SUPERFUND FINAL CLOSE OUT REPORT

O'CONNOR SUPERFUND SITE
AUGUSTA, KENNEBEC COUNTY, MAINE

Prepared by

U.S. Environmental Protection Agency
Region 1
Boston, Massachusetts

Nancy Barmakian for

James T. Owens, III, Director
Office of Site Remediation and Restoration

12/17/13

Date

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AUGUSTA, KENNEBEC COUNTY, MAINE

I. Introduction

This Final Close Out Report (FCOR) documents that all response actions for the O'Connor Superfund Site (Site) have been successfully completed in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-22, May 2011). This FCOR documents all decision documents have been completed and the selected remedy is consistent with CERCLA, the NCP, and EPA policy and guidance documents.

II. Summary of Site Conditions

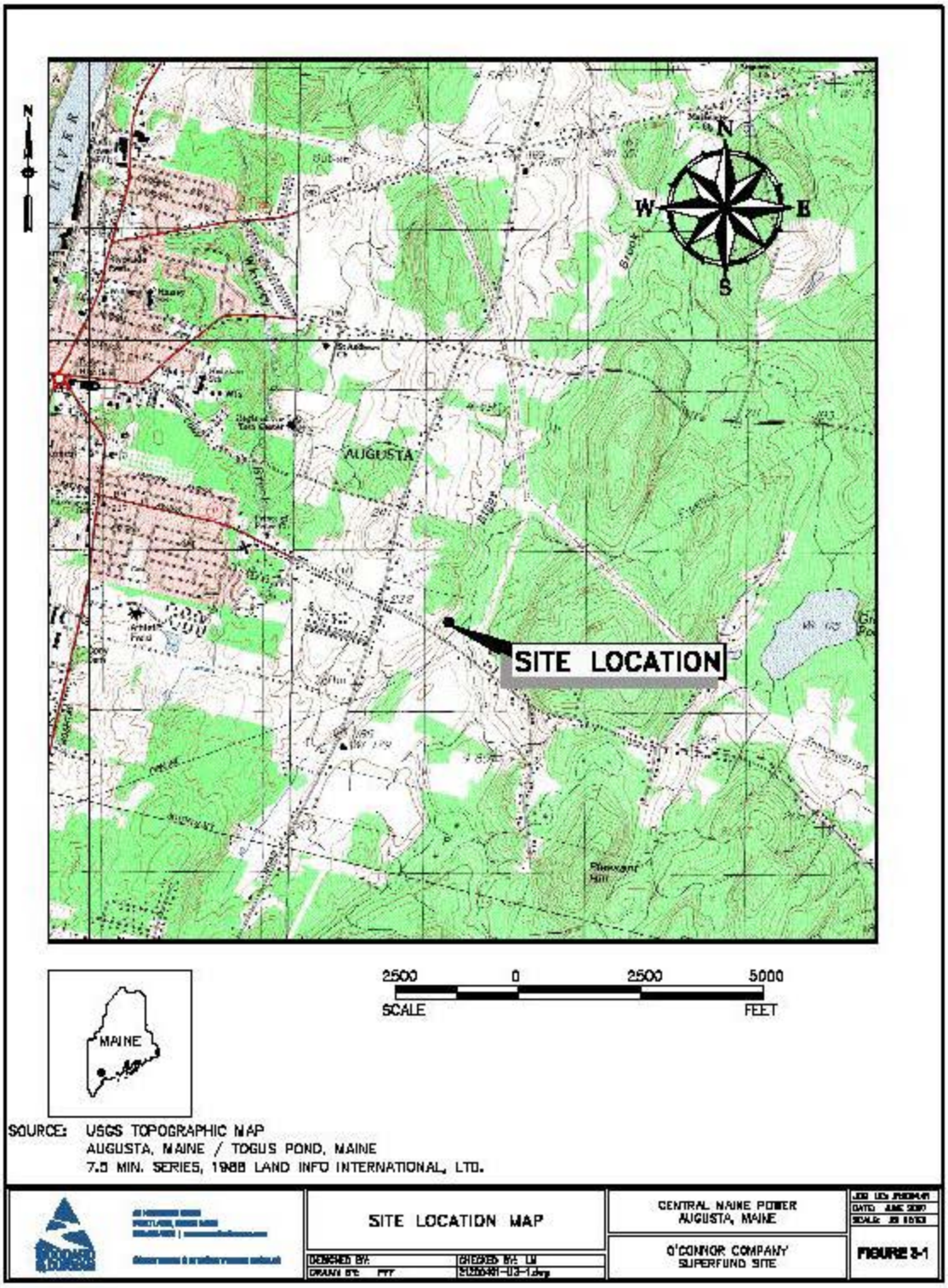
a. Background

The Site consists of approximately 23 acres within a 28-acre property owned by Central Maine Power Company (CMP) and is located on U.S. Route 17 approximately three miles east of the Kennebec River in Augusta, Maine. The Maine Department of Environmental Protection (MEDEP) also designated the same 23-acre property as a Hazardous Substance Site. The surrounding area is generally rural. The property is bordered on the east and southeast by Riggs Brook, a small northerly flowing tributary of the Kennebec River, on the north and west by woodlands, and on the south by Route 17. The property south of Route 17 is primarily wooded. A residence abuts the CMP property along its western boundary. Automotive entry to the Site is limited to Route 17; there are trails which enter the Site from the north and west. The location of the property is shown on Figure 3-1. Figure 3-2 shows features and topography of the Site.

The land at the Site was used as farmland until the 1950s when the F. O'Connor Company established a salvage yard and transformer recycling operation on the property. The F. O'Connor Company operated until the late 1970s. This resulted in drippage and spillage of oil to the ground, principally in the three transformer work areas (TWAs). In February 1972, an oil spill was found to have migrated toward Riggs Brook. In 1976, MEDEP began investigations through sampling and analysis of the soils, sediments, and surface waters for polychlorinated biphenyls (PCBs). Soil and groundwater contamination primarily consisted of PCBs with some volatile and semivolatile organic compounds (VOCs and SVOCs), and inorganics. Potential sources of contamination that were identified included the TWAs, scrap piles, oil storage tanks, and two lagoons installed to help control oil migration from the property. Concern for the potential impact on soils, surface water, and groundwater were the primary reasons the Site was proposed for the National Priorities List on September 8, 1983.

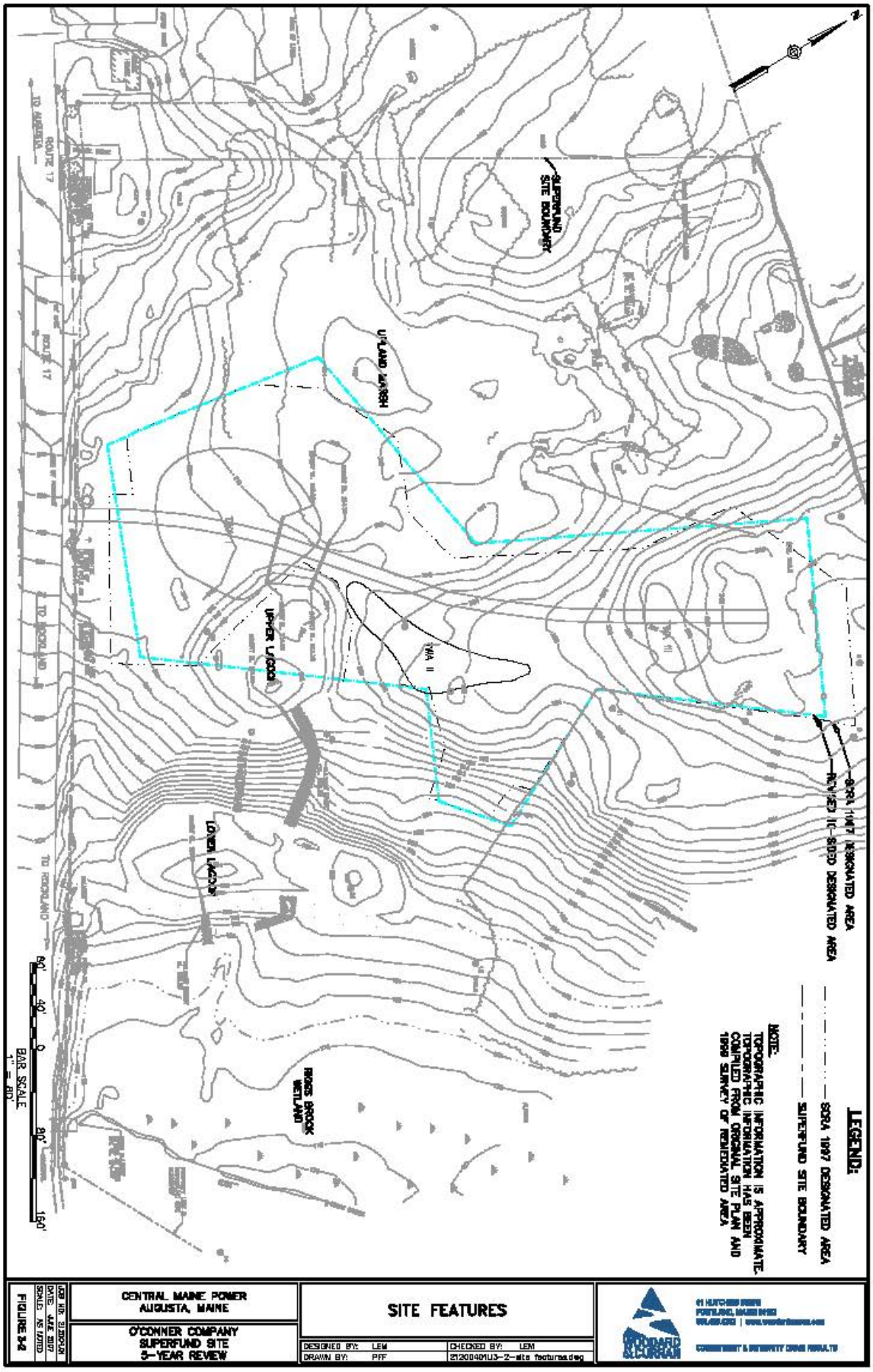
b. Removal Action

Three removal actions were performed at the Site. In 1977, at the request of MEDEP the F. O'Connor Company discontinued use of the lagoons, pumped the lagoon water into storage tanks and excavated the lagoon sediments which were then placed in an upland area upgradient of the TWAs. In 1984, EPA issued a Unilateral Administrative Order to the F. O'Connor Company to construct a fence encompassing approximately five acres of the Site. Under a 1986 Administrative Order by Consent between MEDEP and F. O'Connor Company and CMP, 20 storage tanks and 21 55-gallon drums were removed off the Site.



SOURCE: USGS TOPOGRAPHIC MAP
AUGUSTA, MAINE / TOGUS POND, MAINE
7.5 MIN. SERIES, 1988 LAND INFO INTERNATIONAL, LTD.

	SITE LOCATION MAP	CENTRAL MAINE POWER AUGUSTA, MAINE	FIGURE 3-1
	DESIGNED BY:	CHECKED BY: LM	O'CONNOR COMPANY SUPERFUND SITE
	DRAWN BY: PFF	0125049I-03-1.dwg	


SUPERFUND SITE BOUNDARY
UPLAND MARSH
UPPER LAGOON
LOWER LAGOON
RIDGE BROOK WETLAND
TWA II
TO ROCKLAND
TO AUGUSTA
ROUTE 17
BAR SCALE
1" = 80'
LEGEND:
SUPERFUND SITE BOUNDARY
CERCLA 1997 DESIGNATED AREA
REVISED NON-SDSD DESIGNATED AREA
NOTE:
TOPOGRAPHIC INFORMATION IS APPROXIMATE-
TOPOGRAPHIC INFORMATION HAS BEEN
COMPILED FROM ORIGINAL SITE PLAN AND
1998 SURVEY OF REMEDIATED AREA
CENTRAL MAINE POWER
AUGUSTA, MAINE
O'CONNER COMPANY
SUPERFUND SITE
5-YEAR REVIEW
SITE FEATURES
DESIGNED BY: LEM
DRAWN BY: PFF
CHECKED BY: LEM
FIGURE 3-2

c. Selected Remedy and Remedial Action Objectives

A Record of Decision (ROD) for the Site was issued on September 27, 1989. CMP, an identified Potentially Responsible Party at the Site, signed a Consent Decree with the United States on September 3, 1991, to undertake an investigation and remediation of the Site. CMP also acquired ownership of the property from the F. O'Connor Company in 1992.

The 1989 ROD selected a remedy to address the risks present in the Site soils, sediment, groundwater, and biota from PCBs and VOCs, resulting from the operation of the salvage and electrical transformer recycling business. The barn structure was to be decontaminated, demolished, and then disposed of offsite at appropriate facilities; standing water and sediments in the two lagoons were to be removed; soils contaminated with PCBs, PAHs, and lead were to be excavated and treated using solvent extraction; contaminated groundwater was to be pumped from the soils and bedrock, treated, and then discharged onsite; and sediments and fish in Riggs Brook were to be sampled for ten years.

The 1989 remedy was subsequently modified in 1994 by an Explanation of Significant Differences (ESD) and in 2002 by a ROD Amendment. The ESD adjusted the soil and sediment cleanup levels for a three- to four-acre Designated Area where soils and sediments with concentrations between the old and new cleanup levels would be consolidated after solvent extraction treatment. Following the consolidation of soils within the Designated Area, the entire excavation area was to be covered with one foot of clean fill brought in from offsite. In 1995 EPA selected the contingency cleanup plan that was identified in the ESD. This contingency plan allowed for the disposal offsite of contaminated soil and sediment without first requiring treatment onsite.

Table 1: Soil and Sediment Cleanup Standards (ppm)

Contaminant	1989 ROD	1994 ESD Within Designated Area	1994 ESD Outside Designated Area	1995 Contingency Cleanup Plan
Total PCBs	1	10	1	10
Total cPAHs	1	10	1	10
Lead	248	248	248	248

The 2002 ROD Amendment changed the cleanup approach for groundwater. In place of the pump-and-treat remedy, the 2002 ROD Amendment selected institutional controls to prevent the use of contaminated groundwater, a waiver of federal and state drinking water standards for a limited portion of the Site on the basis of technical impracticability, active recovery of separate-phase oil from the overburden soil and bedrock through annual implementation of a vacuum-enhanced recovery system and passive recovery between these annual implementations, and long-term monitoring of Site groundwater on a regular basis to evaluate changes in Site conditions over time. In 2003, CMP signed an Amendment to Consent Decree with the United States that set forth the actions to be undertaken for implementing the 2002 ROD Amendment.

In 1996, EPA separated the Site into three operable units (OUs). Operable Unit OU-1 addressed the soils, OU-2 addressed groundwater, and OU-3 addressed Riggs Brook sediment and biota.

Five Remedial Action Objectives (RAOs) were set in the 1989 ROD:

1 Reduce potential present and future public health and environmental risks from direct contact, ingestion, and/or dermal absorption with the PCB-, cPAH-, and lead-contaminated soils and sediments located on- and offs ite;
2. Reduce potential, present and future public health risks from the inhalation of PCB vapors from the Site;
3. Reduce potential, present and future public health risks from the ingestion of PCB-contaminated fish from Riggs Brook;
4. Reduce potential future public health risks from the ingestion of PCB-, benzene-, and 1,4-dichlorobenzene contaminated groundwater found on the Site; and
5. Reduce potential present and future environmental risks to aquatic and terrestrial wildlife from exposures to the PCB-, lead-, and aluminum-contaminated onsite surface water.

