DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

9/30/03

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

Migration of Contaminated Groundwater Under Control

Facility Name: **Borden Resins Facility**
Facility Address: **108-112 North Main Street, Bainbridge, NY**
Facility EPA ID #: **NYD000691865**

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

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.

SITE HISTORY

The site is located in Bainbridge, New York, and was owned and operated by Borden, Inc. from the 1940s until 1981. The site is comprised of 210 acres, of which 10 acres were occupied by manufacturing facilities. During the time the facility operated, Borden manufactured synthetic resins such as phenol-formaldehyde, urea-formaldehyde, melamine-formaldehyde and polyvinyl acetate in large reactor vessels. These resins were used in the production of plywoods and fiber boards as well as molding materials for electrical parts such as telephones and circuit breakers. As a result of past waste management practices, releases of hazardous wastes and hazardous constituents have impacted soil, groundwater and sediments at the site. It is believed that oil from the facility's Thermonal heater was the source of much of the PCB contamination. The facility ceased operation in March 1981. Since that date, demolition of buildings and environmental activities have been pursued. In December 1997, the site was acquired by Cherokee Columbus Real Estate, LLC., (Cherokee). As part of the acquisition, Cherokee has assumed the environmental liability and is now responsible for completing the cleanup activities.

The Site is listed as an inactive hazardous waste disposal site in New York State (#709001), Classification 2, as defined under Environmental Conservation Law. This indicates potential for "significant threat to public health or environment." Among the reasons for such a classification, are the levels of PCB contamination historically detected in soils and sediments, and phenolic contamination in the groundwater.

In November 1990, Borden and the NYSDEC entered into an Order on Consent (Order) requiring investigations to completely identify environmental contamination and set forth a remedial program to address the contamination. With the acquisition of the site, Cherokee is now responsible for completing the remedial activities set forth by the Order.

RCRA INVESTIGATIONS

To determine the corrective actions necessary at the site, a series of investigations were undertaken to identify the impacts from hazardous waste or constituents. Extensive soil, sediment and groundwater investigations were conducted to evaluate all Solid Waste Management Units (SWMUs). A SWMU is an area or suspect area where solid or hazardous wastes may have been managed or released. The purpose of these investigations was to determine the presence, nature, rate, and extent of releases of contamination at the site. Data from hundreds of soil/sediment samples and 40 groundwater monitoring wells were gathered to define the extent of any impacts and a RCRA Facility Investigation (RFI) Report was completed, summarizing this information. This information was used to help make the final recommendations for corrective measures at the site. Eleven SWMUs/AOCs were investigated, and six these were found to have been impacted by Hazardous Waste.

The following SWMUs or areas in which investigations were conducted at the site:

- PCB Area;
- Bone Yard;
- River Lagoon;
- Phenol Recovery Area;
- Land Application Area;
- Storm/Process Sewers;
- Gasoline Underground Storage Tank:
- Western Creek;
- Eastern (Beatty) Creek;
- Susquehanna River;
- Groundwater.

AREAS FOUND TO BE IMPACTED BY HAZARDOUS CONSTITUENTS
at the
FORMER BORDEN SITE

Location	Type of Contamination	Media Investigated	Media Impacted
PCB Area	PCBs/VOCs	Soil & Groundwater	Soil & Groundwater
Bone Yard	PCBs/Formaldehyde	Soil & Groundwater	Soil &Groundwater
River Lagoon	PCBs	Soil & Groundwater	Soil & Sediment
Land Application Area	PCBs	Soil & Groundwater	Soil
Phenol Recovery Area	Phenols, Formaldehyde and VOCs {primarily toluene and other tentatively identified compounds}	Soil & Groundwater	Soil & Groundwater
Storm/Process Sewers	PCBs	Sediment & Water	Sediment

