U.S. ENVIRONMENTAL PROTECTION AGENCY
EPA NEW ENGLAND

RECORD OF DECISION SUMMARY

EASTLAND WOOLEN MILL
OPERABLE UNIT II

SEPTEMBER 2004

LIST OF ACRONYMS

AWQC	Ambient Water Quality Criteria
BERA	Baseline Ecological Risk Assessment
BHHRA	Baseline Human Health Risk Assessment
COPCs	Chemicals of potential concern
CBRs	critical body residues
CSM	conceptual site model
CT	Central Tendency
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DQOs	data quality objectives
ECOSAR	Ecological Structural Activity Relationships
ECOTOX	ECOTOXicological database
EPC	exposure point concentration
ER-L	Effects Range-Low
HI	hazard index
HQ	hazard quotient
INCHEM	International Chemical Database
IPCS	International Programme on Chemical Safety
IRIS	Integrated Risk Information System
LD_{50}	Lethal Dose 50
LELs	Lowest Effect Level
LOAEL	Lowest Observable Adverse Effect Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NOAA	National Oceanic and Atmospheric Administration
NOAEL	no observed adverse effect level
NTCRA	Non-Time-Critical Removal Action
NWQC	National Water Quality Criterion
OME	Ontario Ministry of the Environment
ORNL	Oak Ridge National Laboratories
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCDDs	polychlorinated dibenzodioxins
PCDFs	polychlorinated dibenzofurans
PRGs	preliminary remediation goals
RBP	Rapid Bioassessment Protocol

LIST OF ACRONYMS

RME	Reasonable Maximum Exposure
SEM	Simultaneously Extracted Metals
SQC	sediment quality criteria
SQL	sample quantification limit
SVOCs	semivolatile organic compounds
TAL	target analyte list
TCL	target compound list
TCDD	tetrachlorodibenzo-p-dioxin
TEC	toxic equivalent concentration
TEF	toxicity equivalent factor
TEQ	toxic equivalent quotient
TOC	total organic carbon
TRV	toxicity reference value
UCL	upper concentration limit
USEPA	U.S. Environmental Protection Agency
VOCs	volatile organic compounds
WWTP	wastewater treatment plant

DECLARATION FOR THE RECORD OF DECISION

A. SITE NAME AND LOCATION

Eastland Woolen Mill Superfund Site
Corinna, Penobscot County, Maine
MED980915474
Site ID No: 0101043
EPA Lead
Operable Unit II

B. STATEMENT OF BASIS AND PURPOSE

This decision document presents the no further action decision for Operable Unit II (OU II) at the Eastland Woolen Mill Superfund Site in Corinna, Maine (the Site). The no further action decision was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), 42 USC § 9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300 et seq., as amended. The Director of the Office of Site Remediation and Restoration (OSRR) has been delegated the authority to approve this Record of Decision (ROD).

This decision is based on the Administrative Record, which has been developed in accordance with Section 113(k) of CERCLA, and which is available for review at the Stewart Public Library, Corinna, Maine, and at the United States Environmental Protection Agency (EPA) EPA New England, OSRR Records Center in Boston, Massachusetts. The Administrative Record Index (Appendix D to the ROD) identifies each of the items constituting the Administrative Record upon which the selection of the remedial action is based.

The State of Maine does not concur with the no further action decision.

C. DESCRIPTION OF THE SELECTED REMEDY

Based upon the result of the Remedial Investigation and Supplemental Remedial Investigation, including the Baseline Human Health and revised Baseline Ecological Risk Assessments, EPA has determined that no CERCLA remedial action is necessary to protect public health or welfare or the environment for the areas within OU II. As a result, EPA will cease activity regarding the OU II component of the Eastland Woolen Mill Superfund Site.

D. STATUTORY DETERMINATIONS

EPA has determined that no further remedial action is necessary at this Site. Previous response actions implemented as part of a non-time-critical removal action (NTCRA) and the OU I remedial action will adequately control the principle and low-level threats at the Site. The NTCRA removed all of the surface and near surface contamination in the soil, sediment, and floodplain areas in downtown Corinna and for the first several hundred yards of the East Branch of the Sebasticook River (the East Branch). This included the section of the East Branch where DNAPL was observed in the river bed. The OU I remedial action will address the remaining principal threat wastes in the deep overburden and bedrock groundwater.

As this is a decision for No Action, the statutory requirements of CERCLA Section 121 for remedial actions are not applicable. Therefore, EPA does not intend to perform 5-year reviews of the OU II decision. EPA will, however, be performing five year reviews for the OU I portions of the Site pursuant to the September 2002 ROD for OU I.

E. SPECIAL FINDINGS

None.

F. AUTHORIZING SIGNATURES

This ROD documents the selected remedy for OU II at the Eastland Woolen Mill Superfund Site. The State of Maine Department of Environmental Protection (MEDEP) does not concur with the remedial decision.

Concur and recommended for immediate implementation:

U.S. Environmental Protection Agency

By: Susan Studlien Date: 09/30/04

Susan Studlien, Director
Office of Site Remediation and Restoration
EPA New England

RECORD OF DECISION SUMMARY

A. SITE NAME, LOCATION AND BRIEF DESCRIPTION

Eastland Woolen Mill Superfund Site
Corinna, Penobscot County, Maine
MED980915474
Site ID No: 0101043
EPA Lead
Operable Unit II

The Eastland Woolen Mill Superfund Site (Site) is located in the Town of Corinna, Penobscot County, Maine, approximately six miles north of Newport and 25 miles northwest of Bangor, Maine (see Figure 1). Approximately 800 persons live within one mile of the Site and 2,500 within four miles. The Site was formerly dominated by buildings of the Eastland Woolen Mill Company, which before its demolition in 2000 comprised a large manufacturing building and several side buildings with a total area of 250,000 square feet. These buildings stood on both sides of and over the East Branch, a State-designated Class C water that runs north to south through the center of Corinna (see Figure 2).

Corinna is located within the East Branch watershed, which drains to Sebasticook Lake approximately three miles south of the town. Topography within the watershed is typified by gently rolling hills to steeply sloping ridges, varying from narrow valleys to fairly expansive low-lying floodplains. Elevations within the immediate vicinity of Corinna range from 200 to 320 feet above mean sea level (msl). The Site is at an elevation of 220 to 230 feet above msl.

A more complete description of the Site can be found in Section 1 of the Remedial Investigation Report prepared by Harding ESE, Inc., a MACTEC Company (Harding ESE) for EPA Region 1 and released in July 2002 (RI).

B. SITE HISTORY AND ENFORCEMENT ACTIVITIES

1. History of Site Activities

The Eastland Woolen Mill began operation in 1912. Significant expansion of the facility occurred during the 1950's and 1960's, with a final addition to the facility completed in 1977. Liquid wastes from the mill were discharged directly into the East Branch via the Mill Pond dam tailrace, which was located below the western half of Building 1. These wastes included sanitary and chemical wastes as well as wool floc. Wool floc has been observed in downstream sediments and is likely associated with the discharge of chemical wastes from the dye kettles. In 1969, the majority of the liquid waste was discharged into the sewer line for Corinna Wastewater Treatment Plant (See Figure 2 for an overview of the Eastland Woolen Mill complex).

Although many of the operations were "dry" processes, some were mechanized and may have involved use of fuel, lubricants and solvents for powering, oiling and cleaning machinery. The principal operation that generated liquid wastes at the Mill was the fabric finishing operation. According to layout plans of the Mill, a majority of the "wet" processes (e.g., dyeing and washing of the fabric) occurred in the basements of Buildings 1, 1A, 3, and 4 (see Figure 2). In 1977, the new Dye House was constructed; however, the existing dye kettles were still used after the completion of the new Dye House. Reportedly, the dyeing of fabrics occurred in dye kettles, which were essentially large vats cast into the poured concrete basement. Dye mixtures consisted of varying amounts of the following constituents: water, dye (coal-tar derivative), "dye-aid" (e.g., Carolid MXS or Carolid EWS), acid, caustic and ammonia.

Dye-aid was a component of the dyeing process that was used to improve absorption of dye by wool fabric. It contained chlorinated benzene compounds, primarily chlorobenzene, dichlorobenzene, and trichlorobenzene. It is believed that dye-aid was in use by the Mill from as early as the 1950s through the closing of the Mill in 1996. Carolid MXS reportedly contained approximately 65 percent dichlorobenzene and approximately 35 percent biphenyl. Carolid EWS contained up to 31 percent chlorinated benzene compounds, including 1,2-(ortho), 1,4-(para), and 1,3-(meta) dichlorobenzene, and 1,2,4-trichlorobenzene. The 1991 Spill Containment and Prevention Plan prepared by Acheron, Inc. for Eastland Woolen indicates that at that time, approximately 50 gallons of Carolid MXS were being used every day. A monochlorotoluene-based dye-aid reportedly was also used at the Mill but, because it was not as effective as the dye-aids containing chlorinated benzene compounds, was not used as extensively.

Eastland Woolen also owned some property along the East Branch approximately one mile downstream of the Mill. This area is referred to as the "Old Dump" in this document and was used for disposal of solid waste from the Mill (See Figure 3). MEDEP observations of the area indicated the presence of wool scrap and 55-gallon drums. A 1970 aerial photograph indicates that the lateral extent of the landfill is approximately 5.2 acres. Exposed refuse is evident in the photograph, and the western edge of the landfill appears to be about 10 to 40 feet away from the East Branch.

A more detailed description of the Site history can be found in Section 1 of the RI Report.

2. History of Federal and State Investigations and Removal and Remedial Actions

Groundwater contamination was first documented in Corinna in 1983, when a MEDEP employee noticed a strange odor and taste in drinking water at the Gallison Restaurant located across the street from the Mill. Several water samples collected from the restaurant showed the presence of monochlorobenzene, dichlorobenzenes and trichlorobenzenes. Later in 1983, granular activated carbon (GAC) filters were installed on five supply wells (residential and business) near the Mill to mitigate exposures to chlorinated benzene compounds.

Eastland Woolen initiated formal environmental investigations in 1984 by performing a preliminary hydrogeologic investigation of the downtown area. The work included the completion of soil borings, installation of monitoring wells and piezometers, sampling and analysis of soil and groundwater and a preliminary fracture-trace analysis. The investigation concluded that additional work was needed to identify a contaminant source area. By 1988, Eastland Woolen had completed a study of residences and businesses at risk from the groundwater contamination, and had investigated potential locations for installation of a public water supply system. It was concluded that contamination had likely spread via bedrock fractures and faults. Five additional private water supply wells were fitted with GAC filters based on results of water supply well sampling performed between 1983 and 1988. A water line was installed by the Eastland Woolen Mill Company in 1995 to provide uncontaminated water to those residences affected by the contamination.

After closure of the Mill in 1996, MEDEP sampled soils around the former underground storage tanks (USTs) adjacent to Building 13 to evaluate whether residual soil contamination was present and acting as a source of groundwater contamination. This effort was supplemented in 1998 with additional analytical parameters and sampling of a background location. In 1997, MEDEP performed sediment sampling with field chemical screening to gain information on the magnitude of river bottom contamination documented by Acheron, Inc. in 1995. Additional sediment and surface water samples were collected from the river in 1998 for off-site analysis. These investigations confirmed that high concentrations of chlorinated benzene compounds were present in the riverbed over 1000 feet downstream of the Eastland Woolen Mill. These data were used to prepare the Hazard Ranking System scoring package that was submitted to EPA for placement of the Site on the National Priorities List (the NPL).

In 1997, MEDEP performed an emergency response action to remove 54,673 pounds of various hazardous substances from process pipes, containers and vessels located within the Mill.

The Site was proposed for inclusion on the NPL on April 23, 1999 (64 Fed. Reg. 19,968). It was listed for final inclusion on the NPL on July 22, 1999 (64 Fed. Reg. 39,878-39,885).

EPA began a remedial investigation and feasibility study (RI/FS) at the Site in 1999. In addition, in July 1999, EPA signed an Action Memorandum authorizing the excavation and treatment of the contaminated soil and the demolition of the former Eastland Woolen Mill complex. Under the NTCRA, approximately 75,000 cubic yards (115,000 tons) of contaminated soil were excavated from the contaminated areas within the former mill complex and the river. The soil has been successfully treated and the disturbed areas restored. A final phase of the NTCRA includes the in-situ oxidation of the deep overburden soil that was not accessible to excavation. This activity is ongoing and expected to be completed in 2006. Figure 4 provides an overview of the NTCRA, including the areas subject to excavation, the re-alignment of the East Branch and Route 7, and the location of soil treatment and storage areas.

After the RI/FS was completed in 2002, EPA issued a Proposed Plan for the OU I remedial action in July 2002 and signed the OU I Record of Decision in September 2002. The OU I remedial action targets the restoration of the overburden and bedrock aquifer in the OU I area, which is downtown Corinna. The OU I remedial action is in the design phase.

A supplemental RI field investigation was conducted in 2002 and 2003 to futher define the extent of contamination in the OU II areas and evaluate potential impacts to ecological receptors from the contamination. A Supplemental RI Report and Revised Ecological Risk Assessment Report containing the results of the studies and the revised risk evaluation were released in July 2004.

3. History of CERCLA Enforcement Activities

Enforcement activities have been limited by the lack of viable potentially responsible parties (PRPs) at the Site. Eastland Woolen ceased to operate in 1996. The family-owned company is now defunct (it ceased operations shortly after completing a reorganization plan pursuant to Chapter 7 of the Bankruptcy Code), and most of its officers are deceased.

The former Eastland Woolen Mill complex portion of the Site is currently owned by numerous entities, including the Town of Corinna and the State of Maine. The State acquired a portion of the Site through eminent domain, and the Town of Corinna acquired other Site property through tax foreclosure and eminent domain. There is currently one private owner of a portion of the Mill complex who acquired his property at a creditor's auction.

EPA is continuing to investigate Eastland Woolen with respect to possible PRPs.

C. COMMUNITY PARTICIPATION

Throughout the EPA cleanup of the Site, community concern and involvement have been high. The local Selectboard actively sought EPA's involvement at the Site to address the contamination left behind by the closure of the Mill in 1996. EPA has kept the community and other interested parties informed of Site activities through informational meetings, fact sheets, press releases and public meetings. EPA has met regularly with the community and Selectboard to keep them informed and seek their input regarding Site activities. The community has also benefitted from a website (www.cattailpress.com), which was developed and is maintained by a local resident. The website has contained regular photographs of Site cleanup activities and a forum for community dialogue regarding the Site. EPA's public notices and fact sheets have been posted on this website as well. There have been over 200,000 hits to this website since 1999.

The following is a brief chronology of public outreach efforts:

EPA met with the community in March and May of 1999 to present the NTCRA for the Site.

On August 3, 1999, EPA held an informational meeting in Corinna to describe the plans for the RI/FS.

On November 16, 1999, July 11, 2000, December 2001, May 2001, June 5, 2002, April 2003, and June 2004, EPA held informational meetings in Corinna to discuss the results of the RI.

EPA has released eleven public information update fact sheets (December 1998, February 1999, July 1999, November 1999, April 2000, June 2000, April 2001, December 2001, June 2002, April 2003, and March 2004) to update the community about the RI/FS and NTCRA activities at the Site.

From July 18, 2002 to August 17, 2002, EPA held a 30-day public comment period for the OU I remedial action. A public information meeting was held on June 17, 2002 and a public hearing was held on August 7, 2002. EPA signed the OU I Record of Decision in September 2002.

On June 7, 2004, EPA met with the local organization, Sebasticook Committee for a Clean Environment (SCCE) to present the findings of the Ecological Risk Assessment and Supplemental RI for OU II. The SCCE is a recipient of a Technical Assistance Grant from EPA. EPA presented a description of the Supplemental RI and the results of the revised Baseline Ecological Risk Assessment to the SSCE, its Technical Advisors, and members of the public and news media at the meeting.

On June 30, 2004 EPA held an informational meeting to discuss the results of the RI Report, particularly the Supplemental RI and revised Baseline Ecological Risk Assessment and to present the Agency's Proposed Plan to a broader community audience than those that had already been involved at the Site. At this meeting, representatives from EPA answered questions from the public.

From July 13, 2004 to August 12, 2004, EPA held a 30 day comment period for the no further action proposal.

On August 10, 2004, EPA held a public hearing to receive oral comments regarding the no further action proposal.

EPA provided the community with a Redevelopment Initiative Grant to assess future Site use. EPA has considered the Redevelopment Plan developed pursuant to this grant in developing the cleanup action.

All comments received as part of the public comment period were supportive of the decision to take no further action for the OU II area. All of the comments also expressed a preference for additional monitoring and assessment of the OU II area.

D. SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION

There are three components to the EPA cleanup activities at the Site: a NTCRA and two operable units (OU I and OU II). This ROD addresses the third component of the cleanup approach for the Eastland Woolen Mill Site. This ROD will be the third and final cleanup decision for the Site (the ongoing NTCRA is the first cleanup action). Figure 3 displays the boundaries of OU I and OU II.

The NTCRA involved the removal and treatment of the contaminated soils and sediment in the downtown area of Corinna. The NTCRA also involved the demolition of the former Eastland Woolen Mill Complex.

OU I is the groundwater operable unit and includes overburden and bedrock groundwater contamination associated with the Eastland Woolen Mill complex, Building 14 and the UST Area. OU I also includes the soil contamination remaining after the NTCRA. The early soil cleanup conducted under the NTCRA removed all soil contamination above the water table and most soil contamination, including DNAPL, below the water table, except in a few areas under the former Eastland Woolen Mill complex, the UST Area and Building 14. OU I addresses these remaining soils, including the DNAPL, that are a continuing source of groundwater contamination as well as the restoration of the contaminated groundwater. OU I also includes requirements for institutional controls to restrict groundwater use and the addition of certain residences to the public water supply, which is the Corinna Water District.

OU II includes the sediments and floodplain soil of the East Branch beyond the downstream extent of the NTCRA, and the Old Dump. OU II is the focus of this ROD.

With respect to the principal threats at the Site, the NTCRA removed the majority of the highly contaminated source materials at the Site. The NTCRA removed 75,000 cubic yards of contaminated soils (including DNAPL) that was acting as the source of groundwater, surface water and sediment contamination. DNAPL is present in some of the deep overburden soil remaining after the NTCRA and in bedrock fractures within the NTCRA/OU I area. As a result, the principal threat wastes remaining at the Site are the subject of the remaining NTCRA and future OU I cleanup actions. The OU I Remedial Action targets the groundwater contamination resulting from the infiltration of water through the remaining contaminated soils, and from the

contact of groundwater with DNAPL. It also targets the soil and DNAPL contamination that will remain after the NTCRA by using in-situ reagents to destroy and facilitate the removal of this contamination.

With respect to OU II, there are no known source areas or principle threat wastes within the subject area. The contamination identified within OU II has been evaluated and determined to warrant no further action.

E. SITE CHARACTERISTICS

Chapter 1 of the FS Report contains an overview of the RI. Only significant findings of the RI Report are summarized below.

1. General Characteristics

The Site is located in the Town of Corinna, Penobscot County, Maine, approximately six miles north of Newport and 25 miles northwest of Bangor, Maine. Approximately 800 persons live within 1 mile of the site and 2,500 within four miles. The Site was formerly dominated by buildings of the Eastland Woolen Mill Company, which before its demolition in 2000 comprised a large manufacturing building and several side buildings with a total area of 250,000 square feet. The buildings stood on both sides of and over the East Branch, a state-designated Class C water that runs north to south through the center of Corinna.

The Town of Corinna is located within the East Branch watershed, which drains to Sebasticook Lake approximately three miles to the south of the town. Topography within the watershed is typified by gently rolling hills to steeply sloping ridges, varying from narrow valleys to fairly expansive low-lying floodplains. Elevations within the immediate vicinity of Corinna range from 200 to 320 feet above msl. The former Eastland Woolen Mill straddled the East Branch and the southern portion of Mill Pond.