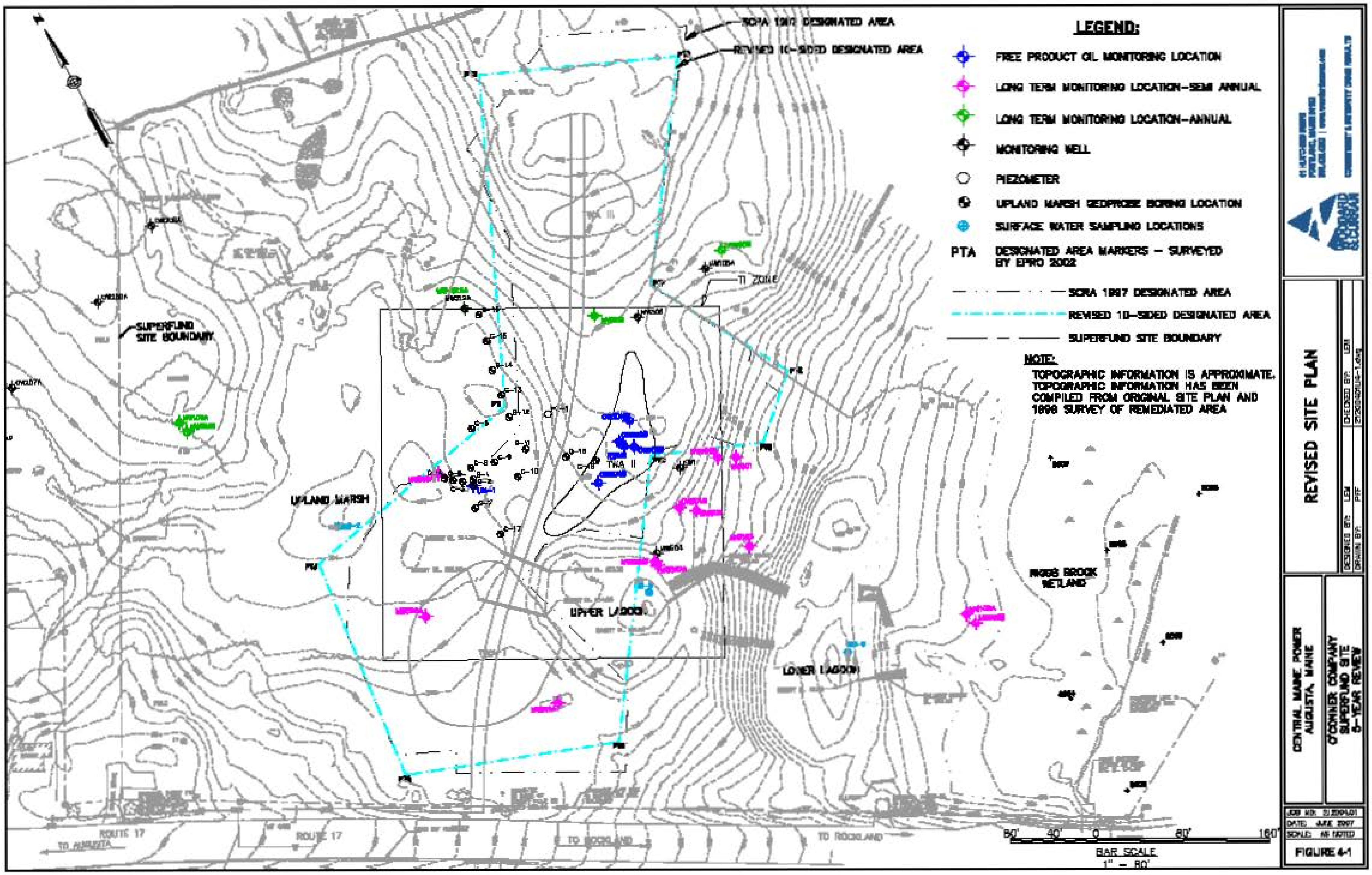
The ESD, while modifying the source control remedy for soils and sediment, did not change the RAOs. The 2002 ROD Amendment noted that RAOs 1, 2, 3, and 5 had been achieved. The ROD Amendment changed the approach to achieving the fourth RAO through institutional controls, a Technical Impracticability waiver, active and passive oil recovery, and long-term monitoring. The TI Zone horizontally encompasses the TWA II Area and the area associated with shallow groundwater flow to the south of the TWA II Area. Vertically, the proposed TI Zone extends into bedrock. See Figure 4-1.

The September 1998 OU-1 RA Report provides a comprehensive review of source control activities and the September 2007 OU-3 RA Report provides a review of monitoring activities performed for Riggs Brook sediment and biota. All Remedial Action activities for OU-1 and OU-3 were implemented under a 1992 Consent Decree signed by CMP and EPA (MEDEP did not sign the Consent Decree).

See below, Section III, Monitoring Results, for further details concerning the initiation and completion of the RA activities described above.

d. Institutional Controls

The 1989 ROD required temporary institutional controls for the entire Site until the cleanup goals were met. In 1994, CMP and MEDEP signed an agreement in the form of a Declaration of Restrictive Covenant, which was not recorded but held by MEDEP "in escrow" until 2002. With the recognition that the 1994 ESD and 2002 ROD Amendment changed the cleanup goals, which in turn would result in some waste being left in place at the Site, thus preventing unlimited exposure and unrestricted use, EPA requested the restrictive covenant be recorded to make the (previously temporary) institutional controls permanent. Accordingly, on September 13, 2002, the Declaration of Restrictive Covenant was recorded in the Kennebec County Registry of Deeds.


LEGEND:
FREE PRODUCT OIL MONITORING LOCATION
LONG TERM MONITORING LOCATION–SEMI ANNUAL
LONG TERM MONITORING LOCATION–ANNUAL
MONITORING WELL
PIEZOMETER
UPLAND MARSH GEOPROBE BORING LOCATION
SURFACE WATER SAMPLING LOCATIONS
PTA DESIGNATED AREA MARKERS – SURVEYED BY EPRO 2002
SCRA 1997 DESIGNATED AREA
REVISED 10–SIDED DESIGNATED AREA
SUPERFUND SITE BOUNDARY
NOTE:
TOPOGRAPHIC INFORMATION IS APPROXIMATE. TOPOGRAPHIC INFORMATION HAS BEEN COMPILED FROM ORIGINAL SITE PLAN AND 1998 SURVEY OF REMEDIATED AREA
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TO AUGUSTA
TO ROCKLAND
BAR SCALE
1" = 80'
REVISED SITE PLAN
CENTRAL MAINE POWER
AUGUSTA, MAINE
O'CONNER COMPANY SUPERFUND SITE 5–YEAR REVIEW
DATE: JUNE 2007
FIGURE 4-1

This covenant includes the following:

- Any use of the groundwater beneath the Site is prohibited without the written approval of MEDEP;
- Any activity which might disrupt remedial or monitoring measures is prohibited without the written approval of MEDEP; and
- CMP or any subsequent owner shall maintain the Site in a condition adequate to ensure the continued compliance with all applicable standards and to ensure the ongoing adequacy of the remediation.

By its terms, the covenant runs to MEDEP and is enforceable only by MEDEP. Accordingly MEDEP will monitor and enforce the institutional controls.

e. Final Inspection Activities

On November 12, 1997, an inspection for OU-1 was conducted with representatives from EPA, MEDEP, and CMP. A few punch list items were identified and were to be completed during the next field season.

An inspection for OU-3 was conducted on April 25, 2007, with representatives from EPA, MEDEP, CMP, and CMP's contractor. A follow-up inspection was performed on July 26, 2007, to assess the vegetative cover during the height of the growing season. No significant issues were identified in either inspection.

An inspection for OU-2 was conducted on April 26, 2012, with representatives from EPA, MEDEP, CMP, and CMP's contractor. A follow-up inspection was performed on June 29, 2012. These inspections included checking the Designated Area boundary and observations of the vegetated cover, monitoring wells and restored wetland areas. No significant issues were identified in either inspection.

III. Monitoring Results

a. Source Control Remedial Action (OU-1)

The Source Control Remedial Action (SCRA) was conducted in two phases. Phase I was completed in 1996. A subset of the soils were remediated, the barn was decontaminated, demolished and disposed of offsite, non-native debris was collected and disposed offsite, and the Support Area for Phase II was constructed. Phase II activities were conducted in 1997. During Phase II, surface water from the Upper Lagoon, Lower Lagoon, and Upland Marsh was collected and disposed of offsite, the remaining soils and sediments were remediated (described below), the lagoons and marsh were reconstructed, and the Site re-graded and vegetated.

All soils and sediments within OU-1 containing greater than 10 ppm PCBs, 10 ppm cPAHs, and 248 ppm total lead were excavated and disposed of at approved disposal facilities offsite. A total of 19,357 tons of soil and sediment were excavated and disposed of: 8,010 tons characterized as Special Waste (a State of Maine designation) were transported to two facilities in Maine; 11,222 tons characterized as TSCA and/or RCRA wastes to a facility in New York; and 125 tons characterized as RCRA waste to a facility in Quebec.

Soils and sediments within the Designated Area containing less than or equal to 10 ppm PCBs or cPAHs and less than 248 ppm total lead were not excavated. Approximately 3,000 to 4,000 tons of soil and sediments located outside the Designated Area and containing between 1 and 10 ppm PCBs or cPAHs and less than 248 ppm total lead were excavated and placed within the Designated Area.

The limits of excavation within and outside the Designated Area were based on analytical results, isopachs, and visual examination of the contamination. Following excavation, confirmation samples were collected at the base of the excavation to determine if the concentrations of PCBs, cPAHs, and total lead were below the respective cleanup goals. If a sample exceeded the target cleanup goal, excavation continued. If the target cleanup goals were met, the sample was used as a confirmation sample, and the area represented by the sample node was confirmed as closed. Pre-excavation and most confirmation samples were collected at specified locations on a sampling grid that was developed to provide a statistically valid approach for confirming that the soils and sediments had meet the target cleanup goals. Additional random samples were collected as determined necessary in the field to confirm attainment of target cleanup goals.

The Site was divided into five sample areas in the 100% Remedial Design, based on contaminants, target cleanup goals, Site history, geology, and a review of the Remedial Investigation data. Based on all this information, a work plan was developed, approved, and implemented. Areas 1, 2, and 3 were sampled for PCBs, Area 4 for lead, and Area 5 for cPAHs. See Figures 5 and 6 for the location of the sampling areas.

Sample Area 1 was the Designated Area. A total of 209 confirmation samples were collected and analyzed for PCBs. The 95% upper confidence limit of the mean of the data was determined to be 0.63 ppm, well below the target cleanup goal of 10 ppm. In addition, the maximum value reported by the PCB analysis was 9.63 ppm. Consequently, with 100% of the analytical results below the 10 ppm target cleanup goal, it was determined that Area 1 met the PCBs performance standard.

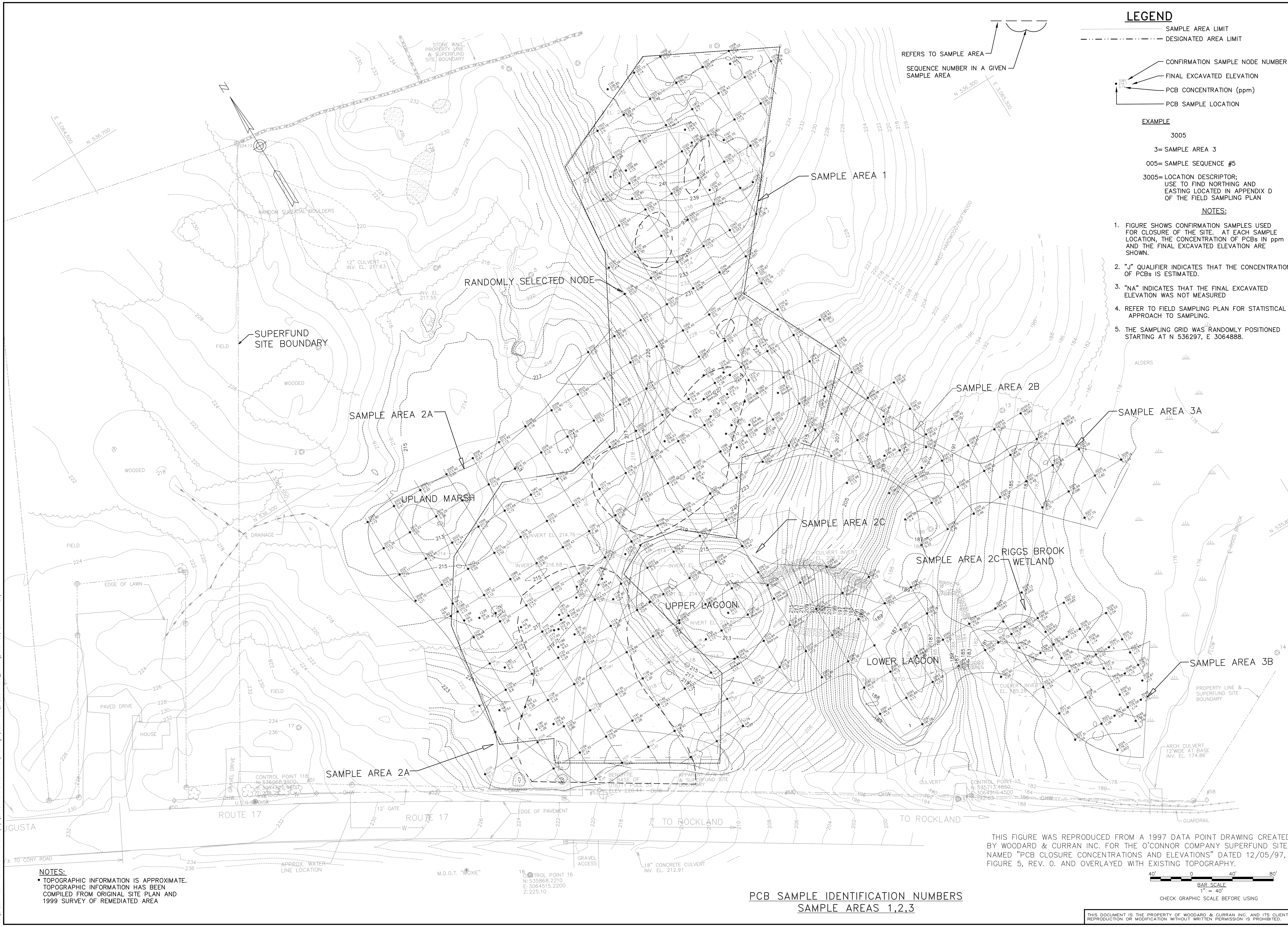
Sample Area 2 consisted of three separate subareas adjacent to the Designated Area: 2A, west and south of the Designated Area; 2B, east and downgradient of TWA II in the Designated Area; and 2C, also east and downgradient of the Designated Area. A total of 114 confirmation samples were collected and analyzed for PCBs. The 95% upper confidence limit of the mean of the data was determined to be 0.23 ppm, below the target cleanup goal of 1 ppm. In addition, the maximum value reported by the PCB analysis was 0.81 ppm. Consequently, with 100% of the analytical results below the 1 ppm target cleanup goal, it was determined that Area 2 met the PCBs performance standard.

