DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

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

Migration of Contaminated Groundwater Under Control

Facility Name: **Forestville Industrial Plating Company**
Facility Address: **811 Queen Street, Southington, CT 06489**
Facility EPA ID #: **CTD001152545**

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.

Rationale and Reference(s): **The groundwater in this area is classified as GA/GAA by the State of Connecticut Department of Environmental Protection (CTDEP) Water Quality Standards.**

Historic groundwater sampling and analysis showed elevated levels of total chromium, nickel and zinc in monitoring wells on-site. The concentrations of these metals exceeded the CTDEP Remediation Standard Regulations (RSRs) GA/GAA Ground Water Protection Criteria (GWPC) and/or Surface Water Protection Criteria (SWPC) for Substances in Groundwater in some of the on-site wells.

The most recent sampling shows concentrations of total and hexavalent chromium exceeding the GWPC by an order of magnitude and the SWPC by a factor of 3 in MW-d located downgradient of the former surface impoundment area (highest concentrations in wells on site).

Zinc has never exceeded the GWPC. With the exception of one event, zinc levels have varied from an order of magnitude less than the SWPC to exceeding the criteria by a factor of 6. In the one exceptional event (1/85), zinc exceeded the SWPC by an order of magnitude. This event appears anomalous for all three constituents discussed here.

Nickel concentration range from an order of magnitude less than the GWPC to exceeding the criteria by less than an order of magnitude. The SWPC for nickle has never been exceeded but concentration in a few events were within tens of ppb of the criteria.

Refer to Attachment 1 data summary and Figure 1 showing monitoring well locations. For additional information refer to the *Groundwater Evaluations In Connecticut Forestville Industrial Plating*, January 1985, and miscellaneous data submittals in the Forestville Plating site file.

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 and Reference(s): **To obtain more current data and to overcome the inadequacies of the existing monitoring well network potentially affecting the representativeness of the historic data, groundwater samples were collected from the two downgradient wells (MW-3 and MW-4) using low stress/flow sampling procedures. Three discrete samples from MW-3 (35-40' screen) and two samples from MW-4 (20' screen) were collected and analyzed for total metals and volatile organics. The pumping rate was maintained at 250 ml/min throughout the sampling. The draw-down in the well was negligible and not measurable. The most recent sampling conducted at the site shows there were no volatile organics detected above the reporting limits (reporting limits ranged from 1 to 2 ug/l with an acrylonitrile detection limit of 20 ug/l).**

Total chromium levels ranged between 2.3 and 4.8 ug/l. Hexavalent chromium was not detected above the reporting limit of 10 ug/l. Based on previous analytical data and for conservativeness, it is assumed that all the chromium is in the hexavalent form.

In comparison to the previous analytical results collected from MW-3 and MW-4, levels of chromium, zinc and nickle appear to be decreasing over time. Previous analytical results from these two wells did not show any exceedances of the CTDEP Groundwater or Surface Water Protection Criteria (SWPC). Levels of chromium, nickle and zinc have decreased an order of magnitude from the previous sampling events and hexavalent chromium is not detected above the reporting limit of 10 ug/l.

Although the data is still limited for the two most downgradient wells on-site MW-3 and MW-4 and the representativeness of the data was previous questioned, there has never been any exceedances of either the GWPC or SWPC in these two wells. The difference in contaminant concentrations between the upgradient wells and the downgradient wells (MW-3 and MW-4) is an order of magnitude or more. This productive aquifer is expected to cause the dilution and dispersion of the contamination prior to groundwater migration off-site.