EPA performed a series of investigations to develop an understanding of the nature and extent of contamination within the OU II area at the Site. The conceptual model of contaminant disposal and transport was that the sediment and floodplain areas were contaminated as a result of the transport of material from the Eastland Woolen Mill complex and/or the Old Dump. Surface water and sediment transport would be influenced by the physical setting downstream of the source areas. Consideration was given to the seasonal flooding of the floodplain areas and the presence of the Moosehead Mill dam just downstream of the former Eastland Woolen Mill complex. To identify the areas where contamination was most likely to be found, an initial delineation was performed considering the current and historical physical setting in the East Branch Sebasticook River. Wetland and floodplain areas along the river were identified along with the lower energy areas where sediment (and possibly contamination) could accumulate. The initial surveys identified fourteen floodplain areas and eight river reaches that were targeted

for investigation. As more information about the OU II area was obtained, these fourteen floodplain and eight river areas were grouped into two floodplain exposure areas and five sediment exposure areas in order to assess the potential ecological impacts at the Site. These areas are shown in Figure 5.

2. Sediment:

A review of the information obtained during investigation programs performed by consultants for the former Eastland Woolen Mill Company and the MEDEP identified several chlorinated benzene compounds as the major contaminants. Chlorobenzene, dichlorobenzene, and trichlorobenzene were considered good indicators to delineate contamination released from the former Eastland Woolen Mill. This allowed EPA to use a screening technique that involved the placement of vapor diffusion samplers in the bed of the East Branch to provide a preliminary delineation of contamination extent. EPA placed 392 vapor diffusion samplers in the river bottom along the stretch for the East Branch Sebasticook River from the former Eastland Woolen Mill complex to the Old Dump. The samplers were allowed to remain in the river bed for a two week period, which allowed the vapors in the river bed to reach equilibrium with the vapor in the samplers. The vapor in the samplers was then analyzed using an on-site laboratory. The approach identified several areas where chlorinated benzene compounds were identified. These areas, along with a large depositional area downstream of the Old Dump, were targeted for additional sampling and characterization. From 1999 to 2003, EPA collected 258 sediment samples to delineate the extent of the contamination in the East Branch. The highest number of samples were analyzed for VOCs (258 samples), with about 177 samples for pesticides, 156 for inorganic constituents, 153 for PCBs, 40 for semi-volatile organic compounds, and 20 samples for dioxin. The depth of sediment contamination was evaluated by installing 36 river borings in areas of known contamination.

The depositional areas upstream of the former dam at Moosehead Mill, the meandering channels and backwater areas near the Old Dump, and the large open depositional area downstream of the Old Dump were found to contain contamination. The chlorinated benzene compounds (chlorobenzene, dichlorobenzene, and trichlorobenzene), several pesticides (dieldrin, DDT, DDD, DDE, and chlordane), and several metals (cadmium, chromium, lead, and zinc) were in the sediments of the East Branch. A set of preliminary remediation goals (PRGs) were established based upon literature values and site-specific toxicity testing of sediment and soil. Figures 6 and 7 show the locations where contamination was detected above the PRGs that were used for contaminant delineation and screening. Table 1 presents the maximum concentration and frequency of detection for the compounds most frequently detected above PRGs.

Table 1
Sediment Contamination Summary

Contaminant	Maximum Detected Concentration in Sediment (mg/kg)	Frequency of detection	Screening Level PRG used in RI
Dieldrin	4.1	116/174	0.087
DDD	2.3	145/176	0.064
DDE	1.9	138/176	0.034
1,3 Dichlorobenzene	14	56/205	0.078
Chlorobenzene	60	64/204	0.59
1,3 Dichlorobenzene	66	82/208	0.37
Aluminum	28,300	156/156	8440
Antimony	5	20/141	1.3
Cadmium	56	39/145	0.27
Chromium	760	152/156	305
Copper	120	152/156	75
Lead	333	156/156	86
Selenium	18	29/114	11
Zinc	4,460	152/156	421

In addition to the collection of sediment samples for chemical analysis, the RI/FS also included biological studies of the environment. The studies included:

- Placement of very small aquatic organisms within test chambers in river sediment to evaluate the effects of ground water discharge (in-situ toxicity testing);
- Exposure of laboratory test organisms to samples of sediment or floodplain soil collected from the Site (ex-situ toxicity testing);
- Field survey of the pelagic zone macroinvertebrate community in the sediment exposure areas;
- Collection and analysis of 18 fish (fillets and whole fish) samples, 9 mussel samples, and 8 crayfish samples to assess tissue levels in these receptors and provide bioaccumulation information;

- Field survey of the benthic macroinvertebrate community in the sediment exposure areas; and
- Qualitative survey of fish abundance as part of the fish tissue collection.

The in-situ toxicity testing identified a very limited areal extent of ground water discharge into OU II sediment where toxicity to very small organisms in sediment is possible. The ex-situ toxicity testing indicated, at some locations, that OU II sediment could be toxic to benthic macroinvertebrate organisms. Mussel, crayfish and fish sampling identified lower than predicted levels of chemical bioaccumulation in the tissue of these prey species. The qualitative survey of fish populations, and quantitative bioassessment of benthic and pelagic zone macroinvertebrate communities, identified a functioning ecology in areas of contaminated sediment on the basis of functional feeding guilds or taxonomic structure in the species assemblage. Figure 8 shows the location of the biota samples.

3. Floodplain

Between the former Eastland Woolen Mill and the Moosehead Mill, the East Branch is bordered by forested uplands and wetlands dominated by hardwood trees and shrubs. Forested wetlands transition to palustrine emergent persistent wetland dominated by grasses and cattails that dominate the wetlands associated with the river down to Moosehead Mill. Small inclusions of palustrine scrub-shrub wetlands are also present in some areas. Steep banks and tree-lined residential areas border both sides of the wetlands. In the emergent wetland just above Moosehead Mill, an open water channel was observed. This area is a backwater of flow from the river and is likely a function of the rock build-up just above the Moosehead Mill dam. A beaver dam was observed on the rock build-up during the 1999 field investigation. In winter 2000 and summer 2001, beaver activity was observed (e.g., dams) in the east channel of the East Branch in front of the Old Dump Site.

South of Moosehead Mill, forested wetlands and floodplains are present along the river. Less extensive areas of emergent and scrub-shrub were recorded on the west bank. On the west side of the river, the forested wetland area is dominated by Silver Maple (*Acer Saccharinum*). Small vernal pools were also observed near the waste water treatment plant (WWTP) and across from the Old Dump Site. On the east side of the river, an extensive area of fill which comprises the Old Dump Site is present in uplands. The Old Dump is about five acres in size and was a disposal site for miscellaneous waste from the Eastland Woolen Mill and domestic waste from the local community.

Approximately 600 feet below the Old Dump, forested wetlands and uplands along the river bank transition to persistent emergent wetlands dominated by cat-tails (*Typha sp.*). From this area to the mouth of the East Branch, emergent wetlands are extensive along the river and, typically, the emergent wetlands transition to forested wetlands and forested uplands in this part of the river.

The delineation of the floodplain soils involved the collection and analysis of about 233 samples for VOCs, 105 samples for pesticides, PCBs, and inorganic constituents, 62 samples for semi-volatile organic compounds, and 7 samples for dioxin. A series of test trenches and borings were performed at the Old Dump to better characterize the nature of the waste at this location. Several monitoring wells were also installed at the Old Dump to assess groundwater conditions.

To assess the biological component of the floodplain, the following studies were performed:

- Ex-situ, bioaccumulation studies and toxicity tests of floodplain soil using earthworms in the laboratory (earthworms were used since they are a major food source for several of the ecological receptors being evaluated);
- Field survey of plant communities in the floodplain exposure areas; and
- Field survey of earthworm abundance in the floodplain exposure areas.

The chlorinated benzene compounds (chlorobenzene, dichlorobenzene, and trichlorobenzene), several pesticides (dieldrin, DDT, DDD, DDE, and chlordane), and several metals (cadmium, chromium, lead, and zinc) were detected at levels above the PRGs in the floodplain soil of the East Branch. Figures 9 - 10 show the locations where contamination was detected above PRGs that were used for contaminant delineation and screening. Table 2 presents the maximum concentration and frequency of detection for the compounds most frequently detected in the floodplain soil above PRGs.

Table 2
Floodplain Soil Contamination Summary

Contaminant	Maximum Detected Concentration in Sediment (mg/kg)	Frequency of detection	Screening Level PRG used in RI
Dieldrin	3	89/105	0.21
DDD	1.3	93/105	0.05
DDE	0.83	41/106	0.05
1,3 Dichlorobenzene	1.8	48/223	0.13
Chlorobenzene	37	59/223	0.74
1,4 Dichlorobenzene	6.7	83/224	0.52
Aluminum	20,800	107/107	4415
Antimony	31	14/105	1.3
Cadmium	2.7	45/104	0.14
Chromium	670	107/107	79
Copper	1,040	91/103	24
Lead	658	107/107	96
Selenium	4.6	46/103	0.46
Zinc	2,760	107/107	323

4. Surface Water

Flow in the East Branch below the former Mill is highly variable and partially a function of the dam at Corundel Lake. Spring flows average about 1,100 cubic per feet second (cfs), while average base flow is approximately 89 cfs. The 100-year storm flow in this section of the river was modeled to be approximately 1,650 cfs.

One round of surface water samples was collected from the East Branch during the 1999 investigation. Surface water samples were collected on October 20 and 21, 1999. The river was flowing at approximately 40 cfs to 80 cfs. Water in the river was clear with no discernable suspended solids, as evidenced by maximum turbidity readings of 14 nephelometric turbidity units (NTU).

Chlorobenzene compounds were detected in each of the eight surface water samples collected from the river downstream of the former Mill. Each of the detected concentrations was below the corresponding ecological benchmark. The highest concentrations were at SW-99-03X, where chlorobenzene, 1,4-DCB and 1,2-DCB and 1,2,4-TCB were detected. Each of the concentrations reported was below 1 microgram per liter (µg/L), lower than the respective sample quantitation limits. No chlorobenzene compounds were detected in any of the background samples (i.e., SW-99-90 through SW-99-95). Low concentrations of acetone were detected sporadically in these samples but are likely laboratory handling artifacts.

No SVOCs or pesticides were detected in any of these samples. The concentrations of inorganic analytes detected in each of the eight samples collected downgradient of the former Mill were within the background 95 percent UCL on the mean, with the exception of one concentration of barium detected at 4.8J µg/L in SW-99-07. The background 95 percent UCL on the mean for this compound is 4.4 µg/L, and the 4.8 estimated value is likely not indicative of a significant difference from background.

Prior to the NTCRA, the chlorinated benzene compounds present in sediment were partitioning into the surface water, causing detectable concentrations to be present. The concentrations of contaminants in surface water are expected to be highest in low flow periods of the summer and fall. Therefore, the contaminant concentrations measured during that period are likely the higher end of the annual concentration range in the East Branch. Based on the Ecological Screening Level PRGs established site-specifically for surface water, the concentrations of contaminants detected in the surface water do not appear to pose a risk to ecological receptors. In addition, the major source of contamination to the surface water, DNAPL in the river bed, has been removed in OU I. As a result of benthic macroinvertebrate sampling in 2003, the MEDEP identified that the stretch of the East Branch within and just below the NTCRA area meets State of Maine Class C standards for surface water. Prior to the NTCRA, this same area failed to achieve the Class C standard and had been referred to as a severely impaired stretch of the river.

5. Historic Resources

An assessment for the presence of historic resources was performed as part of the RI and NTCRA. There are well documented significant historical and archeological resources relating to the Native American use of the area in the East Branch. The contaminated areas appear to be upstream of these resources; however, additional historic resource evaluation would be necessary were any substantial disturbance of this area to occur.

6. Conceptual Site Model

The Conceptual Site Model (CSM) is a diagram of the sources of contamination, release mechanisms and exposure pathways to receptors for the groundwater, as well as other site-specific factors. The CSM is a three-dimensional "picture" of Site conditions that illustrates contaminant sources, release mechanisms, exposure pathways, migration routes and potential

human and ecological receptors. It documents current and potential future Site conditions and shows what is known about human and environmental exposure through contaminant release and migration to potential receptors. Site receptors include individuals and organisms who may come into contact with contaminated floodplain soil, ingest contaminated floodplain soil, come into contact with or ingest surface water, sediment interstitial (pore) water or sediment, or consume organisms that have accumulated contamination. The risk assessment and response action for the Site are based on this CSM as described below. Figure 11 shows the conceptual model for OU II developed for the Site risk assessments.

The CSM identified the DNAPL and highly contaminated soils beneath and in the vicinity of the Mill as the primary sources of contamination for the area addressed as part of the NTCRA and OU I. The conceptual model for the OU II areas is as follows. The East Branch received Dye Aid and related liquid wastes from the Mill, through floor drains, from the early 1960s to 1969 (when theWWTP was built). The majority of Dye Aid contained chlorinated benzene compounds, although a mixture containing chlorotoluene was also used. The chlorotoluene type of Dye Aid was reportedly ineffective and was not used as extensively as chlorinated benzene. After 1969, a majority of liquid process wastes was discharged to the WWTP, but spills from the dye mixing operation and fabric processing likely continued to occur. It is also possible that some of the contamination passed through the WWTP and, as a result, the deposition of contamination in the areas of OU II below the WWTP may have continued after 1969. Once released from the Mill, some portion of the contamination infiltrated the soil and sediment beneath and immediately downstream of the Mill and percolated through overburden into the underlying bedrock aquifer. This area of contamination was the focus of the NTCRA and OU I. Some fraction of the wastes became dissolved in surface water and migrated with its flow until it settled in the sediment or floodplain soil downstream of the Eastland Woolen Mill. Another transport mechanism pathway is represented by the discharge of wool floc to the river system. The discharge of wool fibers was documented in the site history, and the presence of wool containing Dye Aid and pesticides in the surface water likely resulted in a different pattern of deposition than the straight transport of liquids by surface water.

Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. The manner in which principal threats are addressed generally will determine whether the statutory preference for treatment as a principal element is satisfied. Wastes generally considered to be principal threats are liquid, mobile and/or highly-toxic source material. The majority of the principal threat wastes at the Site have been removed as a result of the NTCRA; however, some principal threat wastes (including DNAPL) are present in the overburden and the bedrock groundwater system. These principal threat wastes are being addressed as part of the remedial action for OU I.

Low-level threat wastes are those source materials that generally can be reliably contained and that would present only a low risk in the event of exposure. Wastes that are generally considered to be low-level threat wastes include non-mobile contaminated source material of low to

moderate toxicity, surface soil containing chemicals of concern that are relatively immobile in air or ground water, low leachability contaminants, or low toxicity source material. The contaminants within the OU II area are classified as low-level threat wastes.

F. CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

The land use for the OU I and NTCRA areas is discussed in the OU I ROD. The OU II area covers about four miles from just downstream of downtown Corinna to Sebasticook Lake. The upper portion of the OU II area is a mix of residential, commercial, recreational, and woodland/wetland. Further downstream, past the WWTP, the area is dominated by wetland and woodland areas with some agriculture fields in the vicinity. The surface water at the Site is planned for recreational use and is not expected to be a future water supply; this is based on the classification of the East Branch as a Class C river. The future use of the OU II area is expected to remain similar to the current situation. There is limited area available for development due to the floodplain and wetlands.

Table 3

	Current On-Site Use	Current Adjacent Use	Reasonable Potential Beneficial Use of Site	Basis for Potential Beneficial Use of Site	Time Frame to Achieve Potential Beneficial Use
Old Dump	unused woodland	unused woodland	recreational	current use/local and state land use and zoning requirements	present
floodplain soil	recreational	recreational	recreational	current use/local and state land use and zoning requirements	present
sediments	recreational	recreational	recreational	current use/local and state land use and zoning requirements	present
Surface Water	fishing, seasonal swimming	fishing, seasonal water supply, swimming	fishing, seasonal water supply, swimming	current use	present

Community and stakeholder input was sought and incorporated through active outreach during the RI/FS. EPA held numerous meetings and held private discussions with local residents and Town officials. The local community was provided an EPA Redevelopment Initiative Grant to develop a plan for future reuse of the Site. According to the reuse plan developed by the community, the OU II areas were not considered critical areas in the reuse evaluation of the Site.

G. SUMMARY OF SITE RISKS

A baseline risk assessment was performed to estimate the probability and magnitude of potential adverse human health and environmental effects from exposure to contaminants associated with the Site, assuming no remedial action is taken. The results of the human health and ecological risk assessment are used to determine whether there is a basis for taking action and to identify the contaminants and exposure pathways that need to be addressed by the remedial action. The human health risk assessment followed a four step process: (1) hazard identification, which identified those hazardous substances that, given the specifics of the Site, were of significant concern; (2) exposure assessment, which identified actual or potential exposure pathways, characterized the potentially exposed populations and determined the extent of possible exposure; (3) effects assessment, which considered the types and magnitude of adverse effects associated with exposure to hazardous substances; and (4) risk characterization and uncertainty analysis, which integrated the three earlier steps to summarize the potential and actual risks posed by hazardous substances at the Site, including carcinogenic and non-carcinogenic risks and a discussion of the risk at background levels of contamination and the uncertainty in the risk estimates. The ecological risk assessment followed the eight-step process as outlined in EPA Superfund ecological risk assessment guidance.

A summary of those aspects of the human health risk assessment related to the OU II areas is discussed below, followed by a summary of the OU II revised ecological risk assessment.

1. Human Health Risk Assessment

Of the over 100 chemicals detected in the sediment and floodplain soil, 24 chemicals in the sediment and floodplain soil and 9 chemicals in fish and mussel tissue were chosen as chemicals of potential concern (COPCs) for evaluation in the human health risk assessment.

The OU II COPCs were selected to represent potential site-related hazards based on toxicity, concentration, frequency of detection, and mobility and persistence in the environment. They can be found in Tables 4.6 - 4.17 of the Human Health Risk Assessment. The exposure point concentrations for all COPCs can be found in Tables 4.28 - 4.39 and 4.44 of the Human Health Risk Assessment. Since the Human Health Risk Assessment concluded that there was no threat to human health, Contaminants of Concern were not identified for this ROD. All of the COPCs were carried through the quantitative analysis in the human health risk assessment and are presented in the risk tables in the Human Health Risk Assessment.

The potential human health effects associated with exposure to the COPCs were estimated quantitatively or qualitatively through the development of several hypothetical exposure pathways. These pathways were developed to reflect the potential for exposure to hazardous substances based on the present and potential future uses of the resources within the OU II area. The OU II area of the Site comprises the East Branch surface water, sediments, and floodplain soil, along with the Old Dump. The area surrounding the OU II portion of the Site is mixed

residential, light industrial and agricultural, wetland, and undeveloped floodplain woodland. Portions of the area are used for hunting and fishing. Recreational use is limited by the shallow depth of the water and highly organic soft sediments in most areas. The OU II area was separated into three Exposure Areas to focus the data and risk evaluation.

> Exposure Area1 includes the upper stretch of OU II, from the end of the NTCRA in downtown Corinna until the Moosehead Mill, and is bordered by residential areas. The river is shallow with a gravel, cobble, boulder bottom. Exposure Area 1 is co-located with Ecological Sediment Exposures Area A which is shown on Figure 5 of this ROD.
>
> Exposure Area 2 includes the section of OU II from Moosehead Mill to just south of the Old Dump. The East Branch is bordered by woodlands and floodplain areas. Exposure Area 2 is co-located with Ecological Sediment Exposure Areas B and C and is shown on Figure 5 of this ROD.
>
> Exposure Area 3 includes the section of OU II beginning below the Old Dump where the river opens to a wide slow moving soft bottomed area (very similar to a shallow lake or pond) with broad cattail wetlands along the edge extending to Sebasticook Lake. Exposure Area 3 is co-located with Ecological Sediment Exposure Areas D and E and is shown on Figure 5 of this ROD.

The following is a brief summary of only the exposure pathways that were considered in the Human Health Risk Assessment. A more thorough description of all exposure pathways evaluated in the risk assessment, including estimates for an average exposure scenario, can be found in Chapters 4.2 and tables 4.19 - 4.24 of the Human Health Risk Assessment.

Surface water of the East Branch: For contaminated surface water, EPA assumed that an individual may periodically visit the river to swim. It should be noted that there are few areas within OU II where the water is sufficiently deep to permit swimming, and these areas have a highly organic substrate (muck) that would also tend to discourage use. The weather in central Maine restricts swimming to the summer months. An individual swimming in the river was assumed to ingest 0.5 liter/hour, 1 hour per day for 26 days per year for an adult (19 - 30) and child (1-6) and 52 days per year for an adolescent (7-18).

