PROPOSED PLAN OF REMEDIAL ACTION

207 A Street
Wilmington, DE

DNREC Project No. DE-1247

July 2002

Delaware Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Site Investigation & Restoration Branch
391 Lukens Drive
New Castle, Delaware 19720

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1.0 INTRODUCTION

The 207 A Street site (site) is located on the southern bank of the Christina River in Wilmington, Delaware, a portion of which is utilized as parking and outdoor dining by the Christina River Club. It is bounded on the south by A Street, and on the east by the Walnut Street Bridge. In order to determine the potential for environmental liability prior to the purchase of the site, the Riverfront Development Corporation (RDC) entered into the Department of Natural Resources and Environmental Control Site Investigation and Restoration Branch's (DNREC's) Voluntary Cleanup Program (VCP) under the provisions of the Delaware Hazardous Substance Cleanup Act, 7 Del. C. Chapter 91 (HSCA). Through a VCP Agreement, RDC agreed to investigate the potential risks posed to the public health, welfare, and the environment at the site. RDC contracted EA Engineering, Science and Technology, Inc. (EA) to perform a remedial investigation (RI) of the site.

The purpose of the RI was to: 1) collect additional information from the site to refine site knowledge from previous investigations; 2) delineate and determine the extent of petroleum contamination, and its possible migration and environmental impacts; and 3) determine the level of risk posed by the contaminants, and based upon this analysis, evaluate remedial alternatives.

This document is the Department's proposed plan of remedial action (proposed plan) for the site. It is based on the results of the previous investigations performed at the site. This proposed plan is issued under the provisions of the HSCA and the Regulations Governing Hazardous Substance Cleanup (Regulations). It presents the Department's assessment of the potential health and environmental risks posed by the site.

As described in Section 12 of the Regulations, DNREC will provide notice to the public and an opportunity for the public to comment on the proposed plan. At the comment period's conclusion, DNREC will review and consider all of the comments received and then DNREC will issue a final plan of remedial action (final plan). The final plan will designate the selected remedy for the site. All previous investigations of the site, the proposed plan, the comments received from the public, DNREC's responses to those comments, and the final plan will constitute the remedial decision record for the site.

Section 2.0 presents a summary of the site description and history. Section 3.0 provides a description of the remedial investigation results. Section 4.0 presents a discussion of the remedial action objectives. Section 5.0 presents the proposed plan of remedial action. Section 6.0 discusses public participation requirements.

2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Setting

The site is located along the southern bank of the Christina River in Wilmington, Delaware (Figures 1 & 2). The site is bordered on the west by the structures and parking lot related to the Christina River Club, on the south by A Street, and to the east by the Walnut Street Bridge. The site is part of a larger property, which consists of three parcels: 201 A Street, 205 A Street, and

207 A Street, which in total encompasses 3.58 acres. However, 201 and 205 A Street, which comprise 1.82 acres, were assessed as part of a separate investigation and are not included as part of the site. The remaining parcel (New Castle County tax parcel number 26-050.00.009) constitutes the 207 A Street site, which is approximately 1.76 acres in size. The outdoor dining area for the Christina River Club Restaurant is located on the site. The remainder of the site is utilized as a paved parking lot. The surrounding land use is generally light industrial and commercial.

2.2 Site and Project History

EA, through a review of historical aerial photographs, United States Geologic Survey topographic maps, historical Sanborn fire insurance maps and city directories, investigated the historical use of the site. The 1887 and 1893 Sanborn maps indicated that the site was used as a planing mill, for coal storage and as a lumberyard owned by the Cold Spring Ice and Coal Company. By the 1920s, the site was occupied by the American Oil Company, and contained an aboveground storage tank farm, several small buildings and railroad sidings. The American Oil Company continued to operate at the property until the 1980s.

3.0 INVESTIGATION RESULTS

EA conducted a Phase II investigation at the site in October 1999, which consisted of direct push soil and groundwater sampling. Subsurface soil samples were collected from five direct push soil borings at the site. Groundwater samples were collected from temporary wells constructed in two of the soil boring locations.

Subsequent to the Phase II investigation, a RI was conducted in June and July 2001 by EA, in which soil samples were collected from a total of seven soil borings, with groundwater samples collected from permanent wells constructed in six of the soil boring locations.