Historical Maximum Concentrations of Key Contaminants

	Soil/Sediment	Surface Water	Groundwater
PCBs	14,800 ppm	N/A	9.76 ug/l
VOCs (Toluene)	2,500 ppm	N/A	360,000 ug/l
Phenolic Compounds	730 ppm	N/A	256,600 ug/l
Formaldehyde	155 ppm	4 ug/l	4,425 ug/l

REMEDIAL ACTIVITIES

Soil and Sediments

In accordance with the approved Corrective Measures Implementation Plan, all known major source areas with contaminated soils and sediment have been removed through excavation or sewer clean-out. Soil and sediment clean-up was completed in accordance with the following remedial criteria:

PCB-contaminated soils and sediments

- One part per million (ppm) or less PCBs was the criterion for soils in the River Lagoon and other locations of the site for unrestricted-use. This criterion was met at all off-site locations.

- Twenty-five ppm or less PCBs was the criterion for restricted-use at certain on-site locations. Deed notification and restrictions will be in affect. Areas where PCBs remain at these concentrations are isolated pockets in the Bone Yard and Land Application Areas. All other on-site areas have met the one ppm or less criteria.

Phenolic/VOC-contaminated soils

- All unsaturated soil was removed in the immediate vicinity of monitoring well MW-29 and the former phenol recovery unit, including all grossly contaminated soil. Grossly contaminated soil was determined by visual indications of contamination (e.g., staining) and by screening of soil sample headspace.

Groundwater

Remedial criteria for key contaminants in groundwater are as follows:

Total phenols	1.0 ug/l
Toluene	5.0 ug/l
Formaldehyde	50.0 ug/l
PCBs	0.1 ug/l

Phenol Recovery Area

An interim groundwater pump and treatment system was operated in the Phenol Recovery area beginning in 1995. The system continued to operate during pilot testing of an in-situ bio-sparge system which was performed from April 2001 until January 2002 to determine its effectiveness as a final measure to address the remaining on-site groundwater plume. In 2002, the bio-sparge system was determined to be unsuccessful, and contingent remedial activities were evaluated. In late 2002, Cherokee implemented a plan to prevent off-site migration of contaminants, and to reduce the contaminant mass of the plume. The remedial approach included two major components:

1) Groundwater recovery and treatment. Five new groundwater recovery wells were installed and a treatment plant was constructed to treat the recovered groundwater. The groundwater is pumped from the five new recovery wells and a previously existing sump, and treated with a modified bio-reactor, sediment filters and carbons filters. Treated groundwater is discharged to the ground surface in accordance a discharge permit from the New York State Department of Environmental Conservation's Bureau of Water Permits. Construction of the treatment system and groundwater recovery network was completed by January 1, 2003.

2) Chemical Oxygenate Injection. Calcium oxide was injected into borings at over 100 locations in the Phenol Recovery Area to promote in-situ bioremediation of groundwater contaminants. The chemical oxygenate activities were completed by January 1, 2003.

PCB Area/Boneyard Area

After completion of soil removal activities in the PCB and Boneyard areas, groundwater has continued to be monitored for contaminants of concern. Contaminants of concern have generally been non-detect, but PCBs have occasionally been detected at concentrations which exceed the groundwater criteria. PCBs are generally not expected to be mobile in groundwater, and off-site testing indicates that any residual PCBs are contained on-site.

Figure 1 (attached) presents the well locations, and units of concern.

Footnotes:

[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: Two groundwater monitoring events have been performed since the groundwater pump and treat system was initiated and chemical oxygenate activities were performed in December 2002. Water level measurements have indicated significant draw down in the area of contamination, and monitoring wells located downgradient of the Phenol Recovery Area have been non-detect or below the criteria for the contaminants of concern. Monitoring wells within the plume area have indicated a significant reduction in contaminant concentrations since January 1, 2003. Figure 2B presents groundwater contours in the Phenol Recovery Area, as monitored since start up of the new treatment system. Table3 and 4 present historical groundwater data.