Sediment of the East Branch: For sediment, the major route of contact would be wading. A person swimming, fishing, or hunting could wade in the river. It should be noted that the majority of the areas with sediment contamination have highly organic substrate (muck) that would discourage wading. An adult or adolescent was assumed to ingest 50 mg/day, whereas a child was assumed to ingest 100 mg/day. An adolescent was assumed to visit the area 52 days per year. A child and/or adult was assumed to visit the area 26 times per year.

Floodplain soil (including the Old Dump): For the soil within the floodplain, recreational users of the area (those accessing the river for swimming, boating, or fishing) and hunters, an exposure

frequency of 52 days per year was used for an adult and child and 104 days per year for an adolescent. An adult and adolescent was assumed to ingest 100 mg/day whereas a child was assumed to ingest 200 mg/day.

Fish Consumption: The OU II area supports a warm water fishery. An ingestion rate of 25 grams per day was assumed, which essentially assumes 27 fish meals per year from the OU II.

Excess lifetime cancer risks were determined for each exposure pathway by multiplying a daily intake level with the chemical specific cancer potency factor. Cancer potency factors have been developed by EPA from epidemiological or animal studies to reflect a conservative "upper bound" of the risk posed by potentially carcinogenic compounds. That is, the true risk is unlikely to be greater than the risk predicted. The resulting risk estimates are expressed in scientific notation as a probability (e.g., 1×10^{-6} for 1/1,000,000) and indicate (using this example) that an average individual is not likely to have greater than a one in a million chance of developing cancer over 70 years as a result of site-related exposure (as defined) to the compound at the stated concentration. All risks estimated represent an "excess lifetime cancer risk," or the additional cancer risk on top of that which we all face from other causes such as cigarette smoke or exposure to ultraviolet radiation from the sun. The chance of an individual developing cancer from all other (non-site-related) causes has been estimated to be as high as one in three. EPA's generally acceptable risk range for site-related exposure is 10^{-4} to 10^{-6}. Current EPA practice considers carcinogenic risks to be additive when assessing exposure to a mixture of hazardous substances.

In assessing the potential for adverse effects other than cancer, a hazard quotient (HQ) is calculated by dividing the daily intake level by the reference dose (RfD) or other suitable benchmark. Reference doses have been developed by EPA, and they represent a level to which an individual may be exposed that is not expected to result in any deleterious effect. RfDs are derived from epidemiological or animal studies and incorporate uncertainty factors to help ensure that adverse health effects will not occur. A $HQ \leq 1$ indicates that a receptor's dose of a single contaminant is less than the RfD and that toxic noncarcinogenic effects from that chemical are unlikely. The Hazard Index (HI) is generated by adding the HQs for all chemical(s) of concern that affect the same target organ (e.g., liver) within or across those media to which the same individual may reasonably be exposed. A $HI \leq 1$ indicates that toxic noncarcinogenic effects are unlikely.

A summary of the cancer and noncarcinogenic toxicity data used to estimate the potential risk to human health is located in Tables 1-4 of Attachment D of the Human Health Risk Assessment. A summary of the estimated cancer and noncancer risk is presented below.

Table 4
OU II Human Health Risk Assessment Summary

Exposure Scenario	Exposure Point	Receptors	Exposure Route	Estimated Excess Cancer Risk	Hazard Index
Current/Future Recreational user of Exposure Area 1	Floodplain Soil	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	2×10^{-5}	0.6
Current/Future Recreational user of Exposure Area 1	Sediment	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	9×10^{-6}	0.3
Current/Future Recreational user of Exposure Area 2	Floodplain Soil	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	2×10^{-5}	0.5
Current/Future Recreational user of Exposure Area 2	Sediment	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	5×10^{-6}	0.1
Current/Future Recreational user of Exposure Area 3	Floodplain Soil	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	2×10^{-5}	0.4
Current/Future Recreational user of Exposure Area 3	Sediment	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	4×10^{-6}	0.1
Current/Future Recreational Angler	Fish (perch/ bass)	Adult	Ingestion	2×10^{-5}	2
Current/Future Recreational user of Old Dump	Soil	Child/ Adolescent/ Adult combined total receptor risk	Incidental ingestion/ Dermal Contact/ Volatile inhalation	2×10^{-5}	0.2

Note:

- The Hazard Index of 2 for the Recreational Angler is based entirely on mercury. The Hazard Quotient for mercury was 2.4, the Hazard Index for the remaining contaminants was 0.014. A study by the Maine DEP discovered that 65% of the Lakes in Maine contained fish with PCB concentrations higher than 0.43 mg/kg. The maximum concentration in the fish in the OU II area was 0.69 mg/kg.

The Baseline Human Health Risk Assessment concluded that the estimated risk for the sediment, floodplain soil, surface water, and fish tissue in the OU II do not represent an unacceptable threat to human health.

There are several uncertainties associated with any risk assessment. Some uncertainties bias risk estimates low while others bias risk high. EPA's general approach is to choose conservative but reasonable values for exposure variables so that true risks are unlikely to be higher than risks estimated by the baseline risk assessment. Below is a brief discussion of the major uncertainties associated with the risk assessment for this Site. A more complete discussion can be found in Chapter 4.4 of the Human Health Baseline Risk Assessment.

- Some of the analytical results used for the exposure point concentration in the risk assessment are isolated, elevated detections of chemical that may not be representative of the typical chemical concentration that a receptor is exposed to. This uncertainty is likely to contribute to an overestimation of health risks.

- For media at some study areas, fewer than ten samples were available. As a result, maximum values rather than 95% upper confidence limits on the mean were used for exposure point concentrations. This is likely to result in an overestimate of the concentration to which individuals are typically exposed and an overestimation of the risk since it is unlikely that an individual would be exposed to the maximum concentration over the entire exposure period.

- Recreational fish consumption was assumed due to the absence of information indicating that subsistence fishing was occurring in the OU II area. This is further supported by the limited access to the OU II areas and the presence of a warm water fishery that is less likely to be the focus of subsistence fishermen. An estimate of the potential risk to a subsistence level consumer of fish from the OU II was presented in the Human Health Risk Assessment. The estimated risk would be much higher for a subsistence level user with mercury and PCB/dioxin as the major contributors to the risk.

- The assumption of recreational use of the OU II floodplain and river could underestimate risk if a higher frequency of exposure, more typical of residential use, were to occur. Such an increase in exposure, however, would not result in a risk outside the EPA acceptable risk range.

2. Ecological Risk Assessment

The objective of the ecological risk assessment was to identify and estimate the potential ecological impacts associated with the COCs at the Site with respect to the area of focus for OU II. EPA initially prepared a Baseline Ecological Risk Assessment in July 2002. There were several areas of significant uncertainty identified. As a result, a series of investigations were performed and a revised Baseline Ecological Risk Assessment (BERA) was released in July 2004. Readers are referred to the revised Baseline Ecological Risk Assessment for a more comprehensive risk

summary of all exposure pathways and estimates. The technical guidance for performance of the ecological risk assessment comes primarily from the following sources: *Framework for Ecological Risk Assessment* (U.S. EPA, 1992), *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (U.S. EPA, 1997); and *Guidelines for Ecological Risk Assessment* (U.S. EPA, 1998).

A. Identification of Contaminants of Concern

Contaminants of Potential Concern (COPCs) were selected for each identified exposure area grouping within the sediment or floodplain soil media, as well as surface soil and overburden groundwater associated with the Old Dump Site, East Branch surface water, and overburden groundwater associated with the Mill Source Area. The COPC selection process consisted of a comparison of maximum detected analyte concentrations to conservative screening-level benchmarks summarized in Tables F-1 through F-3 (Appendix F) for surface water, sediment, and floodplain soil, respectively. The selection of COPCs for wildlife exposures to sediment and floodplain soil consisted of the comparison of Protective Concentration Levels (PCLs) to maximum detected concentrations. The development of PCLs for these two media is documented in Appendix H of the BERA. The following sections summarize the results of the COPC selection process for the BERA, which are presented in Tables 4-1 through 4-9 of the BERA. Table 4-10 of the BERA summarizes the COPCs selected across all evaluated media. Tables 5-5 through 5-23 of the BERA list the exposure point concentrations for each ecological receptor evaluated.

Surface Water

Copper was the only analyte selected as a COPC for surface water.

Overburden Groundwater

Old Dump Site. 1,2,4-Trichlorobenzene, bis (2-ethylhexyl)phthalate and 4 inorganic analytes (copper, iron, lead, and silver) were selected as COPCs for the Old Dump Site overburden groundwater medium.

Sediment

Aquatic Macroinvertebrates. Five VOCs (including 4 chlorinated benzene compounds and toluene), 17 SVOCs (all PAHs), 18 pesticide/PCB compounds, and 13 inorganic analytes were selected as COPCs for this group of receptors. Although aluminum exceeded the screening toxicity value, it was not retained due to bioavailability considerations. No PCB, dioxin, or furan congener was retained as a COPC for aquatic macroinvertebrates.

Semi-Aquatic Wildlife. No VOCs or SVOCs were selected as COPCs for semi-aquatic wildlife receptors. Six pesticide compounds and 11 inorganic analytes (including aluminum) were selected as COPCs for semi-aquatic wildlife. Toxic Equivalents (TEQs, derived using both avian and mammalian Toxicity Equivalence Factors (TEFs)) for PCB, dioxin, and furan congener concentrations were also selected as COPCs for wildlife receptors.

Surface Soil

Soil Invertebrates Five VOCs (including 1,2-dichlorobenzene and 1,3-dichlorobenzene), 7 SVOCs (all PAHs), 9 pesticide compounds, and 9 inorganic analytes were selected as COPCs for this group of receptors. Although aluminum exceeded the screening toxicity value, it was not retained due to bioavailability considerations. No PCB, dioxin, or furan congener was retained as a COPC for soil macroinvertebrates.

Terrestrial Wildlife. No VOCs were selected as COPCs for terrestrial wildlife. 11 SVOCs (PAHs and 2 phthalate compounds), 10 pesticide/PCB compounds (including Aroclor 1254 and Aroclor 1260), and 12 inorganic analytes were selected as COPCs for terrestrial wildlife. TEQs (derived using both avian and mammalian TEFs) for detected PCB, dioxin, and furan congener concentrations were also selected as COPCs for wildlife receptors.

Biological Tissue

Fish. 1,2,4-Trichlorobenzene, 13 pesticide/PCB compounds, and 6 inorganics (including aluminum, barium, chromium, copper, mercury, and zinc) were detected in fish tissue and all were selected as COPCs. TEQs (derived using fish, avian, and mammalian TEFs) for detected PCB, dioxin, and furan congener concentrations were also selected as COPCs for fish tissue.

Freshwater Mussel. Aroclor 1248, beta BHC, 5 inorganics (including aluminum, barium, chromium, copper, and zinc), and TEQs (derived using avian and mammalian TEFs) for detected PCB, dioxin, and furan congener concentrations were selected as COPCs for mussel tissue.

Crayfish. Four pesticides, including 4,4'-DDE, 4,4'-DDD, delta BHC, and gamma chloridane, and 12 inorganic analytes were detected in crayfish tissue and all were selected as COPCs for this medium.

B. Exposure Assessment

Animals and plants that occur in or adjacent to the East Branch, including invertebrates, fish, amphibians, birds, and mammals, could be exposed to contaminants through contact with floodplain soil, sediment, surface water, and prey consumption. Species representing various trophic levels were selected as representative receptor species to evaluate the assessment endpoints discussed in Section 4.5.2 of the BERA. The selected species are intended to be representative of other species at the same trophic level that share similar specific life history characteristics. These groups of species are generally referred to as guilds. By evaluating a representative member of a guild and by accounting for the predominant guilds, the uncertainty associated with missing an important species group or pathway is reduced. The following section describes the pathways by which the representative receptor species or taxa could be exposed to contaminants that are within the study area. Ecological receptors may be exposed to site-related contaminants through a variety of exposure pathways. A complete exposure pathway involves a potential for contact between a given receptor and contamination either through direct exposure to an abiotic medium or indirectly through prey consumption. Pathways are evaluated by considering information on contaminant fate and transport, ecosystems potentially affected, and the magnitude and extent of contamination.

Aquatic Exposure Pathways

Aquatic and semi-aquatic organisms, such as plants, invertebrates, amphibians, and fish, are exposed to contaminants through direct uptake from water, uptake from sediment, and/or uptake via food. Exposure is dependent upon timing (e.g., life-stage), feeding preferences, and length of time of exposure.

Organisms exposed to contaminants primarily through the water column include lower trophic level pelagic or planktonic species that live suspended or swimming in the water column. Uptake from sediment is dependent on a number of factors, including contaminant and organic carbon concentrations. Habitat selection of aquatic organisms plays a role in the potential exposure to sediment contaminants. Organisms that prefer fine-grained sediments may be exposed to higher contaminant concentrations. Direct contact with and/or ingestion of contaminated sediment and associated pore water are the primary routes of exposure for benthic infauna that live in close association with or are buried in the sediment. Epifaunal organisms living on the surface of the sediment receive exposure from both the sediment and overlying water. Uptake via food consumption will generally be the primary exposure pathway for bioaccumulating compounds.

Terrestrial Exposure Pathways

Terrestrial animals, such as invertebrates, adult amphibians, birds, and mammals may be exposed to contaminants that have migrated to East Branch floodplain soils or were physically transferred to a secondary source area (e.g., Old Dump Site). Potential exposure pathways include food intake, surface water ingestion, incidental soil ingestion, dermal contact, and, under certain circumstances, inhalation. The dermal absorption and inhalation exposure routes were not evaluated in this BERA due to the anticipated insignificance of these pathways at the former Mill, as well as substantial estimation uncertainties.

The appropriate selection and definition of assessment endpoints, which focus the risk assessment design and analysis, are critical to developing a meaningful risk assessment. It is not practical, or possible, to directly evaluate risks to all of the individual components of the ecosystem at the Site.

Amphibian and reptile guild receptors were not specifically evaluated in this risk assessment. Although these receptors are known to be present at the Site and exposure pathways are likely to be complete, very little toxicological data are available to quantify effects for this guild. It is hypothesized, however, that the most sensitive life-stage for amphibians is the embryo-larval stage and, therefore, aquatic benchmarks that include amphibian toxicity are protective of amphibians. For reptiles, risks would be assumed to be less than or equal to risks for other aquatic and semiaquatic receptors due to the similarity in diet between reptiles and avian receptors and the fact that reptiles have thicker dermal and epidermal layers than other aquatic life.

Assessment endpoints were selected for the risk assessment based on particular components of the ecosystem that could be adversely affected by the contaminants present. A review of the habitat and ecology of the East Branch Sebasticook River provides information for the selection of assessment endpoints. The East Branch provides habitat function for a variety of invertebrates, fish, birds, and mammals that inhabit or use this watershed for foraging, reproduction, and rearing.

The following summary assessment endpoints and specific risk questions were used to organize and focus the BERA:

> Protection and maintenance of aquatic plant community structure and function: Are levels of site contaminants in surface water sufficient to cause biologically significant structural alterations or impair the functioning of aquatic plant communities?
>
> Protection and maintenance of floodplain/upland plant community structure and function: Are levels of site contaminants in surface soil sufficient to cause biologically significant structural alterations or impair the functioning of plant communities?

Protection and maintenance of aquatic macroinvertebrate community structure and function: Are levels of site contaminants in sediment sufficient to cause biologically significant structural alterations or impair the functioning of macroinvertebrate communities?

Protection and maintenance of terrestrial invertebrate community structure and function: Are levels of site contaminants in surface soil sufficient to cause biologically significant structural alterations or impair the functioning of soil invertebrate communities?

Protection and maintenance of demersal and pelagic fish community structure and function: Are levels of site contaminants in surface water or fish tissue sufficient to cause biologically significant survival, growth, or reproductive impairment of demersal and pelagic fish populations?

Protection and maintenance of herbivorous wildlife populations: Are levels of site contaminants in surface water, sediment, or surface soil, or diet sufficient to cause biologically significant survival, growth, or reproductive impairment in herbivorous wildlife populations?

Protection and maintenance of omnivorous wildlife populations: Are levels of site contaminants in surface water, sediment, or surface soil, or diet sufficient to cause biologically significant survival, growth, or reproductive impairment in omnivorous wildlife populations?

Protection and maintenance of piscivorous wildlife populations: Are levels of site contaminants in surface water, sediment, or surface soil, or diet sufficient to cause biologically significant survival, growth, or reproductive impairment in piscivorous wildlife populations?

Protection and maintenance of vermivorous wildlife populations: Are levels of site contaminants in surface water, sediment, or surface soil, or diet sufficient to cause biologically significant survival, growth, or reproductive impairment in vermivorous wildlife populations?

Protection and maintenance of carnivorous wildlife populations: Are levels of site contaminants in surface water, sediment, or surface soil, or diet sufficient to cause biologically significant survival, growth, or reproductive impairment in carnivorous wildlife populations?

The assessment endpoints were assessed using the following four types of measurement endpoints:

- Comparison of estimated or measured exposure levels of COPCs to levels predicted to cause adverse effects;
- Bioassay testing of site and reference media;
- In-situ toxicity testing of site and reference media; and
- Comparison of observed effects on-site with those observed at a reference site.

C. Ecological Effects Assessment

Toxicity benchmarks (bioassay thresholds, critical body residues, etc.) or Toxicity Reference Values (TRVs) for wildlife were identified for VOCs, PAHs, non-PAH SVOCs, pesticides, PCBs, PCDD/PCDFs, and inorganic chemicals retained as COPCs for the BERA. In general, toxicity information available in the ECOTOX or ERED databases, EPA Eco-SSLs interim final guidance document, and other online resources (including IRIS and INCHEM) and those identified in Section 6.2 of the BERA were reviewed to identify toxicity benchmarks or TRVs for soil invertebrates, pelagic and benthic invertebrates, plants, fish, mammals, and birds. Toxicity values benchmarks or TRVs for various receptors were evaluated before their selection for use in the BERA by considering: 1) ecological and biological relevance of the study, (2) exposure duration, and (3) study endpoints (i.e., target organ, level of biological organization of the measured effect).

Multiple lines of evidence were used, whenever possible, to assess the potential effects to ecological receptors. The measures of effects are summarized in Section 4.5.3 of the BERA.

The following hierarchy, in order of decreasing preference, was used to identify toxicity benchmarks or TRVs for wildlife receptors: (1) chronic NOAEL; (2) subchronic NOAEL; (3) chronic LOAEL; (4) subchronic LOAEL; and (5) estimates of acute lethal doses affecting 50 percent of test organisms (LD_{50}). These TRVs and supporting toxicological data are presented in Appendix H of the BERA.

When possible, TRVs based on both chronic NOAELs and LOAELs were established for all COPCs, for mammalian receptors. The NOAELs and LOAELs were used in the BERA to provide bounds on the uncertainties associated with the risk estimates; it is assumed that there is considerably less uncertainty associated with the TRVs derived from EPA interim final Eco-SSLs guidance document due to the more comprehensive process used in their development.

Congener-specific toxicity information for PCDDs, PCDFs, and PCBs are limited and a TEQ approach was used to convert exposure media concentrations of individual congeners to a TCDD TEQ concentrations. Conversion of exposure media concentrations to TEQs allowed direct

comparison to 2,3,7,8-TCDD toxicity benchmarks. These toxicity benchmarks and supporting toxicological data are presented in Appendix H of the BERA.

D. Ecological Risk Characterization

Risk characterization involves the integration of exposure and effects data to determine the likelihood of adverse effects. A Weight-of-Evidence (WOE) approach was used in this BERA that used multiple lines of evidence from the risk characterization to draw conclusions regarding the likelihood that adverse ecological effects would be realized. The WOE approach assigned each line of evidence (i.e., measurement endpoint) a qualitative inference weight (ranging from "low" to "high") based on an objective assessment of its utility in correctly identifying ecological risks (MWOE, 1995). The inference weights for all measurement endpoints selected for this risk analysis are summarized in Table 4-11 of the BERA.