[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 and Reference(s): **The Quinnipiac River is located approximately 1800 feet hydraulically downgradient of Forestville Plating. The Quinnipiac River channel varies between 15 and 25 feet in width in the area and is contained within steep sandy banks, approximately 4 to 5 feet high. Groundwater from Forestville Plating may ultimately discharge to the Quinnipiac River after mixing with groundwater discharging form several other potential downgradient sources of contamination including chromium, other metals and solvents.**

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 and Reference(s): **Analytical results from MW-3 and MW-4, the two most downgradient wells on site, have never shown any exceedances of the CTDEP GWPC or SWPC. The most recent sampling event in these two wells shows levels of chromium, nickle and zinc have decreased an order of magnitude from the previous sampling events and hexavalent chromium is not detected above the reporting limit of 10 ug/l. Refer to Attachment 1.**

In addition, available surface water and sediment data collected from the Quinnipiac River in the stretch where Forestville Plating groundwater has the potential to discharge to does not indicate that there is a significant problem (samples SW-7, SW-8, SW-9 and Q1). Currently, levels of chromium/hexavalent chromium detected in surface water are below the EPA Ambient Water Quality Criteria (AWQC) for fresh water criteria continuous concentration of 11 ug/l and below the CTDEP Chronic Aquatic Life Criteria of 10 ug/l. Refer to Attachment 2 and Figure 2. Historical data shows one exceedance of the EPA AWQC and CTDEP Chronic Aquatic Life Criteria (in 1992 at sampling location Q1 chromium was detected at 13 ug/l).

[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):_____

_____

_____

[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 and Reference(s): **Additional groundwater monitoring will be conducted by Forestville Plating using low-stress/flow sampling techniques. Sampling will be conducted in downgradient monitoring wells MW-3 and MW-4 twice per year in September and March. Samples will be analyzed for total chromium. The January 31, 2002 Quality Assurance Project Plan prepared by Tetra Tech EM Inc. for EPA will be used.**

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 **Forestville Industrial Plating Company**, facility , EPA ID # **CTD001152545**, located at **811 Queen Street, Southington, CT 06489**. 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) _____ Date **July 17, 2001**
(print) **Carolyn Casey**
(title) **RCRA Facility Manager**

Supervisor (signature) _____ Date 7/23/02
(print) **Matthew R. Hoagland**
(title) **Section Chief, RCRA Corrective Action**
(EPA Region or State) **EPA New England**

Locations where References may be found:

EPA-NE files

Contact telephone and e-mail numbers

(name) **Michael Serencko**
(phone #) **(860) 628-5555**
(e-mail) _____

Attachment 1
Forestville Plating Data Summary
(printed from Microsoft Excel file: fipcowelldata2.xls)

SUMMARY OF MONITORING WELL ANALYTICAL DATA
FORESTVILLE INDUSTRIAL PLATING COMPANY
SOUTHINGTON, CONNECTICUT

Refer to Drawing Entitled "Hydrogeological Study" Feb. 1985 for MW Locations and ID's