The samples were analyzed for contaminants listed on the Target Analyte List and the Target Compound List (TAL/TCL). The analytical results were first compared to the DNREC Uniform Risk Based Remediation Standards (URS) in a non-critical water resource area, using the unrestricted use risk scenario as a screen in order to determine potential contaminants of concern (COCs). Those chemicals whose concentrations exceeded the unrestricted use URS were selected as COCs and included in a human health risk assessment and ecological risk assessment screening.

VOC compounds detected above the unrestricted use (i.e., residential) URS values included benzene (unrestricted use URS of 800 micrograms/kilogram (µg/kg)) in four Phase II soil boring locations (up to 13,000 µg/kg) and four RI soil boring locations (up to 7,300 µg/kg), and chloroform (up to 390 µg/kg with an unrestricted use URS of 340 µg/kg) in two RI soil boring locations. Subsurface soil samples from five RI soil boring locations contained one or more polynuclear aromatic hydrocarbons (PAHs) at concentrations exceeding their respective unrestricted use URS values, including benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene. The highest concentrations of each of the above compounds were detected in samples collected from soil boring MW-4, located in the approximate center of the property, at a depth of 4-6'

below ground surface (bgs). The observed concentrations for benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene also exceeded their respective restricted-use (i.e., commercial or industrial) URS. However, benzo(k)fluoranthene was removed from further consideration as it met the remediation attainment criteria using the 75/10 rule as outlined in the DNREC Remediation Standards Guidance. Complete analytical results from the RI are listed in table format in Appendix A.

Several metals were also identified in subsurface soils at concentrations that exceeded their unrestricted use URS, including aluminum, arsenic, iron, manganese and vanadium. However, all of the inorganic contaminant concentrations except arsenic (up to 41.4 mg/kg) were below the respective restricted use URS values. The background value for arsenic in Delaware is 11 mg/kg. Also, vanadium was removed from further consideration as it met the remediation attainment criteria using the 75/10 rule as outlined in the DNREC Remediation Standards Guidance

Groundwater sampling results from each of the sampling locations from the Phase II investigation and the RI detected benzene at concentrations exceeding its U.S. EPA Maximum Contaminant Level (MCL) for drinking water of 5 μg/L in all but one RI location. Concentrations of benzene ranged from 2 μg/L up to 580 μg/L. Naphthalene was detected above its groundwater URS of 20 μg/L in MW-2 (46 μg/L).

Arsenic was detected above its MCL of 50 μg/L in MW-4 (56.1 μg/L), while iron and manganese exceeded their Secondary MCL (SMCLs) in every sample. It should be noted however, that SMCLs represent non-regulatory values that reflect aesthetic qualities such as color and taste, and are not health-based. Further, public water is available in this area, and a Groundwater Management Zone (GMZ) restricting use of groundwater in Wilmington is presently in place, both of which prevent human exposure to site groundwater.

A risk assessment was performed, assuming a restricted use risk setting, and development of the site into a multi-story office building. The risk assessment was performed in order to evaluate the cumulative risk associated with the exposure to soil and ingestion of groundwater on the site. Contaminants identified as COCs and retained for inclusion in the human health risk assessment include: aluminum, iron, manganese, benzene, benzo(b)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, benzo(a)anthracene, indeno(1,2,3-cd)pyrene, naphthalene and arsenic.

The calculations were conducted using the DNREC Site-Specific Calculator for Multiple Analytes (DNREC May 2000 version). The planned future use of the site consists of construction of a multi-story office complex. As such, the completed exposure pathway consisted of incidental soil ingestion, dermal contact, and inhalation of contaminated soils by construction workers. Based upon the assessment, the soil cumulative risk was calculated to be 1.4×10^{-5}, which exceeds the HSCA action level of $1X10^{-5}$, and a hazard index of 0.4, which is below the HSCA action level of 1.0

Due to the site's location along the Christina River, it was necessary to assess what potential impacts, if any, the site could pose to the environmental health of the river. The site will remain paved and will be re-developed, and the existing bulkhead will be maintained, thus precluding erosion of site soils into the river. Groundwater loading values were also calculated to evaluate the possible effects of groundwater discharge into the Christina River. Loading values for all

organic and metallic analytes detected in groundwater during both the Phase II and RI investigations were calculated based upon the measured groundwater flow rate at the site and the flow rate of the Christina River. Based upon these calculations, it was determined that there were no exceedences of Delaware's Surface Water Quality Standards by the discharge of site groundwater into the Christina.

