Investigation Program Complete/Early Cleanup Continues

U.S. Environmental Protection Agency (EPA)

Eastland Woolen Mill Superfund Site Corinna, Maine Community Update # 9 May, 2002

Introduction:

The preliminary investigations at the Eastland Woolen Mill Site enabled EPA to identify the presence of significant contamination beneath the former Eastland Woolen Mill, and resulted in the initiation of the early cleanup action at the Site. This early cleanup is expected to continue through 2002 into 2003. Treatment of the contaminated soil will begin in 2002.

To determine if any additional cleanup actions were necessary, EPA performed a comprehensive investigation of the magnitude and extent of contamination in the groundwater, sediments and floodplain areas of the East Branch of the Sebasticook River (EBSR), the "Old Dump", and several isolated areas that were used by the Eastland Woolen Mill. Figure 1 shows the areas that were included in this investigation program. Figure 1 also identifies two separate focus areas, or operable units, for the Site. The groundwater and any remaining areas of contamination at the former Eastland Woolen Mill complex will be designated Operable Unit I for the purpose of evaluating cleanup options. The sediments and floodplains of the EBSR as well as the Old Dump are designated as Operable Unit II. EPA plans to release the Reports which detail the results of the investigations along with a proposal for the Operable Unit I cleanup work to the public in July 2002.

Remedial Investigation Program:

A remedial investigation (RI) involves the collection of data to determine the nature and extent of contamination at a Site. For the Eastland Woolen Mill Site, EPA completed investigations for the following major areas:

- bedrock and overburden groundwater
- river sediments
- floodplain soils
- the "Old Dump" on Route 222
- contaminated soils within the former Eastland Woolen Mill complex that were not removed as part of the early cleanup.

For an update of the Site activities please attend the Public Information Meeting

June 5, 2002

7:00 p.m.

at

Corinna School Cafeteria

Each study area will be described separately below:

Groundwater:

Groundwater represents the major source of drinking water in the area and also discharges to the surface water of the EBSR. Contamination was found in the overburden and bedrock groundwater at the Site. To identify the magnitude and extent of contamination within the overburden and bedrock groundwater, the following activities were completed:

- installation of 56 overburden and 24 bedrock wells
- sampling of these wells for contaminants
- sampling of existing and former water supply wells
- evaluation of the fracture orientation (direction) in the bedrock wells
- pumping tests to evaluate the flow rates within the aquifer

The results of these investigations reveal the following:

- the bedrock aquifer in the vicinity of the former Eastland Woolen Mill is highly contaminated
- the overburden aquifer is also contaminated
- bedrock groundwater flows along the direction of the predominant fractures in an East/West direction with much less flow in the down river direction

- private water supply wells have been contaminated by the Site
- high concentrations of contaminants, known as dense non-aqueous phase liquids (DNAPLs) are believed to be present in the bedrock
- bedrock contamination extends several hundred feet into the bedrock
- the bedrock and overburden aquifer discharge to the East Branch of the Sebasticook River (EBSR) near the former Eastland Woolen Mill complex

Figure 2 shows the general areas of the overburden and bedrock contamination. Figures 3 and 4 show a side view of the groundwater contamination as well as the conceptual migration pathway for the contamination. The evaluation of human health and ecological risk that may result from exposure to the contaminated groundwater indicated that:

- the contaminated overburden and bedrock aquifers are not suitable for use as drinking water
- the contamination may have an impact on aquatic receptors in the mixing zone between the groundwater and surface water within the EBSR

River Sediments and Floodplan Soils of EBSR:

The RI included an evaluation of the impacts from the former Eastland Woolen Mill complex on the surface water and sediments of the EBSR and associated floodplains. The investigation study area extended approximately four miles, from downtown Corinna to Sebasticook Lake. Investigation activities included:

- collection and analysis of 195 samples from the sediment and 426 samples from the floodplain areas of the river
- toxicity testing to evaluate the impact of the contaminants on sediment and floodplain invertebrates as well as plants
- fish tissue samples collected at five locations throughout the EBSR and Sebasticook Lake to assess accumulation of contamination in fish tissue

