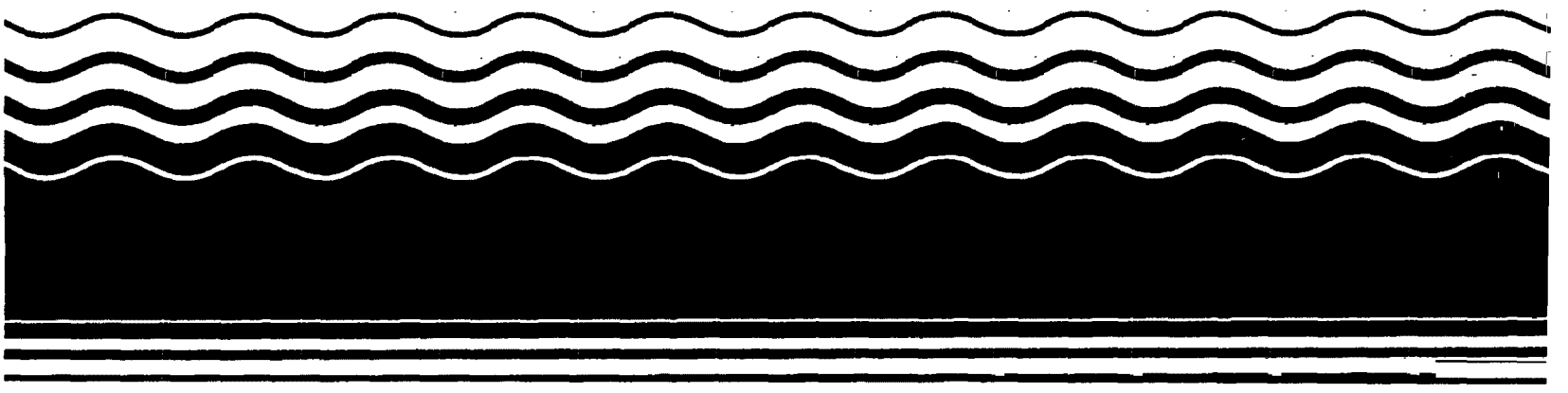
PB93-963703
United States Environmental Protection Agency
Office of Emergency and Remedial Response
EPA/ROD/R01-92/067
September 1992

EPA

Superfund Record of Decision:

Revere Textile Prints, CT



NOTICE

The appendices listed in the index that are not found in this document have been removed at the request of the issuing agency. They contain material which supplement, but adds no further applicable information to the content of the document. All supplemental material is, however, contained in the administrative record for this site.

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA/ROD/R01-92/067	2.	3. Recipient's Accession No.
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15. Supplementary Notes

PB93-963703

16. Abstract (Limit: 200 words)

The 15-acre Revere Textile Prints site is an industrial facility, located in Sterling, Windham County, Connecticut. Land use in the area is a mix of rural residential, industrial, and agricultural with interspersed woodlands and grassland meadows. The Moosup River and Sterling Pond are located southwest and southeast of the site, respectively. The property was originally developed in 1809 as a cotton mill and was used continually for this purpose until 1879. From 1879 to 1980, several textile processing facilities used the site to print colored and patterned fabrics, which involved using pigments, dyes, and solvents. Throughout the site's history, process rinse water and leftover printing pigments were disposed of into floor drains that drained into Moosup River. In 1980, a fire forced the facility to shut down. A subsequent state inspection revealed over 1,500 drums of waste material at the site as well as stained or colored soil near the former drum storage areas. In 1980, the state ordered the PRP to dispose of the 1,500 drums offsite along with an unspecified amount of stained soils; the action was completed in 1983. Between 1982 and 1983, W.F. Norman Company purchased the site for metal stamping operations, and subsequently abandoned

(See Attached Page)

17. Document Analysis a. Descriptors

Record of Decision - Revere Textile Prints, CT
First Remedial Action - Final
Contaminated Media: None
Key Contaminants: None

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 36
	20. Security Class (This Page) None	22. Price

(See ANSI-Z39.18) *See Instructions on Reverse*

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

EPA/ROD/R01-92/067
Revere Textile Prints, CT
First Remedial Action - Final

Abstract (Continued)

the site. In 1988, the Town of Sterling acquired the site for its current use as a light industrial park. In 1990, EPA ordered the Town of Sterling to remove and dispose of several 55-gallon drums and 5-gallon cans containing waste material. This ROD addresses site soil, sediment, ground water, and surface water. The results of the RI have shown no evidence of significant site contamination, and where contaminants were detected, the levels were usually significantly below the federal MCLs. Therefore, there are no contaminants of concern affecting this site.