Sample Area 3 consisted of two separate subareas, which were located downgradient of Areas 2B and 2C and were within the delineated limits of the Riggs Brook wetlands. A total of 49 confirmation samples were collected in Area 3 and analyzed for PCBs. The maximum value reported by the PCB analysis was 4.3 ppm. Consequently, with 100% of the analytical results below the ROD established 5 ppm trigger level for sediments in Riggs Brook and its associated nearby wetlands, it was determined that Area 3 met its PCBs performance standard. (The 95% upper confidence limit of the mean was not calculated since all of the results were below the trigger level, and therefore the mean was also below the trigger level)

Sample Area 4 consisted of five subareas almost entirely within the Designated Area and was used to assess the extent of total lead contamination. A total of 209 confirmation samples were collected and analyzed for total lead. The 95% upper confidence limit of the mean of the data was determined to be 52.1 ppm, well below the target cleanup goal of 248 ppm. In addition, the maximum value reported by the lead analysis was 222 ppm. Consequently, with 100% of the analytical results below the 248 ppm target cleanup goal, it was determined that Area 4 met the lead performance standard.

Similarly, samples for total lead were collected outside the Designated Area and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead, for disposal characterization purposes. The maximum concentration TCLP lead was 55.6 ppm. Based on these results, these soils were disposed of offsite as RCRA-hazardous waste.

Sample Area 5 consisted of two subareas outside the Designated Area where samples were collected and analyzed for cPAHs. The maximum concentration in the nine samples collected in 5A was 0.237 ppm, below the target cleanup goal of 1 ppm. Area 5B underwent two rounds of excavation and three rounds of sampling. Analyses of the third round of samples collected at 1.4 to 3.3 feet below ground surface found cPAHs concentrations ranging between 1.2 to 6.6 ppm. In a letter dated October 27, 1997, MEDEP approved that no further removal actions were warranted in subarea 5B after calculating toxicity equivalence factors for the individual cPAH concentrations remaining in subarea 5B. The total toxicological equivalency value was found to be 1 ppm, which was less than the applicable worker standard of 7 ppm and less than the more conservative residential scenario of 2 ppm. EPA provided prior approval for no further action at subarea 5B.



LEGEND

- SAMPLE AREA LIMIT
- DESIGNATED AREA LIMIT
- REFERS TO SAMPLE AREA
- SEQUENCE NUMBER IN A GIVEN SAMPLE AREA
- CONFIRMATION SAMPLE NODE NUMBER
- FINAL EXCAVATED ELEVATION
- PCB CONCENTRATION (ppm)
- PCB SAMPLE LOCATION

EXAMPLE

3005

3= SAMPLE AREA 3

005= SAMPLE SEQUENCE #5

3005= LOCATION DESCRIPTOR; USE TO FIND NORTHING AND EASTING LOCATED IN APPENDIX D OF THE FIELD SAMPLING PLAN

NOTES:

1. FIGURE SHOWS CONFIRMATION SAMPLES USED FOR CLOSURE OF THE SITE. AT EACH SAMPLE LOCATION, THE CONCENTRATION OF PCBs IN ppm AND THE FINAL EXCAVATED ELEVATION ARE SHOWN.
2. "J" QUALIFIER INDICATES THAT THE CONCENTRATION OF PCBs IS ESTIMATED.
3. "NA" INDICATES THAT THE FINAL EXCAVATED ELEVATION WAS NOT MEASURED
4. REFER TO FIELD SAMPLING PLAN FOR STATISTICAL APPROACH TO SAMPLING.
5. THE SAMPLING GRID WAS RANDOMLY POSITIONED STARTING AT N 536297, E 3064888.

NOTES:

- TOPOGRAPHIC INFORMATION IS APPROXIMATE. TOPOGRAPHIC INFORMATION HAS BEEN COMPILED FROM ORIGINAL SITE PLAN AND 1999 SURVEY OF REMEDIATED AREA

THIS FIGURE WAS REPRODUCED FROM A 1997 DATA POINT DRAWING CREATED BY WOODARD & CURRAN INC. FOR THE O'CONNOR COMPANY SUPERFUND SITE, NAMED "PCB CLOSURE CONCENTRATIONS AND ELEVATIONS" DATED 12/05/97, FIGURE 5, REV. 0. AND OVERLAYED WITH EXISTING TOPOGRAPHY.

40' 0 40' 80'
BAR SCALE
1" = 40'
CHECK GRAPHIC SCALE BEFORE USING

PCB SAMPLE IDENTIFICATION NUMBERS
SAMPLE AREAS 1,2,3

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
800.426.4262 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

REV	DESCRIPTION	DATE
DESIGNED BY: LEM	CHECKED BY: MH	
DRAWN BY: PFF	212004.01U5_U6.dwg	

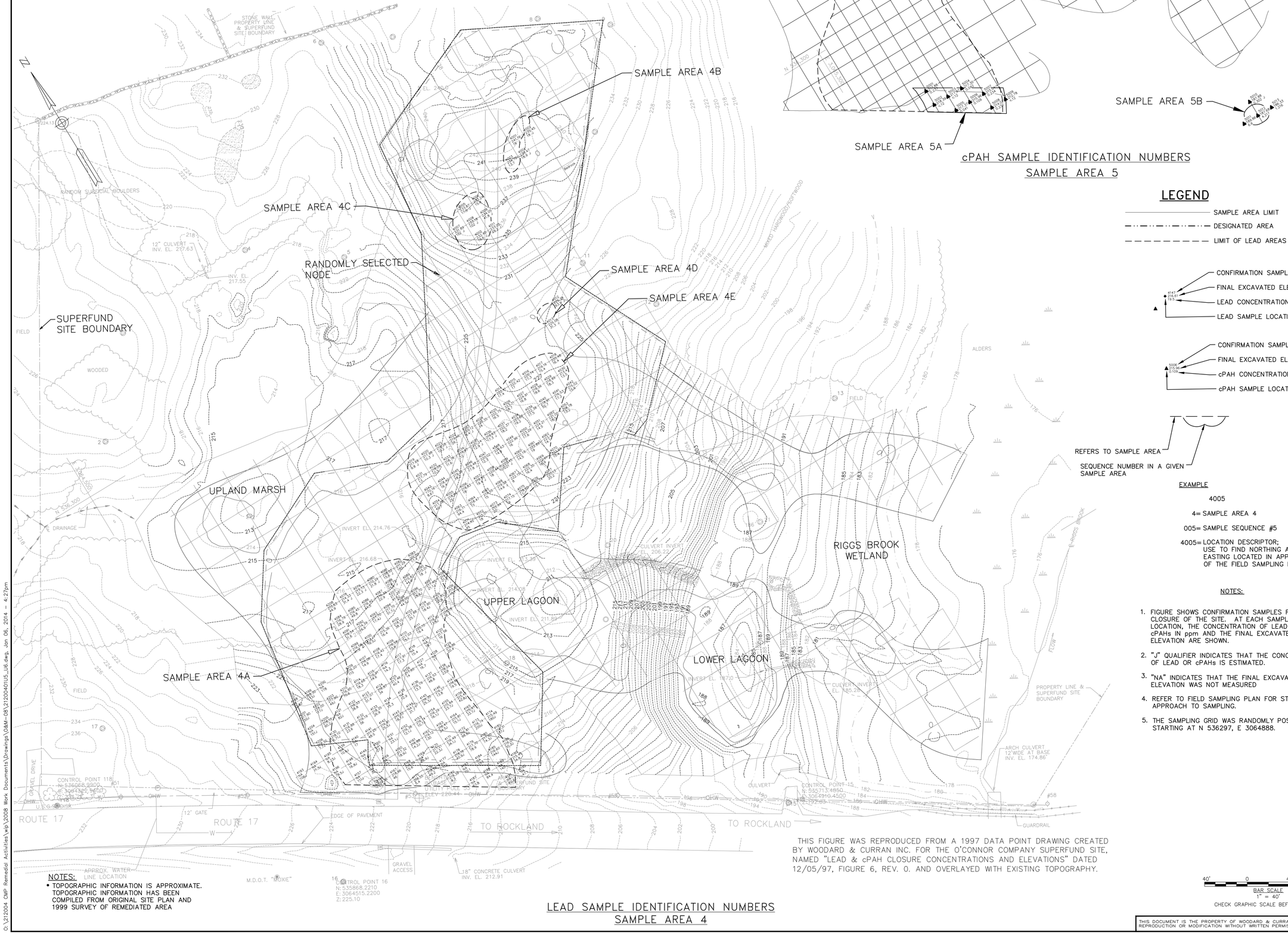
PCB CLOSURE CONCENTRATIONS AND ELEVATIONS

CENTRAL MAINE POWER
AUGUSTA, MAINE

O,CONNER COMPANY
SUPERFUND SITE

JOB NO.: 225545.01
DATE: DECEMBER 2013
SCALE: AS NOTED
SHEET: OF

FIGURE 5



SAMPLE AREA 5A

SAMPLE AREA 5B

cPAH SAMPLE IDENTIFICATION NUMBERS
SAMPLE AREA 5

LEGEND

- SAMPLE AREA LIMIT
- DESIGNATED AREA
- LIMIT OF LEAD AREAS

CONFIRMATION SAMPLE NODE NUMBER
FINAL EXCAVATED ELEVATION
LEAD CONCENTRATION ppm
LEAD SAMPLE LOCATION

CONFIRMATION SAMPLE NODE NUMBER
FINAL EXCAVATED ELEVATION
cPAH CONCENTRATION ppm
cPAH SAMPLE LOCATION

REFERS TO SAMPLE AREA
SEQUENCE NUMBER IN A GIVEN SAMPLE AREA

EXAMPLE

4005

4= SAMPLE AREA 4

005= SAMPLE SEQUENCE #5

4005= LOCATION DESCRIPTOR; USE TO FIND NORTHING AND EASTING LOCATED IN APPENDIX D OF THE FIELD SAMPLING PLAN

NOTES:

1. FIGURE SHOWS CONFIRMATION SAMPLES FOR CLOSURE OF THE SITE. AT EACH SAMPLE LOCATION, THE CONCENTRATION OF LEAD OR cPAHs IN ppm AND THE FINAL EXCAVATED ELEVATION ARE SHOWN.
2. "J" QUALIFIER INDICATES THAT THE CONCENTRATION OF LEAD OR cPAHs IS ESTIMATED.
3. "NA" INDICATES THAT THE FINAL EXCAVATED ELEVATION WAS NOT MEASURED
4. REFER TO FIELD SAMPLING PLAN FOR STATISTICAL APPROACH TO SAMPLING.
5. THE SAMPLING GRID WAS RANDOMLY POSITIONED STARTING AT N 536297, E 3064888.

NOTES:
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LEAD SAMPLE IDENTIFICATION NUMBERS
SAMPLE AREA 4

BAR SCALE
1" = 40'
40' 0 40' 80'
CHECK GRAPHIC SCALE BEFORE USING

41 HUTCHINS DRIVE
PORTLAND, MAINE 04102
800.426.4262 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

REV.	DESCRIPTION	DATE

DESIGNED BY: LEM
DRAWN BY: PFF
CHECKED BY: MH
212004O1U5_U6.dwg

LEAD AND cPAH CLOSURE CONCENTRATIONS AND ELEVATIONS

CENTRAL MAINE POWER AUGUSTA, MAINE

O'CONNER COMPANY SUPERFUND SITE

JOB NO.: 225545.01
DATE: DECEMBER 2013
SCALE: AS NOTED
SHEET: OF

FIGURE 6

b. Riggs Brook Remedial Action (OU-3)

The 1989 ROD selected yearly sediment sampling for ten years for Riggs Brook and its associated wetlands. In addition, biota sampling was to be performed at least once, after five years of sediment sampling.

CMP conducted annual sediment monitoring of Riggs Brook for ten years (1996-2005) as required by the ROD. At EPA's request, the 2000 annual sediment sampling program was supplemented with a sampling grid with 51 locations adjacent to Riggs Brook in adjacent source control areas.

Biota sampling was first conducted in 1997 with the collection of twenty samples. Following a recalculation of the data from mg/kg dry weight to mg/kg wet weight, it was determined that all samples were below the target level of 2 mg/kg (or ppm). A second biota sampling occurred in September 2000, when a total of twenty biota samples were collected from Riggs Brook and analyzed for PCBs. As was the case in 1997, all samples were below the target level of 2 mg/kg. A comparison to the 1997 data indicated that the biota PCB concentrations had decreased.

Considering the results from the 2000 sediment and biota sampling, EPA and MEDEP agreed that with the decrease of PCBs in the biota samples as well as the scattered locations of the sediment exceedances, remedial efforts to address the scattered sediment exceedances were not required at that time. Instead, the 2001 sampling (year six of the ROD-required ten) was to be expanded to monitor the locations identified in the supplemental sampling grid. The 2001 sediment sampling had one exceedance above the 5 ppm trigger level of the thirty-six samples. This one location (location 3018, at 6.1 ppm) is located near the wetland/upland boundary and within the area excavated during the SCRA.

The results of the ten-year sampling program showed the sediments in Riggs Brook to be stable, with no indication that PCBs were migrating or increasing in concentration. Over 95% of the samples were below the PCB action trigger level of 5 ppm with the annual mean varying between 0.38 to 1.93 ppm. With one location, sediment 3018, having the maximum PCB concentration from 2001 through 2005, CMP proposed to excavate a ten-foot square centered on that sediment location. EPA, after opportunity for review and comment by MEDEP, approved this approach. Approximately three tons of material were excavated and disposed offsite at a Special Waste landfill in Maine.

IV. Attainment of Groundwater Restoration Cleanup Levels

Under the ROD, the RAO for the groundwater (OU-2) was to reduce potential future public health risks from ingestion of PCBs, benzene, and 1,4-dichlorobenzene-contaminated groundwater. The ROD established cleanup standards of total PCBs at 0.5 µg/L, benzene at 5 µg/L and 1,4-dichlorobenzene at 27 µg/L. In 2002, based on the ARARs review conducted for the ROD Amendment, five other VOCs were identified which since the 1989 ROD have had ARARs established. These ARARs include federal Maximum Contaminants Levels (MCLs) and Maine Maximum Exposure Guidelines (MEGs) for five VOCs and PCBs. For each of these five compounds, the MEG is either the same or less than the respective MCL. The cleanup standards are presented in table 2 below.

Table 2: Groundwater Cleanup Standards

Contaminant Of Concern	1989 ROD Target Cleanup Levels (µg/L)	1992 MEG (µg/L)	MCL (µg/L)	2002 ROD A Target Cleanup Levels (µg/L)
Benzene	5	5	5	5
Chlorobenzene	no ROD standard	47	100	47
1,2-Dichlorobenzene	no ROD standard	85	600	85
1,3-Dichlorobenzene	no ROD standard	85	NS	85
1,4-Dichlorobenzene	27	27	75	27
1,2,3-Trichlorobenzene	no ROD standard	NS	NS	NS
1,2,4-Trichlorobenzene	no ROD standard	70	70	70
1,3,5-Trichlorobenzene	no ROD standard	40	NS	40
PCBs	0.5	0.05	0.5	0.05

NS - no standard

Groundwater cleanup standards defined in the 2002 ROD Amendment and in the 2003 SOW for VOCs have been met at all wells at the TI boundary and beyond the TI Zone since Spring 2002, and the cleanup standard for PCBs has been met at all wells at the TI boundary and beyond the TI Zone since Spring 2006. Graphs showing groundwater concentrations over time from 1998 (post-Source Control) to 2012 for five Contaminants of Concern listed in Table 2 are presented in Appendix A. The remaining three compounds (benzene, 1,3,5-trichlorobenzene, and PCBs) were not found in sufficient concentration to be meaningfully graphed. Graphs are also shown for four of the nine remaining monitoring wells at the Site (MW-104B, OW-201B, MW-507A in the TI Zone, and MW-106B in the Riggs Brook wetlands), as the majority of the contamination was seen in the three TI Zone wells. Concentrations of the eight compounds have been very low or non-detect at the remaining five monitoring wells at the Site. Groundwater results from 1986 to 2012 are included in Appendix B and monitoring well locations are shown in Figure 4-1.