4.0 REMEDIAL ACTION OBJECTIVES

According to Section 8.4 (1) of the Regulations, site-specific remedial action objectives (RAO) must be established for all plans of remedial action. The Regulations provide that DNREC set objectives for land use, resource use and cleanup levels that are protective of human health and the environment.

Qualitative objectives describe in general terms what the final results of the remedial action, if necessary, should be. The following qualitative objectives are determined to be appropriate for the site:

- Prevent residential exposure to impacted media;
- Prevent future construction worker exposure to elevated concentrations of site contaminants;
- Prevent environmental impacts, specifically to the Christina River, due to impacted media at the site; and
- Continue the use of public water for all purposes to the property and the surrounding community.

These objectives are consistent with the current use of the site as a commercial use in an urban setting, New Castle County zoning policies, state regulations governing water supply and worker health and safety.

Based on the qualitative objectives, the quantitative objectives are:

1. Prevent human exposure to soils and groundwater contaminated by VOCs, PAHs, and metals that would result in a carcinogenic risk exceeding $1X10^{-5}$or a hazard index of 1.0. (Appendix A)
2. Prevent erosion and discharge of soils contaminated by VOCs, PAHs, and metals into the Christina River.

5.0 PROPOSED PLAN OF REMEDIAL ACTION

Based on DNREC evaluation of the site information and the above remedial action objectives, the recommended remedial actions for the site consist of the following activities as described below:

1. Delineate, excavate and dispose off-site the soils around MW-6 and other areas that contain high concentrations of PAHs. Remedial action objectives include removal of soils containing elevated levels of the following PAH compounds above the $1x10^{-4}$ risk concentration noted in parentheses: benzo(a)anthracene (9,000 µg/kg), benzo(b)fluoranthene (9,000 µg/kg), benzo(a)pyrene (900 µg/kg), and dibenz(a,h)anthracene (900 µg/kg).

2. Cap any impacted soils containing the aforementioned constituents at concentrations between the noted $1x10^{-4}$ levels and 1×10^{-5} levels. The proposed cap would be constructed in conjunction with development of the property and will include containment of the soils underneath proposed structures and asphalt parking lots and any clean fill needed to bring the site up to grade. A geotextile fabric will be installed immediately atop the residual contaminated soil as a marker boundary to identify the presence of the contaminated layer.

3. Maintain the existing bulkhead along the Christina River, and contain the existing soils at the site so as to prevent their erosion into the Christina River.

4. Placement of a deed restriction on the property: a) limiting the site to non-residential uses; b) prohibiting any digging, drilling, excavating, grading, constructing, earth moving, or any other land disturbing activities on the property (including the bulkhead) without the prior written approval of the DNREC; and c) prohibiting the installation of any water well on, or use of groundwater at, the site without the prior written approval of DNREC. In addition, the site will remain a part of the Wilmington Groundwater Management Zone.

6.0 PUBLIC PARTICIPATION

The Department actively solicits public comments or suggestions on the proposed plan of remedial action and welcomes opportunities to answer questions. Please direct written comments to:

DNREC Site Investigation and Restoration Branch
391 Lukens Drive
New Castle, Delaware 19720
Attention: Keith Robertson

The comment period begins, Monday, July 22, 2002, and ends at the close of business (4:30 p.m.) Monday, August 12, 2002. If DNREC receives a request with merit, a public meeting will be held on the proposed plan. The meeting time and place will be publicly announced in the same venues as this proposed plan.

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John Blevins
Director, Division of Air and Waste Management

8/2/02
Date of Review of Proposed Plan

Figures 1 & 2 from Remedial Investigation Report

Prepared by EA Engineering, Science and Technology, Inc., September 2001.