[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.

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

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

____ 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: Monitoring wells located adjacent to Beatty Creek are contaminated. Since initiation of the groundwater recovery system, groundwater flow direction has been away from Beatty Creek and toward the recovery wells. Discharge of contaminants to the Creek would be unlikely, or de minimis. Surface water sampling has been performed at two locations and has confirmed that there are no significant impacts to Beatty Creek.

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)?

__X__ 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: See response to Question #4.

[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.

[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: Groundwater monitoring will continue to be performed at 5monitoring wells located down gradient of the Phenol Recovery Area plume to demonstrate plume containment ,and at 9 locations within the plume to demonstrate contaminant mass reduction. Groundwater monitoring will continue to be performed at the Boneyard and PCB area until groundwater criteria have been met for three consecutive annual sampling events. Groundwater monitoring will be performed quarterly, semi-annually or annually, depending on the location. If necessary, contingent remedial actions can be required at any of the impacted areas.

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).

__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 Former Borden resin facility , EPA ID # NYD000691865, located at 108-112 North Main Street, Bainbridge, New York. 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 (signature) Denise M. Radtke Date 9/30/03
(print) Denise M. Radtke
(title) Engineering Geologist II

Supervisor (signature) William E Watt Date 9/30/'03
(print) WILLIAM E WATT
(title) ENGINEERING GEOLOGIST III
(EPA Region or State) EPA Region II - New York State

Bureau Director (signature) Edwin E Dassatti Date 9/30/03
(print) Edwin E Dassatti
(title) Environmental Eng. 4
(EPA Region or State) EPA Region II - New York State

References:

Order on Consent, Index #A7-0121-87-09, *November 1990 signed by New York State Department Environmental Conservation and Borden, Inc.* The Order required Borden to identify and remediate (now Cherokee's responsibility) both on-site and off-site environmental contamination resulting from past operations and waste management practices.

RCRA Facility Investigation Report, *August 1992, prepared by T.M. Gates, Inc.* This report includes sampling results from the first RCRA investigation at the site. The NYSDEC required additional sampling to be conducted to better characterize the extent of contamination.

Phase II RCRA Facility Investigation Report, *August 1996, prepared by T.M. Gates, Inc.* This report includes the results of the additional sampling. This sampling event better characterized the extent of contamination and revealed contamination in storm sewers.

Corrective Measures Study (CMS) Report, *February 1997, revised April 1998 prepared by T.M. Gates, Inc.* This report evaluates options for Final Corrective Measures. Based on the evaluation, a recommendation for the Final Remedy was chosen.

Draft Corrective Measures Implementation Plan (CMIP), *August 1998, prepared by T.M. Gates, Inc. in conjunction with the New York State Department Environmental Conservation.* The purpose of this document is to present specifications for implementation of corrective measures addressing environmental contamination at the former Borden Resin Facility. These requirements include remedial goals and criteria; institutional controls; detailed design, construction, operation, and monitoring plans; and reporting.

Statement of Basis - Former Borden Resins Facility, Bainbridge, NY, New York State Department of Environmental Conservation, November 19, 1998. This Report summarizes the results of the investigations and studies and describes the proposed Final Corrective Measures at the site.

Certification of Completion: Final Corrective Measures Addressing Soil and Sewer Contamination, Northern Kentucky University, September 2001. This report includes all verification sampling to show the remedial criteria for the Final Corrective Measures at the site was accomplished.

Semi-Annual Groundwater Monitoring and IRM Reports, prepared by Northern Kentucky University - Environmental Resource Management Center, various dates. These reports include routine groundwater and surface water sampling results.