Groundwater has been monitored at the Site since 1986. Beginning in Spring 2008, the sampling frequency was changed from semi-annual to annual. The monitoring program currently consists of nine wells, four outside the TI Zone and five within the TI Zone and downgradient of the TWA II area. Based on steady improvements in groundwater, and the fact that groundwater had met target cleanup goals for the Site in all wells outside the TI Zone since 2006, 28 monitoring wells and piezometers at the Site were decommissioned in September 2008. Groundwater

monitoring reports have been prepared by CMP's consultant Woodard & Curran and present the data demonstrating the attainment of the cleanup levels for the Site.

In addition to the monitoring of water quality at the TI boundary and downgradient of it, the 2002 ROD Amendment included active and passive oil recovery. Investigations completed following the 1989 ROD determined that the migration of contaminants in the shallow groundwater in the downgradient direction was limited; the bedrock aquifer had low groundwater storage and therefore a relatively small volume of water. It was also concluded that the 1992 pump test had mobilized the PCB transformer oil and other contaminants vertically downward into the bedrock flow regime. Based on these findings, CMP's consultant recommended continued groundwater monitoring and the use of vacuum extraction recovery (VER) rather than conventional groundwater pumping to eliminate the potential for drawing free-floating product farther into the bedrock aquifer.

Seepage of the transformer oil into the TWA II wells had been observed since it was first induced into the wells during the 1992 pump test. The total amount of oil recovered from the five TWA II wells since their installation using a combination of VER and passive oil recovery is about 125 gallons. Approximately 79 gallons of oil (about 63%) were recovered prior to the completion of the source control work, and approximately 35 gallons (about 28%) after the completion of source control through the summer of 2002. Since the resumption of the VER in 2002, 11.3 gallons of transformer oil have been recovered (or about 9% of the total).

Approximately 7.4 gallons of oil were recovered by the VER system in 2002, 2.5 gallons in 2003, and about 0.3 gallons in both 2004 and 2006. The system was not operated in 2005 because of equipment failure. Significantly there was not any increase in the amount recovered passively nor was any increase observed when the active recovery resumed in August 2006. The amount of oil removed from the wells using the VER system decreased steadily over time to minimal amounts. In December 2006, the VER system was decommissioned because the rate of oil recovery using passive recovery was equal to or greater than with the VER system. Prior to 2005, the passive oil recovery program was conducted monthly. Since 2005, passive oil recovery has continued on a quarterly basis.

V. Summary of Operation & Maintenance

The O&M activities associated with the SCRA and long-term monitoring at the Site were initiated in 1998 upon completion of the SCRA. Inspections of the Site have been conducted semi-annually. The O&M Plan for the Site was last updated in October 2009 and describes the long-term activities for OU-1 and OU-2 at the Site, including inspections, soil cover sampling, routine maintenance, and repairs as necessary. Sediment and biota sampling have been completed for OU-3, and therefore, there are no O&M activities associated with OU-3. Inspections have been conducted at the Site and have documented that the vegetation is well developed and minor ruts in the access road have been repaired. There has been no significant erosion of the soil cover over the Designated Area or on the slope leading down to the Riggs Brook since the completion of the SCRA. Because contamination remains that prevents unlimited exposure and unrestricted use of the Site, it is anticipated that maintenance and inspections will continue for an extended period of time.

The 2002 Declaration of Restrictive Covenant places several restrictions on the entire Site property (including the TI zone). CMP (and any future owner) is prohibited from any use of

groundwater or any activity which might disrupt remedial or monitoring measures without prior written approval from MEDEP.

Additionally, the restrictive covenant provides that CMP and all subsequent owners shall maintain the Site property in a condition adequate to ensure the continued compliance with all applicable cleanup standards and to ensure the ongoing adequacy of the remedial action implemented under the Consent Decree. Specific examples of required ongoing activities include, but are not limited to maintenance of "all drainage ways, berms, monitoring wells, permeable or impervious caps or covers (including paved portions of the property and areas covered by topsoil or other clean fill), piping, pumps and electrical equipment constructed or installed under the Consent Decree."

By its terms, the restrictive covenant is enforceable only by MEDEP. Compliance with this covenant is confirmed at the same time as the spring Site inspection.

VI. Demonstration of Cleanup QA/QC

a. Construction Quality Assurance/Quality Control Plan

Source control activities at the Site were consistent with the ROD, the ESD, and all work plans. Specifically, the construction activities associated with the SCRA were generally conducted in compliance with the approved 100% Remedial Design which was consistent with EPA Quality Assurance and Quality Control (QA/QC) procedures. Detailed work plans for all activities including sampling and analyses were reviewed and approved by EPA prior to initiation of field work. Only EPA approved sampling and analytical methods were utilized for these studies. All analytical data were reviewed and validated according to EPA approved data validation procedures.

All procedures and protocol utilized during the development and implementation of response actions are described in the work plans and summary reports submitted for each activity. These documents are available for review at the EPA Region I Record Center and the MEDEP office in Augusta, Maine.

The QA/QC program utilized throughout the Remedial Action was sufficiently rigorous and was complied with to enable EPA and MEDEP to determine that analytical results reported were accurate to the degree needed to assure satisfactory execution of the RA, consistent with the 1989 ROD, 1994 ESD, 2002 ROD Amendment, and Remedial Design plans and specifications.

b. Operation and Maintenance Quality Assurance/Quality Control Plan

Operation and maintenance activities at the Site are consistent with the October 2009 O&M Plan. Specifically, the O&M activities have been conducted in compliance with the approved O&M Plan which is consistent with EPA QA/QC procedures. Work plans for all activities including sampling and analyses are reviewed and approved by EPA prior to initiation of field work. Only EPA approved sampling and analytical methods have been utilized for these studies. All analytical data were reviewed and validated according to EPA approved data validation procedures.

VII. Five-Year Review

Statutory five-year reviews are required at the O'Connor Superfund Site since hazardous substances remain at the Site above levels that allow for unlimited use and unrestricted exposure. Five-year reviews were completed for the Site in 2002, 2007, and 2012. The 2012 Five-Year Review stated that remedial actions at all OUs are protective, and therefore the Site is protective of human health and the environment. The 2012 Five-Year Review made the following protectiveness statements for each operable unit and sitewide:

OU-1: The remedial action for OU-1 has been completed and is protective of human health and the environment. Exposure pathways that could result in unacceptable risk are being controlled through a clean soil cap that covers remaining contamination and institutional controls that have been placed on the Site. The O&M plan was updated and approved in 2009 and its implementation will ensure that the OU-1 remedy remains protective.

OU-2: The remedy for OU-2 is protective of human health and the environment. Exposure pathways that could result in unacceptable risk are being controlled with institutional controls covering the entire Site. Outside the TI Zone, groundwater has met the performance standards for VOCs since Spring 2002 and for PCBs since Spring 2006. Long-term monitoring will continue to ensure that the performance standards continue to be met.

OU-3: The remedy at OU-3 is protective of human health and the environment. Annual sampling of sediments for ten years resulted in over 95% of the samples being below the 5 ppm trigger level with the annual mean PCB concentration varying between 0.38 and 1.72 ppm. Results from the two biota sampling events were below the threshold level of 2 ppm for all samples, with the overall average being below 1 ppm. Site inspections have documented functioning habitat in both the uplands and wetlands.

Sitewide: Because the remedial actions at all OUs are protective, the Site is protective of human health and the environment.

The 2012 Five-Year Review did not identify any issues in any of the operable units. As noted above, the Final Remedial Action Report for OU-1 was signed in 1998 and the Final Remedial Action Report for OU-3 was signed in 2007. EPA signed the Superfund Property Reuse Evaluation Checklist for Reporting the Sitewide Ready for Anticipated Use Government Performance and Results Act Measure in 2009.

With the groundwater cleanup standards having been met for an extended period (ten years for VOCs, six years for PCBs) and no changes in land use, the 2012 Five-Year Review identified re-evaluation of the groundwater monitoring program as a possible opportunity for optimization. Therefore the review recommended that the groundwater monitoring program be re-evaluated.

VIII. Site Completion Criteria

The implemented remedy has achieved the degree of cleanup or protection specified in the 1989 ROD, 1994 ESD, and 2002 ROD Amendment for all pathways of exposure. The activities for OU-1 remedy were successfully completed in 1997 and the activities for OU-3 remedy were successfully completed in 2006. With the 2002 Technical Impracticability waiver, groundwater (OU-2) beyond the TI Zone has met all cleanup standards since 2006.

The five response action RAOs presented in the ROD (see Section II.c. above) and associated cleanup goals and the remedial action selected and implemented to achieve these RAOs are consistent with agency policy and guidance. The Endangerment Assessment (the 1998 human health and ecological risk assessment) identified seven exposure scenarios including three potential current exposures and four potential future exposures. According to the 2002 ROD Amendment, following the completion of the source control component of the remedy, only two potential exposure pathways remained: future ingestion of groundwater from within the bedrock and ingestion of fish caught in Riggs Brook. Since the 2002 ROD Amendment, EPA released draft guidance on the vapor intrusion pathway. The 2007 FYR noted that the potential existed for this pathway if buildings were constructed onsite. However, there are currently no plans for any construction onsite and the VOC concentrations in the shallow groundwater do not suggest a significant source of vapors.

Section X of the 1989 ROD, Selected Remedy, stated that the Site would be re-evaluated to determine the risk posed by the Site at the completion of the remedial action (i.e., before the Site is proposed for deletion from the NPL). EPA completed a risk evaluation in 2013 and concluded the remaining contamination beyond the TI Zone did not pose an unacceptable risk to human health or the environment. See the September 30, 2013 memorandum in Appendix C for the risk evaluation.

Future ingestion of groundwater is prohibited without the prior written approval of MEDEP and potential future exposure to vapor intrusion is prevented by the same institutional controls. The two biota sampling events demonstrated that ingestion of fish caught in Riggs Brook will not create an unacceptable risk. Consequently no further Superfund response is needed to protect human health and the environment.

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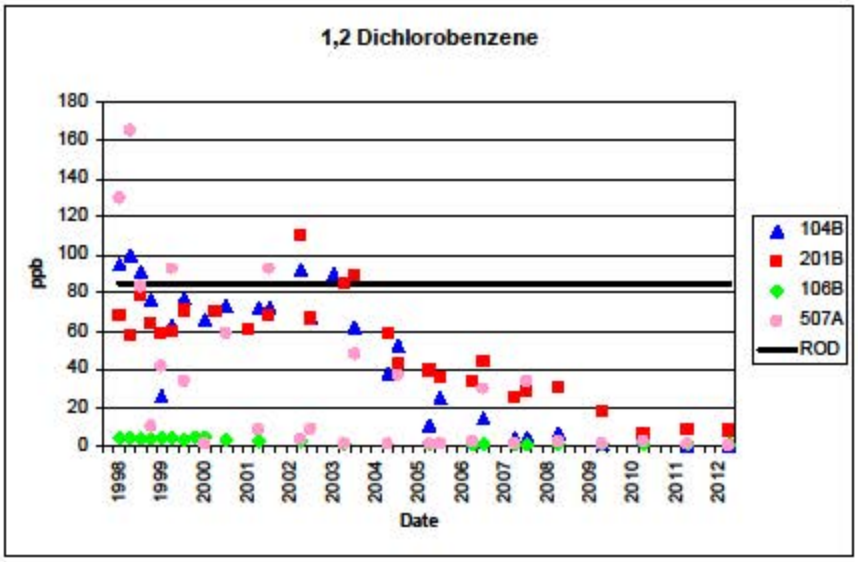
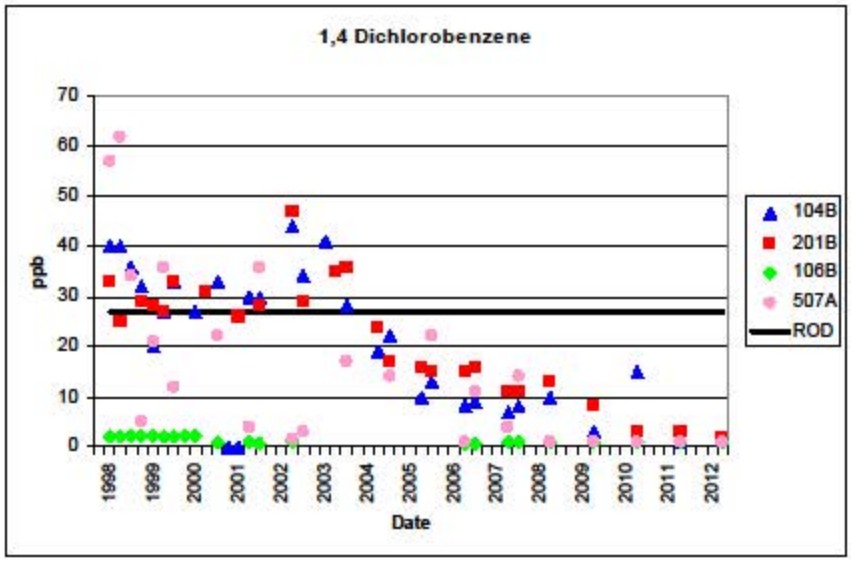
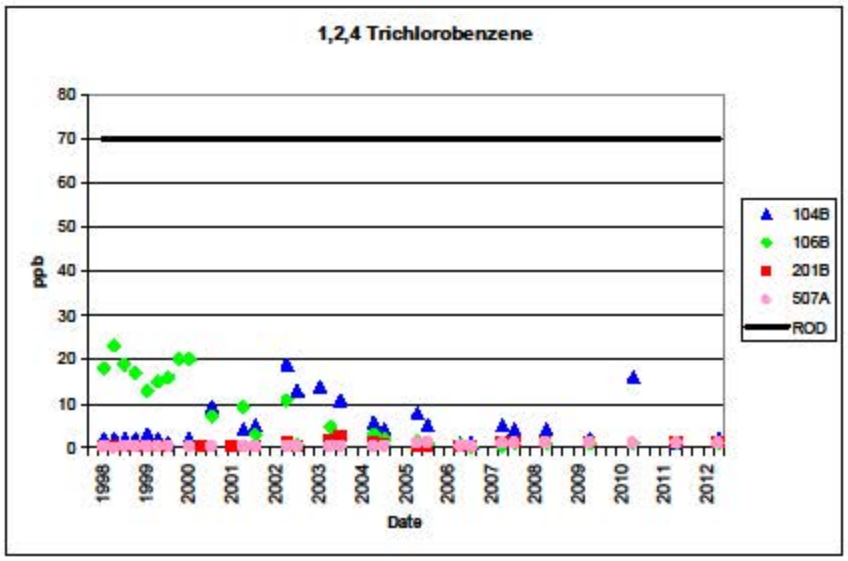
APPENDIX A