The selected remedial action for this site includes no further action, with implementation of a 5-year sediment and ground water monitoring program. EPA has determined that the previous interim remedial activities have eliminated the need to conduct additional remedial actions and are adequate to protect human health and the environment. The estimated net present worth of this remedial action is $263,000 for the site monitoring activities.

PERFORMANCE STANDARDS OR GOALS: Not applicable.

DECLARATION FOR THE REVERE TEXTILE PRINTS CORPORATION RECORD OF DECISION

SITE NAME AND LOCATION

Revere Textile Prints Corporation Superfund Site
Sterling, Connecticut

STATEMENT OF PURPOSE

This decision document presents the selected No Action decision for the Revere Textile Prints Superfund Site (the Site), located in Sterling, Connecticut. This document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, the National Contingency Plan (NCP); 40 CFR Part 300 et seq. (1990). The Regional Administrator for Region I of the United States Environmental Protection Agency (EPA) has been delegated the authority to approve this Record of Decision.

The State of Connecticut has concurred with the No Action decision.

STATEMENT OF BASIS

This decision is based on the administrative record compiled for the Site which was developed in accordance with Section 113(k) of CERCLA. The administrative record is available for public review at the Sterling Public Library in Oneco, Connecticut and at the EPA Region I Waste Management Division Record Center in Boston, Massachusetts. The administrative record index (attached as Appendix E to this ROD) identifies each of the items which comprise the administrative record upon which the selection of the No Action remedy is based.

DESCRIPTION OF THE SELECTED REMEDY

EPA has determined that No Action is necessary to address the contaminants that remain at the Site under CERCLA. Previous response actions eliminated the need to conduct remedial action at the Site. EPA will perform a minimum of five years of additional monitoring of the ground water and sediments. In addition, pursuant to Section 121(c) of CERCLA, the Site will be reviewed to ensure that the No Action decision remains protective of human health and the environment.

DECLARATION

EPA has determined that no remedial action is necessary to ensure protection of human health and the environment. Therefore, the Site now qualifies for inclusion in the "sites awaiting deletion" subcategory of the Construction Completion category of the National Priorities List.

Sept. 30 1992
Date

Julie Belaga
Julie Belaga
Regional Administrator

REGION I

REVERE TEXTILE PRINTS CORPORATION SUPERFUND SITE
RECORD OF DECISION SUMMARY

SEPTEMBER 30, 1992

REVERE TEXTILE PRINTS CORPORATION

TABLE OF CONTENTS

REVERE TEXTILE PRINTS CORPORATION SUPERFUND SITE
ROD DECISION SUMMARY
SEPTEMBER 1992

I. REVERE TEXTILE PRINTS CORPORATION SUPERFUND SITE, STERLING, CONNECTICUT

The Revere Textile Prints Corporation Superfund Site (the Site) covers approximately 15 acres in the small rural Town of Sterling, Connecticut, in Windham County, situated one mile west of the Rhode Island border (refer to Figure 1). The Site is bounded by Industrial Park Road to the northwest, Main Street and Route 14 to the south and southwest and a very steep bedrock dominated slope to the northeast (refer to Figure 2).

The Moosup River and Sterling Pond are located southwest and southeast of the Site, respectively, on the opposite side of Main Street and Route 14. Sterling Pond is a man-made reservoir created by damming the river. Four spillway channels allow pond overflow to merge into the Moosup River downstream of the Site. One of these channels diverts water from Sterling Pond underground through a subgrade, covered man-made spillway channel consisting of a headrace and tailrace (Spillway Channel). The headrace passes through the Revere Site feeding an on-site pond, and discharging back into the tailrace and into the Moosup River. Along the northern bounds of the Site, adjacent to the steep slope, is an abandoned railway bed. Fresh-water wetlands were identified 0.9 miles downstream of the Site. No critical habitats of threatened or endangered species, or natural wildlife refuges were identified within a 1-mile radius of the Site.