Figure 1: Site Location/Topographic Map

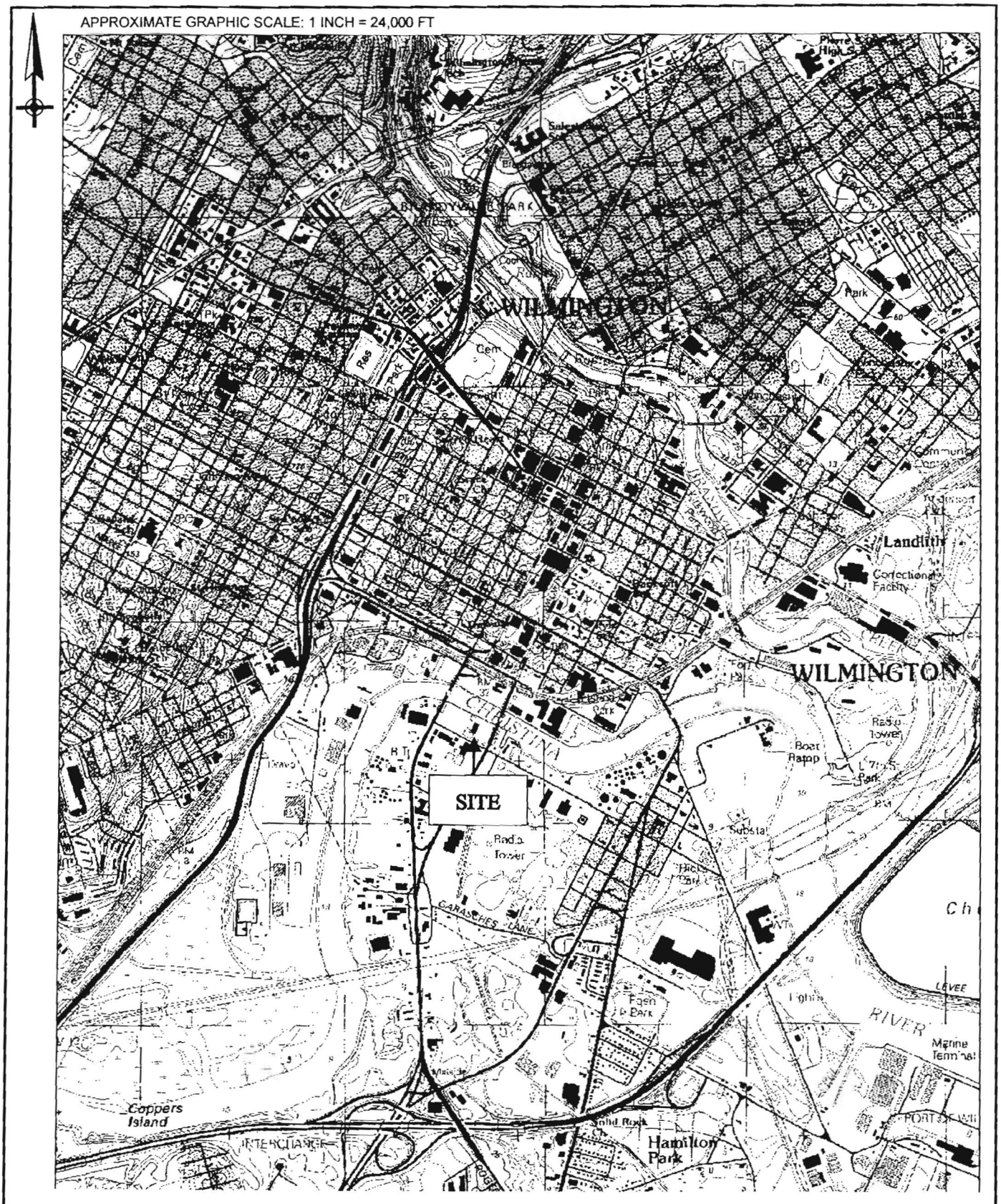

Figure 1-1. Site location map, 207 A Street, Wilmington, Delaware. (Source: USGS 7.5 Minute Series Topographic Map, Wilmington South Quadrangle, DE)