GROUNDWATER CONCENTRATIONS GRAPHS 1998-2012
O'CONNOR SUPERFUND SITE



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201B
507A
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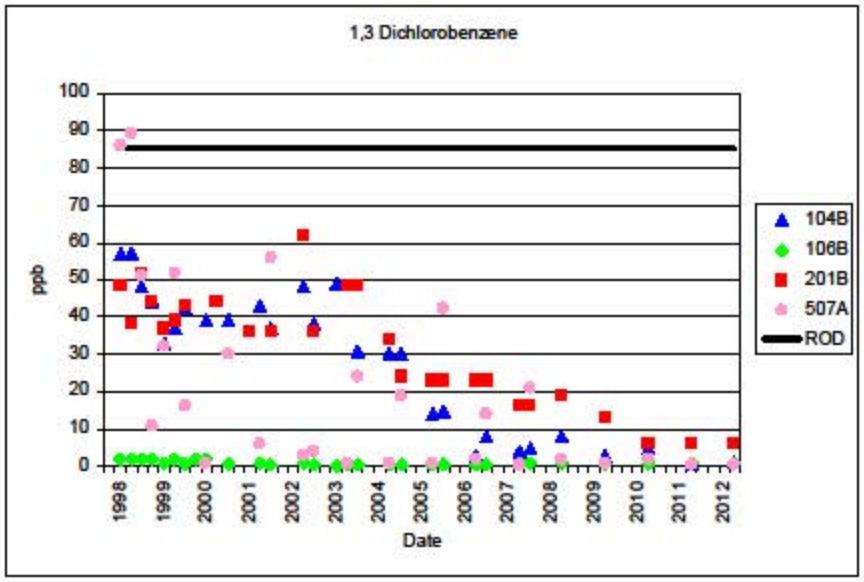
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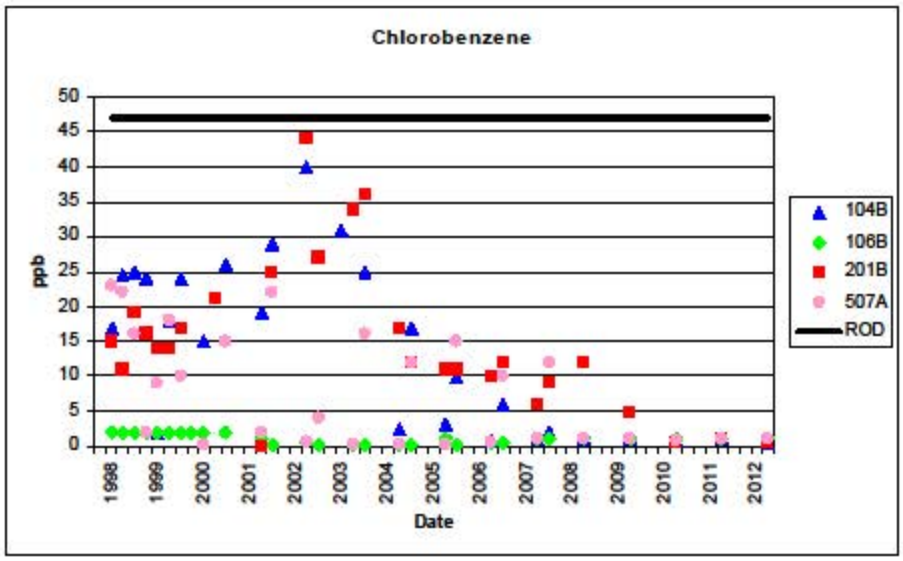
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201B
507A
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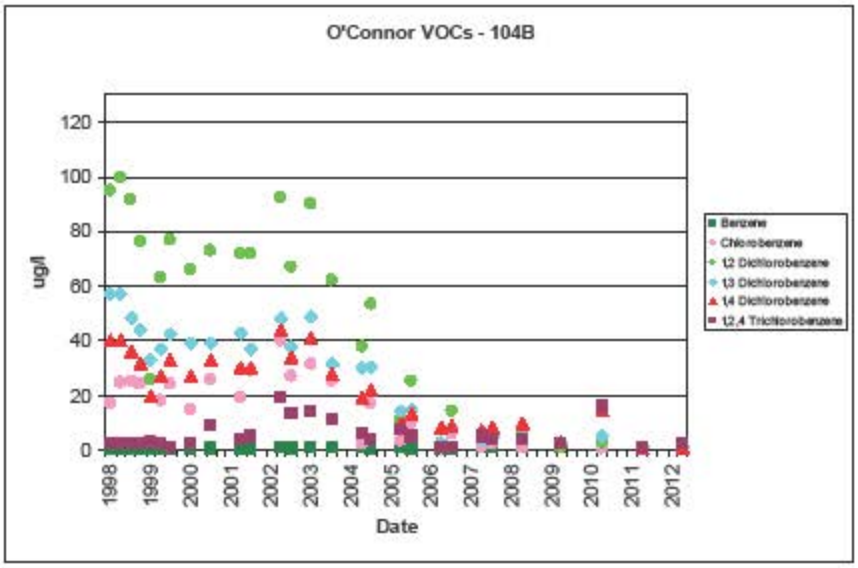
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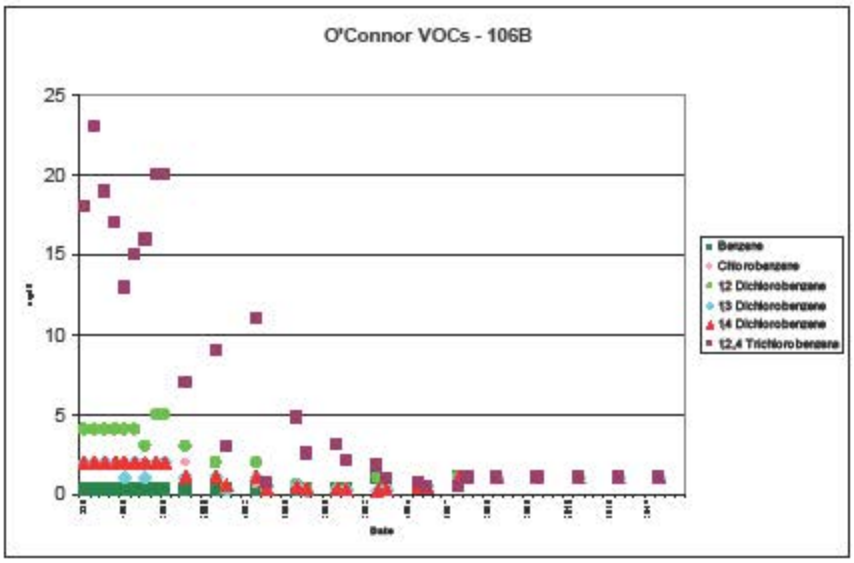
1,2,4 Trichlorobenzene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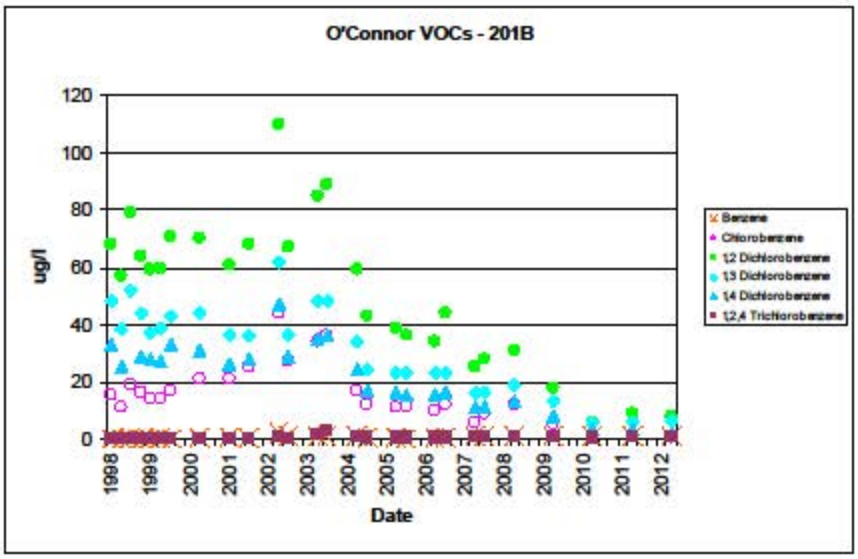
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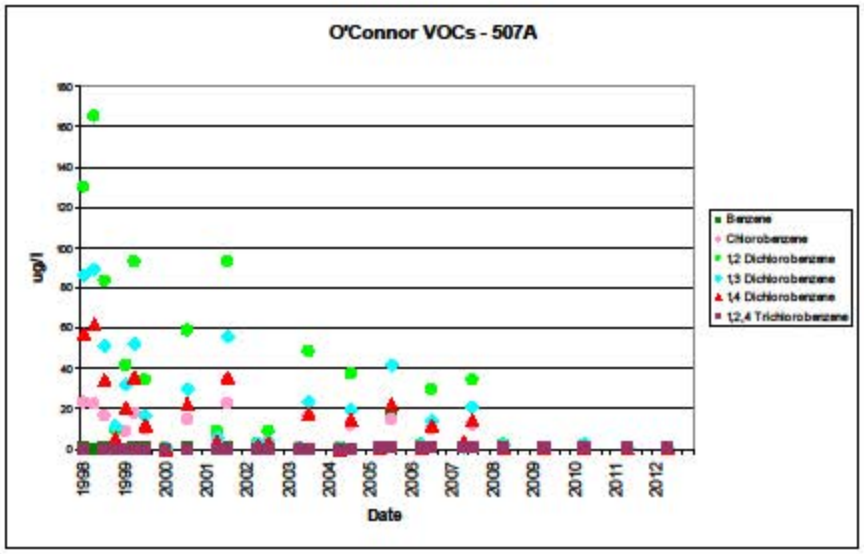
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APPENDIX B

GROUNDWATER RESULTS 1998 – 2012
O'CONNOR SUPERFUND SITE

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
Augusta, Maine

Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
EW-101	10/23/1996	9	7	30	13	33	—	<0.5	4	5000
MW-101A	11/25/1986	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101A	4/29/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101A	6/24/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101A	12/12/1994	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101A	5/1/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.26
MW-101A	3/24/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101A	3/24/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101A	3/23/1999	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-101A	3/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-101A	4/23/2001	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-101A	4/29/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-101A	4/24/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-101B	11/25/1986	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101B	4/29/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101B	6/24/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101B	12/12/1994	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101B	5/1/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.26
MW-101B dup	5/1/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.26
MW-101B	3/24/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101B	3/24/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-101B	3/23/1999	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-101B	3/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-101B	4/23/2001	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-101B	4/29/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-101B	4/24/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-104B	11/25/1986	17J	<0.5	28	<0.5	310	—	<0.5	16	50
MW-104B	4/29/1987	17J	3.6	30J	<0.5	170	—	1.1J	6.1	<0.25
MW-104B	6/24/1987	16	2.4J	28	<0.5	170	—	2J	11	23
MW-104B	6/17/1991	<0.5	<0.5	60J	<0.5	<0.5	—	2J	<0.5	9.2
MW-104B	7/15/1991	<0.5	<0.5	91	<0.5	<0.5	—	4	<0.5	570
MW-104B	8/19/1991	<0.5	<0.5	77	<0.5	<0.5	—	3	<0.5	770
MW-104B	6/9/1992	43	6.6	66	160	700	—	<0.5	10	2300
MW-104B	12/12/1994	88	41	75	61	280	—	<0.5	45	0.52
MW-104B	10/18/1995	120	66	51	<2.5	7.1	—	<2.5	40	<0.27
MW-104B	1/30/1996	61	43	32	5.4	4.9	—	<1.5	<1.5	<0.28
MW-104B	5/3/1996	48	32	26	3.5	4.1	—	<1	21	<0.25
MW-104B	7/10/1996	78	52	40	0.9J	3	—	[0.7]J	28	<0.3
MW-104B	9/25/1996	91	58	48	5.3	24	—	[0.7]J	29	<0.3
MW-104B dup	9/25/1996	110	70	59	6	27	—	[1]J	32	<0.3
MW-104B	12/11/1996	85	52	42	3	10	—	<2.5	28	<0.3

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-104B	3/26/1997	86J	<2.5	<2.5	4	6J	—	[0.3]J	16	<0.25
MW-104B	6/13/1997	87	55	43	4	10	—	<2.5	29	<0.3
MW-104B	9/24/1997	74	46	36	2	4	—	<2.5	25	<0.3
MW-104B dup	9/24/1997	79	48	36	2	4	—	<2.5	24	<0.3
MW-104B	12/9/1997	110	65	47	1	3	—	0.7	32	<0.25
MW-104B	3/25/1998	95	57	40	1	2	—	<0.5	17	<0.3
MW-104B	6/10/1998	100	57	40	1	2	—	<0.5	26	<0.3
MW-104B dup	6/10/1998	83	47	—	<2.5	<2.5	—	<2.5	23	—
MW-104B	9/22/1998	82	49	36	0.8	2	—	<0.5	25	<0.25
MW-104B	12/2/1998	76	44	32	1	2	—	0.6	24	<0.3
MW-104B	3/25/1999	26	33	20	2	3	—	<0.5	2	<0.1
MW-104B dup	3/25/1999	24	34	20	2	3	—	<0.5	2	<0.1
MW-104B	6/22/1999	63	37	27	1	2	—	<0.5	18	<0.1
MW-104B	9/14/1999	77	42	33	0.8	1	—	0.7	24	<0.1
MW-104B	3/29/2000	66	39	27	2	2	—	<0.5	15	<0.1
MW-104B	9/6/2000	73	39	33	2	9	—	0.8	26	<0.1
MW-104B	4/24/2001	72	43	30	1	4	—	<0.5	19	<0.1
MW-104B	9/18/2001	72	37	30	1	5	—	0.6	29	<0.1
MW-104B	5/1/2002	92	48	44	5	19	—	1	40	<0.05
MW-104B	9/17/2002	67	38	34	<0.5	13	—	0.8	27	<0.05
MW-104B	4/15/2003	90	49	41	3.5	14	—	<2.5	31	<0.047
MW-104B	9/9/2003	62	31	28	<2.7	11	—	<2.5	25	<0.047
MW-104B dup	9/9/2003	56	29	25	<2.7	10	—	<2.5	24	<0.047
D4/MW-104B/04	4/21/2004	38	30	19	<2.7U	5.9	—	<2.5U	[2.3]J	<0.19U
D9/MW-104B/04	9/22/2004	48D	26D	20D	<1.1U	3.3D	—	<1.0U	16D	<0.047U
MW-104B	4/20/2005	11	14	10	3.5	7.9	<1.0	<1.0	3.3	0.24
MW-104B	9/9/2005	25	15	13	1.4	5	<0.5	<0.5	9.8	<0.047
MW-104B	4/19/2006	2	8	3	—	1	<1	<1	[0.8]J	<0.05
MW-104B	9/28/2006	14	8	9	<1	1	<1	<1	6	<0.05
MW-104B	4/25/2007	4	4	7	—	5	<1	<1	<1	<0.05
MW-104B	9/18/2007	5	5	8	2	4	<1	<1	2	<0.05
MW-104B	4/23/2008	6	8	10	3	4	<1	<1	1	<0.05
MW-104B	4/23/2009	1.0J	3	3	3	2	<1	<1	<1	<0.047
MW-104B	4/22/2010	3	5	15	8	16	<1	<1	[0.7]J	<0.047
MW-104B	4/21/2011	[0.2]J	1	[0.8]J	4	<1	<1	<1	<1	<0.048
MW-104B	4/25/2012	[0.35]J	1.1	1.2	2.4	2.2	<1.0	<1.0	[0.43]J	<0.048J