A number of comprehensive field studies were completed during the RI and the subsequent supplemental investigations and provided the most accurate ecological information for characterizing risks within the Study Area. In general, measurement endpoints that were based on site-specific data, especially field studies that quantified effects at the same level of biological organization as the assessment endpoint (e.g., benthic macroinvertebrate community), were assigned the highest inference weights (had highest certainty).

Although interpretation of the results of some of the measurement endpoints is somewhat qualitative in nature, where appropriate, the Hazard Quotient (HQ) method was used to characterize the magnitude of potential risks associated with specific measurement endpoints. HQ results were integrated with other lines of evidence to generate an overall conclusion regarding the likelihood of adverse ecological effects. Tables 7-1 through 7-57 in the BERA present the HQs for the various ecological receptors.

Consistent with EPA Region 1 guidance, the RME exposures were the primary basis for characterizing risk in the BERA; however, risks associated with CT exposures were evaluated for those measurement endpoints where risks are projected under the more conservative RME exposure assumption. This was done to provide a broader perspective of potential ecological effects for risk management decision-making. Tables 8-1 and 8-2 of the BERA, which are attached as Tables 5 and 6 of this ROD, summarize the results of the risk characterization. A summary of the weight of evidence evaluation for each ecological receptor is presented on Tables 7 - 16 of this ROD.

The result of the Risk Characterization are summarized below:

- Plant communities associated with the East Branch and its associated floodplains are not at substantial risk of harm associated with exposure to COPCs identified for surface water and

floodplain soils. The highest weight was assigned to the field surveys of plant communities which demonstrated that the plant communities in contaminated and uncontaminated areas were similar.

- Aquatic macroinvertebrate and soil invertebrate communities are not at substantial risk of harm associated with exposure to East Branch sediment and floodplain soil, respectively. For the aquatic macroinvertebrate community, the highest weight was assigned to the site specific assessment which demonstrated that the structure and function of the aquatic macroinvertebrate community was similar in contaminated and uncontaminated areas of similar physical settings.
- Fish populations (including both demersal and pelagic species) that occur in the study area are not at substantial risk of harm associated with exposure to COPCs identified for surface water and fish tissue.
- Dietary exposures to Site-related COPCs in surface water, sediment, surface soil, and food are not predicted to result in adverse effects in avian herbivore (e.g., ducks) or mammalian herbivore (e.g., vole) populations.
- Dietary exposures to COPCs in surface water, sediment, and food are not predicted to result in adverse effects in avian or mammalian omnivore populations; moreover, raccoon populations (the modeled omnivorous mammal receptor) are not at risk associated with dietary exposures to COPCs associated with the East Branch floodplains.
- Avian populations (e.g., belted kingfisher and osprey) that forage for fish within the reach of the East Branch within the Study Area are not at substantial risk of harm.
- Based on the magnitude and uncertainty bounding of the incremental risk estimates, it is concluded that no substantial population level effects will occur in piscivorous mammal populations that are exposed to Site-related COPCs in East Branch sediment, surface water or prey tissue. This endpoint provides a weak negative indication of harm to the mink receptor based on exposure to site-related stressors. This conclusion follows from the finding that no NOAEL-based incremental HQ exceeds 10, and with the single exception of aluminum in Area D, the LOAEL-based incremental HQs under both RME and CT exposure assumptions are less than 1 (Table 7-47 and 7-48 of the BERA). Although non-zero incremental risks for aluminum were estimated, there is no evidence that aluminum (or PCB and dioxin/furans) in East Branch sediments are associated with historical releases from the Mill. Based on the magnitude and uncertainty bounding of the incremental risk estimates (Table 7-47 and 7-48 of the BERA), it is concluded that no substantial population level effects will occur in piscivorous mammals that are exposed to site-related constituents in East Branch sediment.
- Avian populations that forage primarily on earthworms (e.g., American woodcock) within the East Branch floodplain or the Old Dump Site are not at substantial risk of harm due to exposure to Site-related constituents in floodplain soil or prey tissue.
- Small vermivorous mammal (e.g., shrews) populations are not likely at substantial risk of harm associated with exposure to site-related COPCs in East Branch floodplain soils and

diet; however, there is considerable uncertainty involved in the analysis of this endpoint. The conclusion in the BERA was scored as "undeterminate" (Table 7-54 of the BERA) to acknowledge the considerable uncertainties associated with this analysis. It is important to reiterate that exposure levels are below those where acute or chronic lethal effects would be anticipated, and thus if effects were to be realized at the population level, such effects would most likely be subtle in nature and potentially difficult to distinguish for natural patterns of temporal variability.

- The populations of carnivorous wildlife receptors (e.g., barred owl and red fox) that forage in EBSR floodplains and the Old Dump Site are not at substantial risk of harm.

3. Overall Risk Assessment Conclusion--Basis for Response Action.

The Baseline Human Health Risk Assessment (July 2002) and revised Baseline Ecological Risk Assessment (July 2004) revealed that no unacceptable human health and ecological risk exists in the OU II area of the Site. As such, actual or threatened releases of hazardous substances from the OU II area of the Site do not present an imminent and substantial endangerment to public health, welfare, or the environment.

H. DOCUMENTATION OF NO SIGNIFICANT CHANGES

On June 30, 2004, EPA presented a proposed plan describing that no further action was necessary to address the contamination with the OU II area. EPA reviewed all written and verbal comments submitted during the public comment period, which was open from July 13 to August 12, 2004. Based on EPA's consideration of the public comments submitted, it was determined that no significant changes to the remedy decision, as originally identified in the proposed plan, were necessary.

I. STATE ROLE

The State of Maine Department of Environmental Protection (ME DEP) has reviewed the Proposed Plan and the Remedial Investigation Report, Supplemental Remedial Investigation Report, Baseline Human Health Risk Assessment and Revised Baseline Ecological Risk Assessment. The State of Maine submitted a letter of non-concurrence with the OU II Record of Decision. The State of Maine does not concur with EPA's decision that further monitoring and assessments are not necessary components of the No Further Action Decision. The State of Maine did express agreement that active remediation of the OU II area would not be appropriate. A copy of the non-concurrence is attached as Appendix B.

RECORD OF DECISION RESPONSIVENESS SUMMARY

PREFACE:

The purpose of this Responsiveness Summary is to document EPA's responses to the questions and comments raised during the public comment period. EPA considered all of the comments summarized in this document before selecting a final remedial alternative to address contamination at the Site. Attachment A to the Responsiveness Summary contains a copy of the transcript from the public hearing held on August 10, 2004 at the Corinna School in Corinna, Maine. All of the original comments submitted during the comment period are included in the Administrative Record.

This Responsiveness Summary addresses comments pertaining to the Proposed Plan and FS Report that were received by EPA during the comment period from July 13 to August 12, 2004. One individual and the Sebasticook Committee for a Clean Environment (SCCE) (the Technical Assistance Grant recipient) submitted comments to EPA in writing. Two individuals also spoke at the public hearing. The comments from SCCE and the general public were supportive of the cleanup decision. All of the commentors expressed concern that no future monitoring or reviews would be performed.

SUMMARY OF COMMENTS FROM STATE AND LOCAL OFFICIALS AND CITIZENS

Written comments were submitted by the Sebasticook Committee for a Clean Environment (SCCE), and one individual.

Comment 1: The one written comment submitted by an individual, the two statements by individuals at the public hearing, and a letter from the SCCE all expressed support for the EPA decision to take No Further Action.

EPA Response: No response necessary.

Comment 2: All of the commentors included comments requesting that long-term monitoring and a periodic re-evaluation be part of the cleanup decision.

EPA Response: EPA does not agree that any additional monitoring or re-assessment of the cleanup decision are necessary to protect human health and the environment in the OU II area. EPA acknowledges that future studies could provide interesting information regarding changes in the concentration and location of the contamination over time. This new information, however, would not change the basis for the No Further Action decision, which is that the remaining contamination

does not pose an unacceptable threat to human health or the environment. Since the source of the contamination has been removed as part of the Non-Time-Critical Removal Action (NTCRA), there is no reason to expect the concentration of the contaminants to increase in the future. In addition, the release of the primary contaminant, dieldrin, occurred during the 1960's and 1970's, over 30 years ago. While there may be some re-suspension and transport of the contamination over time, the results of human health and ecological risk assessments would not change even if the contamination were to be spread further downstream into Sebasticook Lake. The human health and ecological risk assessments for the OU II area are based upon scenarios that are reflective of the realistic range of land-use and receptors.

Comment 3: I believe it's imperative to perform a study to determine why there is such a vast difference between the high levels of toxins in the floodplain soils and the low levels of toxins in the biomass of the ecosystem. The answer to this question may possibly let us know what type of changes in the ecosystem might release these toxins and make them available in the future. We may also glean some insight into how to prevent this from happening. I do, however, believe that a major anomaly exists in the collected data that seriously needs to be addressed. The difference between the results of toxicity tests done on the floodplain soil and the level of bioaccumulation is very non-intuitive, and raises the question: Why are these toxins not bioavailable? The next question of concern is: Could some unforeseen future change in the ecosystem make these toxins bioavailable? If these toxins do become bioavailable in the future it could not only devastate the ecosystem, but also be very dangerous to humans who come into direct contact with the toxins or organisms from the ecosystem.

EPA Response: First, the major differences with respect to the predicted vs the actual levels of toxicity and/or bio-accumulation were found in the sediment and aquatic receptors rather than the floodplain receptors. Dieldrin was found to accumulate in the earthworms as a result of the earthworm toxicity testing. With respect to the sediment and aquatic receptors the "toxins" were found to be *less* bioavailable rather than *not* bioavailable. Tissue were collected for fish, mussels, and crayfish. All of the tissue data were consistent in showing a lower degree of accumulation than would be expected using the default accumulation values obtained from the scientific literature. Also, the benthic community assessment further supported the notion that some factor was resulting in less significant than expected accumulation and fewer direct toxicity effects. The exact reason for this is not known. Factors that are believed to have an influence on the less than expected bioavailability and toxicity include: (i) the contaminants are strongly sorbed to wool or other organic material; and (ii) the true concentration of the contaminants is

lower than estimated in the remedial investigation due to contaminant variability. EPA believes that the No Further Action decision takes into account the potential for a future change in conditions. The key fact to consider is that dieldrin was used primarily in the 1960's and early 1970's. The contamination has therefore been present in the environment for over 30 years. The contamination has been exposed to numerous weather cycles as well as the to annual drawdown of the East Branch and Sebasticook Lake. Consequently, there are unlikely to be additional changes to the OU II area that would result in a change in the bioavailability of the contaminants. At this point, EPA is confident that the information collected was sufficient to make the No Further Action decision and that additional data collection would be essentially an academic exercise.

Comment 4: Although the document does not state the obvious remedial status of OU-II (i.e., a finding of No Substantial Risk to Ecological Receptors means that no further remedial action is planned), the SCCE supports EPA's decision of no further action. Soil disturbances resulting from remedial action may cause more short-term impact due to sediment transport to Sebasticook Lake that could exacerbate phosphorous loading and algal blooms. However, SCCE members, the Sebasticook Lake Association and others remain concerned that significant concentrations of contaminants remain present within OU-II.

EPA Response: EPA appreciates the comment in support of the No Further Action proposal. While the concentration of the contaminants in the floodplain soil and sediment is considered "high" when compared to screening criteria, the human health and ecological risk assessments have concluded that there is no current or future potential threat to human health or the environment.

Comment 5: The second bullet of the Executive Summary Page (ES-1) references riverbed "soil". This term is also used infrequently in other portions of the document. However, the term river "sediment" appears to be the more common term and is referenced in most sample descriptions in the document. We assume that riverbed soil and riverbed sediment refer to the same material.

EPA Response: Riverbed soil and sediment are the same. Comment noted.

Comment 6: The Executive Summary notes that EPA Region I provided comments on the draft BERA. The document is prepared by MACTEC Engineering and Consulting, Inc. for the U.S. Army Corps of Engineers. It is implied that EPA concurs with the conclusions of the report, however, given that the conclusions in the document are the basis for EPA's Record of Decision, a statement should be made in the Final document that EPA concurs with the findings and conclusions.

EPA Response: EPA does concur with the findings in the BERA.

Comment 7: The first full paragraph of Page ES-2 (Executive Summary) states that "compounds with a propensity to bioaccumulate were taken up by plants, invertebrates and fish and transferred through aquatic food webs." The text indicates that little if any bioaccumulation occurred in the food chain. The statement in the Executive Summary appears to conflict with later discussions and findings.

EPA Response: The context for that discussion was to describe the general conceptual model for contaminant transport and uptake in the ecosystem. The major finding of the RI that was reflected in the BERA was that the actual uptake of contaminants was less than expected.

Comment 8: Why is the word "likely" underlined in the first bullet on page ES-5 of the Executive Summary?

EPA Response: It was underlined to add emphasis. The conclusion that vermivorous mammals are not likely at substantial risk was based on the relatively low hazard quotient for the LOAEL (1.1), the recuperative capability of the receptor (shrew), and the contaminant variability.

Comment 9: The Old Dump Site poses some degree of risk to Ecological Receptors, but not at levels significant enough to pursue remedial action by EPA. The Old Dump Site was identified as an Uncontrolled Site by the Maine Department of Environmental Protection (DEP) in the past. Does DEP concur with EPA's conclusion concerning risk at the Old Dump Site? If not, will DEP pursue any additional investigation at the Old Dump Site?

EPA Response: The Maine DEP agreed with EPA's position that active remediation of the OU II area was not appropriate. This question is best directed to the State of Maine. The EPA decision to take no further action does not alter the ability of the State of Maine to use its authority to take action at the Old Dump.

Comment 10: The last paragraph of page 2-5 indicates a "strong downward vertical gradient" in the bedrock aquifer system, but several sentences late states that a "bedrock to overburden connection (artesian conditions) may be present along the East Branch." These statements appear to conflict, or at a minimum need clarification as to reference locations. Also, several references are made to "perched shallow groundwater". A perched aquifer implies no connection to other overburden or bedrock aquifer systems. Although limited hydraulic connection may be present in many areas, it may not be appropriate to use the term "perched" in describing overburden ground water.

EPA Response: Comment noted. Downward gradients in bedrock occur upslope from the river. Along the river bedrock gradients are upward. There is very little perched groundwater at the site, beyond that which is being perched by the liner installed in the NCTRA soil excavation area.

Comment 11: The text goes on to state that groundwater contamination is influenced by a "variety of wells" including Sunshine Village. Ongoing ground water investigations and remediation studies may support this statement, but this discussion does not need to be included in the BERA.

EPA Response: Comment noted.

Comment 12: Section 3.2.1 states that soil from the top 1-foot of soil (as well as 0-2 feet) were considered surface soil in the BERA. The Table in section 3.3.2 does not list 0-2 feet for surface soil. Similarly, a 0-2 feet reference for Upland Soil is made in Section 3.3.2.6. Something needs to be adjusted to be consistent.

EPA Response: Soil from 0-2 feet were used. The table in section 3.3.2 of the BERA should indicate a depth of 0-2 feet for surface soil. It should be noted that the majority of soil samples in the floodplain areas (i.e., approximately 89% and 94% in Floodplain Areas A and B, respectively) were collected at a depth between 0 and 1 foot, with the majority of these samples collected at a depth of 0 to 0.5 feet. Most of the soil samples (i.e., 70%) collected from the Old Dump Site were collected at a depth between 0 and 2 feet. However, in both the Old Dump Site and the Floodplain Areas, all soil samples that included depths greater than 1 foot were collected at a depth range of either 0 to 2 feet or 0 to 1.5 feet below ground surface, thereby including the most surficial soils.

Comment 13: It is anticipated that surface soils will become less impacted with depth. Does the addition of samples below 1 foot skew the concentration data to the low side? This could be important when performing statistical analyses or averaging data to achieve a representative EPC.

EPA Response: EPA considers the data set to be representative. In Area D, the contamination increased with depth. The contamination decreased with depth in other areas. Therefore, it is unlikely that EPC values were underestimated.

Comment 14: Page 4-5 references Tables B-1 through B-6. Are these in Appendix B?

EPA Response: That is correct.

Comment 15: Section 4.2.5 indicates that 4 pesticides were detected in crayfish, but dieldrin was not one of them. It seems unusual that pesticides similar to dieldrin would be found in crayfish, yet dieldrin (known to be present at higher concentrations) is not present. Because of the importance of dieldrin as a risk driver, this discrepancy is of concern. (A later comment raises the issue of bioavailability)

EPA Response: It is not known why dieldrin was not detected in crayfish tissue. However, there were many pesticide compounds known to exist in sediment that were also not detected in the crayfish tissue samples (e.g., aldrin, endrin, endrin aldehyde, endrin ketone, etc.), which suggests that the majority of these compounds are tightly bound to the sediment matrix and not available to organisms. It is also possible that the dieldrin remains bound to the wool fiber and organic matter in the system.

Comment 16: The presentation of COPCs, Ecotoxicity and Mode of Action is very informative and well presented.

EPA Response: Comment noted.

Comment 17: Section 5.2.1.7 indicates that distinct differences are observed in fish above and below the former Moosehead Mill dam. A brief explanation should be added to clarify the statement. Do the remnants of the dam restrict movement of fish and result in exposure variables between upstream and downstream populations? In addition, would removal of the dam provide better hydraulic conditions to limit resuspension of floodplain soils associated with previous low energy environments created by the dam? Also, would the risk assessment change if fish could freely move upstream and downstream of Moosehead Mill?

EPA Response: While there is still a dam in place, a section of the dam has been breached allowing fish to move up and down river when flows are optimal for this to occur. There is still an impediment to fish movement under low flow conditions which will tend to isolate fish above and below the dam for periods of time, resulting in exposure variables. A detailed evaluation of the sediment resuspension that would occur if the dam were removed has not been conducted. However it is likely that if the dam were fully removed there might be more erosion of sediment during high flow events than occurs presently. This could result the transport of additional contamination away from the Moosehead Mill area to the downstream area. Even if such migration of contamination occurred, however, the conclusion of the BERA is unlikely to change since the data set for the Moosehead Mill area was considered as part of the assessment.

Comment 18: Exposure Models for Wildlife (Section 5.2.1.8) lists dietary composition. Do the models average all consumption over a lifespan or do the models consider seasonal effects? What would be the effect of wildlife consuming several consecutive meals of contaminated prey, rather than averaging consumption over a time period? This essentially implies a "chronic" versus "acute" approach.

EPA Response: In the interests of simplicity, the exposure models for wildlife assume a dietary composition that applies across the life-span of adult receptors although it was recognized that seasonal and age-related variability in an individual receptors' diet exists. In the case of the raccoon, two models were evaluated to account for season variation in diet. Hypothetically, if a wildlife receptor were to feed preferentially only on the most contaminated component of its presumed diet for a certain period of time, it would receive a higher contaminant dose than estimated in the BERA. This is one of the many uncertainties involved in estimating ecological risk.

Comment 19: The top paragraph of Page 5-6 discusses Area Use Factors for woodcock, raccoon and heron. However the following text describes woodcock, raccoon and mink. No discussion of herons is provided.

EPA Response: Area use factors for the woodcock and raccoon were identified as areas needing further evaluation in the BERA refinement memo. The heron was not identified as a receptor that required additional evaluation. The text referred to in the comment should be revised to exclude heron. Based on the data collected during the supplemental RI it became apparent that the mink should also be re-evaluated based on the absence of crayfish in the lower reach, requiring a change in the dietary composition for this receptor.

Comment 20: The multivariate analysis discussion in Section 6 provides a useful tool for attempting to discern risk from the myriad of data, studies and observations. However, the discussion is difficult for non-technical persons to follow. The addition of some form of simplified summary would be helpful.

EPA Response: Attachment G of the Ecological Risk Assessment contains a more detailed description of the multivariate analysis. The bottom line of the multivariate analysis was that the difference in the benthic community was most likely the result of factors other than contamination since the benthic community structure and functionality were similar in the contaminated and non-contaminated areas downstream of the former Eastland Woolen Mill. The information was summarized in the Proposed Plan and public presentations. EPA can meet with the SCCE and community to discuss the results in more detailed if that would be helpful.