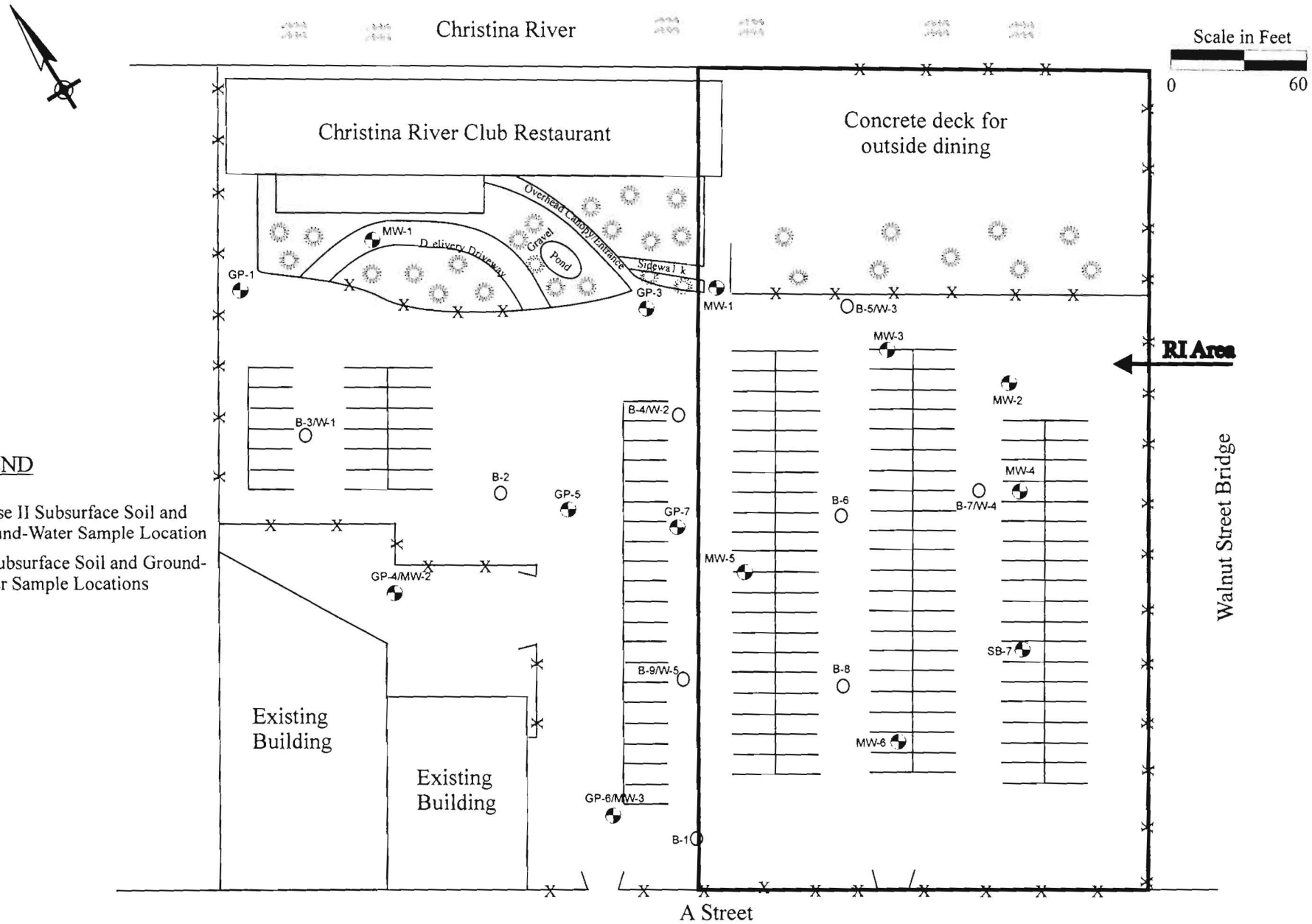

Figure 1-2. Site sketch of 201, 205, and 207 A Street, Wilmington, DE showing approximate locations of the Phase II sample locations, and the RI sample locations.

Subsurface Soil Analytical Results from the 26 October 1999 Phase II Investigation
BTEX and Lead

Concentrations in µg/kg

Sample Number	Depth (ft)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
DNREC-URS		**800**	**650,000**	**400,000**	**420,000**	**400**
B-5	4-6	**<9,400**	<9,400	6,600 J	<18,800	140
B-6	1-3	**3,400**	3,300	640 J	5,090 J	190
B-7	6-8	**<14,000**	6,900 J	<14,000	<24,000	120
B-8	0-2	**13,000 J**	<14,000	<14,000	<27,000	70

< = Not Detected
J = Estimated value, below laboratory detection limit
Delaware Uniform Risk-Based Remediation Standards, URS for Protection of Human Health, Unrestricted Reuse in a Non-Critical Resource Area for Subsurface Soil, December 1999

Concentrations in bold/highlighted exceeded the DNREC URS value

Ground-Water Analytical Results from the 26 October 1999 Phase II Investigation
BTEX and Dissolved Lead

Concentrations in µg/L

Sample Number	Benzene	Toluene	Ethylbenzene	Total Xylenes	Lead
URS	**0.4**	**750**	**700**	**1,200**	**15**
W-3	**76**	11	8	29	<10
W-4	**23**	11	7	31	<10

< = Not detected
Delaware Uniform Risk-Based Remediation Standards, URS for Protection of Human Health, Ground-Water, December 1999