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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-105A	4/29/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-105A	12/12/1994	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-105B	11/25/1986	<0.5	<0.5	<0.5	<0.5	22	—	<0.5	<0.5	<0.25
MW-105B	4/29/1987	5J	<0.5	9.8J	<0.5	79	—	<0.5	<0.5	<0.25
MW-105B	6/24/1987	3.8J	<0.5	7.2J	<0.5	52	—	<0.5	1.8J	<0.25
MW-105B	6/17/1991	<0.5	<0.5	12	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-105B	7/15/1991	<0.5	<0.5	8	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-105B	8/19/1991	<0.5	<0.5	9	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-105B	12/12/1994	—	—	—	—	—	—	—	—	<0.25
MW-105B	5/1/1996	—	—	—	—	—	—	—	—	<0.25
MW-105B	3/24/1997	<0.5	<0.5	<0.5	<0.5	2J	—	<0.5	<0.5	<0.3
MW-105B	3/24/1998	<0.5	<0.5	<0.5	<0.5	2	—	<0.5	<0.5	<0.3
MW-105B	3/23/1999	2	0.6	6	6	29	—	<0.5	2	<0.1
MW-105B	3/27/2000	<0.5	<0.5	0.8	0.8	3	—	<0.5	<0.5	<0.1
MW-105B	4/23/2001	<0.5	<0.5	1	0.6	4	—	<0.5	<0.5	<0.1
MW-105B	4/30/2002	<0.5	<0.5	1	0.9	3	—	<0.5	[0.3]	<0.05
MW-105B	4/25/2007	<1	<1	[0.6]J	0.6J	2	<1	<1	<1	<0.05
MW-106A	11/25/1986	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	1.9
MW-106A	4/29/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	6/24/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	6/17/1991	<0.5	<0.5	<0.5J	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	7/15/1991	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	8/19/1991	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	12/12/1994	<0.5	<0.5	<0.5	1.2	3.1	—	<0.5	<0.5	<0.25
MW-106A	10/18/1995	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	1/26/1996	<0.5	1.1	<0.5	1	2	—	<0.5	<0.5	<0.27
MW-106A	5/2/1996	<0.5	<0.5	<0.5	<0.5	2.3	—	<0.5	<0.5	<0.25
MW-106A	7/8/1996	[0.3]J	<0.5J	[0.3]J	0.3J	0.7	—	<0.5	<0.5	<0.3
MW-106A	9/24/1996	<0.5	<0.5J	<0.5	<0.5	0.9	—	<0.5	<0.5	<0.3
MW-106A	12/9/1996	<0.5	<0.5	<0.5	<0.5	1	—	<0.5	<0.5	<0.3
MW-106A	3/25/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-106A	6/12/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-106A dup	6/12/1997	<0.5	<0.5	<0.5	<0.5	0.9	—	<0.5	<0.5	<0.3
MW-106A	9/23/1997	<0.5	<0.5	<0.5	<0.5	0.6	—	<0.5	<0.5	<0.3
MW-106A	12/9/1997	<5	<3.5	<3.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	3/25/1998	<0.5	0.6	<0.5	<0.5	1	—	<0.5	<0.5	<0.3
MW-106A	6/9/1998	<0.5	<0.5	<0.5	<0.5	0.9	—	<0.5	<0.5	<0.3
MW-106A	9/21/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106A	12/1/1998	0.6	1	<0.5	<0.5	2	—	<0.5	<0.5	<0.3

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-106A	3/24/1999	<0.5	<0.5	<0.5	<0.5	0.6	—	<0.5	<0.5	<0.1
MW-106A dup	3/24/1999	<0.5	<0.5	<0.5	<0.5	0.7	—	<0.5	<0.5	<0.1
MW-106A	6/21/1999	<0.5	[0.4]J	<0.5	0.3J	0.8	—	<0.5	<0.5	<0.1
MW-106A	9/13/1999	<0.5	0.7	<0.5	<0.5	1	—	<0.5	<0.5	<0.1
MW-106A	3/29/2000	0.6	1	<0.5	<0.5	1	—	<0.5	<0.5	<0.1
MW-106A	9/5/2000	<0.5	<0.5	<0.5	1	1	—	<0.5	<0.5	<0.1
MW-106A	4/23/2001	<0.5	0.7	<0.5	<0.5	1	—	<0.5	<0.5	<0.1
MW-106A	9/17/2001	<0.5	<0.5	<0.5	<0.5	0.6	—	<0.5	<0.5	<0.1
MW-106A	5/1/2002	<0.5	1	<0.5	<0.5	1	—	<0.5	<0.5	<0.05
MW-106A	9/16/2002	[0.3]J	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-106A	4/15/2003	<0.50	0.63	<0.50	<0.50	0.73	—	<0.50	<0.50	<0.047
MW-106A	9/9/2003	<0.50	0.39	<0.50	<0.55	<0.55	—	<0.50	<0.50	<0.047
04/MW-106A/04	4/21/2004	<0.50U	[0.41]J	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.047U
04MW106ADUP4 dup	4/21/2004	<0.50U	[0.40]J	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.047U
09/MW-106A/04	9/21/2004	<0.50U	[0.29]J	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.050U
MW-106A	4/20/2005	<1.0	0.31	0.21	<1.0	0.41	<1.0	<1.0	<1.0	<0.047
MW-106A	9/12/2005	<0.5	<0.5	<0.5	<0.55	<0.55	<0.5	<0.5	<0.5	<0.047
MW-106A dup	9/12/2005	<0.5	<0.5	<0.5	<0.55	<0.55	<0.5	<0.5	<0.5	<0.047
MW-106A	4/18/2006	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-106A	9/27/2006	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-106A	4/25/2007	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-106A	9/19/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-106A	4/23/2008	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-106A	4/23/2009	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-106A	4/21/2010	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-106A	4/21/2011	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-106A dup	4/21/2011	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-106A	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.047J
MW-106B	11/25/1986	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106B	4/29/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106B	6/24/1987	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106B	6/17/1991	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106B	7/15/1991	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106B	8/19/1991	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-106B	12/12/1994	3.2	1.8	3	12	33	—	<0.5	<0.5	<0.25
MW-106B	10/18/1995	4	2.1	3.4	11	27	—	<0.5	2.1	<0.26
MW-106B	1/26/1996	3.5	2	2.7	11	29	—	<0.5	<0.5	<0.27
MW-106B dup	1/26/1996	204	2	2.6	12	30	—	<0.5	<0.5	<0.26
MW-106B	5/6/1996	4	2.6	3	9.7	23	—	<0.5	2.7	<0.25
MW-106B	7/8/1996	4	2	3	10	23	—	<0.5	1	<0.3

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MW-106B	9/24/1996	3.7	1.9	2.9	11	23	—	<0.5	1.4	<0.3
MW-106B	12/11/1996	3	2	2	10	21	—	<0.5	1	<0.3
MW-106B	3/25/1997	<0.5	<0.5	<0.5	11	22J	—	<0.5	2	<0.25
MW-106B	6/12/1997	4	2	3	12	22	—	<0.5	2	<0.3
MW-106B	9/23/1997	3	1	2	9	17	—	<0.5	1	<0.25
MW-106B	12/9/1997	[4]	[2]	[2]	9	15	—	<0.5	1	<0.25
MW-106B	3/25/1998	4	2	2	9	18	—	<0.5	2	<0.3
MW-106B	6/9/1998	4	2	2	11	23	—	<0.5	2	<0.3
MW-106B dup	6/9/1998	4	2	2	11	23	—	<0.5	2	<0.3
MW-106B	9/21/1998	4	2	2	9	19	—	<0.5	2	<0.25
MW-106B	12/1/1998	4	2	2	8	17	—	<0.5	2	<0.3
MW-106B	3/24/1999	4	1	2	6	13	—	<0.5	2	<0.1
MW-106B	6/21/1999	4	2	2	7	15	—	<0.5	2	<0.1
MW-106B	9/13/1999	3	1	2	7	16	—	<0.5	2	<0.1
MW-106B dup	9/13/1999	3	2	2	7	15	—	<0.5	2	<0.1
MW-106B	3/28/2000	5	2	2	12	20	—	<0.5	2	<0.1
MW-106B	9/5/2000	3	1	1	4	7	—	<0.5	2	<0.1
MW-106B	4/23/2001	2	1	1	3	9	—	<0.5	1	<0.1
MW-106B	9/17/2001	<0.5	<0.5	0.6	2	3	—	<0.5	<0.5	<0.1
MW-106B	5/1/2002	2	1	1	7	11	—	<0.5	0.7	<0.05
MW-106B	9/16/2002	[0.3]J	<0.5	[0.4]J	<0.5	0.7	—	<0.5	<0.5	<0.05
MW-106B dup	9/16/2002	[0.3]J	[0.4]J	[0.3]J	<0.5	1	—	<0.5	<0.5	<0.05
MW-106B	4/15/2003	0.58	0.55	0.49J	3.7	4.8	—	<0.50	<0.50	<0.047
MW-106B	9/9/2003	<0.50	0.22	<0.50	2.2	2.5	—	<0.50	<0.50	<0.050
04/MW-106B/04	4/21/2004	<0.50U	[0.32]J	[0.28]J	3.2	3.1	—	<0.50U	<0.50U	<0.048U
09/MW-106B/04	9/21/2004	<0.50U	[0.25]J	<0.50U	3	2.1	—	<0.50U	<0.50U	<0.047U
09/MW-106BD/04 dup	9/21/2004	<0.50U	[0.23]J	<0.50U	2.8	2	—	<0.50U	<0.50U	<0.048U
MW-106B	4/20/2005	<1.0	0.21	0.21	2.5B	1.8	<1.0	<1.0	<1.0	<0.050
MW-106B	9/12/2005	<0.5	<0.5	<0.5	1.7	0.92	<0.5	<0.5	<0.5	<0.050
MW-106B	4/18/2006	<1	<1	<1	—	[0.7]J	<1	<1	<1	<0.05
MW-106B	9/27/2006	<1	<1	<1	0.8J	<1	<1	<1	<1	<0.05
MW-106B	4/25/2007	<1	<1	<1	0.9J	[0.5]J	<1	<1	<1	<0.05
MW-106B	9/19/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-106B dup	9/19/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-106B	4/23/2008	<1	<1	<1	0.5J	<1	<1	<1	<1	<0.05
MW-106B	4/23/2009	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-106B	4/21/2010	<1	<1	<1	0.4J	<1	<1	<1	<1	<0.047
MW-106B	4/21/2011	<1	<1	<1	<1	<1	<1	<1	<1	<0.048
MW-106B	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.047J
MW-106B dup	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.048J

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-501	5/6/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-501	7/8/1996	<0.5	[0.3]J	[0.4]J	<0.5J	0.6	—	<0.5	<0.5	<0.3
MW-501	9/24/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-501	12/9/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-501	3/25/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-501	12/9/1997	<5	<3.5	<3.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-501	3/25/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-501	12/17/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-501	3/23/1999	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-501	3/27/2000	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-501	4/23/2001	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-501	4/29/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	0.06
MW-501	4/14/2003	<0.50	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	<0.047
D4/MW-501/04	4/20/2004	<0.50U	<0.50U	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.093U
MW-501	4/19/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.028
MW-501	4/18/2006	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-501	4/24/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-501	4/22/2008	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-501	4/23/2009	<1	<1	<1	<1	<1	<1	<1	<1	0.071
MW-501	4/21/2010	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-501	4/21/2011	[0.2]J	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-501	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.038
MW-502	5/6/1996	7.2	10	6.7	<0.5	<0.5	—	<0.5	4.7	<0.25
MW-502	7/10/1996	0.9	4	2	<0.5	<0.5	—	<0.5	0.8	<0.3
MW-502	9/24/1996	0.6	2.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-502	12/10/1996	<0.5	0.7	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-502	3/25/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-502	6/13/1997	<0.5	0.6	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-502	9/24/1997	<0.5	<0.5J	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-502	12/9/1997	[0.7]	[0.8]	<3.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-502	3/25/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-502	6/10/1998	0.7	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-502	12/2/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
MW-502	3/25/1999	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-502	6/22/1999	1	0.8	0.6	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-502	3/29/2000	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-502	9/6/2000	2	0.9	0.8	<0.5	1	—	<0.5	<0.5	<0.1
MW-502	4/23/2001	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-502	4/29/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-502	4/14/2003	<2.0	<2.0	<2.0	<2.0	<2.0	—	<2.0	<2.0	<0.047

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F. O'Connor Superfund Site
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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
04/MW-502/04	4/20/2004	<2.0U	<2.0U	<2.0U	<2.2U	<2.2U	—	<2.0U	<2.0U	<0.26U
09/MW-502/04	9/21/2004	<2.0U	<2.0U	<2.0U	<2.2U	<2.2U	—	<2.0U	<2.0U	<0.050U
MW-502	4/19/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.054
MW-502	4/18/2006	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-502	9/28/2006	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-502	4/24/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-502	4/22/2008	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-502	4/23/2009	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-502	4/21/2010	<1	<1	<1	<1	<1	<1	<1	<1	<0.049
MW-502	4/21/2011	<1	<1	<1	<1	<1	<1	<1	<1	<0.048
MW-502	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.048J
MW-503	5/6/1996	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.25
MW-503	7/8/1996	3	1	1	0.6	0.9	—	<0.5	2	<0.3
MW-503 dup	7/8/1996	2	0.8	0.9	0.4J	[0.4]J	—	<0.5	1	<0.3
MW-503	9/23/1996	2.7	0.6	0.9	<0.5	<0.5	—	<0.5	1.5	<0.3
MW-503	12/10/1996	3	0.6	1	<0.5	<0.5	—	<0.5	1	<0.3
MW-503	3/26/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	4	<0.3
MW-503 dup	3/26/1997	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	4	<0.3
MW-503	6/12/1997	8	2	3	<0.5	<0.5	—	<0.5	6	<0.3
MW-503	9/23/1997	7	1	2	<0.5	0.7	—	<0.5	5	<0.25
MW-503	12/8/1997	7	[2]	[2]	<0.5	<0.5	—	<0.5	4	<0.25
MW-503 dup	12/8/1997	[7]	[1]	[2]	<97	<97	—	<97	[4]	<97
MW-503	3/24/1998	10	2	3	<0.5	<0.5	—	<0.5	7	<0.3
MW-503	6/9/1998	7	2	2	<0.5	<0.5	—	<0.5	5	<0.3
MW-503	9/21/1998	5	2	2	<0.5	<0.5	—	<0.5	4	<0.25
MW-503	12/1/1998	2	0.8	0.8	<0.5	<0.5	—	<0.5	0.7	0.55
MW-503	3/24/1999	4	1	2	<0.5	<0.5	—	<0.5	2	<0.1
MW-503	6/21/1999	22	8	8	<0.5	<0.5	—	[0.3]J	14	<0.1
MW-503	9/14/1999	1	0.9	0.6	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-503	3/28/2000	3	2	1	<0.5	<0.5	—	<0.5	0.7	<0.1
MW-503 dup	3/28/2000	3	2	1	<0.5	<0.5	—	<0.5	0.7	<0.1
MW-503	9/5/2000	7	2	3	<0.5	<0.5	—	<0.5	4	<0.1
MW-503	4/23/2001	0.8	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-503	4/29/2002	2	1	0.9	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-503	4/14/2003	0.33J	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	<0.047
MW-503 dup	4/14/2003	0.34J	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	<0.047
MW-503	9/9/2003	15	4.9	5.3	<0.55	<0.55	—	<0.50	8	0.066
04/MW-503/04	4/20/2004	1.2	[0.47]J	0.52	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.20U
09/MW-503/04	9/21/2004	10	3.9	3.9	<0.55U	<0.55U	—	<0.50U	4.8	0.91