The results of these investigations confirmed widespread impacts from the operation of the former Mill on the downstream river sediments and floodplain areas. Figure 5 shows the location of the eight ecological study areas within the EBSR. Figures 6-8 show the areas where contaminants were detected in the EBSR sediments and floodplain soils. Specific findings include:

- cholorobenzenes (mono, di, and tri) were found in both the sediment and floodplain
- elevated levels of cadmium, chromium, zinc, dieldrin, and other pesticides appear to be related to the Site
- fish tissue contain dieldrin and other bioaccumulative compounds
- there are low levels of contaminants throughout most of the river stretch with much higher “hot spot” areas in depositional areas near Moosehead Mill, the Old Dump, and below the Old Dump where the river widens and a large depositional area is located

The evaluation of human health and ecological risk that may result from exposure to the contaminated sediments and floodplain soils indicate that:

- human contact with the sediments and floodplain soils should not present a health problem
- human contact with the surface water should not present a health problem
- human consumption of fish poses a level of potential health risk that exceeds the Maine DEP health criteria
- sediments in certain areas are potentially toxic to benthic invertebrates
- certain contaminants, including dieldrin, are found in sediments and fish above levels that could impact wildlife
- floodplain soil contamination could result in the absence of certain plant species that are sensitive to the contaminants
- floodplain soil contamination in certain areas may be toxic to soil dwelling invertebrates
- floodplain soil contamination may be having an impact on wildlife

Old Dump:

An area of debris that contains miscellaneous material from the former Eastland Woolen Mill, as well as domestic solid waste, is located along the EBSR about one mile downstream of the Eastland Woolen Mill

complex. The area covers about 4 acres and contains about 45,000 cubic yards of waste material. Empty drums are found scattered along the EBSR bank. Investigations of the old dump include:

- installation of 11 overburden and seven bedrock monitoring wells to assess overburden and bedrock contamination
- collection of soil samples
- 27 test pits and geophysical investigations to confirm the limits and waste profile

The investigations confirmed that Eastland Woolen Mill waste was deposited in this area. No large areas of liquid waste were identified. Figure 9 shows the extent of groundwater contamination in the Old Dump. Preliminary results suggest:

- a small area of overburden groundwater is impacted above state and federal drinking water standards
- a small area of the bedrock aquifer contains low levels of chlorobenzenes
- metals (cadmium), combustion byproducts, chlorobenzene, and pesticides were found in the dump materials.

The evaluation of human health and ecological risk that may result from exposure to the contaminated soil and groundwater at the Old Dump indicate that:

- there is not a human health threat to persons visiting the Old Dump area
- groundwater is not considered to be a usable source of water, however, concentrations in the overburden would not be safe for use as drinking water
- a low level threat to terrestrial wildlife and invertebrates exists for the old dump

Eastland Woolen Mill Complex:

The former Eastland Woolen Mill complex along with the majority of the contaminated soil was removed as part of the early cleanup during 1999 - 2001. Two areas of contaminated soil remain after the excavation program. One area of soil contamination located in the former downtown area of Corinna, is located along the bedrock surface and was considered inaccessible during the early cleanup. These soils contain very high concentrations of contaminants and are a continuing source of groundwater contamination. The second area is located adjacent to the former UST area and is very small. The contamination is under Route 7 and adjacent to the loading dock for building 14. This contamination also contributes to the groundwater contamination. Figure 4 shows the location of the contaminated soil remaining after the NTCRA

What are the major contaminants?

Several patterns of contamination have become evident as a result of the detailed studies.

- chlorobenzenes are the major contaminant in groundwater
- dieldrin appears to be the most significant contaminant in the sediments in the floodplain soil with 1,4 dichlorobenzene, cadmium, and chromium contributing to the impacts
- the early cleanup removed the majority of the soil contamination although an area of significant contamination remains

How did the contamination get to its present location?

The groundwater has become contaminated by the migration of the waste water from the Eastland Woolen Mill flowing into the soil and migrating into the bedrock. The early cleanup removed most of the contaminated soil above the bedrock. However, a limited area of contamination in the soil and the contamination in the bedrock remain.

The river sediments and floodplain soil have become contaminated by the downstream transport of the contamination. Contamination would flow along with the surface water until the river velocity would slow and the material would be deposited on the river bottom or floodplain. High flow periods could scour and re-suspend the material and cause further downstream transport of contaminants. Some of the contaminants have become entrained in the food chain causing an accumulation of contaminants such as dieldrin in the fish tissue.