Well ID	Sampling Date	Total Cr (mg/l)	Hex. Cr (mg/l)	Zn (mg/l)	Ni (mg/l)	Lab Name		Comments
Mwu	3/29/83	0.00	0.00	0.09	0.00	McDermid	1	
	7/20/83	0.01	<0.005	0.39	0.01	ESC	1	
	10/5/83	<0.01	<0.01	0.13	<0.02	G&F	1	
	4/9/84	0.01	<0.01	0.08	<0.03	FIPCO	sample/report date?	
	10/18/84	0.01	<0.01	0.058	0.06	EPA audit	sample/report date?	
	1/5/84	<0.01	<0.01	0.07	<0.05	G&F	1	
	4/9/84	<0.01	<0.01	0.08	<0.03	G&F	1	
	7/17/84	<0.01	<0.01	0.01	<0.02	G&F	1	
	10/18/84	<0.005	<0.005	0.05	<0.01	G&F	1	
	1/18/85	0.18	<0.01	2.98	0.69	G&F	1	
	3/1/85	0.005	<0.01	0.10	0.01	G&F	1	
	4/18/85	0.002	<0.01	0.04	0.03	G&F	1	
	6/5/85	0.004	0.00	0.048	0.007	Averill	1	
	10/10/85	<0.01	<0.01	0.03	0.01	G&F	1	
	1/10/86	<0.01	<0.01	0.06	0.01	G&F	1	
	4/16/86	<0.01	<0.01	0.03	0.03	G&F	1	
	7/18/86	<0.01	<0.01	0.02	<0.01	G&F	1	
	8/3/86	<0.01	<0.01	0.1	0.01	G&F	1	
	10/14/86	<0.01	<0.01	0.06	0.01	G&F	1	
	1/19/87	<0.01	<0.01	0.08	0.01	G&F	1	
	4/29/87	0.05	<0.01	No data	0.05	G&F	1	
	11/3/87	<0.05	<0.02	0.11	<0.08	Envirite	1	
	1/27/88	<0.05	<0.01	0.02	<0.07	Envirite	1	
	6/16/88	<0.05	<0.01	0.06	<0.07	Envirite	1	
	8/26/88	<0.05	<0.01	0.06	<0.07	Envirite	1	
	10/12/88	0.01	<0.1	0.4	0.03	Vargo	1	
	1/18/89	0.05	<0.1	0.07	<0.01	Vargo	1	
	4/4/90	<0.05	<0.05	0.18	<0.05	CT Testing	1	
							1	
MWd	3/29/83	0.35	0.2	0.08	0.23	McDermid	1	
	5/9/83	0.61	0.26	0.17	0.11	McDermid	1	
	7/20/83	0.49	0.43	0.58	0.14	ESC	1	
	10/5/83	0.37	0.37	0.08	0.05	G&F	1	
	1/5/84	0.62	0.25	0.08	0.15	G&F	1	
	4/9/84	0.3	0.29	0.15	0.18	FIPCO	sample/report date?	
	10/18/84	0.338	No data	0.018	0.038	EPA audit	sample/report date?	
	4/9/84	0.3	0.29	0.15	0.18	G&F	1	
	7/17/84	0.46	0.18	0.13	0.17	G&F	1	
	10/18/84	0.46	0.19	0.03	0.05	G&F	1	
	1/18/85	0.39	0.37	0.1	0.06	G&F	1	
	3/1/85	No data	0.17	No data	No data	G&F	1	
	4/18/85	0.36	0.07	0.04	0.13	G&F	1	
	6/5/85	0.43	0.41	0.06	0.15	Averill	1	

Well ID	Sampling Date	Total Cr (mg/l)	Hex. Cr (mg/l)	Zn (mg/l)	Ni (mg/l)	Lab Name		Comments
	10/10/85	0.22	0.11	0.22	0.83	G&F	1	
	1/10/86	0.44	0.17	0.26	0.72	G&F	1	
	4/16/86	0.34	0.15	0.18	0.34	G&F	1	SH. 1 of 2

SUMMARY OF MONITORING WELL ANALYTICAL DATA
FORESTVILLE INDUSTRIAL PLATING COMPANY
SOUTHINGTON, CONNECTICUT

Refer to Drawing Entitled "Hydrogeological Study", Feb. 1985 for MW Locations and ID's