GROUNDWATER RESULTS FROM 1986 TO 2012
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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-503	4/19/2005	2	0.78	0.82	<1.0	<1.0	<1.0	<1.0	0.72	<0.050
MW-503	9/12/2005	9.8	3.4	4.1	2.2	1.1	<0.5	<0.5	5	0.5
MW-503	4/18/2006	[0.4]J	<1	<1	—	<1	<1	<1	<1	<0.05
MW-503 dup	4/18/2006	[0.5]J	<1	<1	—	<1	<1	<1	<1	<0.05
MW-503	9/27/2006	8	2	3	<1	<1	<1	<1	6	<0.05
MW-503	4/24/2007	1	<1	[0.6]J	<1	<1	<1	<1	[0.4]J	<0.05
MW-503	4/22/2008	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-503	4/23/2009	<1	<1	<1	<1	<1	<1	<1	<1	0.038
MW-503	4/21/2010	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-503	4/21/2011	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-503	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.05U
MW-507A	12/9/1997	190	120	81	<0.5	<0.5	—	0.9	34	<0.5
MW-507A	3/26/1998	130	86	57	<0.5	<0.5	—	0.6	23	<0.3
MW-507A	6/10/1998	190	100	69	<0.5	<0.5	—	<0.5	24	<0.25
MW-507A dup	6/10/1998	140	78	55	<5	<5	—	<5	20	—
MW-507A	9/22/1998	83	51	34	<0.5	<0.5	—	<0.5	16	<0.25
MW-507A	12/2/1998	10	11	5	<0.5	<0.5	—	<0.5	2	<0.3
MW-507A	3/25/1999	42	32	21	<0.5	<0.5	—	<0.5	9	<0.1
MW-507A	6/22/1999	93	52	36	<0.5	<0.5	—	0.6	18	<0.1
MW-507A	9/14/1999	34	16	12	<0.5	<0.5	—	<0.5	10	<0.1
MW-507A	3/29/2000	0.9	0.9	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-507A dup	3/29/2000	0.8	0.8	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-507A	9/6/2000	59	30	22	<0.5	<0.5	—	0.6	15	<0.1
MW-507A dup	9/6/2000	79	40	30	<0.5	<0.5	—	0.7	21	<0.1
MW-507A	4/24/2001	9	6	4	<0.5	<0.5	—	<0.5	2	<0.1
MW-507A	9/18/2001	93	56	36	<0.5	<0.5	—	0.6	22	<0.1
MW-507A	5/1/2002	3	3	1	<0.5	<0.5	—	<0.5	0.6	<0.05
MW-507A dup	5/1/2002	3	3	2	<0.5	<0.5	—	<0.5	0.7	<0.05
MW-507A	9/17/2002	9	4	3	<0.5	<0.5	—	[0.3]J	4	<0.05
MW-507A	4/15/2003	0.87	0.71	0.39J	<0.50	<0.50	—	<0.50	<0.50	<0.047
MW-507A	9/9/2003	44	24	17	<0.55	<0.55	—	0.33	16	<0.048
04/MW-507A/04	4/21/2004	0.57	0.72	[0.28]J	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.047U
04/MW-507AD/04 dup	4/21/2004	0.56	0.71	[0.26]J	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.048U
09/MW-507A/04	9/22/2004	37	19	14	<0.55U	<0.55U	—	<0.50U	12	<0.050U
MW-507A	4/20/2005	1.1	0.98	0.4	<1.0	<1.0	<1.0	<1.0	0.32	—
MW-507A	9/12/2005	42	22	16	<2.2	<2.2	<2.0	<2.0	15	<0.047
MW-507A dup	9/12/2005	43	22	16	<2.2	<2.2	<2.0	<2.0	14	<0.048
MW-507A	4/19/2006	2	2	[0.8]J	—	<1	<1	<1	[0.6]J	<0.05
MW-507A dup	4/19/2006	2	2	[0.8]J	—	<1	<1	<1	[0.6]J	<0.05
MW-507A	9/27/2006	30	14	11	<1	<1	<1	<1	10	<0.05

GROUNDWATER RESULTS FROM 1986 TO 2012
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Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-507A	4/25/2007	<1	[0.4]J	<1	—	<1	<1	<1	<1	<0.05
MW-507A	9/18/2007	34	21	14	<1	<1	<1	[0.4]J	12	<0.05
MW-507A	4/22/2008	2	2	1	<1	<1	<1	<1	1	<0.05
MW-507A	4/23/2009	<1	[0.4]J	<1	<1	<1	<1	<1	<1	<0.047
MW-507A	4/21/2010	2	2	[0.9]J	<1	<1	<1	<1	[0.8]J	<0.047
MW-507A dup	4/21/2010	2	2	[0.8]J	<1	<1	<1	<1	[0.7]J	<0.047
MW-507A	4/21/2011	<1	[0.4]J	<1	<1	<1	<1	<1	<1	<0.048
MW-507A	4/25/2012	[0.20]J	[0.51]J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.047J
MW-508B	12/9/1997	24	12	10	1	1	—	2	10	<0.25
MW-508B	3/25/1998	10	5	4	<0.5	<0.5	—	<0.5	4	<0.3
MW-508B	6/9/1998	8	2	2	<0.5	<0.5	—	<0.5	5	<0.3
MW-508B	9/21/1998	2	0.9	1	<0.5	<0.5	—	<0.5	2	<0.25
MW-508B	12/1/1998	5	2	2	<0.5	<0.5	—	<0.5	4	<0.3
MW-508B	3/24/1999	6	2	2	<0.5	<0.5	—	<0.5	7	<0.1
MW-508B	6/21/1999	3	1	1	<0.5	<0.5	—	<0.5	3	<0.1
MW-508B	9/13/1999	2	0.7	0.6	<0.5	<0.5	—	<0.5	4	<0.1
MW-508B	3/29/2000	2	1	0.9	<0.5	<0.5	—	<0.5	2	<0.1
MW-508B	9/6/2000	2	0.9	0.8	<0.5	<0.5	—	<0.5	1	<0.1
MW-508B	4/24/2001	0.6	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-508B	9/17/2001	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-508B	5/1/2002	0.6	0.7	<0.5	<0.5	<0.5	—	1	<0.5	<0.05
MW-508B	9/17/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-508B	4/15/2003	<0.50	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	<0.047
MW-508B	9/9/2003	<0.50	<0.50	<0.50	<0.55	<0.55	—	<0.50	<0.50	<0.047
D4/MW-508B/D4	4/21/2004	<0.50U	<0.50U	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.095U
D9/MW-508B/D4	9/22/2004	[0.25]J	<0.50U	<0.50U	<0.55U	<0.55U	—	<0.50U	[0.22]J	<0.049U
MW-508B	4/20/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.050
MW-508B dup	4/20/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.050
MW-508B	9/13/2005	<0.5	<0.5	<0.5	<0.55	<0.55	<0.5	<0.5	<0.5	<0.047
MW-508B	4/19/2006	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-508B	9/27/2006	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-508B	4/25/2007	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-508B dup	4/25/2007	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-508B	9/18/2007	<1	<1	<1	<1	<1	<1	<1	<1	—
MW-508B	4/22/2008	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-508B	4/23/2009	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-508B	4/21/2010	<1	<1	<1	<1	<1	<1	<1	<1	<0.048
MW-508B	4/21/2011	<1	<1	<1	<1	<1	<1	<1	<1	<0.047
MW-508B	4/25/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.05J

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
Augusta, Maine

Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
MW-509A	4/30/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	1	<0.5	<0.05
MW-509A	9/16/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	0.8	<0.5	<0.05
MW-509A	4/15/2003	<0.50	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	<0.050
MW-509A	9/9/2003	<0.50	<0.50	<0.50	<0.55	<0.55	—	<0.50	<0.50	0.044
04/MW-509A/04	4/20/2004	<5.0U	<5.0U	<5.0U	<5.5U	<5.5U	—	<5.0U	<5.0U	<0.47U
09/509A/04	9/21/2004	<5.0U	<5.0U	<5.0U	<5.5U	<5.5U	—	<5.0U	<5.0U	<0.049U
09/509A-DUP/04 dup	9/21/2004	<5.0U	<5.0U	<5.0U	<5.5U	<5.5U	—	<5.0U	<5.0U	<0.049U
MW-509A	4/19/2005	0.24	<1.0	<1.0	0.20J	0.32	<1.0	1.1	<1.0	<0.048
MW-509A dup	4/19/2005	<1.0	<1.0	<1.0	<1.0	0.27	<1.0	1.1	<1.0	<0.050
MW-509A	4/18/2006	<1	<1	<1	—	<1	<1	1	<1	<0.05
MW-509A	4/24/2007	<1	<1	<1	<1	<1	<1	1	<1	<0.05
MW-510A	9/18/2001	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.1
MW-510A	4/30/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-510A	9/16/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-510A	4/15/2003	<0.50	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	<0.047
MW-510A	9/9/2003	<0.50	<0.50	<0.50	<0.55	<0.55	—	<0.50	<0.50	0.045
MW-510A dup	9/9/2003	<0.50	<0.50	<0.50	<0.55	<0.55	—	<0.50	<0.50	<0.048
04/MW-510A/04	4/20/2004	<0.50U	<0.50U	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.18U
09/MW-510A/04	9/21/2004	<0.50U	<0.50U	<0.50U	<0.55U	<0.55U	—	<0.50U	<0.50U	<0.048U
MW-510A	4/19/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.047
MW-510A	9/12/2005	<0.5	<0.5	<0.5	<0.55	<0.55	<0.5	<0.5	<0.5	0.14
MW-510A	4/18/2006	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-510A	9/27/2006	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-510A	4/24/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-510A	9/18/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
MW-511A	5/1/2002	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.05
MW-511A	4/15/2003	<2.0	<2.0	<2.0	<2.0	<2.0	—	<2.0	<2.0	<0.048
04/MW-511A/04	4/22/2004	<2.0U	<2.0U	<2.0U	<2.2U	<2.2U	—	<2.0U	<2.0U	<0.050U
MW-511A	4/19/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.033
MW-511A	4/18/2006	<1	<1	<1	—	<1	<1	<1	<1	<0.05
MW-511A	4/24/2007	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
OW-201B	6/9/1992	<0.5	<0.5	<0.5	<0.5	<0.5	—	[0.31]	0.54	0.78
OW-201B	12/12/1994	120	70	55	<0.5	3	—	<0.5	41	<0.25
OW-201B	10/19/1995	130	73	55	<2.5	<2.5	—	<2.5	43	<0.27
OW-201B	1/30/1996	74	67	49	5.2	4.1	—	<1.5	<1.5	<0.26
OW-201B dup	1/30/1996	71	64	47	2.6	<1.5	—	1.7	22	<0.27
OW-201B	5/3/1996	67	58	42	<0.5	<0.5	—	<0.5	26	<0.25
OW-201B	7/10/1996	71	57	41	<0.5	0.7	—	1	22	<0.25
OW-201B	9/25/1996	100	75	51	<2.5	[0.9]J	—	[1]J	27	<0.3
OW-201B	12/11/1996	100	67	48	<2.5J	<2.5	—	<2.5	27	<0.3
OW-201B dup	12/11/1996	100	67	48	<2.5	[0.8]J	—	[0.9]J	27	<0.3

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
Augusta, Maine

Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
OW-201B	3/27/1997	170	<5	<5	<5	<5	—	[1]J	44	<0.25
OW-201B	6/13/1997	120	81	57	<2.5	<2.5	—	<2.5	31	<0.3
OW-201B	9/23/1997	96	65	45	<2.5	<2.5	—	[0.7]	25	<0.3
OW-201B	12/9/1997	130	81	56	<0.5	<0.5	—	1	32	<0.25
OW-201B	3/25/1998	68	48	33	<0.5	<0.5	—	<0.5	15	<0.3
OW-201B dup	3/25/1998	62	44	30	<0.5	<0.5	—	<0.5	14	<0.3
OW-201B	6/10/1998	57	38	25	<0.5	<0.5	—	<0.5	11	<0.3
OW-201B	9/22/1998	79	52	—	<0.5	<0.5	—	0.6	19	<0.3
OW-201B dup	9/22/1998	—	—	—	—	—	—	—	—	<0.5
OW-201B	12/2/1998	64	44	29	<0.5	<0.5	—	<0.5	16	<0.3
OW-201B	3/25/1999	59	37	28	<0.5	<0.5	—	<0.5	14	<0.1
OW-201B	6/21/1999	60	39	27	<0.5	<0.5	—	[0.4]J	14	<0.1
OW-201B dup	6/21/1999	62	40	28	<0.5	<0.5	—	<0.5	15	<0.1
OW-201B	9/14/1999	71	43	33	<0.5	<0.5	—	<0.5	17	<0.1
OW-201B	9/6/2000	70	44	31	<0.5	<0.5	—	0.7	21	<0.1
OW-201B	4/24/2001	61	36	26	0.8	<0.5	—	0.6	21	<0.1
OW-201B	9/17/2001	68	36	28	<0.5	<0.5	—	0.6	25	<0.1
OW-201B	5/1/2002	110	62	47	<0.5	1	—	2	44	<0.05
OW-201B	9/17/2002	67	36	29	<0.5	<0.5	—	0.9	27	<0.05
OW-201B dup	9/17/2002	57	32	24	<0.5	<0.5	—	0.9	25	<0.05
OW-201B	4/15/2003	85	48	35	2	1.6J	—	<2.0	34	<0.047
OW-201B dup	4/15/2003	87	50	36	2	1.6J	—	<2.0	35	<0.047
OW-201B	9/9/2003	89	48	36	<2.2	2.8	—	<2.0	36	<0.047
04/OW-201B/04	4/21/2004	59	34	24	<2.2U	<2.2U	—	<2.0U	17	<0.19U
09/OW-201B/04	9/22/2004	43	24	17	<1.1U	<1.1U	—	<1.0U	12	<0.048U
OW-201B	4/20/2005	39	23	16	<1.0	0.47	<1.0	0.27	11	<0.047
OW-201B	9/13/2005	36	23	15	<0.55	<0.55	<0.5	<0.5	11	<0.048
OW-201B	4/19/2006	34	23	15	—	<1	<1	<1	10	<0.05
OW-201B	9/28/2006	14	9	8	0.6J	2	<1	<1	6	<0.05
OW-201B dup	9/28/2006	46	24	17	<1	<1	<1	<1	12	<0.05
OW-201B	9/18/2007	28	16	11	<1	<1	<1	<1	9	<0.05
OW-201B	4/23/2008	31	19	13	<1	<1	<1	<1	12	<0.05
OW-201B dup	4/23/2008	31	19	14	<1	<1	<1	<1	12	<0.05
OW-201B	4/23/2009	18	13	8	<1	<1	<1	<1	5	<0.048
OW-201B	4/22/2010	6	6	3	<1	[0.4]J	<1	<1	[0.4]J	<0.047
OW-201B	4/21/2011	9	6	3	<1	<1	<1	<1	1	<0.049
OW-201B	4/25/2012	8.1	6.1	1.7	<1.0	<1.0	<1.0	<1.0	[0.45]J	<0.048J