What will be done about this contamination?

EPA is developing a Feasibility Study Report to present a range of alternatives to address the

contamination remaining at the Site. The cleanup options for groundwater and any remaining soil contamination of the Eastland Woolen Mill complex (Operable Unit I) include:

- monitor the contamination over time
- extract and treat the contaminated groundwater to prevent any further migration of the contamination
- extract and treat the contaminated groundwater and add in-situ reagents to destroy some of the contaminant mass in the overburden and bedrock.

The FS will also include an evaluation of those areas where the installation of future water supplies should be avoided to prevent further migration of the contamination as well as an evaluation of the need to extend the public water line.

For the river sediments and floodplain soils (Operable Unit II), the FS will evaluate:

- long-term monitoring of the contamination
- excavation of the contamination with off-site disposal
- excavation of certain "hot spot" areas of contamination with off-site disposal
- covering the contaminated sediments in place

EPA is still evaluating the need to develop cleanup alternatives for the Old Dump. Alternatives for the Old Dump would include placing a cover over the waste material or removing select materials.

Next Steps:

Once the FS for each Operable Unit is complete, EPA will issue a fact sheet describing the proposal to address the remaining contamination at the Site. This document is known as a Proposed Plan. EPA plans to develop a separate FS for the groundwater/Eastland Woolen Mill complex (Operable Unit I) contamination and one for the sediments, old dump, and floodplain soil (Operable Unit II). EPA plans to release the Proposed Plan for Operable Unit I during the summer of 2002, with a cleanup proposal for Operable Unit II to be released in 2003.

Status of Early Cleanup:

As documented in the April 2001 and December 2001 fact sheets, EPA is well into the early cleanup action at the Site. The excavation program was completed in 2001.

Cleanup Activities for 2002 include:

- treatment of a portion of the contaminated soils using a low temperature thermal technology
- complete the restoration of the roadway (Nokomis Road)
- complete the restoration of the river channel (section just north of the Route 7 bridge)

EPA began work at the Site in May 2002. Treatment and restoration work will continue through the fall. A winter shutdown (similar to this year) is currently planned with re-mobilization to complete the treatment of the soil and restoration of the area in 2003.

How You Can Comment On EPA's Upcoming Cleanup Proposal

Once the Proposed Plan is released, EPA will begin a formal public comment process . The supporting information for the Proposed Plan and cleanup decision will be available in the Administrative Record. The Administrative Record is available at the EPA Record Center and Corinna Town Offices at the Stewart Public Library.

There are three different ways in which individuals can express their comments on this Proposed Plan.

1. Comments can be submitted in writing to EPA.

2. Comments can be sent to the EPA RPM by email at:hathaway.ed@epa.gov.

3. Comments can be spoken into the official public record during the public hearing that will occur during the comment period.

EPA welcomes and encourages anyone with any concern relative to the cleanup to express their

opinion during the comment period. All comments are important. Any of the three mechanisms above are acceptable for providing comments and all of the comments are given equal weight.

Two types of public meetings will occur with respect to the Proposed Plan. The first will be an informational meeting to explain the proposed cleanup and answer any questions that may arise. Comments that are made during this meeting will not be part of the "official record". This meeting will focus on a discussion of the Proposed Plan and RI/FS and is considered informational only.

The second type of meeting, a public hearing, will occur during the official comment period. At this meeting, EPA will provide a brief summary of the cleanup proposal and then the floor will be open for spoken comments. A stenographer will be present to record all of the comments offered during this comment session. Comments made must be limited in duration in order to allow all individuals present to have an opportunity to have their verbal comments recorded into the record. EPA does not respond to any of the comments made at the meeting other than to indicate the time limits or when a request for clarification is made. At the close of the comments session, if time permits, EPA will be available to answer questions.

The comment period will last for thirty days unless an extension is requested. EPA will typically allow a 30 day extension if requested. Once the comment period is complete, EPA will assemble and evaluate all of the comments submitted. Appropriate revisions to the Proposed Plan will be made based on these comments. EPA will then sign the Record of Decision (ROD) describing the chosen cleanup plan. The ROD and a summary of responses to public comments will be made available to the public at the Corinna Town Offices at the Stewart Public Library and through EPA Records Center in Boston.