Well ID	Sampling Date	Total Cr (mg/l)	Hex. Cr (mg/l)	Zn (mg/l)	Ni (mg/l)	Lab Name		Comments
MWd	7/18/86	0.50	0.16	0.16	0.52	G&F	1	
	8/3/86	0.33	0.14	0.13	0.29	G&F	1	
	10/14/86	0.40	0.12	No data	0.76	G&F	1	
	1/19/87	0.7	0.11	0.36	0.77	G&F	1	
	4/29/87	0.22	0.06	No data	0.84	G&F	1	
	11/3/87	0.66	0.56	0.25	0.54	Envirite	1	
	1/27/88	0.82	0.18	0.23	0.59	Envirite	1	
	6/16/88	0.5	0.47	0.15	0.57	Envirite	1	
	8/26/88	0.74	0.59	0.3	0.7	Envirite	1	
	10/12/88	0.35	< 10	0.69	0.5	Vargo	1	
	1/18/89	0.47	0.47	0.22	0.15	Vargo	1	
	4/4/90	0.38	0.37	0.34	0.52	CT Testing	1	
	8/10/90	0.577	0.51	No data	No data	Averill	1	
	9/9/98	0.39	0.39	No data	No data	CT testing	1	
MW1	6/5/85	0.19	0.18	0.15	0.07	Averill	1	
MW2	6/5/85	0.6	0.53	0.07	0.2	Averill	1	
	1/14/86	0.67	0.51	No data	No data	McDermid	1	
	7/16/86	0.41	0.35	No data	No data	McDermid	1	
	3/4/88	0.50	0.50	No data	No data	Envirite	1	
	6/16/88	0.38	0.36	No data	No data	Envirite	1	
	1/8/89	0.78	0.76	No data	No data	Vargo	1	
	9/9/98	0.20	0.20	No data	No data	CT Testing	1	
MW3	6/5/85	0.038	0.03	0.084	0.022	Averill	1	
	10/14/86	0.03	No data	No data	No data	G&F	1	
	9/9/98	<0.05	<0.05	No data	No data	CT Testing	1	
	2/1/02	0.0048	<0.01	0.0063	0.0055	Tetra Tech		
MW4	6/5/85	0.031	0.02	0.022	0.012	Averill	1	
	10/14/86	0.02	No data	No data	No data	G&F	1	
	1/27/88	<0.05	0.02	No data	No data	Envirite	1	
	9/9/98	<0.05	<0.05	No data	No data	CT Testing	1	
	2/1/02	0.0024	<0.01	0.004	0.0001J	Tetra Tech		
MW5	8/10/90	0.15	0.15	No data	No data	Averill	1	
MW6	8/10/90	<0.01	<0.01	No data	No data	Averill	1	

GA/GAA GWPC	0.05	NE	5	0.1		2
SWPC	NE	0.11	0.123	0.88		3

Notes:

1. Except for 2002 sampling using low-flow procedures and conducted by Penn Tech EMI for EPA, laboratories appear to have filtered samples through 0.45 micron filter prior to analyzing for metals
2. CTDEP Remediation Standard Regulation GA/GAA Groundwater Protection Criteria.
3. CTDEP Remediation Standard Regulation Surface Water Protection Criteria
ND = Non detected
"No data" means that sample was not analyzed for identified parameter
NE = criteria not established

REV. #1 - 6/27/01

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Mwu well depth 23' bgs, screen 10'

MWd well depth 30' bgs, screen 10'

MW-1 well depth 35.5' bgs screen 25'

MW-2 well depth 36' bgs, screen 25'

MW-3 well depth 71.5', screen 40'
or ~35'

MW-4 well depth 32.5', screen 20'

MW-5 well depth 24', screen 15'

MW-6 well depth 25', screen 15'