The Site is an open, gently sloping area with elevation increasing to the northeast. The northwestern third of the Site has a topographic depression. The most significant surface features on the Site are four dilapidated building structures on the northern portion of the Site (designated as Buildings B3, B5, B10 and B11) and two additional structures identified as Buildings B16 and B18 adjacent to Route 14 (refer to Figure 2). Approximately 130 feet northwest of Building B3 is a partially underground structure that houses the remains of the former Town of Sterling water distribution and treatment system. The northern edge of the topographic depression discussed above, terminates at this structure. Building debris and foundations cover a large portion of the surface of the Site. EPA performed both an electro-magnetic geophysical survey and a seismic survey which suggest the existence of either a maze of underground utilities or numerous buried metal objects (possibly including foundation slabs and demolition debris). Both surveys found significant anomalous readings in the southwestern portion of the Site that were thought to consist of such materials.

Figure 1.

Revere Textile Prints Site Location Map

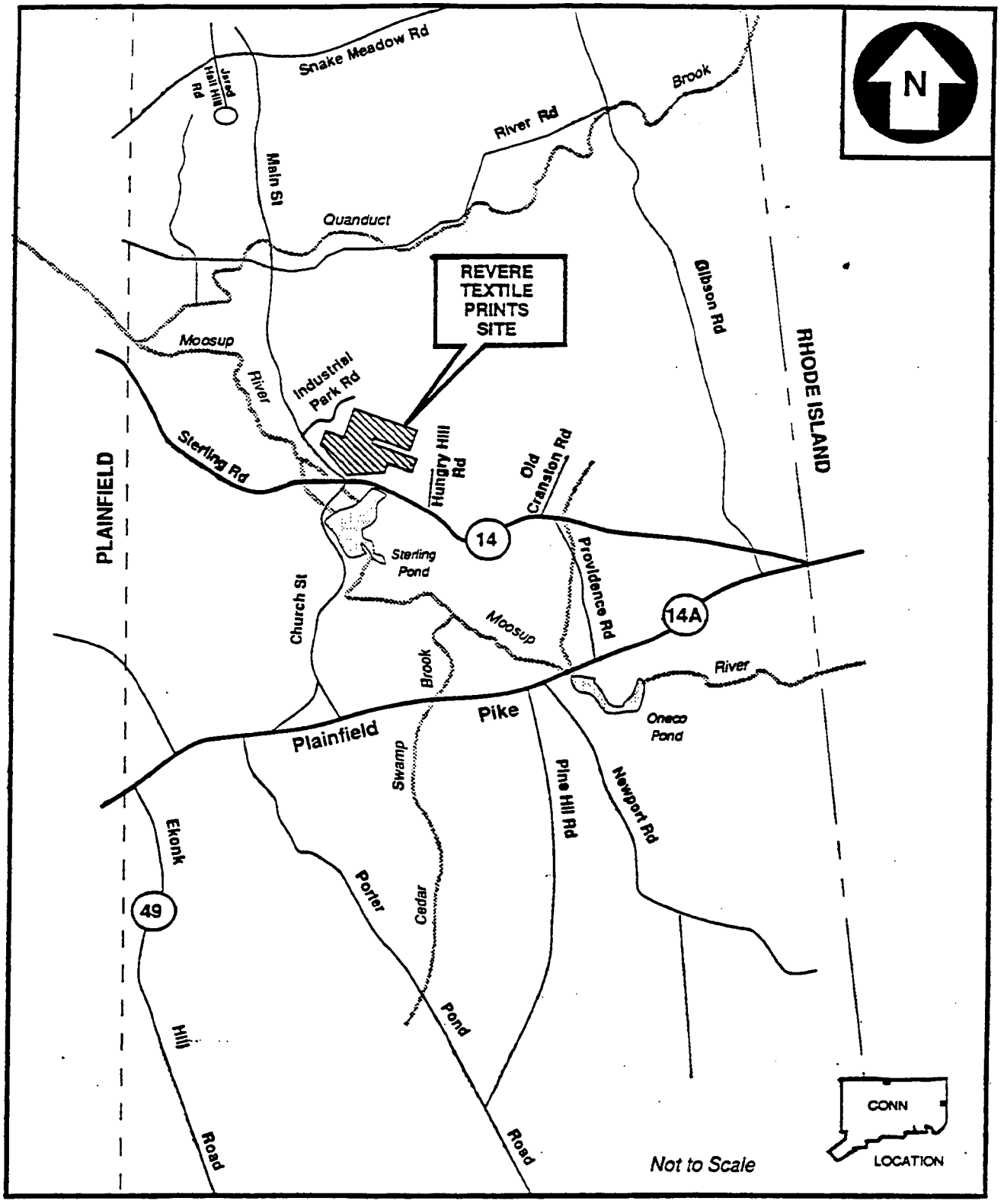
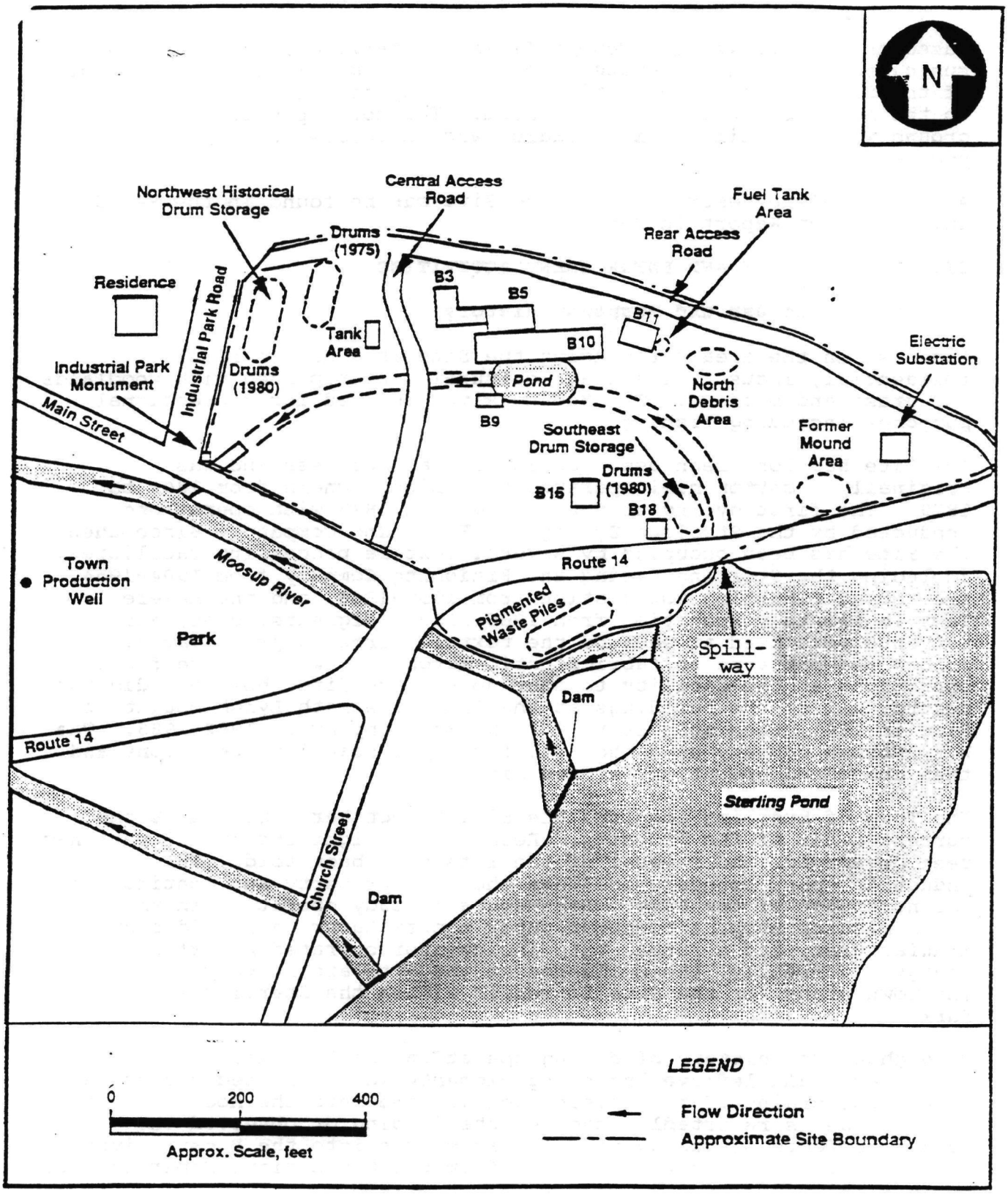


Figure 2.