Concentrations in bold/highlighted exceeded the DNREC URS value

Subsurface Soil Analytical Results from the 19 June and 12 July 2001 Remedial Investigation
TCL VOC

Concentration, µg/Kg

Acetone	**780,000**	<600	<660	<3400	<680	<590	260 JB	430 J
Chloroform	**300**	<300	<330	<1700	**390**	**320**	<310	<300
Benzene	**800**	440	210 J	**7,300**	**2,100**	**4,800**	**2,400**	<300
Toluene	**650,000**	560	<330	61,000	990	860	730	<300
Ethylbenzene	**400,000**	4,100	220 J	24,000	380	1000	290 J	<300
Total Xylenes	**420,000**	1,330 J	615 J	51,200	2030	2810	1620	68 J

Subsurface Soil Analytical Results from the 19 June and 12 July 2001 Remedial Investigation
Pesticides by EPA Method 8082

Concentration, µg/Kg

alpha-BHC	**100**	<2	<2.2	11	<11	<9.6	<2	<9.8
beta-BHC	**400**	<2	<2.2	2.5	<11	<9.6	<2	<9.8
gamma-BHC (Lindane)	**500**	<2	<2.2	8.8	<11	<9..6	<2	<9.8
Heptachlor epoxide	**70**	<2	<2.2	<2.3	<11	<9.6	51	<9.8
4,4'-DDE	**2,000**	<3.9	<4.2	<4.4	<22	<19	6.3	<19
4,4'-DDD	**3,000**	<3.9	<4.2	<4.4	<22	<19	5.4	<19
4,4'-DDT	**2,000**	<3.9	<4.2	<4.4	<22	<19	5.7	<19
Endrin ketone	**NC**	<3.9	<4.2	10	<22	<19	<3.9	<19

< = Below Laboratory Detection Limit
Delaware Uniform Risk-Based Remediation Standards, URS for Protection of Human Health, Unrestricted Reuse in a Non-Critical Resource Area for Subsurface Soil, February 1998, revised December 1999
Concentrations in bold exceeded the URS value

Subsurface Soil Analytical Results from the 19 June and 12 July 2001 Remedial Investigation
TAL Metals

Concentration in mg/kg

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aluminum	**7800**	6040	**18300**	2090	**9170**	**13000**	**10300**	7340
Antimony	**3**	0.074 B	0.76	1.9	<0.80	<0.68	0.47 B	<0.69
Arsenic	**0.40**	**4.1**	**6.6**	**23**	**41.4**	**7.3**	**17.3**	**6.9**
Barium	**550**	68	177	57.9	85	51.3	110	65.9
Beryllium	**16**	0.47 B	0.98	0.30 B	0.64 B	0.41 B	0.61	0.46 B
Cadmium	**4**	<0.59	<0.63	1.1	<0.66	<0.57	0.13 B	<0.58
Calcium	**NC**	2770	3170	7560	3810	9330	17500	16300
Chromium	**12000**	14.4	65.2	12.8	25.4	28.4	27.9	19.4
Cobalt	**470**	10.3	32.8	4.8 B	18.8	9	6.6	6.7
Copper	**310**	25.9	64.4	109	34.4	17.7	59.5	15.7
Iron	**2300**	**12000**	**41200**	**12200**	**23800**	**20600**	**20400**	**15100**
Lead	**400**	58.2	102	218	97.3	74.8	75.1	61.1
Magnesium	**NC**	1440	1860	653 B	2210	2790	3940	2530
Manganese	**160**	119	**1460**	72.6	**472**	**249**	**438**	**252**
Mercury	**10**	0.36	0.023 B	0.30	0.21	0.72	0.21	0.094 B
Nickel	**160**	9	39	10.1	14.9	11.5	13.4	10.9
Potassium	**NC**	400 B	601 B	331 B	1070	685	1110	823
Selenium	**39**	1.1	<0.63	1.4	<0.66	<0.57	1.3	<0.57
Silver	**39**	0.79 B	<1.3	<1.3	<1.3	<1.1	<1.2	<1.1
Sodium	**NC**	147 B	312 B	254 B	290 B	186 B	334 B	201 B
Thallium	**18**	<1.2	1.7	<1.3	0.51 B	<1.1	<1.2	<1.1
Vanadium	**55**	27.8	**56.5**	13.3	46.2	30.9	30.1	28.5
Zinc	**2300**	54.6	125	265	111	42.6	87.2	67.6