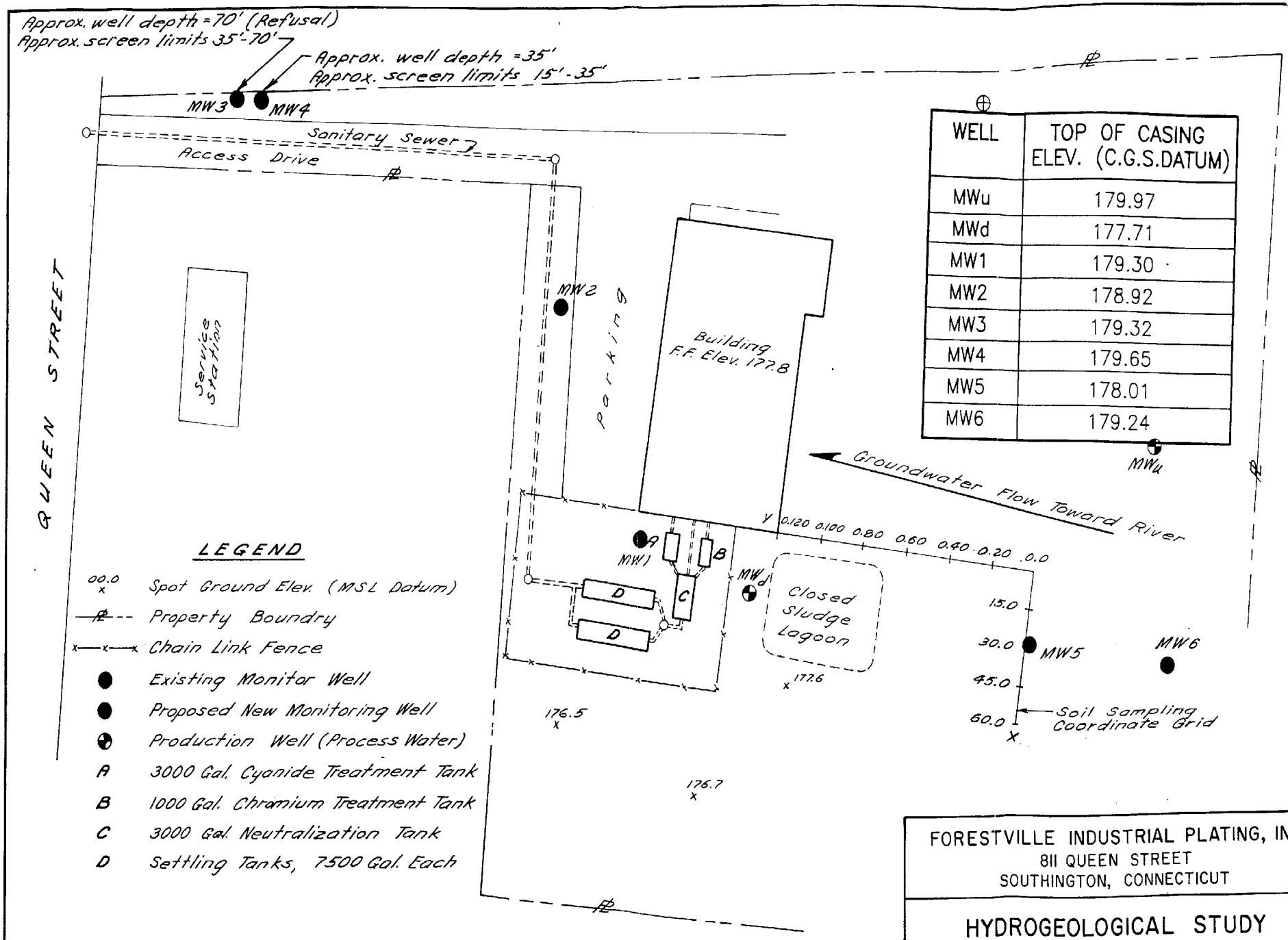
Attachment 2
Quinnipiac River Surface Water Sampling Results for Chromium
(data from Pratt & Whitney data base April 12, 2002)