Revere Textile Prints Site Map



Based on interviews with Town officials, Sterling is serviced by a municipal water supply system located approximately 1,000 feet west of the Site. All homes within the vicinity of the Site are connected to the municipal water supply system. The total population served by ground water within a 3-mile radius was calculated to be 4,538 people.

A more complete description of the Site can be found in the Remedial Investigation Report in Section 1.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

A. Land Use and Response History

Land use in the area surrounding the Site is a mix of rural residential, industrial and agricultural, interspersed with woodlands and grassland meadows. The Moosup River is used for recreational purposes including fishing.

The Site has long been used for industrial purposes and was originally a cotton mill operated by various owners from 1809 to 1879. The first dyeing of cotton began in 1879 with operations conducted by the Sterling Dyeing and Finishing Company. Since then, the Site has been occupied by several textile processing facilities, including the Sterling Dyeing and Finishing Company from 1904-1954, the Moosup Finishing Corporation from 1959-1960, and the Revere Textile Prints Corporation from 1966-1980. Pigments, dyes, and solvents were used at each of the textile firms to print various colors and patterns on fabrics until March 1980 when a fire forced operations at the facility to shut down. The fire, however, did not destroy all of the buildings at the Site. Kenneth Lynch bought the Site in 1981, then sold it to W.F. Norman Company in 1982-1983. The W.F. Norman Company used the Site for metal stamping operations and then abandoned operations at the Site.

The Town of Sterling acquired the Site in October 1988 and is the current owner of the property. Recently, a light industrial park has been developed, and several of the lots have been sold. The industrial park boundary includes the Site property and continues to the northeast of the Site. Businesses already operating in the park are a machine shop, a computer paper manufacturer, a liquid soap manufacturer, and a rubber tire incinerator operated by Oxford Energy. Currently, the buildings at the Site are in very poor shape. The Town plans for the Site to remain within the Sterling Industrial Park.

Throughout the history of dyeing operations at the facility, process rinse water and leftover printing pigments were reportedly disposed down floor drains of the Revere facility and into the Moosup River. Many residents reportedly observed the dumping or observed the colored effects of the dumping of waste dyes into the Moosup River. In 1978, after an order was issued from the Connecticut Department of

Environmental Protection (CTDEP) to drastically reduce the organic color levels being discharged directly into the Moosup River, the Revere Textile Prints Company apparently began drumming the wastes and having them shipped off the Site for treatment/disposal. The Revere Textile Print Company began storing large quantities of the wastes on the Site after their contracted drum hauler went out of business.

After the fire in 1980, an inspection of the Site in September 1980 by the CTDEP revealed that over 1,500 drums of waste material remained at the Site. The inspection revealed waste-containing drums spread out over the entire Site, and not placed specifically in waste storage areas. Some drums were lying horizontally and evidence of soil staining was apparent. A November 1980 inspection by CTDEP personnel revealed that the drums were eventually gathered and organized in two of the on-site buildings. Figure 2 identifies the historical drum storage areas and waste material piles.

During the period that the drums were on the Site, the property did not have adequate security measures and several drums leaked as a result of vandalism. As stated previously, visual inspection of the Site showed evidence of stained/colored soils located by the former drum storage areas and also pigmented waste piles by the fill area of the Spillway Channel and across Route 14 in the pile area.

EPA involvement with the Site commenced after the discovery of drum storage on the Site. In 1987, the Site was placed on EPA's National Priorities List (NPL) of hazardous waste sites, making it eligible for federal funding for investigation and cleanup. The drum storage area as well as certain historical waste disposal areas on Site, including the Spillway Channel and the Moosup River, had the potential to have been affected by the historical Site waste disposal activities. Therefore, EPA determined that contamination might reside in the ground water, surface water, soils and sediments connected with the historical waste disposal and storage areas of the Site.

Several sampling events were conducted in an effort to determine whether significant levels of contamination still existed in the soils, sediments, surface water, and ground water, and to identify the contents of the remaining drums. The results of these sampling events led to the initiation and subsequent completion of EPA's remedial investigation in 1992.