Locations where References may be found:

NYSDEC
Division of Solid and Hazardous Materials
625 Broadway
Albany NY 12233-7258

NYSDEC, Region 7
615 Erie Boulevard West
Syracuse, NY 13204-2400

Contact telephone numbers and e-mail addresses:

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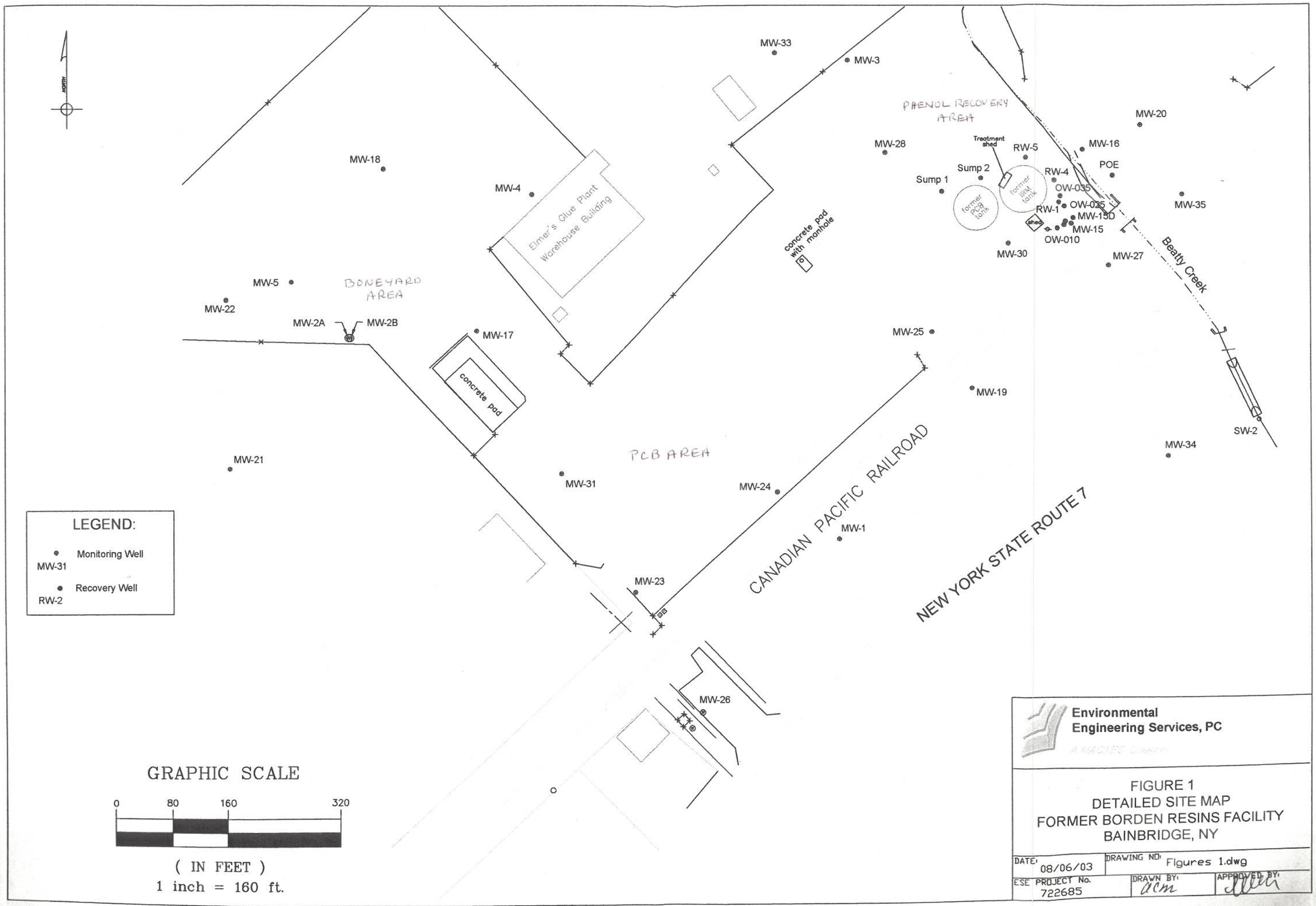