GROUNDWATER RESULTS FROM 1986 TO 2012
F. O'Connor Superfund Site
Augusta, Maine

Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
OW-204B	6/9/1992	<0.5	<0.5	<0.5	1.3	4.8	—	0.79	<0.5	1.94
OW-204B	12/12/1994	0.8	<0.5	<0.5	<0.5	<0.5	—	0.6	<0.5	107
OW-204B	6/8/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	<0.3
OW-204B dup	6/8/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	—
OW-204B	9/22/1998	<0.5	<0.5	—	<0.5	<0.5	—	<0.5	<0.5	0.64
OW-204B	12/2/1998	<0.5	<0.5	<0.5	<0.5	<0.5	—	<0.5	<0.5	1
OW-204B	3/26/1999	<0.5	<0.5	0.6	<0.5	<0.5	—	<0.5	<0.5	<0.1
OW-204B	6/23/1999	<0.5	<0.5	0.7	0.7	2	—	<0.5	[0.4]J	1.07
OW-204B	9/7/2000	0.9	<0.5	<0.5	<0.5	<0.5	—	<0.5	1	0.62
OW-204B	4/24/2001	<0.5	<0.5	1	<0.5	<0.5	—	<0.5	3	<0.1
OW-204B	5/1/2002	<0.5	<0.5	2	<0.5	<0.5	—	<0.5	2	0.81
OW-204B	4/15/2003	<0.50	<0.50	<0.50	<0.50	<0.50	—	<0.50	<0.50	0.21
04/OW-204B/04	4/22/2004	<0.50U	<0.50U	0.78	<0.55U	<0.55U	—	<0.50U	1.3	<0.24U
09/OW-204B/04	9/22/2004	<0.50U	<0.50U	[0.36]J	<0.55U	<0.55U	—	<0.50U	0.79	0.17
OW-204B	4/19/2006	<1	<1	[0.5]J	—	<1	<1	<1	[0.8]J	<0.05
OW-204B	9/28/2006	<1	<1	<1	<1	<1	<1	<1	<1	<0.05
OW-204B	4/25/2007	<1	<1	<1	—	<1	<1	<1	<1	<0.05
OW-301B	12/12/1994	97	49	240	120	560	—	13	73	840
OW-301B	6/8/1998	39	32	160	17	53	—	4	48	1.2
OW-301B dup	6/8/1998	38	33	160	15	48	—	4	48	—
OW-301B	9/23/1998	3	2	—	0.7	2	—	<0.5	4	1.7
OW-301B	12/3/1998	38	30	120	19	51	—	2	41	7.1
OW-301B	3/30/1999	24	23	91	10	36	—	1	27	3.1
OW-301B	6/23/1999	190	150	640	120	240	—	5	200	2.9
OW-301B	9/7/2000	80	49	240	26	120	—	2	91	8.6
OW-301B dup	9/7/2000	58	38	250	34	120	—	2	93	—
OW-301B	4/24/2001	26	19	89	12	56	—	1	47	3.5
OW-301B	4/25/2007	280	350	1100	—	580	1	2	880	74

Notes: < Indicates constituent not detected above detection limit (practical quantitation limit (PQL))
J denotes an estimated value below the PQL, but above the method quantitation limit.
Total PCBs are equal to the sum of detected Aroclors or the largest detection limit if they vary

GROUNDWATER RESULTS FROM TWA II AREA
F. O'Connor Superfund Site
Augusta, Maine

Location/ Sample ID	Date	1,2-Dichloro benzene Total (ug/l)	1,3-Dichloro benzene Total (ug/l)	1,4-Dichloro benzene Total (ug/l)	1,2,3-Trichloro benzene Total (ug/l)	1,2,4-Trichloro benzene Total (ug/l)	1,3,5-Trichloro benzene Total (ug/l)	Benzene Total (ug/l)	Chlorobenzene Total (ug/l)	PCBs Total (ug/l)
OW-202B	6/9/1992	10	<0.5	15	130	590	—	<0.5	<0.5	320
OW-202B	8/3/1992	27	5	42	110	450	—	<0.5	4.2	350
OW-202B	8/4/1992	29	5.4	45	130	500	—	<0.5	<0.5	360
OW-202B	8/5/1992	32	5.5	48	120	610	—	<0.5	<0.5	3.7
OW-202B	8/6/1992	36	6	51	710	150	—	<0.5	<0.5	<0.25
OW-202B	8/8/1992	38	5.8	55	130	580	—	<0.5	<0.5	1.8
OW-202B	12/12/1994	2.5	1.2	7.1	2.4	11	—	1.7	22	21.2
OW-202B	6/8/1998	2	2	6	0.6	1	—	0.6	3	<0.3
OW-202B	12/2/1998	2	2	8	0.6	2	—	0.6	3	<0.3
OW-202B	3/30/1999	<0.5	1	2	0.6	2	—	<0.5	1	0.79
OW-202B	4/24/2001	5	4	20	0.8	3	—	1	10	0.35
OW-302B	12/12/1994	69	27	150	150	680	—	<0.5	17	950
OW-302B	10/19/1995	1.8	<0.5	2.1	1.4	3.3	—	2.1	1.8	2.2
OW-302B dup	10/19/1995	40	15	74	68	280	—	<5	17	<0.37
OW-302B	1/31/1996	42	16	97	66	260	—	5.4	9.2	<0.29
OW-302B	6/9/1998	65	37	200	84	440	—	6	38	32
OW-302B dup	6/9/1998	70	36	160	57	250	—	<10	34	—
OW-302B	9/23/1998	160	81	400	580	2800	—	<10	66	1500
OW-302B	12/3/1998	140	73	500	790	2500	—	6	60	8900
OW-302B	3/26/1999	98	61	300	290	1600	—	58	58	930
OW-302B dup	3/26/1999	—	—	—	—	—	—	—	—	930
OW-302B	6/22/1999	120	70	420	580	3200	—	6	63	710
OW-302B	4/25/2001	150	110	520	98	640	—	6	170	44
OW-302B dup	4/25/2001	210	160	720	98	770	—	8	240	—
RW-101	6/8/1998	2	1	6	1	3	—	2	2	1.5
RW-101	3/30/1999	3	3	11	0.8	2	—	0.6	2	2.32
RW-101	4/25/2001	2	3	13	4	5	—	1	9	0.12

Notes: < Indicates constituent not detected above detection limit (practical quantitation limit (PQL))
J denotes an estimated value below the PQL, but above the method quantitation limit.
Total PCBs are equal to the sum of detected Aroclors or the largest detection limit if they vary

APPENDIX C

O'CONNOR SUPERFUND SITE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

From: Claire Willscher, Human Health Risk Assessor, OSRR

To: Terrence Connelly, RPM, OSRR

Re: Risk evaluation for O'Connor Superfund Site

Date: September 30, 2013

Per your request, please find in this memorandum a screening of site groundwater data available from Woodard & Curran's April 2012 Management of Migration Sampling and Analysis Annual Report for the O'Connor Superfund Site ("Site"). This memorandum also includes a conservative risk evaluation of the site-related contaminants of concern using the risk ratio approach, and a discussion regarding the soil cleanup levels outside of the Designated Area at the Site.

In this memorandum the Site groundwater data are screened against EPA's generic residential risk-based screening levels for direct contact with groundwater, Site cleanup levels, and screening levels developed for the residential vapor intrusion pathway. EPA's risk-based screening levels are developed for chemicals with both cancer and non-cancer affects, following EPA Superfund guidance and using available toxicity values, standard risk methodology and standard default exposure values. The residential risk-based screening levels specific to direct contact with groundwater account for the exposure pathways of: incidental ingestion of tap water; dermal contact with tap water; inhalation of volatiles in tap water while bathing/showering; and, using tap water to do household chores. In this memorandum the Site groundwater data are also screened against both the Site cleanup levels and against residential screening levels developed for the vapor intrusion pathway.

For purposes of this risk evaluation at the O'Connor Site, both the direct contact with groundwater risk-based screening levels and the risk-based screening levels for the vapor intrusion pathway are based on a target cancer risk level of 1E-6 or non-cancer hazard quotient (HQ) of 1.0 as the point of departure, with the lower value being used when there are both cancer and non-cancer screening levels. Please note that Region 1's common practice is to use non-cancer screening levels at HQ of 0.1 when there is a long list of non-carcinogenic contaminants

to account for cumulative effects of more than 10 contaminants on the same target organs. However, since there are fewer than 10 non-carcinogens identified at this Site and they have effects on different target organs, there is no adding the health effects; therefore non-cancer screening levels used for this evaluation are based on HQ of 1.

EPA's generic risk-based screening levels used in this memorandum can be found on this EPA website: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

The risk-based screening levels specific to the vapor intrusion pathway can be found on this EPA website: http://www.epa.gov/oswer/vaporintrusion/guidance.html

The groundwater wells that are relevant to this screening and risk evaluation at the O'Connor Site are those that are outside of the TI zone: MW-106A, MW-106B, MW-501, and MW-503. The concentrations used for this screening and risk evaluation are from the three most recent sampling rounds (2010, 2011, 2012), and correspond to the maximum detected concentrations at these wells, or the highest detection limit for a specific compound if all sampling rounds reported non-detect or if detected concentrations are lower than the greatest detection limit. Concentrations that exceed any screening levels are bolded in the tables.

1) Groundwater screening

Groundwater COC	Conc for Screening (ppb)	Residential Risk-Based Screening Level-Groundwater Exposure Pathway (ppb)	Basis for Screening Level	GW Cleanup Level (ppb)	Residential Risk-Based Screening Level-Vapor Intrusion Pathway (ppb)	Basis for Screening Level
1,2-Dichlorobenzene	1	280	HQ=1	85	2700	HQ=1
1,3-Dichlorobenzene	1	NA	NA	85	NA	NA
1,4-Dichlorobenzene	**1**	**0.42**	**1E-6 risk**	27	2.2	1E-6 risk
1,2,3-Trichlorobenzene	1	5.2	HQ=1	ns	NA	NA
1,2,4-Trichlorobenzene	**1**	**0.99**	**1E-6 risk**	70	36	HQ=1
1,3,5-Trichlorobenzene	1	NA	NA	40	NA	NA
Benzene	**1**	**0.39**	**1E-6 risk**	5	1.4	1E-6 risk
Chlorobenzene	1	72	HQ=1	100	410	HQ=1
PCBs	**0.05**	**0.004**	**1E-6 risk**	0.05	NA	NA

As shown in the table above, the concentration used for screening for 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, benzene and PCBs exceeds their respective residential risk-based screening levels for the direct contact with groundwater exposure pathway. However, the concentration used for screening, for all groundwater COCs, does not exceed their respective Site groundwater cleanup level or their respective residential risk-based screening level for the vapor intrusion pathway.

2) Groundwater risk evaluation

Based on the screening above, the concentration used for screening for 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, benzene and PCBs exceeds their respective residential risk-based screening levels for the direct contact with groundwater exposure pathway. If these concentrations are used as exposure point concentrations to calculate risks, with the risk ratio approach, the risks for residential scenario from being exposed to groundwater at the Site would be:

Groundwater COC	Residential Cancer Risk - Groundwater Exposure Pathway	Residential Non-cancer Hazard - Groundwater Exposure Pathway	Residential Cancer Risk - Vapor Intrusion Pathway	Residential Non-cancer Hazard - Vapor Intrusion Pathway
1,4-Dichlorobenzene	2.38E-06	0.002	4.55E-07	0.0001
1,2,4-Trichlorobenzene	1.01E-06	0.254	NA	0.0278
Benzene	2.56E-06	0.034	7.14E-07	0.0071
PCBs	1.25E-05	0.161	3.57E-07	NA
Total Risk	**1.85E-05**		**1.53E-06**	

Cancer risk and non-cancer hazards, for each the direct contact with groundwater exposure pathway and vapor intrusion pathway, do not exceed EPA's acceptable risk level.

3) Soil Cleanup Levels for Areas inside and outside of the Designated Area

The cleanup standards for soil and sediment inside of the Designated Area, as established in the 1994 ESD, are 10 ppm for Total PCBs, 10 ppm for Total cPAHs and 248 ppm for lead. The 1994 ESD identifies that these cleanup goals are "within EPA's acceptable range of 10^{-4} to 10^{-6} for a residential setting". These standards were attained in 1997, and the 2012 Five Year Review site inspection and soil sampling show that the integrity of the soil cover placed over the Designated Area has been maintained. Even though the 28-acre property, which includes the 23-acre Site is zoned as RRES – rural residential district, where residential development that conserves the rural character of the area is permitted, institutional controls are in place which prevent current and future exposures to soils inside of the Designated Area. Specifically, the Declaration of Restrictive Covenant prohibits any activity which might disrupt remedial or monitoring measures installed pursuant to the Consent Decree without the prior written approval of the DEP, and requires that the owner shall maintain permeable or impervious caps or covers (including areas covered by topsoil or other clean fill).

The cleanup standards for soil and sediment outside of the Designated Area are 1 ppm for Total PCBs, 1 ppm for Total cPAHs and 248 ppm for lead. These standards were attained in 1997. These cleanup levels remain appropriate at the O'Connor Site:

- EPA's current Guidance on Remedial Actions for Superfund Superfund Sites with PCB Contamination (August 1990) identifies that for soils, the preliminary remediation goals for PCBs should generally be 1 ppm for sites in or expected to be in residential areas.

- The cleanup standard was set for Total PAHs at 1 ppm. Current risk assessment methodology allows for the calculation of cancer risk and non-cancer hazards, and corresponding risk-based cleanup standards, for individual PAHs. The residential risk-based screening level for benzo(a)pyrene (the most toxic of the cPAHs) is 0.015 ppm. As a conservative approach, assuming that the cPAHs at the Site are comprised entirely of benzo(a)pyrene, and using an exposure point concentration of 1 ppm (equivalent to the cleanup standard), the risks for the residential scenario, using the risk ratio approach, would be 6.67E-05. This risk is with EPA's acceptable risk range, and therefore the cleanup standard remains protective of human health.

- The EPA Office of Solid Waste and Emergency Response Directive: Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities (August 2004) recommends a screening level of 400 ppm for lead in soil for residential land use. The directive states that residential areas with soil lead below 400 ppm generally require no further action.

Notes:

a. This risk evaluation is a quick evaluation using the conservative maximum detected concentrations or detection limits to show a quick estimate of the risks at the Site. In traditional risk assessment, the full dataset would be evaluated and exposure concentrations would be closer to the mean, likely to be the 95% upper confidence limits instead of the maximum. In that case, the estimated risks would be lower than the risks estimated using the maximum in this memorandum.

b. Toxicity information specific to Arochlor 1221 and Arochlor 1254 was used in the screening and the evaluation of the cancer risk and hazard associated with exposure to PCBs in order to provide for the most conservative assessment of PCBs. The direct contact with groundwater and vapor intrusion carcinogenic screening levels for PCBs correspond to those of Arochlor 1221, the most toxic of the PCBs. Because Arochlor 1221 does not have toxicity values associated with non-cancer hazards, the direct contact with groundwater non-carcinogenic screening level for PCBs corresponds to that of Arochlor 1254. There is no residential risk-based screening level for non-cancer hazards for the vapor intrusion pathway because Arochlor 1254 is not volatile.