[illegible]

Subsurface Soil Analytical Results from the 19 June and 12 July 2001 Remedial Investigation
TCL SVOC by EPA Method 8270C
Concentration, µg/Kg

Naphthalene	**160,000**	180 J	110 J	20,000	290 J	440	10,000	45 J
2-Methylnaphthalene	**160,000**	170 J	62 J	30,000	230 J	710	5,400	<380
Acenaphthylene	**NC**	<390	<420	<2200	<440	<370	4,100	77 J
Acenaphthene	**470,000**	<390	<420	1,000 J	<440	85 J	4,000	<380
Dibenzofuran	**31,000**	<390	<420	1,300 J	<440	42 J	8,000	<380
Fluorene	**310,000**	<390	89 J	2,400	<440	140 J	13,000	<380
Phenanthrene	**1,000,000**	100 J	470	5,800	91 J	460	66,000	300 J
Anthracene	**1,000,000**	<390	64 J	730 J	<440	67 J	11,000	120 J
Carbazole	**32,000**	<390	<420	<2200	<440	<370	5,100	<380
Di-n-butyl phthalate	**NC**	<390	<420	<2200	<440	41 J	<2000	<380
Fluroanthene	**310,000**	65 J	590	1,900 J	170 J	310 J	61,000	700
Pyrene	**230,000**	62 J	490	1,900 J	190 J	260 J	83,000	880
Benzo(a)anthracene	**900**	<390	190 J	720 J	110 J	94 J	**28,000**	640
Bis(2-Ethylhexyl)phthalate	**46,000**	<390	<420	<2200	300 J	<370	<2000	<380
Chrysene	**87,000**	58 J	230 J	1,400 J	150 J	130 J	29,000	640
Benzo(b)fluoranthene	**900**	53 J	230 J	**1,200 J**	150 J	80 J	**30,000**	800
Benzo(k)fluoranthene	**9,000**	<390	120 J	340 J	120 J	83 J	**12,000**	710
Benzo(a)pyrene	**90**	<390	**170 J**	**580 J**	**140 J**	89 J	**24,000**	**840**
Indeno(1,2,3-cd)pyrene	**900**	<390	110 J	470 J	120 J	49 J	**16,000**	780
Dibenz(a,h)anthracene	**90**	<390	<420	<2200	<440	<370	**4,600**	**170 J**
Benzo(g,h,i)perylene	**NC**	<390	120 J	520 J	110 J	44 J	14,000	730
TENTATIVELY IDENTIFIED COMPOUNDS								
Unknown hydrocarbons		3,910 J	3,980 J	223,000 J	15,880 J	7170 J		
Octane						1800 JN		
Unknown		12,980 J	4,250 J	168,000 J	5,460 J	6000 J	21,900 J	
Cyclohexane, 1,1,3-trimethyl-						850 JN		
Octane, 3-methyl-					1,200 JN	1600 JN		
Nonane						2100 JN		
Cyclohexane, propyl-					1,200 JN	940 JN		
Nonane, 3-methyl-					1,700 JN	1400 JN		
Unknown C9H12					1,200 J	910 J		
Decane						1500 JN		
Undecane						870 JN		
Sulfur, mol. (S8)					1,100 JN	2000 JN		480 JN
Benzo[e]pyrene								700 JN
Cyclohexane, ethyl-			420 JN					
Unknown C10H14			1,140 J		2,600 J			
Unknown C10H12			1,190 J					
Unknown C11H16			500 J					
Dodecane, 2,6,10-trimethyl-			410 JN					
Dibenzothiophene							7,300 J	
Unknown PAH C15H12							44,900 J	
Unknown dimethylnaphthalene				16,000 J			3,200 J	
Unknown PAH C14H12							3,500 J	
Unknown PAH							41,200 J	
2-Phenylnaphthalene							18,200 J	
Unknown PAH C16H14							8,000 J	
Unknown PAH C16H10							11,000 J	
Unknown PAH C17H12							11,000 J	
o-Terphenyl							3,500 J	
Unknown PAH C19H14							3,800 J	
Unknown PAH C20H12							43,100 J	
Unknown PAH C22H14							4,300 J	
Unknown PAH C22H12							3,000 J	
Unknown substituted benzene		380 J		275,000 J				
Benzene, propyl-				106,000 J				
Pentadecane, 2,6,10,14-tetramethyl-				63,000 J				
Total TICs		17,270 J	11,890 JN	851,000 J	30,340 JN	27,140 JN	227,900 J	1,180 JN
Total PAHs (including TICs)		688 J	3,045 JN	192,260 J	1,871 JN	3,083 JN	613,100 J	8,132 JN

