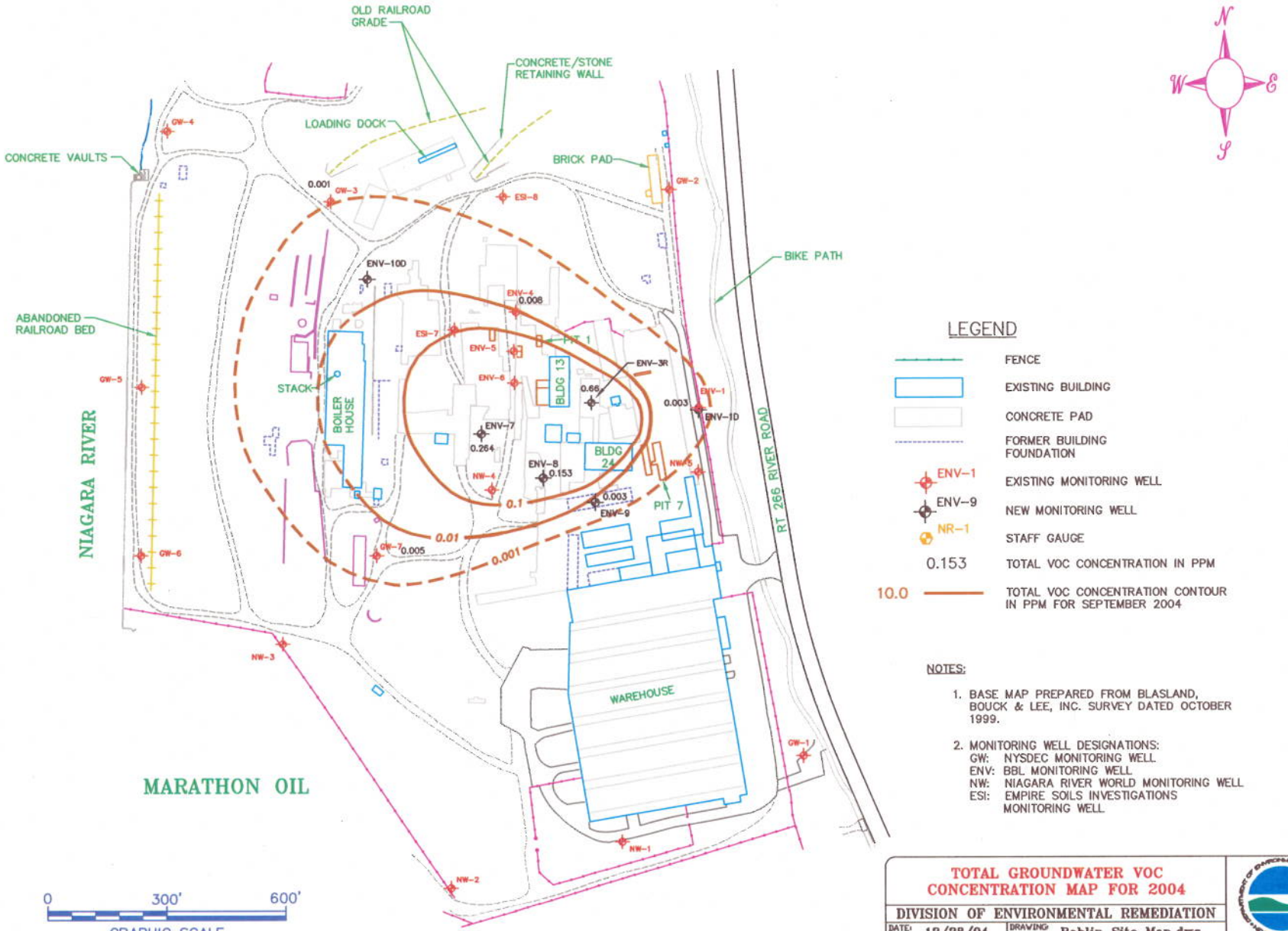
- B — ANALYTE FOUND IN ASSOCIATED BLANK
- D — SAMPLE WAS DILUTED
- J — ESTIMATED VALUE
- 11,000 — EXCEEDS NYSDEC TAGM #4046 SOIL CLEANUP OBJECTIVES

POST-EXCAVATION SOIL SAMPLE LOCATIONS AND RESULTS

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/06/04 DRAWING: Envirotek IRM.dwg

SITE NAME: Envirotek II Portion/Roblin Steel Site Figure 7



LEGEND

- FENCE
- EXISTING BUILDING
- CONCRETE PAD
- FORMER BUILDING FOUNDATION
- ENV-1 — EXISTING MONITORING WELL
- ENV-9 — NEW MONITORING WELL
- NR-1 — STAFF GAUGE
- 0.153 — TOTAL VOC CONCENTRATION IN PPM
- 10.0 — TOTAL VOC CONCENTRATION CONTOUR IN PPM FOR SEPTEMBER 2004

NOTES:

1. BASE MAP PREPARED FROM BLASLAND, BOUCK & LEE, INC. SURVEY DATED OCTOBER 1999.
2. MONITORING WELL DESIGNATIONS:
   GW: NYSDEC MONITORING WELL
   ENV: BBL MONITORING WELL
   NW: NIAGARA RIVER WORLD MONITORING WELL
   ESI: EMPIRE SOILS INVESTIGATIONS MONITORING WELL

TOTAL GROUNDWATER VOC CONCENTRATION MAP FOR 2004

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 12/28/04 | DRAWING: Roblin Site Map.dwg

SITE NAME: Envirotek II Portion/Roblin Steel Site

Figure 8

Figure 9. Total VOC concentration over time for select monitoring wells.