Comment 21: Page 7-3 references a "previous discussion in Section 4.6". The document does not have a Section 4.6. The "Weight of Evidence" approach could be presented in slightly more detail or with a few specific examples to make it easier to understand and follow.

EPA Response: Comment noted.

Comment 22: Section 7.2.5 states that amphibian and reptile receptors were not evaluated. While we do not expect EPA to assess all potential receptors, the text states that these receptors are among the most sensitive aquatic receptors. With the significant uncertainties present in any Ecological Risk Assessment, it would be appropriate to assess the more sensitive receptors.

EPA Response: Amphibian and reptile guild receptors were not specifically evaluated in this Ecological Risk Assessment. Although these receptors are known to be present at the Site and exposure pathways are likely to be complete, very little toxicological data are available to quantify effects for this guild. It is hypothesized, however, that the most sensitive life-stage for amphibians is the embryo-larval stage and, therefore, aquatic benchmarks that include amphibian toxicity, are protective of amphibians. For reptiles, risks would be assumed to be less than or equal to risks for other aquatic and semiaquatic receptors due to the similarity in diet between reptiles and avian receptors and the fact that reptiles have thicker dermal and epidermal layers than other aquatic life.

Comment 23: Section 7.9.3.2 contains a duplicate paragraph.

EPA Response: Comment noted.

Comment 24: EPA should add discussion of what the conclusions in the BERA mean with respect to the process (i.e., a finding of no risk means no feasibility study and no further action).

EPA Response: The BERA, like the Human Health Risk Assessment, provide the technical evaluation of the potential threats to human health and the environment. For the OU II areas, these documents support a finding of no unacceptable risk to human health and the environment within the OU II area. The Proposed Plan and Record of Decision provide the public with information regarding the process for proposing and finalizing a cleanup decision. A Feasibility Study was not prepared since there was no need to develop alternatives to address an unacceptable risk.

Comment 25: As a result, any unanswered questions will remain unanswered. As an example, why is there such a discrepancy between predicted risk based on sample results and direct observations made at OU-II. Also, EPA has the most experience and knowledge of the Site as a result of its work over the past several years. Are there any recommendations that could be made to minimize the potential for future concern in OU-II. Examples include: Should the Sebasticook Lake drawdown continue? Should the Moosehead Mill Dam be completely removed? Should the Town seek any restriction on use of the floodplains that are contaminated? Should any long-term monitoring be performed? Are additional investigations of the Old Dump warranted?

EPA Response: EPA has completed the study of the release from the Eastland Woolen Mill Superfund Site. The results confirmed that there is no threat to human health or the environment from the contamination remaining in OU II. It is up to other stakeholders to determine the proper management of the watershed. The drawdown of the Lake and/or removal of the dam are not issues relevant to the Superfund decision. EPA will provide the data for the OU II area to state and local officials. This data can be used as part of any long-term resource planning to make people aware of the contamination. Any land-use restrictions would be the decision of the property owner, state, and local government. The Town of Corinna may wish to consult with the Maine DEP regarding the floodplain area. Future residential use of these areas could result in an exposure that would be above the Maine DEP default risk threshold of 1×10^{-5} but still within the EPA acceptable risk range of 10^{-4} to 10^{-6}. As stated previously, EPA does not believe that any Superfund related monitoring of the OU II area (including the Old Dump) is necessary.

CHANGES MADE TO THE PROPOSED REMEDY BASED UPON PUBLIC COMMENTS

There have been no significant changes to the Proposed Remedy as a result of public comments.

APPENDIX A
TABLES AND FIGURES

ROD TABLE 5
RISK ASSESSMENT SUMMARY (RME Exposures)

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

Receptor[1]	Exposure Area[2]	NOAEL[3]			LOAEL[3]			Major Contributor (NOAEL/LOAEL)
		Pesticides	Inorganics	PCB & Dioxin/Furan TEqs	Pesticides	Inorganics	PCB & Dioxin/Furan TEqs	
Crayfish[4]	EBSR[5]	(0.002)	(4.6)		(0.002)	(2.9)		4,4'-DDE(0.0016/0.0016) 4,4'-DDD(0.00044/0.00044) Copper(4.0/2.3) Selenium(0.26/0.11) Zinc(0.27/0.20)
Fish	Area 8	0.016 (0.023)	0.07 (0.35)	0.28 (0.30)	0.0024 (0.0052)	0.08 (0.3)	0.00054 (0.00058)	Dieldrin(0.023/0.0052) PCBTEq(0.0044/0.0000091) Dioxin/furanTEq(0.27/5.4E-04) Copper(0.029/0.014) Zinc(0.08/0.08)
Heron	Area D	3.4 (3.4)	0.85 (1.1)		0.34 (0.34)	0.094 (0.12)		4,4'-DDE(2.1/0.21) 4,4'-DDD(1.3/0.13) Zinc(0.85/0.094)
Kingfisher	Areas B,C	5.5 (5.6)			0.55 (0.56)			4,4'-DDE(3.3/0.33) 4,4'-DDD(2.2/0.22)
Mink	Area D	1.5 (1.7)	6.7 (13)	5.3 (8.4)	0.022 (0.024)	3.1 (6.1)	0.53 (0.84)	Dieldrin(1.5/0.022) PCBTEq(1.2/0.12) Dioxin/furanTEq(4.1/0.41) Aluminum(6.1/3.0)
Vole	Area B	6.6 (6.6)	22 (36)	0.2 (2)	0.094 (0.094)	3.1 (4.5)	0.002 (0.2)	Dieldrin(6.6/0.094) Dioxin/furanTEq(0.2/0.002) Antimony(3.0/0.013) Lead(3.1/0.36) Selenium(1.2/0.71) Thallium(7.9/0.79) Vanadium(5.2/0.52) Zinc(1.5/0.74)
Woodcock	Area B	15 (15)	2.7 (4.8)		1.4 (1.4)	1.2 (2.5)		4,4'-DDT(12/1.2) Dieldrin(2.8/0.22) Chromium(0.89/0.89) Lead(1.8/0.26)

ROD TABLE 5
RISK ASSESSMENT SUMMARY (RME Exposures)

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

Receptor[1]	Exposure Area[2]	NOAEL[3]			LOAEL[3]			Major Contributor (NOAEL/LOAEL)
		Pesticides	Inorganics	PCB & Dioxin/Furan TEqs	Pesticides	Inorganics	PCB & Dioxin/Furan TEqs	
Shrew	Area B	86 (86)	21 (35)	8.0 (26.2)	2.4 (2.4)	3.8 (5.0)	0.8 (2.6)	Dieldrin(80/1.1) 4,4'-DDT(6.4/1.3) Aroclor-1254(1.2/0.12) PCBTEq(6.1/0.61) Dioxin/furanTEq(1.9/0.19) Antimony(2.7/0.12) Lead(2.4/0.28) Selenium(2.1/1.3) Thallium(7.3/0.73) Vanadium(4.9/0.49) Zinc(1.7/0.87)
Barred Owl	Areas A, B		1.1 (1.2)			0.12 (0.14)		Zinc(1.1/0.12)

Notes:

1 = The Hazard Quotients for the fox, mallard, raccoon, and osprey were below 1 for all categories and therefore are not presented.
Only values for demersal fish are shown, since it had a higher maximum hazard index than piscivorous fish.

2 = Exposure area with the highest incremental risk for a given receptor.

3 = Incremental RME NOAEL/LOAEL values are presented. The total risk is indicated in parentheses.
NOAEL/LOAEL values were obtained from Tables 7-22, 7-32, 7-34, 7-38, 7-41, 7-45, 7-47, 7-50, 7-52, and 7-55, and were summed for each chemical class.

4 = Due to a lack of a crayfish reference, only total risk values are shown.

5 = Only exposure area evaluated for the crayfish.

RME = Reasonable maximum exposure
PCBs = Polychlorinated biphenyls
EBSR = East Branch of the Sebasticook River
LOAEL = Lowest Observed Adverse Effect Level
NOAEL = No Observed Adverse Effect Level

Prepared by: SGH
Checked by: NAR

ROD TABLE 6
BASELINE ECOLOGICAL RISK ASSESSMENT CONCLUSIONS

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

Receptor Group	Risk Assessment Question	Risk Assessment Answer
Aquatic Plant Community	Are levels of site contaminants in surface water sufficient to cause biologically significant structural alternations or impair the functions of aquatic plant communities?	No
Floodplain Plant Community	Are levels of site contaminants in surface soils sufficient to cause biologically significant structural alterations or impair the functions of floodplain plant communities?	No
Aquatic Macroinvertebrate Community	Are levels of site contaminants in sediment sufficient to cause biologically significant structural alterations or impair the functioning of aquatic macroinvertebrate communities?	No
Terrestrial Macroinvertebrate Community	Are levels of site contaminants in soil sufficient to cause biologically significant structural alterations or impair the functioning of terrestrial macroinvertebrate communities?	No
Fish Populations	Are levels of site contaminants in surface water or fish tissue sufficient to cause biologically significant survival, growth, or reproductive impairment in demersal or pelagic fish populations?	No
Herbivorous Wildlife Populations (mallards, voles)	Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in herbivorous wildlife populations?	No
Omnivorous Wildlife Populations (heron, raccoon)	Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in omnivorous wildlife populations?	No
Piscivorous Wildlife Populations (osprey, kingfisher, mink)	Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in piscivorous wildlife populations?	No
Vermivorous Wildlife Populations (woodcock, shrew)	Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in vermivorous wildlife populations?	No[a]
Carnivorous Wildlife Populations (owl, fox)	Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in carnivorous wildlife populations?	No

ROD TABLE 6
BASELINE ECOLOGICAL RISK ASSESSMENT CONCLUSIONS

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

Footnote.
a. While the BERA concluded that exposure to Site-related COPCs associated with floodplain soil do not pose a significant population level risk to avian vermivores the risk analysis results for small mammal vermivores were ambiguous. The BERA concluded that significant population level effects in shrew (and other mammalian vermivore) populations associated with exposure to Site-related COPCs in floodplain soil and prey are unlikely but possible.

Prepared by: AMN
Checked by: SGH

TABLE 7
WEIGHT-OF-EVIDENCE INTEGRATION: AQUATIC PLANT COMMUNITY

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 1a. Protection and maintenance of aquatic plant community structure and function.

Are levels of site contaminants in surface water sufficient to cause biologically significant structural alterations or impair the functioning of aquatic plant communities?

Measurement Endpoints[a]

A. Comparison of surface water COPC concentration to criterion

B. Comparison of predicted groundwater COPC discharge concentrations to criteria/guidelines

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low		**B**			
Undeterminate					
No/Low					
No/Very Low			**A**		

Risk Conclusion:

The aquatic plant community that occurs within the study area is not at substantial risk of harm due to exposure to Site-related contaminants in surface water.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2
b. WOE integration is discussed in Section 7.3.1.3.

TABLE 8
WEIGHT-OF-EVIDENCE INTEGRATION: FLOODPLAIN/UPLAND PLANT COMMUNITY

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 1b. Protection and maintenance of floodplain/upland plant community structure and function.

Are levels of site contaminants in surface soils sufficient to cause biologically significant structural alterations or impair the functioning of floodplain and upland plant communities?

Measurement Endpoints[a]

A. Comparison of floodplain and upland soil COPC concentrations to benchmarks/guidelines
B. Lettuce seed germination laboratory bioassay
C. Comparison of floodplain plant community with comparable reference habitats

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High		**A**			
Yes/Low			**B**		
Undeterminate					
No/Low					
No/Very Low				**C**	

Risk Conclusion:

The upland/floodplain plant community that occurs within the study area is not at substantial risk of harm due to exposure to Site-related contaminants in floodplain soil.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.3.2.4.

TABLE 9
WEIGHT-OF-EVIDENCE INTEGRATION: AQUATIC INVERTEBRATE COMMUNITY

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 2a. Protection and maintenance of aquatic macroinvertebrate community structure and function.

Are levels of site contaminants in sediment sufficient to cause biologically significant structural alterations or impair the functioning of aquatic macroinvertebrate communities?

Measurement Endpoints[a]

A. Comparison of predicted groundwater COPC discharge concentrations to criteria/guidelines
B. Comparison of sediment COPC concentrations to benchmarks/guidelines
C. Whole sediment laboratory bioassays
D. Comparison of COPC concentrations in crayfish tissue to literature-derived CBRs.
E. Comparison of macroinvertebrate community structure with reference conditions

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High			**B**	**C**	
Yes/Low		**A**			
Undeterminate					
No/Low			**D**		**E**
No/Very Low					

Risk Conclusion:

The aquatic macroinvertebrate community that occurs within the study area is not at substantial risk of harm due to exposure to Site-related contaminants in sediment.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.4.1.6.

TABLE 10
WEIGHT-OF-EVIDENCE INTEGRATION: SOIL INVERTEBRATE COMMUNITY

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 2b. Protection and maintenance of terrestrial invertebrate community structure and function.

Are levels of site contaminants in surface soil sufficient to cause biologically significant structural alterations or impair the functioning of soil invertebrate communities?

Measurement Endpoints[a]

A. *Comparison of soil COPC concentrations to benchmarks/guidelines*
B. *Laboratory earthworm bioassay*
C. *Comparison of earthworm relative abundance in Site soils with reference conditions*

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High		**A**			
Yes/Low			**B**		
Undeterminate					
No/Low					
No/Very Low				**C**	

Risk Conclusion:

The terrestrial soil invertebrate community that occurs within the study area is not at substantial risk of harm due to exposure to Site-related contaminants in floodplain soil.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.4.2.4.

TABLE 11
WEIGHT-OF-EVIDENCE INTEGRATION: FISH POPULATIONS

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 3. Protection and maintenance of demersal and pelagic fish populations.

Are levels of site contaminants in surface water or fish tissue sufficient to cause biologically significant survival, growth, or reproductive impairment in demersal and pelagic fish populations?

Measurement Endpoints[a]

A. *Comparison of surface water COPC concentration to criterion.*
B. *Comparison of COPC concentrations in fish tissue to Critical Body Residues.*
C. *Qualitative survey of fish community status relative to expected conditions.*

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low					
Undeterminate					
No/Low			**B**		
No/Very Low			**A, C**		

Risk Conclusion:

The demersal and pelagic fish populations that occur within the study area are not at substantial risk of harm due to exposure to Site-related contaminants in surface water and tissue.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.5.5.

TABLE 12
WEIGHT-OF-EVIDENCE INTEGRATION: HERBIVOROUS WILDLIFE POPULATIONS

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 4. Protection and maintenance of herbivorous wildlife populations.

Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in herbivorous wildlife populations?

Measurement Endpoints[a]

A. Comparison of estimated ingestion doses in herbivorous wildlife to TRVs and Toxic Equivalencies.

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low					
Undeterminate					
No/Low			A_{vole}		
No/Very Low			$A_{mallard}$		

Risk Conclusion:

Herbivorous wildlife populations that occur in aquatic and floodplain habitat within the study area are not at substantial risk of harm associated with exposure to Site-related contaminants in surface water, sediment/surface soil, and diet.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.6.3.

TABLE 13
WEIGHT-OF-EVIDENCE INTEGRATION: OMNIVOROUS WILDLIFE POPULATIONS

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 5. Protection and maintenance of omnivorous wildlife populations.

Are levels of site contaminants in surface water, sediment, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in omnivorous wildlife populations?

Measurement Endpoints[a]

A. Comparison of estimated ingestion doses in omnivorous wildlife to TRVs and Toxic Equivalencies.

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low					
Undeterminate					
No/Low			A_{heron}		
No/Very Low			$A_{raccoon}$		

Risk Conclusion:

Omnivorous wildlife populations that occur within the study area are not at substantial risk of harm associated with exposure to Site-related contaminants in surface water, sediment, surface soil, and diet.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.7.3.

TABLE 14
WEIGHT-OF-EVIDENCE INTEGRATION: PISCIVOROUS WILDLIFE POPULATIONS

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 6. Protection and maintenance of piscivorous wildlife populations.

Are levels of site contaminants in surface water, sediment, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in piscivorous wildlife populations?

Measurement Endpoints[a]

A. Comparison of estimated ingestion doses in piscivorous wildlife to TRVs and Toxic Equivalencies.

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low					
Undeterminate					
No/Low			A_{mink}		
No/Very Low			$A_{kingfisher}$ A_{osprey}		

Risk Conclusion:

Piscivorous avian wildlife populations that occur within the study area are not at risk due to exposure to Site-related contaminants in surface water, sediment, and diet. Although the possibility exists that some piscivorous mammals (e.g., mink) may experience adverse effects associated with exposure to Site-related COPCs, substantial population level impacts are not predicted.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.8.3.

TABLE 15
WEIGHT-OF-EVIDENCE INTEGRATION: VERMIVOROUS WILDLIFE POPULATIONS

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 7. Protection and maintenance of vermivorous wildlife populations.

Are levels of site contaminants in surface water, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in vermivorous wildlife populations?

Measurement Endpoints[a]

A. Comparison of estimated ingestion doses in vermivorous wildlife to TRVs and Toxic Equivalencies.
B. Qualitative census of woodcock presence/absence within the Study Area.

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low					
Undeterminate		B	A_{shrew}		
No/Low			$A_{woodcock}$		
No/Very Low					

Risk Conclusion:

Avian vermivorous wildlife populations that occur within the study area are not at substantial risk of harm associated with exposure to Site-related contaminants in surface water, surface soil, and diet. It is also unlikely that vermivorous small mammal populations are at substantial risk of harm associated with exposure to Site-related COPCs. There are considerable uncertainties that were identified in the risk analysis and as a result the overall risk conclusion was indeterminate. However, given the conservative nature of the NOAEL based TRV for the primary risk driver and the other site-specific factors (including spatial variability of contamination) it is unlikely that shrews are experiencing population-level impacts associated with exposure to Site-related contaminants.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.5.5.

TABLE 16
WEIGHT-OF-EVIDENCE INTEGRATION: CARNIVOROUS WILDLIFE POPULATIONS

OPERABLE UNIT II - REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
FORMER EASTLAND WOOLEN MILL
CORINNA, MAINE

Assessment Endpoint 8. Protection and maintenance of carnivorous wildlife populations.

Are levels of site contaminants in surface water, surface soil, and diet sufficient to cause biologically significant survival, growth, or reproductive impairment in carnivorous wildlife populations?

Measurement Endpoints[a]

A. Comparison of estimated ingestion doses in carnivorous wildlife to TRVs and Toxic Equivalencies.

Weight-of-Evidence Integration[b]

	WEIGHT				
HARM/MAGNITUDE	Low	Low - Medium	Medium	Medium - High	High
Yes/High					
Yes/Low					
Undeterminate					
No/Low			A_{owl}		
No/Very Low			A_{fox}		

Risk Conclusion:

Carnivorous wildlife populations that occur within the study area are not at risk due to exposure to Site-related contaminants in surface water, surface soil, and diet.

Notes:
a. Measurement endpoints and assigned weights are discussed in Section 4.5.2.
b. WOE integration is discussed in Section 7.5.5.