Ground-Water Analytical Results from the 27 July 2001 Remedial Investigation
TCL VOC

Concentration, µg/L

Acetone	**61**	2 J	48	7	28	27	1 J
2-butanone	**NC**	<5	11 J	6	19	8 J	<5
Benzene	**0.4**	**6**	**580**	**160**	**200**	**390**	**2**
Toluene	**750**	0.9 J	150	15	22	30	0.7 J
Ethylbenzene	**700**	2	110	6	8	24	<1
Total Xylenes	**1,200**	2.6 J	234	32	65	53	3

[redacted]

Ground-Water Analytical Results from the 27 July 2001 Remedial Investigation
TCL SVOC by EPA Method 8270C
Concentration, µg/L

Phenol	**4,000**	<10	7 J	5 J	2 J	5 J	1 J
4-Methylphenol	**18**	<10	1 J	<10	<10	<10	2 J
2,4-Dimethylphenol	**73**	<10	<10	<10	<10	<10	2 J
Naphthalene	**20**	<10	**46**	<10	2 J	3 J	**21**
2-Methylnaphthalene	**12**	<10	5 J	<10	<10	3 J	6 J
Acenaphthylene	**NC**	<10	<10	<10	<10	<10	1 J
Acenaphthene	**37**	<10	2 J	<10	<10	1 J	5 J
Dibenzofuran	**2**	<10	<10	<10	<10	<10	**5 J**
Fluorene	**24**	<10	2 J	<10	<10	<10	9 J
Phenanthrene	**120**	<10	4 J	<10	<10	1 J	18
Anthracene	**180**	<10	<10	<10	<10	<10	2 J
Carbazole	**3**	<10	2 J	<10	<10	<10	**6 J**
Fluroanthene	**150**	<10	2 J	<10	<10	<10	3 J
Pyrene	**18**	<10	1 J	<10	<10	<10	2 J
Bis(2-Ethylhexyl)phthalate	**6**	<10	5 J	2 J	3 J	3 J	1 J
Total PAHs (including TICs)			64 J		2 J	8 J	78 J

Ground-Water Analytical Results from the 27 July 2001 Remedial Investigation
TAL Metals

Concentration in µg/L

Aluminum	**200***	151 B	186 B	122 B	122 B	92.7 B	109 B
Antimony	**6**	<1.4	2.7 B	1.9 B	<1.4	2.2 B	<1.4
Arsenic	**0.5**	**15.3**	**16.5**	**7.8 B**	**56.1**	**35.2**	**28.8**
Barium	**2000**	291	833	369	501	529	332
Beryllium	**4**	<0.087	0.14 B	<0.087	<0.087	0.15 B	0.17 B
Cadmium	**5**	<0.54	<0.54	<0.54	<0.54	<0.54	<0.54
Calcium	**NC**	96200	75700	102000	86700	106000	107000
Chromium	**100**	1.9 B	2.3 B	1.4 B	1.9 B	1.1 B	1.4 B
Cobalt	**220**	<4.2	<4.2	<4.2	<4.2	<4.2	<4.2
Copper	**1300**	<1.4	7.9 B	<1.4	<1.4	<1.4	<1.4
Iron	**300***	**50700**	**15300**	**33200**	**45900**	**47300**	**36400**
Lead	**15**	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6
Magnesium	**NC**	18100	103000	21800	39000	28700	21000
Manganese	**50***	**1020**	**451**	**638**	**690**	**1320**	**640**
Mercury	**2**	0.042 B	0.034 B	0.038 B	0.030 B	0.040 B	0.032 B
Nickel	**100**	<2.4	<2.4	<2.4	<2.4	2.5 B	<2.4
Potassium	**NC**	16100	14200	13100	12500	31400	15000
Selenium	**50**	4.7 B	3.8 B	3.6 B	3.1 B	4.3 B	3.9 B
Silver	**100**	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Sodium	**NC**	65000	25600	41100	35300	52500	34800
Thallium	**2**	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8
Vanadium	**26**	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4
Zinc	**2000**	1380	38.6	43	44.1	91.5	28.7