Q1	CHROMIUM, TOTAL (UNFI	0.013	mg/l	WS	Y		mg/l	10/07/1992
SW-7	CHROMIUM, TOTAL	0.050	mg/L	WS	N	0.056	mg/L	09/16/1996
SW-7	CHROMIUM, TOTAL	0.050	mg/L	WS	N	0.056	mg/L	09/22/1997
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	09/25/1995
SW-7	CHROMIUM, TOTAL	10.0	ug/l	WS	N	10.0	ug/l	03/28/2001
SW-7	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	03/18/1996
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	03/18/1996
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-7	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.01	mg/l	09/21/1999
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	09/16/1996
SW-7	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.01	mg/l	09/21/1999
SW-7	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.010	mg/L	09/14/1998
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.010	mg/L	09/14/1998
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	03/17/1997
SW-7	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.011	mg/L	03/17/1997
SW-7	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.056	mg/L	03/26/1998
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	03/26/1998
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	09/22/1997
SW-7	CHROMIUM, TOTAL (UNFI	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-7	CHROMIUM, TOTAL (UNFI	0.010	mg/L	WS	N	0.01	mg/L	03/13/1995
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.010	mg/l	09/12/1994
SW-7	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	09/25/1995
SW-7	CHROMIUM, TOTAL (UNFI	0.010	mg/l	WS	N	0.010	mg/l	05/27/1994
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.9	mg/l	09/15/2000
SW-7	CHROMIUM, TOTAL	0.01	mg/L	WS	N		mg/L	03/13/1995
SW-7	CHROMIUM, TOTAL (UNFI	0.010	mg/l	WS	N	0.010	mg/l	09/12/1994
SW-7	CHROMIUM, HEXAVALENT	0.01	mg/L	WS	N	0.2	mg/L	03/13/1995
SW-7	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.05	mg/l	09/15/2000
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.010	mg/l	05/27/1994
SW-7	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.01	mg/l	03/16/2000
SW-7	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.05	mg/l	03/16/2000
SW-7	CHROMIUM, HEXAVALENT	0.01	mg/l	WS	N	0.01	mg/l	03/28/2001
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	03/17/1997
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.010	mg/l	05/27/1994
SW-8	CHROMIUM, TOTAL (UNFI	0.010	mg/l	WS	N	0.010	mg/l	09/12/1994
SW-8	CHROMIUM, TOTAL (UNFI	0.010	mg/l	WS	N	0.010	mg/l	05/27/1994
SW-8	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.011	mg/L	03/17/1997
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.010	mg/l	09/12/1994
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	09/16/1996
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	09/25/1995
SW-8	CHROMIUM, TOTAL	0.01	mg/L	WS	N		mg/L	03/13/1995
SW-8	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	03/18/1996
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	03/18/1996
SW-8	CHROMIUM, TOTAL (UNFI	0.010	mg/L	WS	N	0.01	mg/L	03/13/1995
SW-8	CHROMIUM, HEXAVALENT	0.01	mg/L	WS	N	0.2	mg/L	03/13/1995

SW-8	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	09/25/1995
SW-8	CHROMIUM, TOTAL	0.050	mg/L	WS	N	0.056	mg/L	09/16/1996
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.01	mg/l	09/21/1999
SW-8	CHROMIUM, TOTAL	10.0	ug/l	WS	N	10.0	ug/l	03/28/2001
SW-8	CHROMIUM, HEXAVALENT	0.01	mg/l	WS	N	0.01	mg/l	03/28/2001
SW-8	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.05	mg/l	09/15/2000
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.9	mg/l	09/15/2000
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.01	mg/l	03/16/2000
SW-8	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.05	mg/l	03/16/2000
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	09/22/1997
SW-8	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.01	mg/l	09/21/1999
SW-8	CHROMIUM, TOTAL	0.050	mg/L	WS	N	0.056	mg/L	09/22/1997
SW-8	CHROMIUM, TOTAL (UNFI	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-8	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-8	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.05	mg/L	03/26/1998
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.010	mg/L	09/14/1998
SW-8	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.010	mg/L	09/14/1998
SW-8	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	03/26/1998
SW-9	CHROMIUM, TOTAL	10.0	ug/l	WS	N	10.0	ug/l	03/28/2001
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.01	mg/l	03/16/2000
SW-9	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.05	mg/l	03/16/2000
SW-9	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.011	mg/L	03/17/1997
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	03/17/1997
SW-9	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.05	mg/l	09/15/2000
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.9	mg/l	09/15/2000
SW-9	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	09/25/1995
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.010	mg/l	09/12/1994
SW-9	CHROMIUM, HEXAVALENT	0.01	mg/l	WS	N	0.01	mg/l	03/28/2001
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	09/22/1997
SW-9	CHROMIUM, TOTAL	0.050	mg/L	WS	N	0.056	mg/L	09/22/1997
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.010	mg/l	05/27/1994
SW-9	CHROMIUM, TOTAL (UNFI	0.010	mg/l	WS	N	0.010	mg/l	05/27/1994
SW-9	CHROMIUM, TOTAL (UNFI	0.010	mg/l	WS	N	0.010	mg/l	09/12/1994
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	03/26/1998
SW-9	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.010	mg/L	09/14/1998
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.2	mg/L	09/16/1996
SW-9	CHROMIUM, TOTAL (UNFI	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-9	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	03/18/1996
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	03/18/1996
SW-9	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999
SW-9	CHROMIUM, TOTAL	0.010	mg/l	WS	N	0.01	mg/l	09/21/1999
SW-9	CHROMIUM, TOTAL	0.050	mg/L	WS	N	0.057	mg/L	09/16/1996
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/l	WS	N	0.01	mg/l	09/21/1999
SW-9	CHROMIUM, TOTAL	0.010	mg/L	WS	N	0.05	mg/L	03/26/1998
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	09/25/1995