Technical Assistance Grant

The Sebasticook Committee for a Clean Environment (SCCE) is available to assist the public with any questions regarding the Site. The SCCE is able to access technical experts to obtain an independent opinion of the information provided by EPA. The meeting times for the SCCE are posted on the website: www.cattailpress.com. Should you have questions regarding the cleanup, feel free to contact SCCE members : Ken Dow (chair), Jackie Emerson, Tom Hanula, Don McDougal, Everett Simpson, or Linda Smith. For technical questions, you can contact Mike Deyling at Summit Environmental (207) 795-6009, 95 Main Street, Auburn, ME 04210, mdeyling@summitenv.com .

If you have questions or concerns about the Eastland Woolen Mill Superfund Site, please contact one of the following officials:

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Town of Corinna

Judy Doore, Town Manager

(207) 278-4183

corinna@tdstelme.net

All of the Site information is available for public review at the Corinna Town Library or EPA Record Center in Boston, MA

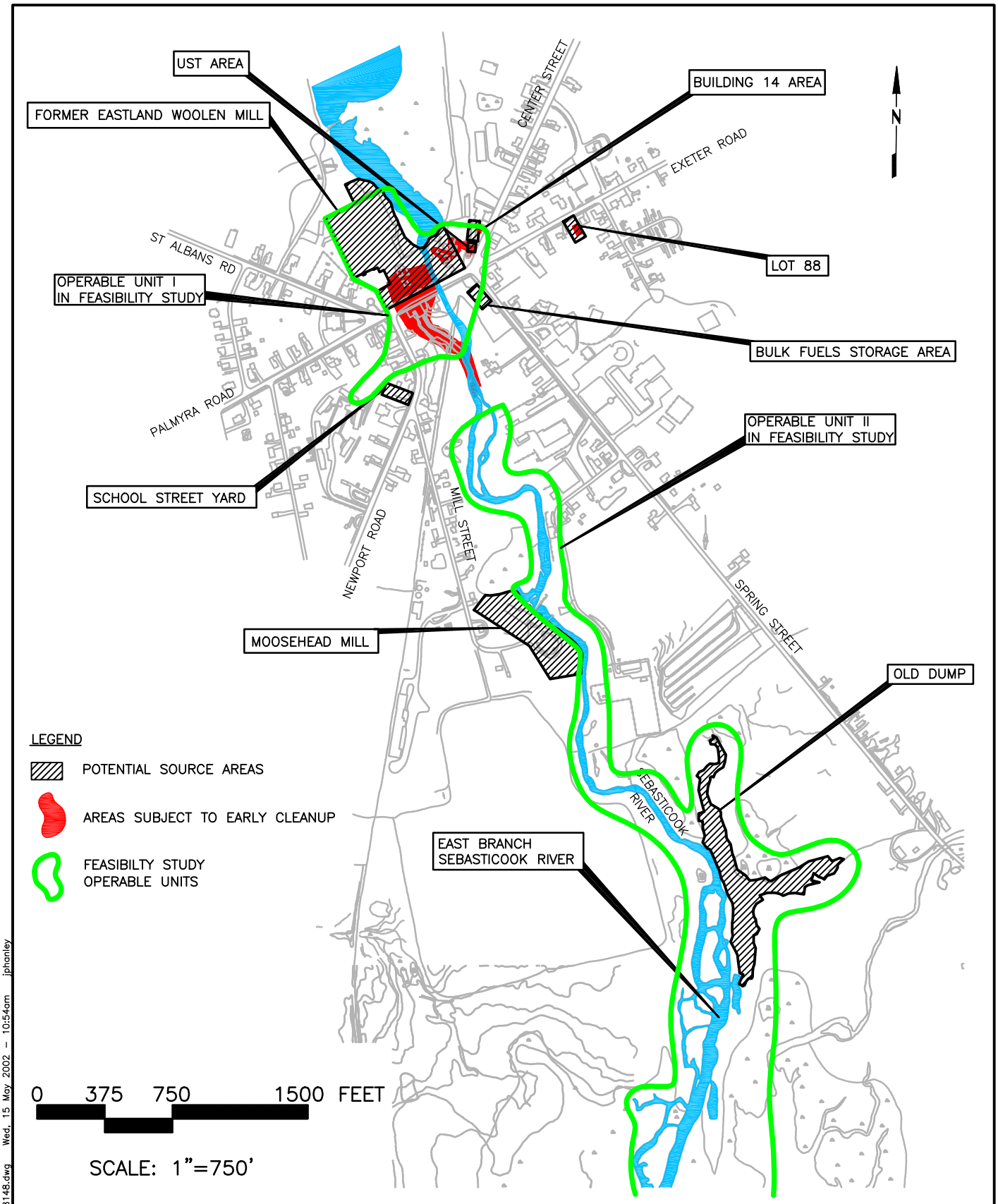

FIGURE 1
SITE PLAN SHOWING STUDY AREAS

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

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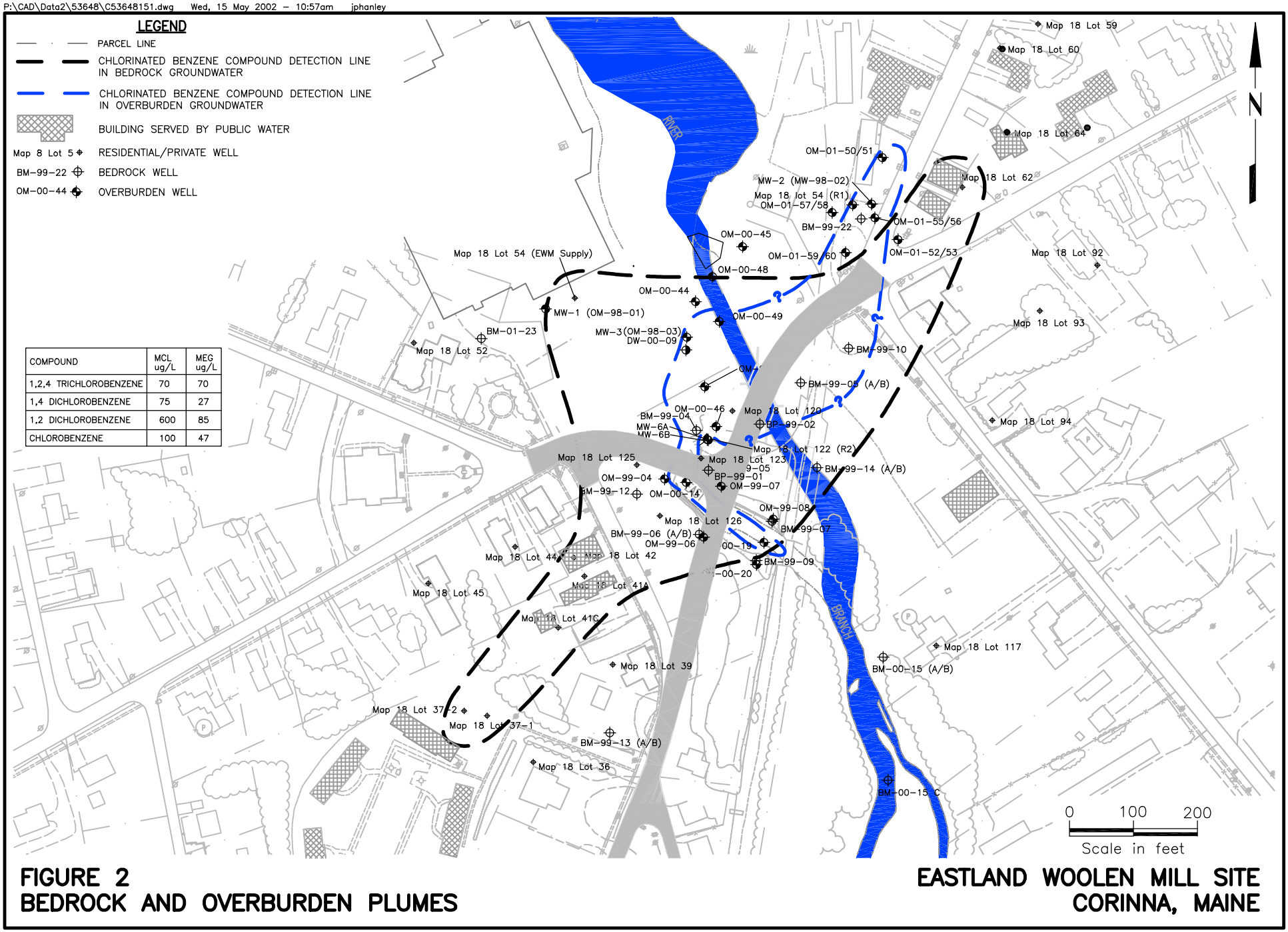