Environmental Engineering Services, PC
A MACTEC COMPANY

FIGURE 1
DETAILED SITE MAP
FORMER BORDEN RESINS FACILITY
BAINBRIDGE, NY

DATE: 08/06/03	DRAWING NO: Figures 1.dwg		
ESE PROJECT No. 722685	DRAWN BY: acm	APPROVED BY:	

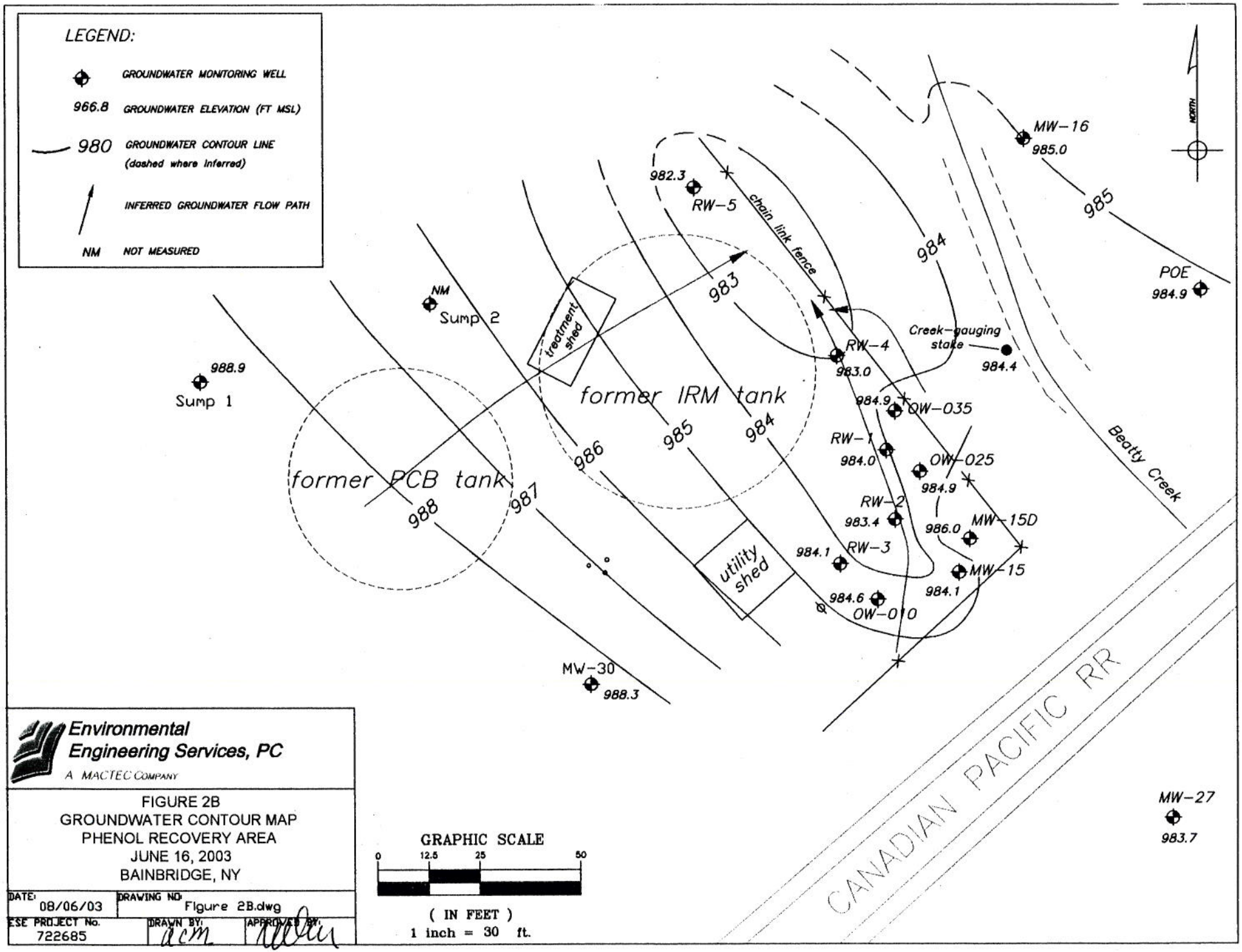
LEGEND:
GROUNDWATER MONITORING WELL
966.8 GROUNDWATER ELEVATION (FT MSL)
980 GROUNDWATER CONTOUR LINE (dashed where inferred)
INFERRED GROUNDWATER FLOW PATH
NM NOT MEASURED
NORTH
MW-16
985.0
982.3
RW-5
chain link fence
985
984
POE
984.9
NM
Sump 2
treatment shed
983
Creek-gauging stake
984.4
RW-4
983.0
988.9
Sump 1
former IRM tank
984.9
OW-035
RW-1
984.0
986
985
984
OW-025
984.9
Beatty Creek
former PCB tank
988
987
RW-2
983.4
986.0
MW-15D
984.1
RW-3
utility shed
MW-15
984.1
984.6
OW-010
MW-30
988.3
CANADIAN PACIFIC RR
MW-27
983.7
Environmental Engineering Services, PC
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FIGURE 2B
GROUNDWATER CONTOUR MAP
PHENOL RECOVERY AREA
JUNE 16, 2003
BAINBRIDGE, NY
DATE: 08/06/03
DRAWING NO: Figure 2B.dwg
ESE PROJECT No. 722685
DRAWN BY: acm
APPROVED BY:
GRAPHIC SCALE
0 12.5 25 50
(IN FEET)
1 inch = 30 ft.