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

Removal Activities to Date

In September 1980, CTDEP ordered Kenneth Lynch to remove the drums remaining on the Site. In 1983, Kenneth Lynch hired Environmental Waste Removal (EWR) to remove approximately 1,500 drums from the

Site. At the same time, an unspecified amount of stained soils was removed for off-site disposal. The CTDEP inspected the Site following the removal and found that all of the drums had been removed. Although most of the contaminated soil was removed, stained soils and sludge piles remained on the Site in material fill areas and around the drum storage areas.

In 1989, EPA found several 55-gallon drums and 5-gallon cans containing liquid waste material, located in and around the remaining Site buildings. The drums were sampled in June 1989. On May 31, 1990, EPA issued a unilateral administrative order pursuant to Section 106 of CERCLA to the Town of Sterling to remove and dispose of the remaining drums off the Site. The Town of Sterling performed the removal and disposal in 1991.

B. Enforcement History

EPA issued a unilateral administrative order to the Town of Sterling on May 31, 1990, to remove and dispose of the remaining drums off the Site. The Town of Sterling performed the removal and disposal in 1991.

On January 29, 1991, EPA requested that four parties who either owned or operated the facility, generated wastes that were shipped to the facility, arranged for the disposal of wastes at the facility, or transported wastes to the facility provide certain information regarding the identification, nature, and quantity of materials that have been generated, treated, stored, disposed of at the Site or transported to the Site. EPA also requested information relating to the ability of a person to pay for or to perform investigations and a cleanup of the Site.

III. COMMUNITY PARTICIPATION

Throughout the Site's history, community concern and involvement has been low. EPA has kept the community and other interested parties apprised of the Site activities through fact sheets, press releases and public meetings.

EPA conducted interviews with local officials and residents during September 1990 to assess community concerns. On October 15, 1990, EPA issued a press release to describe the plans for the Remedial Investigation. During January, 1991, EPA released a community relations plan which outlined a program to address community concerns and keep citizens informed about and involved in activities during remedial activities.

On August 19, 1992, EPA updated the administrative record which had previously been made available for public review at EPA's offices in Boston and at the Sterling Public Library in Oneco, Connecticut. EPA published a notice and brief analysis of the Proposed Plan in The Norwich Bulletin on August 20, 1992 and made the plan available to

the public at the Sterling Public Library.

On September 2, 1992, EPA held an informational meeting to discuss the results of the Remedial Investigation and to present the Agency's Proposed No Action Plan. Also during this meeting, the Agency answered questions from the public. From August 21, 1992 through September 19, 1992, the Agency held a 30-day public comment period to accept public comment on the No Action remedy outlined in the Proposed Plan and on any other documents previously released to the public. During the September 2, 1992, informational meeting, the Agency was prepared to accept any oral comments. No oral comments were made during this meeting. A transcript of this meeting (Appendix C of this ROD) and the written comments received during the comment period and the Agency's responses to these comments are included in the attached responsiveness summary (Appendix B).

IV. SCOPE AND ROLE OF NO ACTION REMEDY

EPA has determined that no further CERCLA action is required at the Revere Textile Prints Corporation Site. The levels of contaminants detected in the soils, sediments, ground water, surface water, and air at the Site do not appear to pose an unacceptable risk to human health and the environment based upon the authority of CERCLA to respond to releases.

EPA will continue to monitor the ground water and sediments at the Site for a period of five years. Consistent with Section 121(c) of CERCLA, EPA will also perform five-year reviews of the Site to ensure that the No Action decision remains protective of human health and the environment.

The decision by EPA not to pursue further action at the Site is not a determination that no action is warranted under other federal or state regulations and statutes. In addition, EPA has the authority to revisit the No Action decision even if the Site is removed from the NPL. This could occur if future conditions indicate that an unacceptable risk to human health or the environment would result from the exposure to contaminants at the Site.