SW-9	CHROMIUM, HEXAVALENT	0.01	mg/L	WS	N	0.2	mg/L	03/13/1995
SW-9	CHROMIUM, TOTAL	0.01	mg/L	WS	N		mg/L	03/13/1995
SW-9	CHROMIUM, TOTAL (UNFI	0.010	mg/L	WS	N	0.01	mg/L	03/13/1995
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.010	mg/L	09/14/1998
SW-9	CHROMIUM, HEXAVALENT	0.010	mg/L	WS	N	0.01	mg/L	03/29/1999

Figure 1



WELL	TOP OF CASING ELEV. (C.G.S.DATUM)
MWu	179.97
MWd	177.71
MW1	179.30
MW2	178.92
MW3	179.32
MW4	179.65
MW5	178.01
MW6	179.24

FORESTVILLE INDUSTRIAL PLATING, INC.
811 QUEEN STREET
SOUTHINGTON, CONNECTICUT

HYDROGEOLOGICAL STUDY

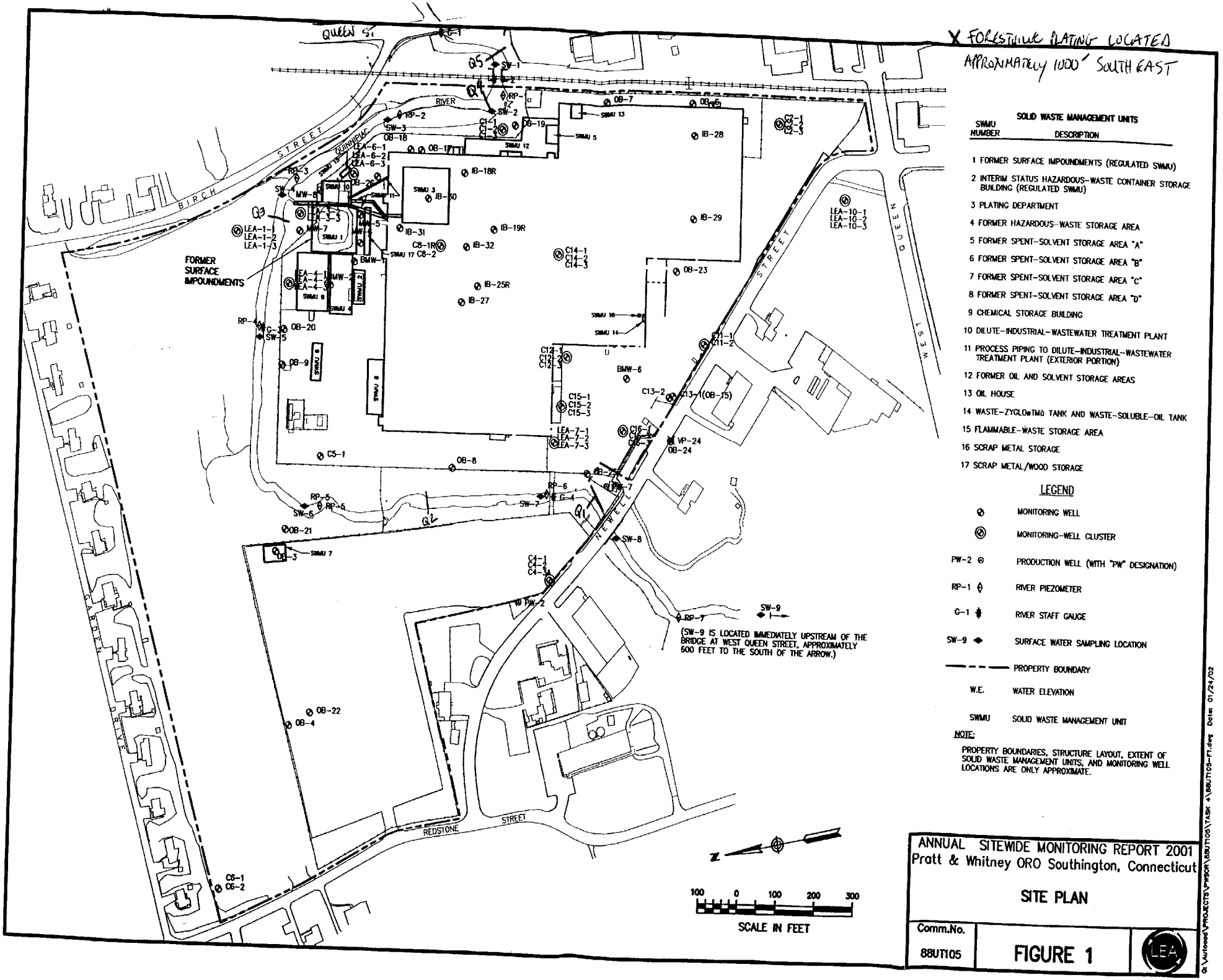
DATE FEB. 1985
SCALE 1" = 40'