FIGURE 2
BEDROCK AND OVERBURDEN PLUMES

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

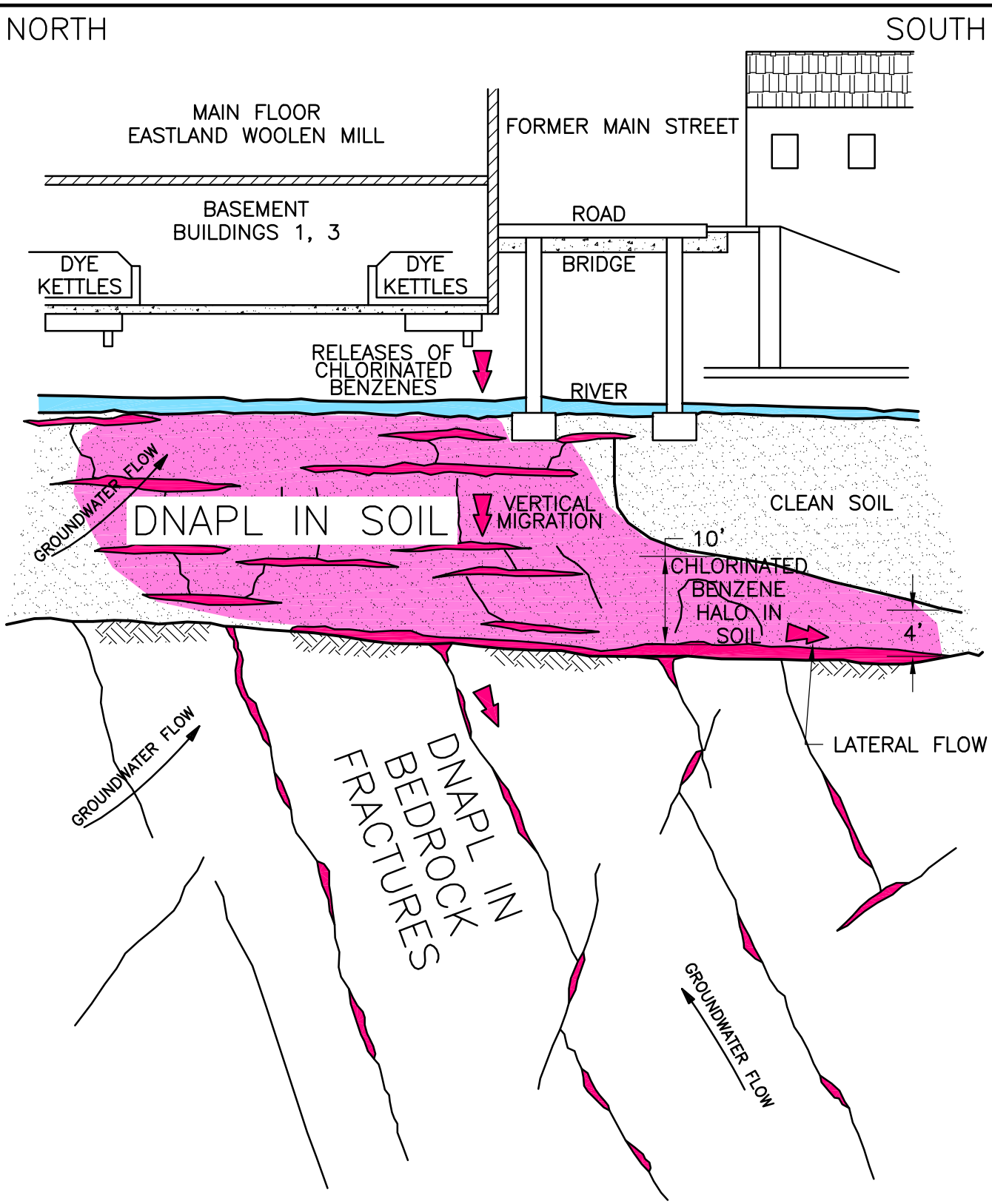

FIGURE 3
PRE–NTCRA CONCEPTUAL MODEL