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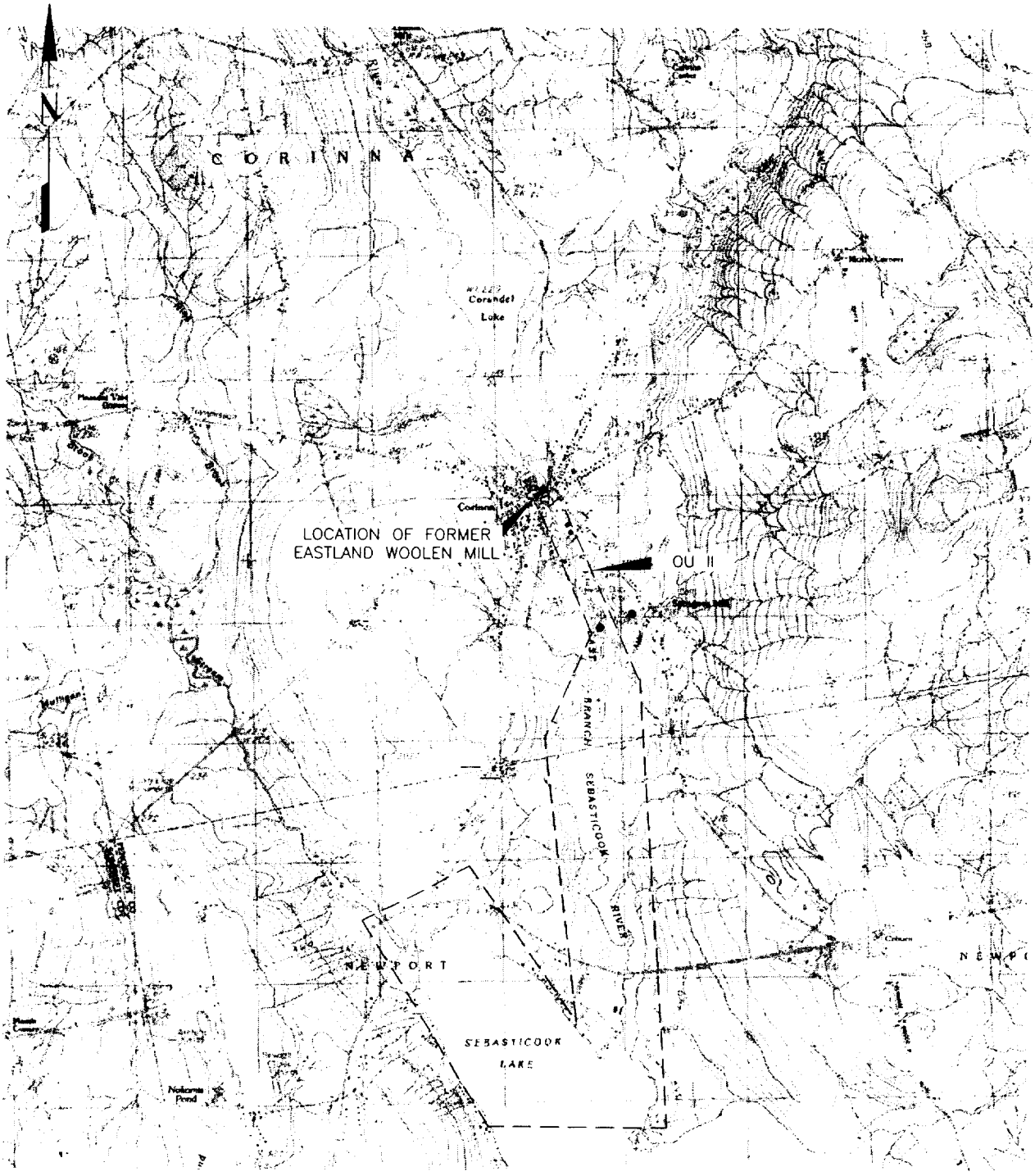


NOTES:

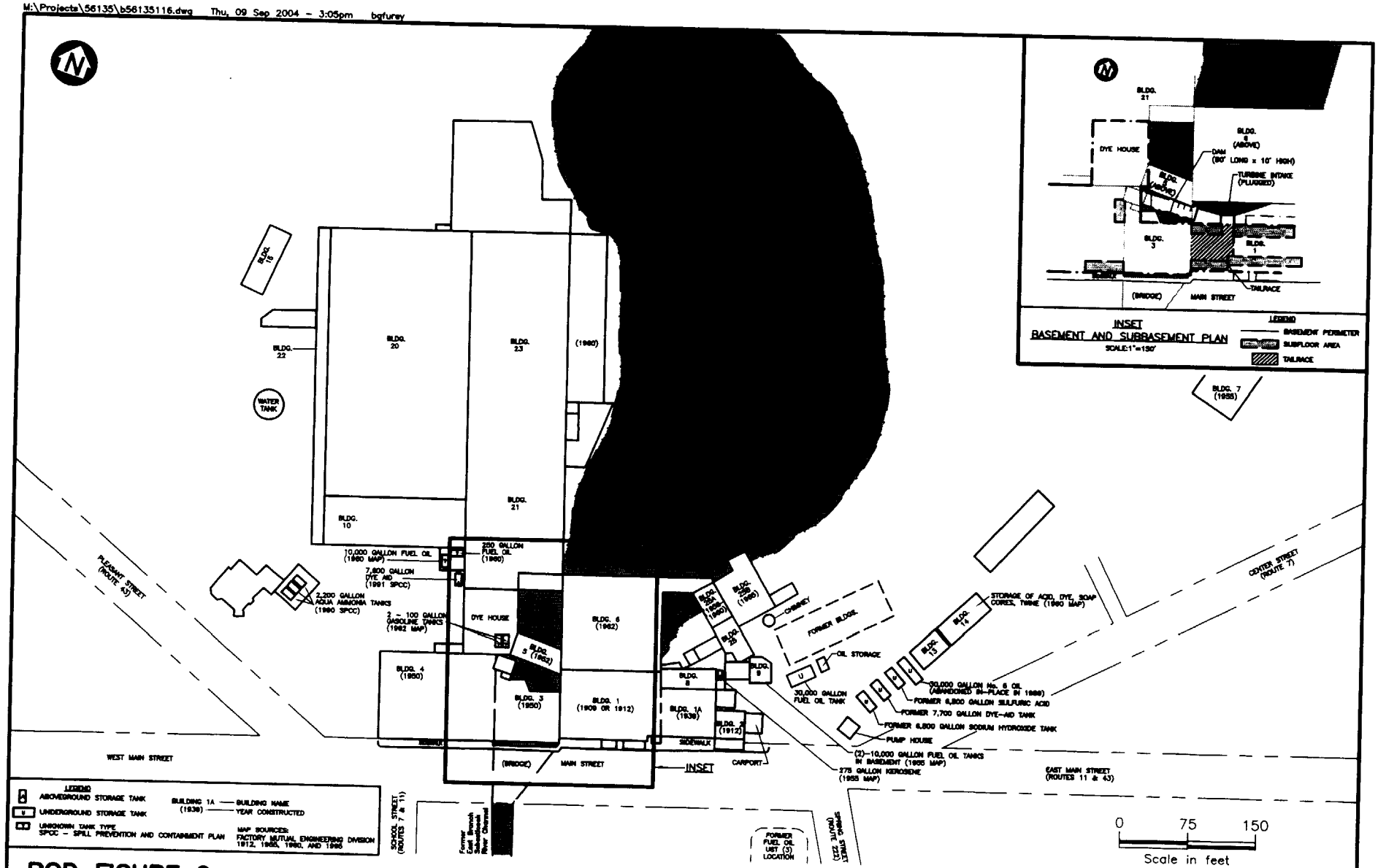
1. MAP SOURCE: USGS DEXTER, GARLAND, CORINNA, STETSON, NEWPORT, AND PLYMOUTH, ME. 7.5 MINUTE QUADRANGLES.

0 2,000 4,000

Approximate Scale in feet

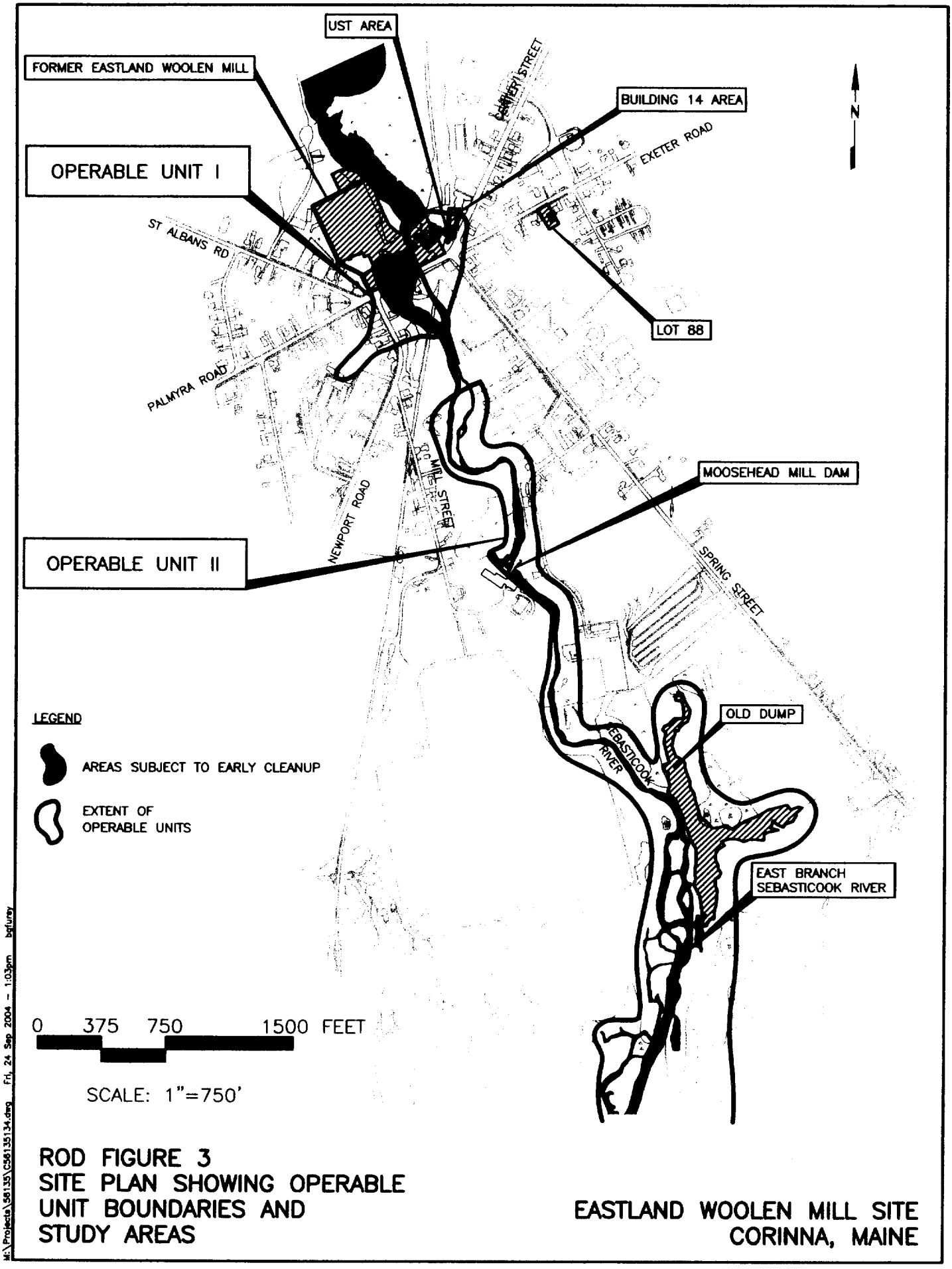
PREPARED BY: /DATE:	BGF/2-3-04
CHECKED BY: /DATE:	INB/3-12-04

ROD FIGURE 1
OU II SITE LOCATION MAP
EASTLAND WOOLEN MILL SITE
CORINNA, MAINE



ROD FIGURE 2
LOCATION OF FORMER EASTLAND WOOLEN MILL BUILDINGS, SOURCE AREAS, AND UNDERGROUND STORAGE TANKS

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE



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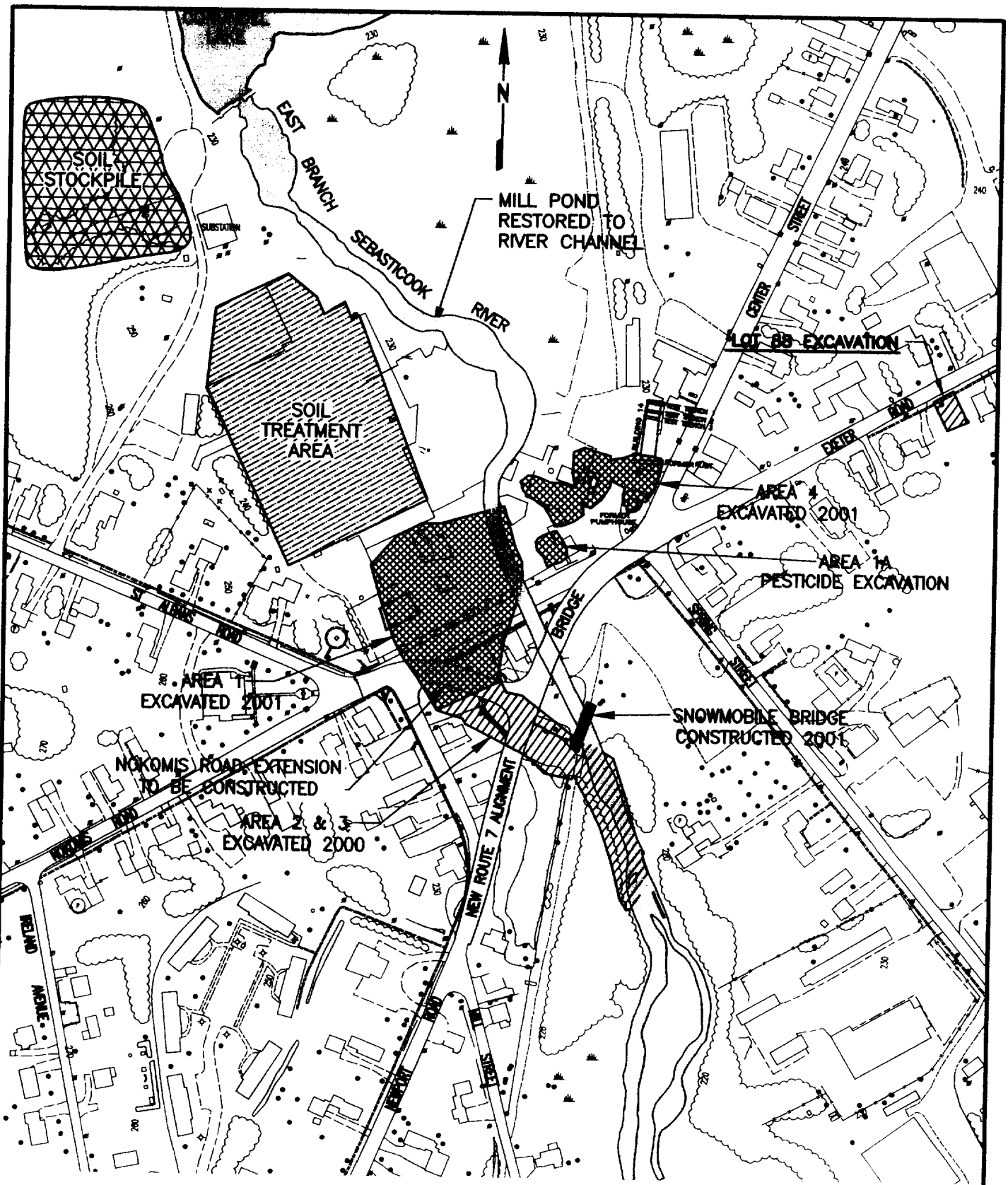
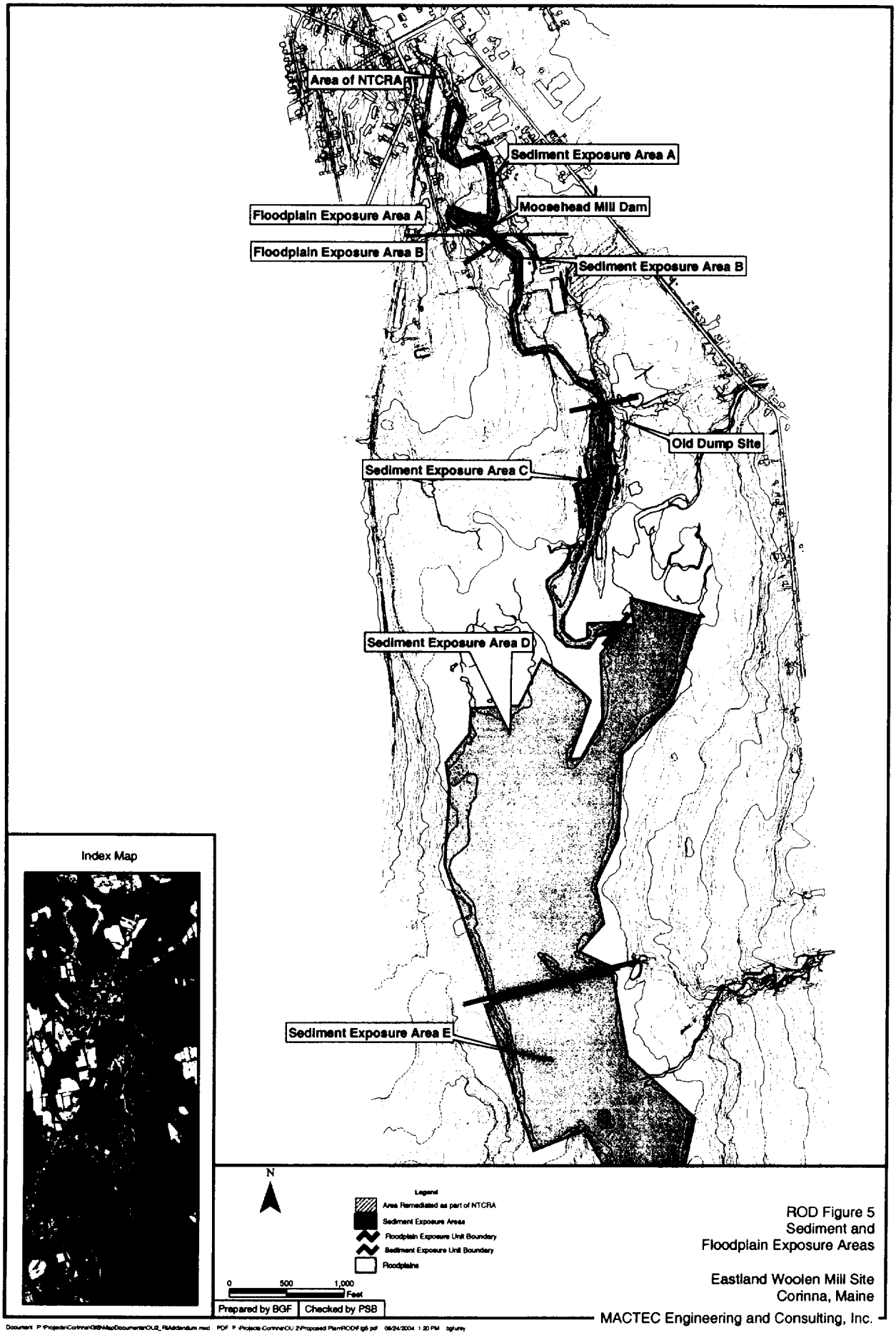
ROD FIGURE 3
SITE PLAN SHOWING OPERABLE UNIT BOUNDARIES AND STUDY AREAS