HOWARD M. WEXLER, P.E.
51 LIPMAN DRIVE
SOUTH WINDSOR, CT.

Revised 10-26-90

FIG. III - 1

Figure 2



X FORESTDALE PLATING LOCATED APPROXIMATELY 1000' SOUTH EAST

SOLID WASTE MANAGEMENT UNITS

SWMU NUMBER	DESCRIPTION
1	FORMER SURFACE IMPOUNDMENTS (REGULATED SWMU)
2	INTERIM STATUS HAZARDOUS-WASTE CONTAINER STORAGE BUILDING (REGULATED SWMU)
3	PLATING DEPARTMENT
4	FORMER HAZARDOUS-WASTE STORAGE AREA
5	FORMER SPENT-SOLVENT STORAGE AREA "A"
6	FORMER SPENT-SOLVENT STORAGE AREA "B"
7	FORMER SPENT-SOLVENT STORAGE AREA "C"
8	FORMER SPENT-SOLVENT STORAGE AREA "D"
9	CHEMICAL STORAGE BUILDING
10	DILUTE-INDUSTRIAL-WASTEWATER TREATMENT PLANT
11	PROCESS PIPING TO DILUTE-INDUSTRIAL-WASTEWATER TREATMENT PLANT (EXTERIOR PORTION)
12	FORMER OIL AND SOLVENT STORAGE AREAS
13	OIL HOUSE
14	WASTE-ZYGLO®TM® TANK AND WASTE-SOLUBLE-OIL TANK
15	FLAMMABLE-WASTE STORAGE AREA
16	SCRAP METAL STORAGE
17	SCRAP METAL/WOOD STORAGE

LEGEND

- ⊗ MONITORING WELL
- ⊚ MONITORING-WELL CLUSTER
- PW-2 ⊙ PRODUCTION WELL (WITH "PW" DESIGNATION)
- RP-1 ⊕ RIVER PIEZOMETER
- G-1 ⊕ RIVER STAFF GAUGE
- SW-9 ◆ SURFACE WATER SAMPLING LOCATION
- PROPERTY BOUNDARY
- W.E. WATER ELEVATION
- SWMU SOLID WASTE MANAGEMENT UNIT

NOTE:

PROPERTY BOUNDARIES, STRUCTURE LAYOUT, EXTENT OF SOLID WASTE MANAGEMENT UNITS, AND MONITORING WELL LOCATIONS ARE ONLY APPROXIMATE.

ANNUAL SITEWIDE MONITORING REPORT 2001
Pratt & Whitney ORO Southington, Connecticut

SITE PLAN

Comm.No.	FIGURE 1
88UT105	

G:\Autocad\PROJECTS\PWSOR\88UT105\TASK 4\88UT105-F1.dwg Date: 01/24/02