Table 3: Historical Groundwater Quality - Total Phenolics in Selected Monitoring Wells

Former Borden Resins Facility, Bainbridge, NY

Date	Wells																				
	MW-POE	MW-15D	MW-15	OW-010	OW-025	OW-035	MW-16	MW-20	MW-27	MW-29/ Phenol Pool/ Excavation Water	MW-29D	MW-30	MW-34	MW-35	Sump 1	MW-19	RW-1	RW-2	RW-3	RW-4	RW-5 / Sump 3*	SW-2 Beatty Creek
Jun-03			8.23			11,375																
Mar-03	ND	ND	ND	9.35	439	16,500	ND	ND	ND			ND	ND	ND	2.00	ND	19,600	3,870	17,500	17,300	22,400	ND
Dec-02	ND	0.215	18.5	245	2,850	32,100	ND	ND	ND			ND	ND	ND	5.52	ND	22,400	6,360	22,900	21,000	17,500	ND
Oct-02	ND			1,069	32,446	57,576											8,377.5					
Sep-02		15	4,181				ND	ND	ND			ND	ND	ND	10,492	ND					13.94	ND
Mar-02	43	2.56	50.8	6,300	40,800	30,300	0.341	ND(0.3)	ND(0.3)			0.471	ND(0.3)	ND(0.3)	0.499	0.468					ND(0.3)	0.769
Dec-01	ND	2.35	722	218	16,200	33,600																
Nov-01		30	298	28,300	100,000	126,000	ND	ND	ND	ND		ND	ND	ND	311						ND	ND
Nov-01	ND	30.0	147.0	25,780	88,520	118,980				ND					273.8						ND	ND
Oct-01	ND (8)		9.0	10,713		10,817								ND (8)								
Aug-01	122	3.0	4,501	37,800	63,430	115,110	ND	ND	50.0	dry		7.0	10.0	85,240**	4,493	2.0					ND	
May-01	4.0	9.0	ND	21,190	36,300	4,939	ND	1.0	627	2.0		1.0	ND	11.0	14.0	ND					21.0	
Dec-00		ND	711.0				ND	ND	ND	4.0		ND	ND	ND	ND	11.0					ND	ND
Oct-00		ND	19.0				ND	ND	ND	ND		ND	ND	ND	512	4.0					ND	ND
Jun-00		ND	138.0				ND	ND	ND	3.0		1.0	ND	ND	5.0	ND					ND	ND
Mar-00		ND	162.0				ND	ND	ND	ND		ND	ND	ND	266	ND					ND	
Dec-99		ND	516.7				ND	ND	ND	511		ND	ND	ND	15.4	5.0					ND	
Aug-99		ND	ND				ND	ND	36.7	166,141	78.8	28.4	3.3	3.2	ND	ND					ND	
Jun-99															8,690							
May-99															462							
Nov-98															235							
Aug-98															68.0							
May-98			ND (10)	ND (10)			ND (10)			111,000	1,000	ND (10)	ND (10)	ND (10)	ND(10)	11.0					ND (10)	
Feb-98															610.0							
Nov-97		ND	780				ND		ND	110	180	ND			19,000	ND					120	
Aug-97		ND	2,000				230.0		ND	87	340	78.0			540	137					ND	
May-97															0.01							
Feb-97		ND	752						ND	256,600	4.2 J	ND				44.5					ND	
Nov-96		ND	ND						ND	101,700	507	ND	ND		910.0	50.0					ND	
Aug-96			4.6 J						ND	103,100		ND				73.0						
May-96		3.0	ND (58)					ND (75)	ND (50)	162,480	2,110	ND (58)	ND (60)			65.0						
Feb-96			1 J						ND (52)	78,300		ND (61)				36.0						
Dec-89			ND (50)				ND (50)															
Oct-89			ND (50)				ND (50)															
Jul-89			ND (50)				ND (50)															
Mar-89			ND (110)				ND (50)															
Dec-88			ND (250)				ND (50)															
Oct-88			ND (50)				ND (50)															
Jun-88			ND (10)				ND (10)															
Mar-88			ND (30)				ND (30)															
Aug-84			ND (20)				ND (20)															

Notes: Total Phenolics concentrations are given in ug/L

Cleanup criteria for total phenolics is 1 ug/L. **BOLD** numbers indicate value is above cleanup standard.

ND - Analyte Not Detected at or above the method detection limit

Blank cells indicate well not sampled or parameter not analyzed

Recovery Wells RW-1 - RW-5 installed in December 2002

* - Sump 3 redrilled to a depth of 35 feet below ground surface and renamed RW-5 during December 2002 remediation activities.

** - value believed to be incorrect; sample mislabeled with OW-035.

J - Indicates an estimated value (above the method detection level but below the quantitation level)