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

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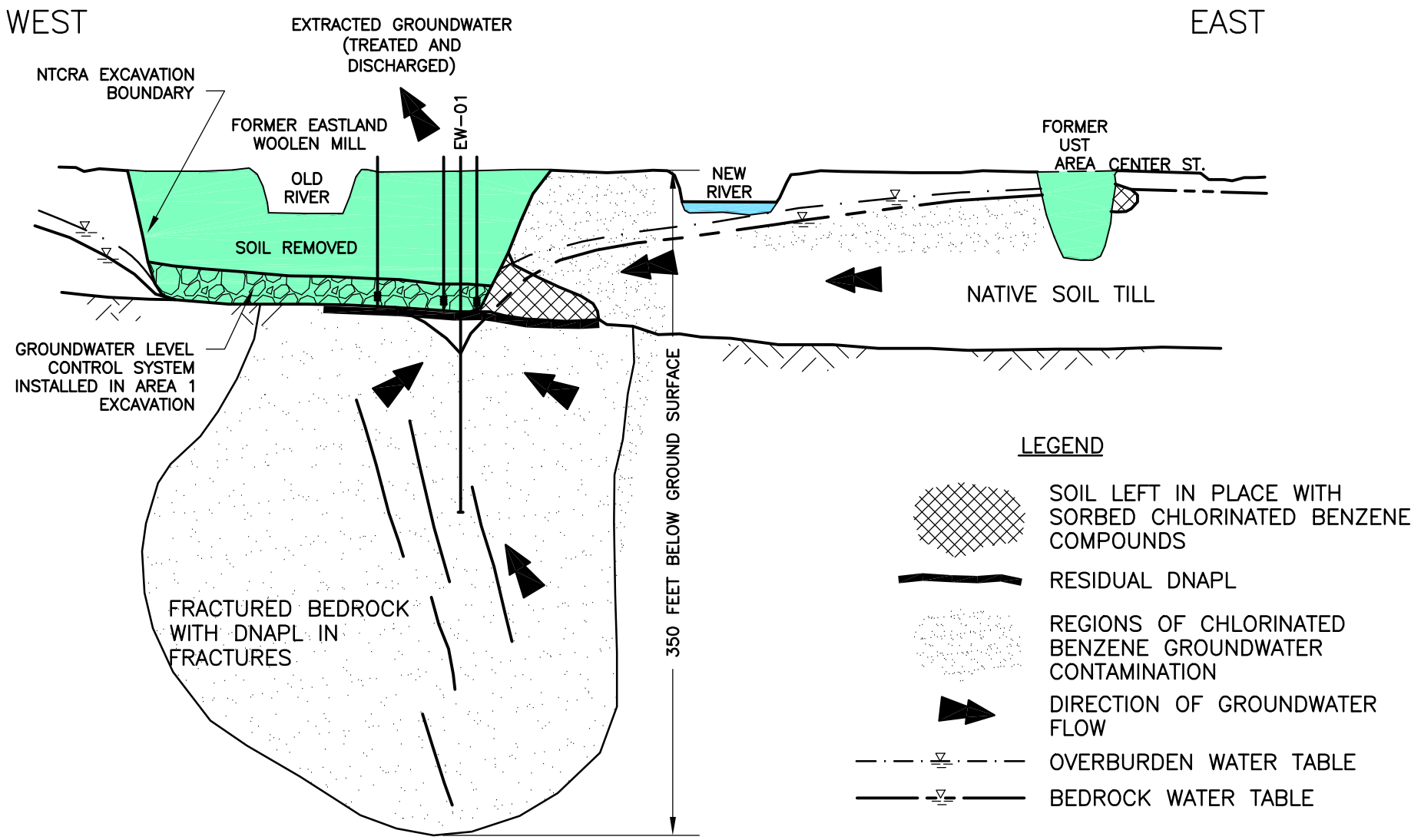