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE



ROD FIGURE 4
EXTENT OF NTCRA SOIL EXCAVATIONS AND OTHER SITE FEATURES

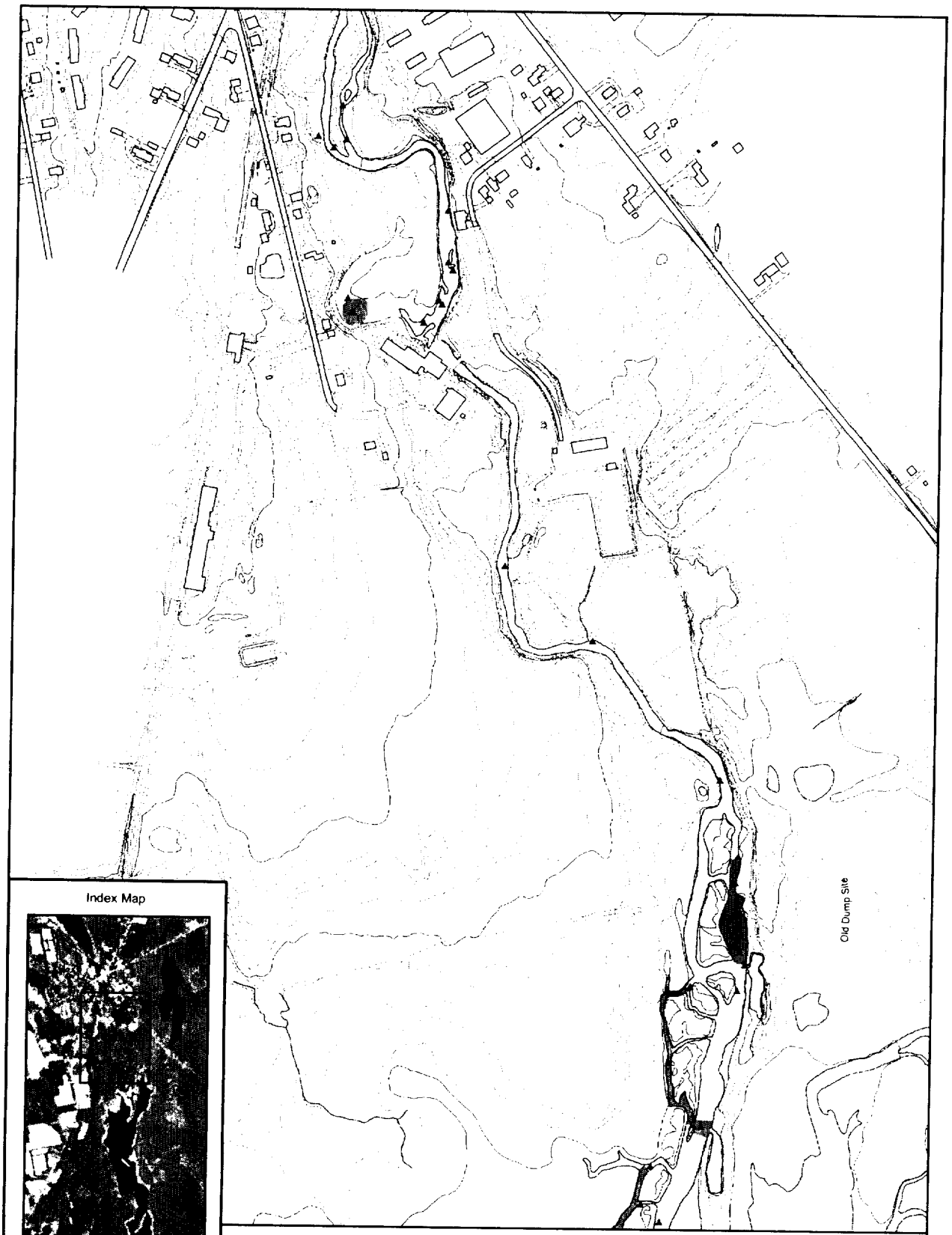
EASTLAND WOOLEN MILL SITE
CORINNA, MAINE



ROD Figure 5
Sediment and
Floodplain Exposure Areas

Eastland Woolen Mill Site
Corinna, Maine

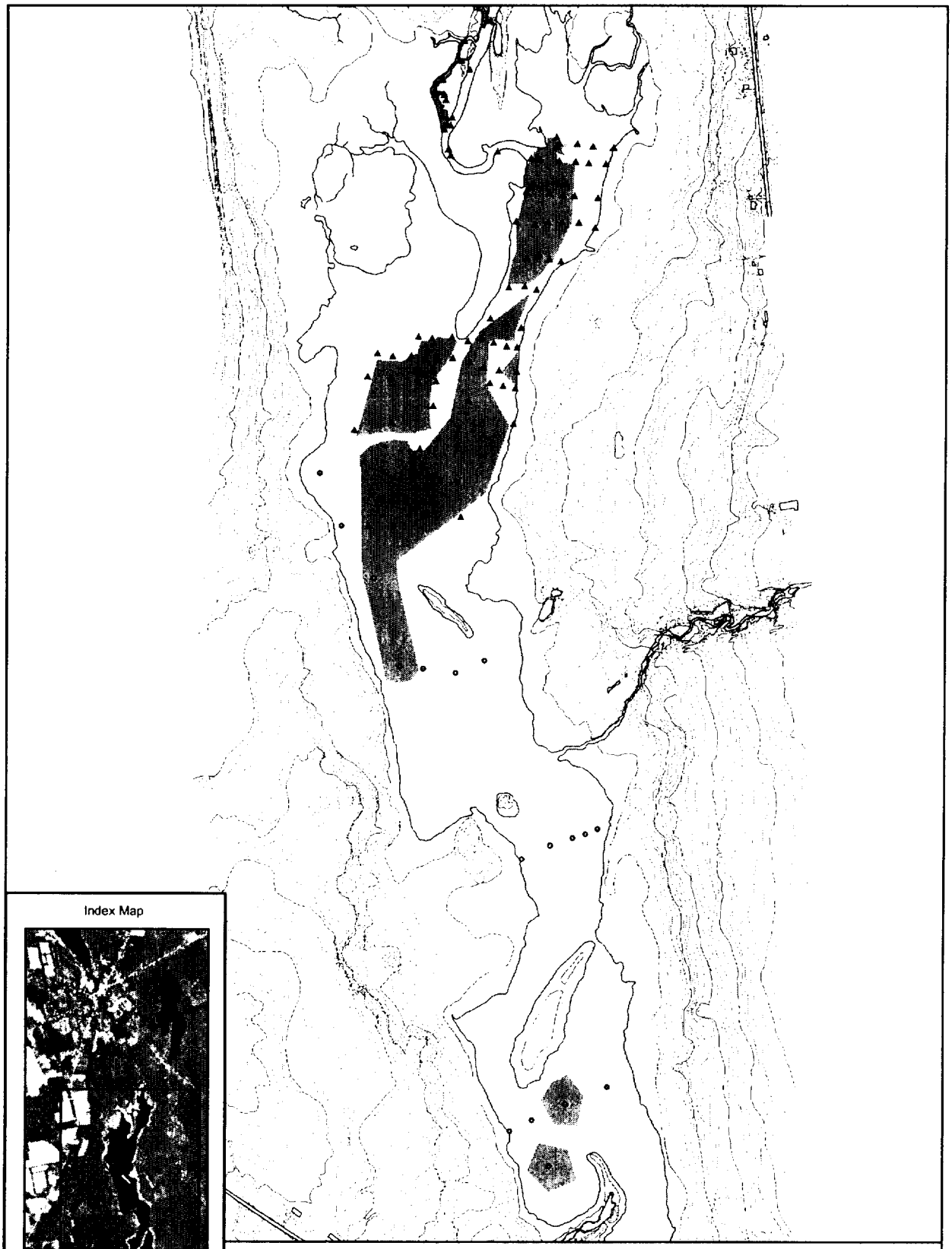
MACTEC Engineering and Consulting, Inc.



ROD Figure 6
Sediment Contamination Above PRGs
ESUs II though VI

Eastland Woolen Mill Site
Corinna, Maine

MACTEC Engineering and Consulting, Inc.



ROD Figure 7
Sediment Contamination Above PRGs
ESUs VII and VIII

Eastland Woolen Mill Site
Corinna, Maine

MACTEC Engineering and Consulting, Inc.

ROD Figure 8
Location of Biota Samples

N

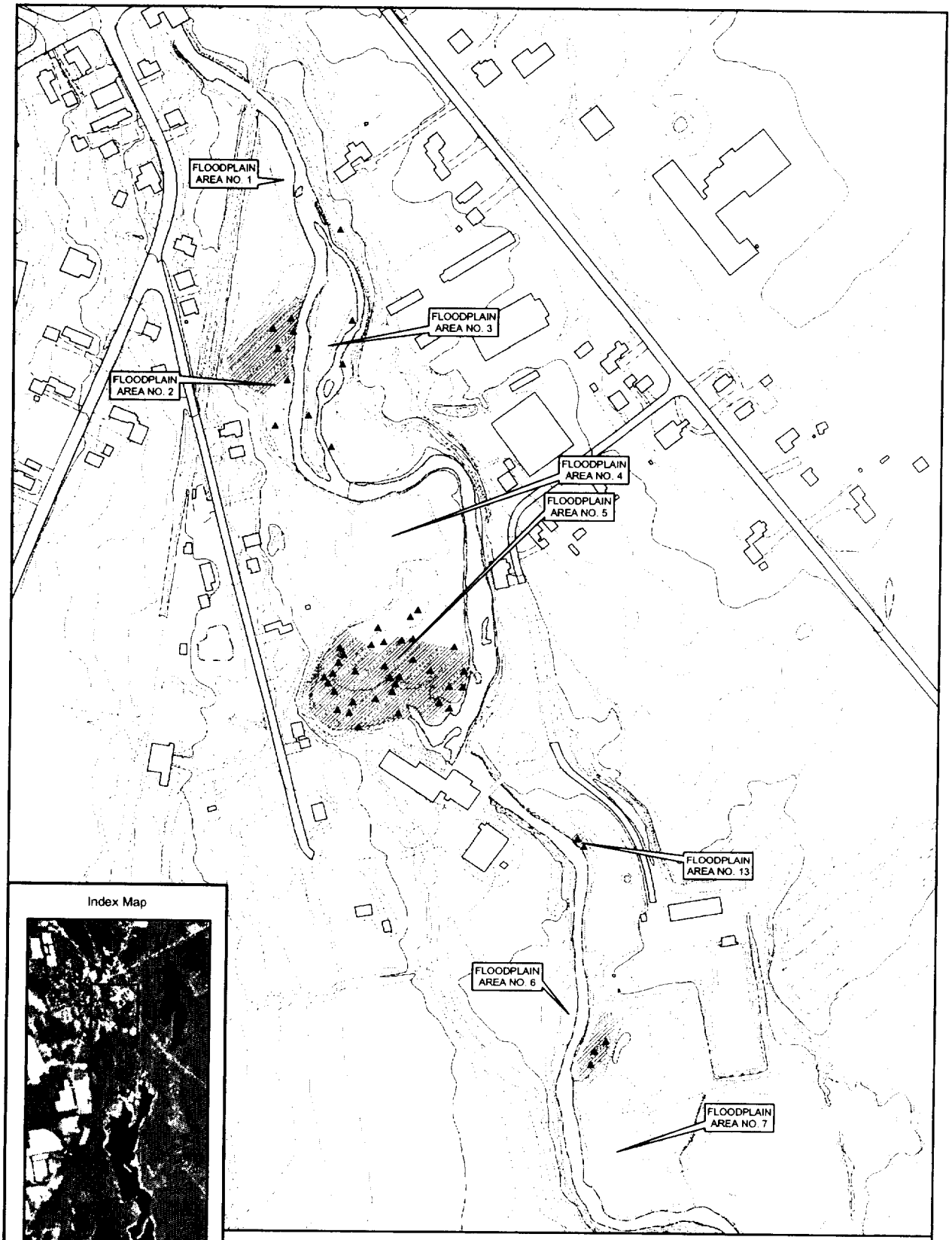
0 550 1,100 2,200 Feet

Legend

- ▲ Crayfish Sample
- Benthic Macroinvertebrate Sample
- Areas containing levels of contaminants that could potentially impact the environment
- ★ Fish Tissue Sample
- ✱ Mussel Tissue Sample

Eastland Woolen Mill Site
Corinna, Maine

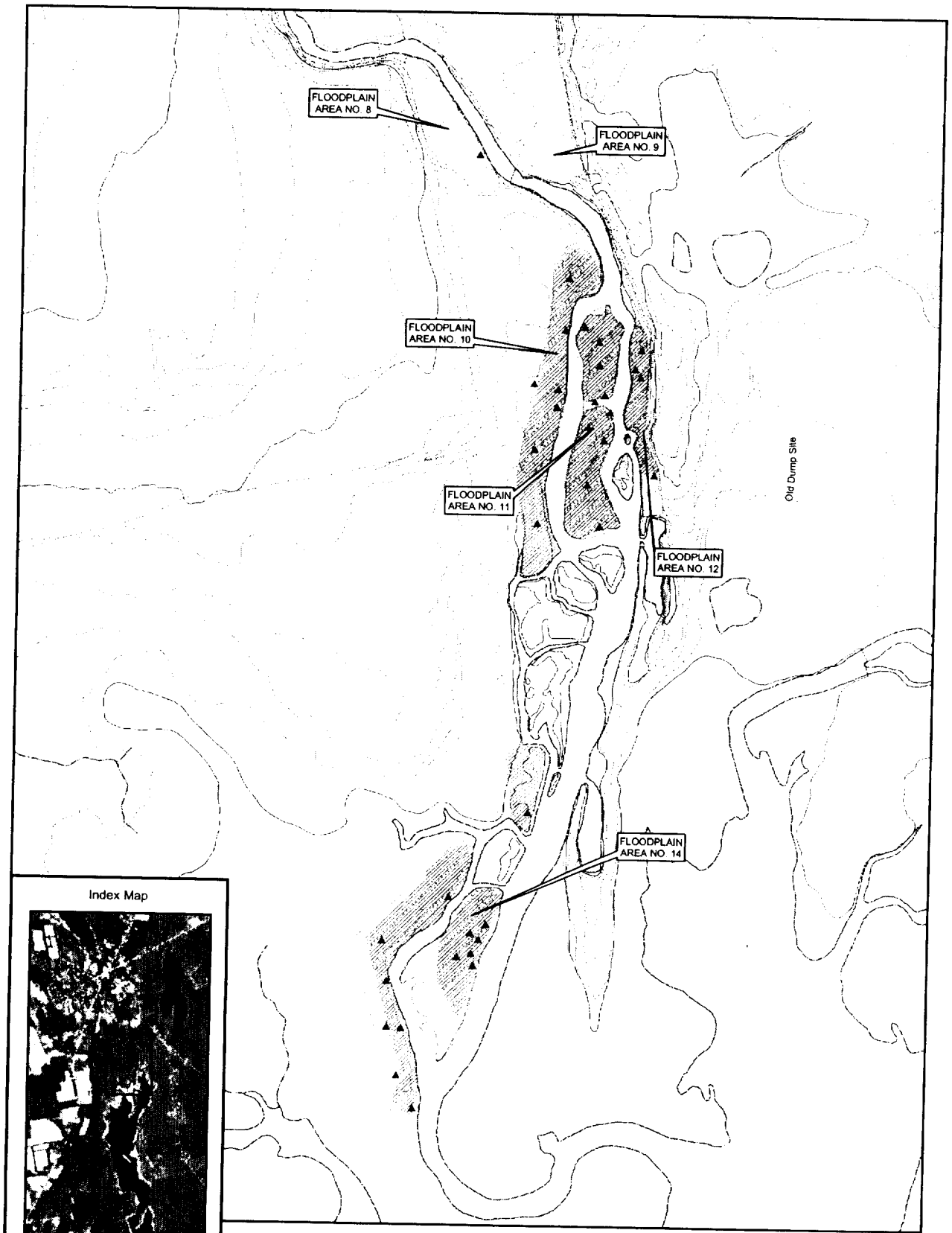
Document: P:\Projects\Corinna\GIS\MapDocuments\OU2_RIAddendum EPA Pub Meeting Fig 8.mxd PDF: P:\Projects\Corinna\OU 2\Proposed Plan\Figure_8.pdf 06/17/2004 9:37 AM fboettner



ROD Figure 9
Floodplain Soils Above PRGs
Floodplains Nos. 1 through 7 and 13

Eastland Woolen Mill Site
Corinna, Maine

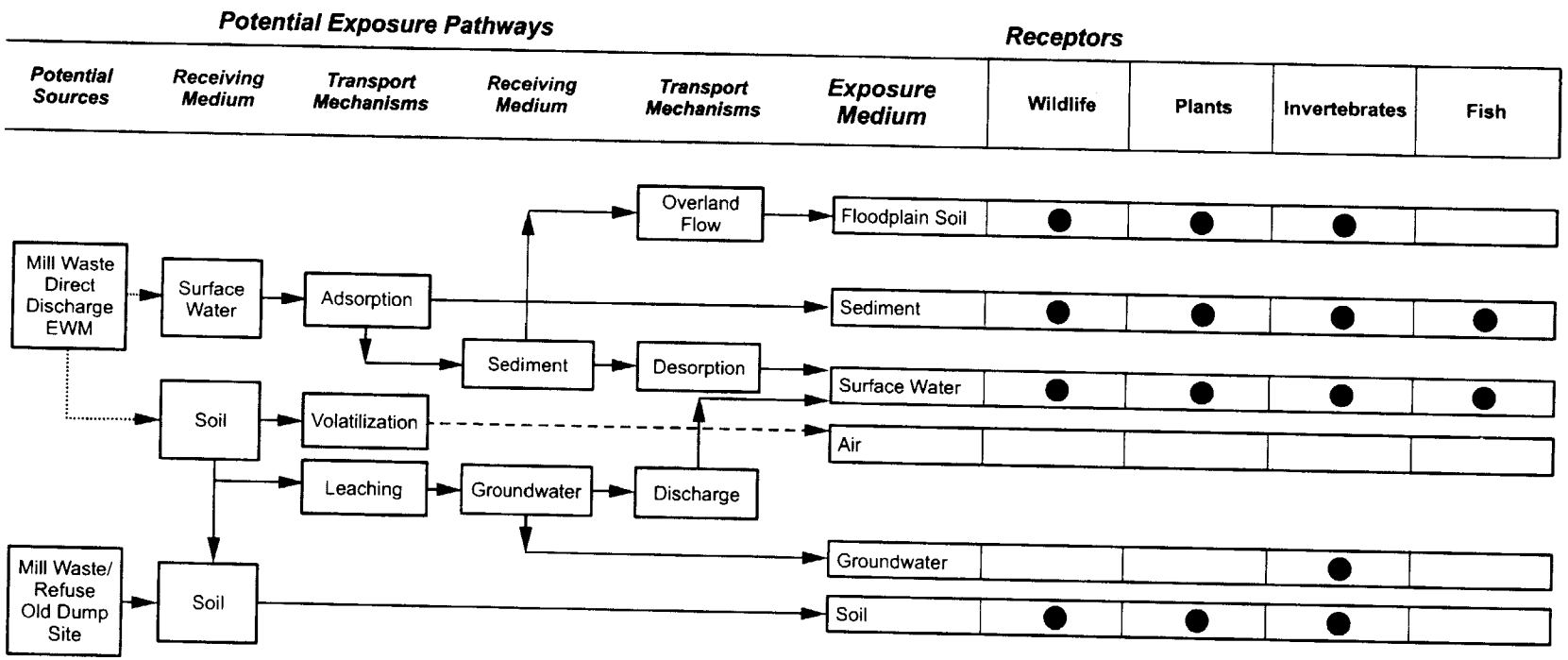
MACTEC Engineering and Consulting, Inc.



ROD Figure 10
Floodplain Soils Above PRGs
Floodplain Nos. 8 through 12, and 14

Eastland Woolen Mill Site
Corinna, Maine

MACTEC Engineering and Consulting, Inc.



Legend

- Pathway potentially complete
- Pathway incomplete or substantially reduced through NTCRA
- Pathway potentially complete, but insignificant

MACTEC

MACTEC Engineering and Consulting, Inc.
Portland, Maine 04101

ROD FIGURE 11
CONCEPTUAL SITE MODEL
OPERABLE UNIT II
EASTLAND WOOLEN MILL
CORINNA, MAINE

DRAWN:	CHECKED:	JOB NUMBER:	FILE NUMBER:	DATE:	REVISED DATE:
BGF	IB	56135.15B	W2004003b	2/04	03/15/04

APPENDIX B
LETTER FROM STATE OF MAINE

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

FILE COP

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

September 22, 2004

Ms. Susan Studlien, Director
Office of Site Remediation and Restoration
EPA New England
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

RE: Record of Decision, Operable Unit II, Eastland Woolen Mill, Corinna Maine

Dear Ms. Studlien,

I would like to thank you and members of your staff for taking the time during the past several weeks to brief me and other members of the Maine Department of Environmental Protection on the proposed Record of Decision for Operable Unit II (OU II) at the Eastland Woolen Mill site in Corinna, Maine. The level of detail provided by your staff during the August briefing was exceptional and greatly appreciated.