Prepared by: _____

Checked by: acm

Table 4: Historical Groun ter Quality - Total BTEX in Selected Mo..itoring Wells

Former Borden Resins Facility, Bainbridge, NY

Date	Wells																				
	MW-POE	MW-15D	MW-15	OW-010	OW-025	OW-035	MW-16	MW-20	MW-27	MW-29/ Phenol Pool/ Excavation Water	MW-29D	MW-30	MW-34	MW-35	Sump 1	MW-19	RW-1	RW-2	RW-3	RW-4	RW-5 / Sump 3*	SW-2 Beatty Creek
Mar-03			**16.86**			**16,100**																
Mar-03	ND	ND	0.234	ND	395	**17,160**	ND	ND	0.450			ND	ND	ND	0.840	0.775	**2,100**	**173**	**27.7**	**33.1**	**50.5**	ND
Dec-02	ND	3.02	**9.403**	**122.7**	**1701**	**22,626**	ND	ND	ND			ND	ND	ND	**33.2**	1.83	**8,510**	**663**	**987**	**6,830**	**59.6**	ND
Oct-02	ND			**1,588**	**16,700**	**38,900**											**5,660**					
Sep-02		ND	**3,907**				ND	ND	0.267			ND	ND	ND	**13,449**	0.328					0.281	ND
Mar-02	ND(1)	ND(1)	3.49	**1,003**	**30,600**	**27,100**	ND(1)	ND(1)	ND(1)			ND(1)	ND(1)	ND(1)	**515**	0.88					ND(1)	ND(1)
Dec-01	ND	ND	**57**	**185.03**	**18,400**	**33,600**																
Nov-01	ND	ND	**760**	**12511.3**	**32,715**	**38,519**	ND	ND	0.205	**9.67**		ND	ND	ND	**1,546**	0.846					0.74	ND
Oct-01	ND (1)		**107**	**38,932**		**8,420**								ND (1)								
Aug-01	ND	1.0	**2,370**	**20,871**	**34,300**	**44,494**	ND	ND	ND	dry		ND	ND	ND	**1,872**	2.0					0.3	
May-01	ND	ND	**192**	**16,900**	**40,600**	**7,220**	ND	ND	**239.0**	**27.0**		**9.0**	ND	ND	**149**	2.0					0.4	
Dec-00		ND	**831**				ND	ND	0.3	**101**		**82.0**	ND	ND	**11**	1.0					1.0	ND
Oct-00		ND	**156**				ND	ND	ND	**103**		0.4	ND	ND	**1,989**	0.5					0.5	ND
Jun-00		ND	**151**				ND	ND	2.0	**22.0**		**12.0**	ND	ND	**347**	ND					2.0	ND
Mar-00		ND	**212**				ND	ND	1.0	**80.0**		1.0	ND	ND	**2,962**	1.0					7.0	
Dec-99		ND	**186**				ND	ND	ND	**199.0**		ND	ND	ND	**1,522**	1.1					ND	
Aug-99		ND	**50**				ND	ND	ND	**252,000**	ND	ND	ND	ND	**142**	2.3					0.4	
Jun-99															**981**							
May-99															**358**							
Nov-98															**54**							
Aug-98															**1,840**							
Feb-98															**510**							
Nov-97		ND	**6,368**				ND		ND	**260,000**	22.0	ND			**4,600**	2.0						
Aug-97		ND	**11,000**				ND		ND	**360,000**	18.0	ND			**3,000**	ND					ND	
May-97			**10.0**												**1,700**							
Feb-97		ND	**1,314**				ND		ND	ND	75.0	ND									1.8	
Nov-96		ND	**51.0**						1.7	**330,000**	110.0	ND	ND		**1,700**	1.7						
Aug-96			**124.6**						ND	**270,000**		ND				1.7						
May-96			**9.0**					ND (5)	2 J	**6,540**	764	ND(5)	ND(5)			1 J						
Feb-96			**13.5**						**5.3**	**360**		1.8				1.7						
Dec-89			ND(1)				ND(1)									ND(1)						
Oct-89			**8.2**				ND(1)									ND(1)						
Jul-89			3.2				2.5									ND(1)						
Mar-89			**5.9**				ND(1)									ND(1)						
Dec-88			ND(1)				ND(1)									ND(1)						
Oct-88			2.7				ND(1)									ND(1)						
Jun-88			ND(1)				ND(1)									ND(1)						
Mar-88			ND(1)				ND(1)									ND(1)						
Aug-84			4.0				ND(3)									ND(3)						

Notes: Total BTEX concentrations are given in ug/L

Cleanup criteria for BTEX is 5 ug/L. **BOLD** numbers indicate value is above cleanup standard.

ND - Analyte Not Detected at or above the method detection limit

Blank cells indicate well not sampled or parameter not analyzed

J - Indicates an estimated value (above the method detection level but below the quantitation level)

* - Sump 3 redrilled to a depth of 35 feet below ground surface and renamed RW-5 during December 2002 remediation activities.

Recovery Wells RW-1 - RW-5 installed in December 2002

Prepared by: _____

Checked by: acm