FIGURE 4
POST–NTCRA CONCEPTUAL MODEL

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE

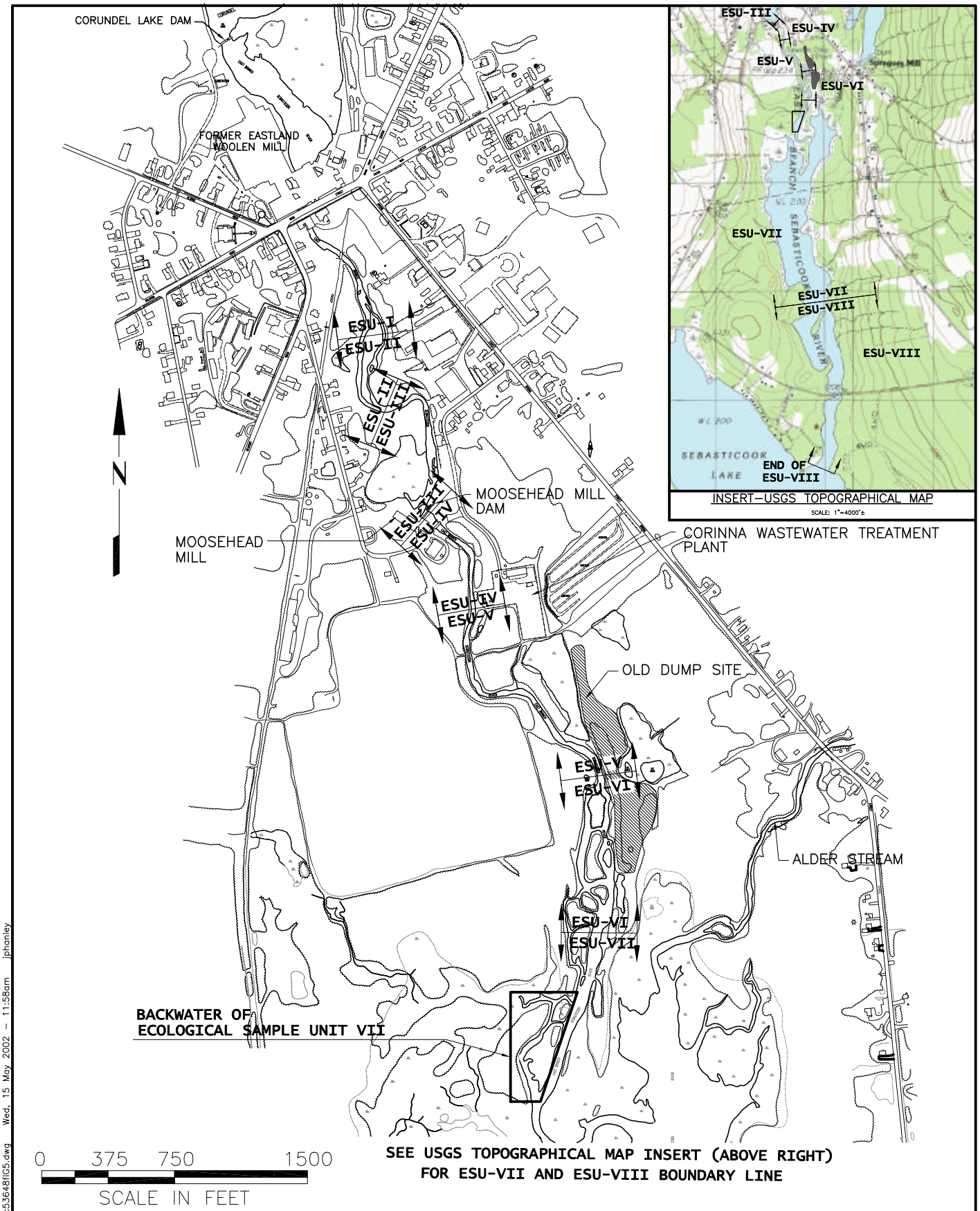

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FIGURE 5
LOCATION OF ECOLOGICAL STUDY AREAS
(ECOLOGICAL SAMPLE UNITS—ESUs)

EASTLAND WOOLEN MILL SITE
CORINNA, MAINE