Based on a thorough review of the Draft Record of Decision (ROD) and associated supporting documentation, the Maine Department of Environmental Protection (MEDEP) is unable to concur at this time with the U. S. Environmental Protection Agency's (USEPA) proposal that no CERCLA remedial action is necessary to protect public health, welfare or the environment for areas within OU II. The MEDEP agrees that the physical removal of contaminated sediment at this time may have significant impacts on ecological receptors located in and around the Sebasticook River. However, because of the relatively high concentration of contaminants proposed to be left in place within OU II, we believe that at a minimum, some form of long-term monitoring should be proposed by USEPA. Long term monitoring would help to ensure that specific assumptions made by USEPA in the Baseline Ecological Risk Assessment (BERA) and Remedial Investigation do not change, resulting in potentially adverse impacts on the environment.

In ecological risk assessment, USEPA concluded there is "low to moderate level of adverse effect" to populations of: meadow voles which represent plant eating mammals; mink which represent fish eating mammals; woodcock which represent worm eating birds; and shrew which represent worm eating mammals. The specific adverse effects may involve reproductive success and survival rate of the young. USEPA believes that since voles, mink and shrew are animals with high reproductive rates, their populations have evolved such that they can tolerate significant losses before the population is impacted. Also it is possible that the moles, mink, and shrew are exposed to less contamination or to contaminants in a less toxic form than we assumed. MEDEP is concerned that EPA selected abandoning the ecosystem rather than further study.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
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PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

web site: www.state.me.us/dep

While USEPA has determined that sediments located within the Sebasticook River that are seasonally exposed due to draining are of lesser habitat value, the risk assessment does not place sufficient weight on the fact that there have been significant modifications to downstream dams in the area within the past few years, allowing for the migration of anadromous species directly to the study area. Sediments have been documented by USEPA to have contaminant concentrations of toxic substances that exceed threshold quality criteria; these sediments have proven to be toxic to benthic organisms in various bioassays. As fish begin to reuse the upper reaches of the Sebasticook River, they will begin reusing and colonizing the impacted areas.

Fish consumption advisories and wildlife impacts from environmental contamination are at odds with Maine's efforts to promote tourism and aquaculture. The Maine Department of Economic and Community Development (MEDECD) estimates that tourism is Maine's largest industry, supporting 77,000 jobs, and generating $8.9 billion in sales and $344 million in tax revenue. MEDECD indicates that of all tourism in Maine, 21% is outdoor or environmentally-based. Out of this 21%, 54% of the tourist activity is linked to eco-tourism experiences that rely on Maine's image of pristine mountains, quiet lakes, clean rivers and rugged coasts. The State of Maine takes pride in its natural resources. Our citizens rely heavily on these resources for a significant portion of our tourism base.

The base of the river food chain rests on small insects, crayfish, and mussels that live in the sediment. When USEPA took sediment from the East Branch of the Sebasticook River to the lab and exposed test animals to it, the sediment proved to be too toxic for the test animals to survive. MEDEP and EPA have a common mission to improve the environment. We are reluctant to give up on the East Branch of the Sebasticook River because it is subject to multiple insults.

The notion of natural resource stewardship will be taken very seriously under a revitalized natural resource damage program that Commissioner Gallagher has asked my Bureau to spearhead. As a result of this stewardship responsibility, we feel strongly the following modifications should be made to the draft ROD:

1. Develop a better explanation of the ecological risk weighting to better prove that no action is appropriate.

2. Provide the necessary provisions to deal with potential erosion of seasonally exposed contaminated sediment as they would potentially impact spawning by anadromous fish.

3. Develop a long term monitoring proposal that would include the necessary triggers that would provide for additional investigation and potentially additional remedial actions if existing assumptions were found incorrect or to change in the future.

I trust you will find this information helpful in developing your final ROD. If you wish to discuss our concerns in more detail, please do not hesitate to contact me at 207 287-7890.

Sincerely,

Stephen K. Davis P.G.
Director
Bureau of Remediation and Waste Management

Cc: File
Dawn Gallagher
David Littell
Deborah Garrett
Mark Hyland
Denise Messier

APPENDIX C
ADMINISTRATIVE RECORD INDEX

EASTLAND WOOLEN MILL
SEDIMENTS
ADMINISTRATIVE RECORD FILE
EASTLAND WOOLEN OU2 ROD AR

3. REMEDIAL INVESTIGATION (RI)

1. REPORT: DRAFT BASELINE ECOLOGICAL RISK ASSESSMENT REFINEMENT MEMORANDUM
TO: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION
AUTHOR: MACTEC ENGINEERING AND CONSULTING INC
DOC ID: 210478 05/09/2003 98 PAGES

2. REPORT: FINAL OU 2 ECOLOGICAL RISK ASSESSMENT REFINEMENT WORK PLAN
TO: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION
AUTHOR: MACTEC ENGINEERING AND CONSULTING INC
DOC ID: 210479 08/12/2003 67 PAGES

3. REPORT: PUBLIC HEALTH ASSESSMENT FOR PUBLIC COMMENT
AUTHOR: US DHHS/US PUBLIC HEALTH SERVICE
DOC ID: 64889 09/16/2003 62 PAGES

4. REPORT: FINAL OU 2 REVISED BASELINE ECOLOGICAL RISK ASSESSMENT, VOLUME 1 OF 2
TO: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION
AUTHOR: MACTEC ENGINEERING AND CONSULTING INC
DOC ID: 210888 07/07/2004 773 PAGES

5. REPORT: FINAL OU 2 REVISED BASELINE ECOLOGICAL RISK ASSESSMENT, VOLUME 2 OF 2
TO: US ARMY CORPS OF ENGINEERS - NEW ENGLAND DIVISION
AUTHOR: MACTEC ENGINEERING AND CONSULTING INC
DOC ID: 210889 07/07/2004 1105 PAGES

6. LETTER: SCCE COMMENTS ON FINAL OU2 REVISED BASELINE ECOLOGICAL RISK ASSESSMENT
TO: EDWARD M HATHAWAY, US EPA REGION 1
AUTHOR: MICHAEL DEYLING, SUMMIT ENVIRONMENTAL CONSULTANTS, INC.
DOC ID: 204835 08/08/2004 4 PAGES

EASTLAND WOOLEN MILL
SEDIMENTS
ADMINISTRATIVE RECORD FILE
EASTLAND WOOLEN OU2 ROD AR

4. FEASIBILITY STUDY (FS)

1. FACT SHEET: EASTLAND WOOLEN MILL SUPERFUND SITE PROPOSED PLAN, NO FURTHER ACTION NECESSARY TO ADDRESS CONTAMINATION IN THE EAST BRANCH OF THE SEBASTICOOK RIVER
AUTHOR: US EPA REGION 1
DOC ID: 210635 07/01/2004 19 PAGES

5. RECORD OF DECISION (ROD)

1. MEMO : COMMENT ON NO FURTHER ACTION TO ADDRESS CONTAMINATION IN THE EAST BRANCH OF THE SEBASTICOOK RIVER
TO: EDWARD M HATHAWAY, US EPA REGION 1
AUTHOR: JOHN HUNT, CORINNA (ME) RESIDENT
DOC ID: 204834 08/11/2004 1 PAGE

13. COMMUNITY RELATIONS

1. MEETING NOTES: MEETING NOTES JUNE 1999 - CORINNA VILLAGE COALITION
AUTHOR: EVERETT SIMPSON, CORINNA VILLAGE COALITION
DOC ID: 212531 06/08/1999 5 PAGES

2. FACT SHEET: COMMUNITY UPDATE #11 - SOIL TREATMENT CONTINUES/GROUNDWATER CLEANUP TO BEGIN
AUTHOR: US EPA REGION 1
DOC ID: 43545 04/01/2003 13 PAGES

3. FACT SHEET: COMMUNITY UPDATE #12 - SOIL TREATMENT COMPLETED, MAJORITY OF SITE WILL BE READY FOR RE-USE IN 2004
AUTHOR: US EPA REGION 1
DOC ID: 210477 03/01/2004 10 PAGES

4. PUBLIC MEETING RECORD: EASTLAND WOOLEN MILL OU 2 PUBLIC INFORMATION MEETING PRESENTATION, JUNE 7, 2004
AUTHOR: US EPA REGION 1
DOC ID: 210683 06/07/2004 24 PAGES

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13. COMMUNITY RELATIONS (CONT'D)

5. NEWS CLIPPING: EPA SAYS RIVER CLEANUP COMPLETE CORINNA'S LOWER SEBASTICOOK FOUND UNPOLLUTED BY SUPERFUND SITE
AUTHOR: BANGOR DAILY NEWS
DOC ID: 210685 06/08/2004 2 PAGES

6. NEWS CLIPPING: EPA WANTS TO SKIP RIVER CLEANUP, GOVERNMENT AGENCY SAYS POLLUTION DANGEROUS ONLY TO SHREWS
AUTHOR: CHRIS CHURCHILL, WATERVILLE MORNING SENTINEL
DOC ID: 210686 06/29/2004 1 PAGE

7. PUBLIC MEETING RECORD: EASTLAND WOOLEN MILL OU 2 PUBLIC INFORMATION MEETING PRESENTATION, JUNE 29, 2004
AUTHOR: US EPA REGION 1
DOC ID: 210684 06/29/2004 28 PAGES

8. NEWS CLIPPING: DECISION ON RIVER EXPLAINED AT HEARING
AUTHOR: SHARON MACK, BANGOR DAILY NEWS
DOC ID: 210887 06/30/2004 1 PAGE

9. MEETING NOTES: PUBLIC HEARING, CORRINA, MAINE, ELEMENTARY SCHOOL
TO: US EPA REGION 1
AUTHOR: DON THOMPSON & ASSOCIATES COURT REPORTING
DOC ID: 204833 08/10/2004 16 PAGES

10. PRESS RELEASE: INVITATION TO PUBLIC HEARING, NO FURTHER ACTION DECISION
AUTHOR: US EPA REGION 1
DOC ID: 212530 08/10/2004 1 PAGE

APPENDIX D
PUBLIC HEARING TRANSCRIPT

Eastland Woolen Mill OU II

Public Hearing

Corinna, Maine

Elementary School

August 10, 2004

Don Thompson & Associates
Court Reporters

(Whereupon, the hearing commenced at 7:00 p.m. on

August 10, 2004.)

* * * * *

MS. O'DONNELL: Good evening, everyone, to tonight's meeting on the Eastland Woolen Mill site.

My name is Mary Jane O'Donnell; I'm a manager with the Environmental Protection Agency in Boston, and I will act as the hearing officer for tonight's meeting.

I have just a few introductory comments. I wanted to talk a little bit about the purpose of the meeting, introduce a few individuals who are here with me, and also explain a little bit about the format for tonight's meeting.

In terms of the purpose of the meeting, it's to formally accept your comments on our No Further Clean-up Action for the mill and then also to -- well, actually to formally accept your comments.

We have a comment period that ends, I believe, this Thursday. We will take the comments that we receive tonight and the comments that were received during the comment period, evaluate them, and make a decision as to whether or not any further changes need to be made.

We will do the evaluation and a document called a Responsive Summary, and that Responsive Summary will be part of the public record and will go in the public library here, and we expect to complete our evaluation and make our formal

clean-up decision by the end of September.

Just quickly in terms of folks that are here with me tonight, Ed Hathaway, who is our project manager who most of you I'm sure have met before from EPA; Pam Harting-Barrat, who is our community involvement coordinator.

From the Corps of Engineers, Scott Acone; and Denise Messier from the Maine Department of Environmental Protection.

We also have a court reporter, Lisa Fitzgerald, who is recording the entire contents of tonight's meeting.

In terms of the format, Ed's going to give a presentation that's going to -- he's going to explain the rationale for our clean-up proposal or our No Further Clean-up Action and also give some further background.

After Ed gives his presentation, I will open the floor to questions or comments that -- actually comments that you folks might have.

Because this is a formal public meeting, I'm going to ask you to come forward, to identify yourself and your association with the site, and I'm also going to ask you to speak accurately and clearly so that we can accurately record what you have to say.

Because this is a hearing, we won't respond to questions that you might have, but certainly after the close of the hearing we will be here as long you would like to answer whatever questions you might have.

We encourage you to come forward with your comments, whether or not they are pro or con. We're anxious to get a diversity of perspectives and certainly we're going to take your comments seriously.

With those few introductory comments, I'm going to turn things over to Ed for his presentation.

MR. HATHAWAY: Thank you. Good evening. Again, Mary Jane O'Donnell has provided the introduction. I'm just going to briefly review the No Further Action Proposal.

This proposal was detailed in our document as a proposed plan. I hope you all got that in the mail. There are copies of this in the public library actually right outside the town office for you to obtain. Hopefully you have the mail, as I indicated, so you have reviewed this.

In addition, on June 10th and June 29th we provided briefings to the TAG group and the public regarding the detail of our risk assessment.

A quick review of the setting. We're here to talk about Operable Unit II. It's essentially the East Branch of the Sebasticook River, Old Dump, and the associated sediment and flood plan. It runs from the end of the soil excavation zone, about three miles or so, to Sebasticook Lake.

Some of our reference area for sampling were actually in the Mulligan Stream, one of the adjacent surface water bodies to Sebasticook Lake.

The aerial photograph once again simply shows from downtown extending down into the lake. This is the OU II, Operable Unit II, clean-up area under discussion for consideration.

A brief summary of the context for which we reviewed the clean-up. We did find contamination throughout the river area in both the floodplain and the sediment and at the Old Dump. Those contaminants included chlorinated benzene compounds, dieldrin, cadmium, chromium, lead, and zinc, which we do feel are associated with the releases from the mill.

We detected other contaminates such as certain pesticides like DDT, DDD, DDE, chlordane, which may have been used by the mill but were also known to be used agriculturally

in the area.

There were other constituents that were detected, these polycyclic aromatic hydrocarbons, PAHs they're referred to which are combustion by-products, which is a residual of fires burning in the area that we don't think were mill related. There were some low level PCB and dioxin and mercury detected that we're not sure are site related.

We sampled fish and mussel tissue and found that they contained low levels of some pesticides, including dieldrin and dioxin, dioxin not being a pesticide.

We found that the discharge from the Old Dump could result in some chlorinated benzene compounds being found in a

very small stretch of the East Branch Sebasticook River above levels that could harm the critters that dwell in the submerged sediment, but we did not find anything in the surface water itself, although we did find an indication that some of the contaminants really aren't accumulating in the food chain. They're not being found in the crayfish, the mussel, or the fish tissue, which was good news.

The basis upon which we have proposed to take no further action is the human health risk assessment that was prepared in July of 2002 and the revised baseline ecological risk assessment that was prepared in 2004 -- or finalized in 2004.

The conclusions of the human health risk assessment are that contact with sediments in floodplain soil does not present a health problem. People can go out and wade in the stream and fish and hunt and whatever activities are common. There is not a health problem from that.

There is no health concern with contact of surface water. Contact with soil at the Old Dump does not pose a health problem. So we looked at all these scenarios and there was no concern.

The risk assessment concluded that ingestion of fish -- this is primarily a bass fishery, bass, perch, pickerel, not a trout, salmon -- may have a low level of risk, however, the risk is significantly diminished if you follow the

statewide health advisories that advise only ingesting a certain amount of fish based on statewide mercury contamination.

We also made a finding that the groundwater at the Old Dump is not usable. It would be unlikely for anyone to actually sink a well in the trash and use that as a water supply.

The Agency for Toxic Substances and Disease Registries concluded that the Operable Unit II area was not a public health hazard. So they did their own independent assessment based on current exposures and scenarios. They also concluded that there was no public health hazard to humans.

As a result, our conclusion from a human health perspective is that there is no unacceptable risk to human health in the OU II area.

Now, in addition to human health concerns, we do look at ecological receptors. Some of the conclusions from our ecological risk assessment are that the benthic community -- the community of essentially bugs and critters that live on the bottom of the river -- are much less impacted than was predicted by our initial risk assessment.

That risk assessment predicted widespread absence. They shouldn't even be there, and our sampling showed fairly robust abundance in similar contaminated locations had similar characteristics than at uncontaminated locations in the same

areas in the same settings downstream.

Critical was that the dieldrin, the pesticide that we find in the sediments released from the mill and is in the sediment as a release from the mill, does not appear to be accumulating in the crayfish, the mussels, or the fish tissue.

We found that earthworms, that once again we thought might not be present due to concentration levels, were abundant in the floodplain soils. As a result of these factors, we did not find a significant threat to the food chain or key species, meaning the contamination was not moving up trophic levels. It was not expected to accumulate in the mink or the raccoon or the other higher trophic level species.

As a result of that we have concluded that there are no unacceptable risks to ecological receptors either, sum of that being that we did not see a basis to take a Superfund action in the area known as Operable Unit II.

So we are here tonight to present to you for your comment that we are taking no further action in the East Branch of Sebasticook River of the sediment, surface water, the floodplain soil, or the Old Dump for the areas downstream of the early clean-up operation.

The 30-day comment period will end this Thursday, August 12. We do encourage all to comment. There are three ways to comment: You can mail them to the address identified here, which is also in the proposed plan and a copy of the

handouts are in the back of the room; you may e-mail them to this e-mail address also in the proposed plan and in the handout in the back of the room; or you may tonight speak verbal comment into the record that will be recorded.

If you do not have the information you would like, you can go to the Corinna town office. All of our documents are present there. You can go to the EPA Records Center, and we have certain records available on the EPA website, some of the fact sheets.

We also encourage you to contact the Sebasticook Committee for a Clean Environment, who has received a technical assistance grant from EPA if you wish to get an independent evaluation of the site and the situation, and there are representatives from there here tonight as well.

As indicated by Mary Jane, we will consider all the comments that are submitted, we will prepare a response to those comments, and the public will be notified of the clean-up decision once we sign a record of decision.

With that I will turn the floor back over to Mary Jane to administer the comment portion of the hearing. I am finished, and as Mary Jane indicated, when the hearing is closed I will remain here, and if you have any questions I will be happy to take them.

MS. O'DONNELL: I would like to open the floor to comments that anyone in the audience would like to make. I'll

start at this side of the room and move it this way. Could you just identify yourself, your association with the site, and

then feel free to state your comments.

Are there any comments?

PARTICIPANT: The comments are only dealing with these four items? Nothing about well water?

MS. O'DONNELL: That's correct. Any comment on our No Further Clean-up Action Proposal?

MR. HANNULA: I'm Tom Hannula, H-a-n-n-u-l-a. I represent the Sebasticook Lake Association.

We are kind of mixed in our feelings for the No Action because one, we think that if you go in there and start mucking around, you're going to cause potential damage to the lake with the transport of the sediments that are highly polluted -- not just with your chemicals -- but with the phosphorous that has been transported to lakes that are causing our algae problems.

As a result, we would like to see something that would guarantee that the sediments that are in there are essentially protected so they will not be disturbed, so they will state where they're at.

The other thing is that there should be some sort of long-term monitoring to make sure that the contaminants are in fact not causing additional problems.

MS. O'DONNELL: Thank you for your comment. Anyone

else?

MR. DOW: I'm Ken Dow; I'm the chair of the Technical Advisory Grant committee for the site.

The TAG committee has submitted its comments to the EPA in writing but I have this additional comment.

Over the past few years in conjunction with the

Superfund Clean-up in Corinna, a great deal of information has been gathered and compiled by the EPA and its contractors. Scientific research has been done on the geology, the hydrology, resources, and the infrastructure of the area.

My question is: How can a community like Corinna store and retain this information in a way that will make it available for use in resource development zoning, community planning, and as an educational resource for the area?

MS. O'DONNELL: Thank you. Anyone else?

Seeing that there aren't anymore comments, the hearing is now closed.

Certainly we will be available to answer questions you might have, and we certainly appreciate you coming out tonight and all your interest in the project over the years and your patience, I guess, for tonight.

Thank you very much.

(Whereupon, the deposition was concluded at 7:15 p.m. on August 10, 2004.)

CERTIFICATE

I, Lisa Fitzgerald, a Notary Public in and for the State of Maine, hereby certify that on August 10, 2004, a public hearing was held regarding Eastland Woolen Mill OU II; and that this hearing was stenographically reported by me and later reduced to typewritten form with the aid of computer-aided transcription; and the foregoing is a full and true record of the hearing.

I further certify that I am a disinterested person in the event or outcome of the above-named hearing.

IN WITNESS WHEREOF, I subscribe my hand and affix my seal this August 11, 2004.

LISA FITZGERALD, NOTARY PUBLIC
Court Reporter

My commission expires: May 10, 2011