V. SUMMARY OF SITE CHARACTERISTICS

The significant findings of the Remedial Investigation are summarized below:

A. Soil

Based on U.S. Geological Survey (USGS) surficial maps, the overburden at the Site and vicinity primarily consists of two types of surficial deposits: glacial till and stratified glacial outwash (Harwood and Goldsmith, 1971a). According to the regional well and test boring data, the till varies in thickness from 8 to 80 feet with average values of less than 10 feet. The till typically consists of

heterogeneous, dense, poorly sorted, light-gray to tan silt, sand, gravel, boulders, and minor clay. The stratified outwash ranges in size from boulder/cobble/gravel to coarse/fine sand, silt and clay. The overburden thickness increases to the west from the Site towards the center of the valley. The town well field 1000 feet west of the Site boundary (across the Moosup River) is located in an area of overburden 92 feet thick.

EPA investigated soils throughout the Site using various field screening techniques, and laboratory analysis of soil samples. These activities are described in detail in Section 4 of the RI Report. Site soils were sampled and analyzed for volatile organic contaminants (VOCs), base neutral acid extractables (BNAs), pesticides, polychlorinated biphenyls (PCBs), metals, and cyanide.

The highest VOC concentration levels were recorded at the four foot depth interval from MWT-09-04 (acetone at 200 micrograms per kilogram (ug/kg), ethylbenzene at 400 ug/kg, and xylene at 6100 ug/kg), and adjacent subsurface sample SL-02-D (acetone at 480 ug/kg). These low levels of VOC contamination appear to be limited to a very small area and are probably associated with minor spills and/or releases associated with the movement of drums/tanks and/or equipment across the Site. The data do not indicate any major spills or sources of VOC contamination.

Soil sampling and subsequent laboratory analysis of BNAs was conducted during Phase II of the remedial investigation. Analytical results for the surface and subsurface soil sampling programs are presented in Section 4 of the RI Report with more discussion of the results in Section 5 of that report and in the December 1991 Technical Directive Memorandum.

Numerous BNAs, primarily polynuclear aromatic hydrocarbons (PAHs), were identified in the surface and subsurface soils. Low PAH concentrations were distributed throughout the entire Site; however, concentrations were elevated in some areas.

A number of metals including lead, barium, copper, iron, and zinc are elevated above the highest reported background concentrations in certain localized areas of the Site. Elevated concentrations of aluminum, beryllium, and manganese were found in soils at the Northwest Historical Drum Storage Area. The Southeast Drum Storage Area, the Rear and Central Access Roads, the Fuel Tank Area, and the Northern Building Perimeter Area all showed elevated concentrations of copper and/or lead. Chromium, magnesium, and nickel were found at elevated levels in the Pigmented Waste Pile and iron was found at elevated levels in the Former Mound Area. Arsenic was found at several locations.

The occurrences of elevated metals at these areas may be the result of pigments and dyes used at the Site, and spills and/or leaks of materials during the movement of equipment and vehicles across the

Site or from drums stored on the property. The occurrence of vanadium at elevated levels along the Access Roads may be the result of fuel spills from vehicular movement.

Pesticide/PCB field screening results and laboratory analysis indicate that chlorinated pesticides are not widespread at the Site. No PCBs were detected in the field screening or the laboratory analysis.

B. Ground Water

The Moosup River flows past the Site and the well field in a northwesterly direction and recharges the overburden aquifer in the vicinity of the town well field. Due to the shallow water table, the surficial aquifer also discharges to the Moosup River in the vicinity of the Site. Ground water was characterized during the Site hydrogeological study as flowing in a southwesterly direction across the Site towards the Moosup River.

Potential impacts of increasing ground water withdrawal from the Moosup River aquifer were evaluated. Based on the town supply well (installed 1985) pump test data, geologic logs of wells in the immediate vicinity and a study performed by BCI-Geonetics (BCI-Geonetics, 1988) EPA concludes that two surficial aquifers, a lower and upper aquifer, are present at the municipal well field area directly across Moosup River from the Site. Sterling's municipal well PW-01 is screened in the lower aquifer, which is confined by a layer of silt and clay that has a low, but measurable, permeability. Seventy-two (72) hour pump tests of well PW-01 pumped ground water at a constant rate (550 gpm) from the lower aquifer. Based on these tests, transmissivity of the aquifer was estimated at 4,144 ft^2/day. The upper aquifer appeared unconfined. The low-permeability layer does not appear to exist under the Site and the overburden aquifer acts as one entity.

Ground water sampling was conducted in three phases (Phase I, Phase II, and Phase III). During Phase I, ground water samples were collected on the Site from 14 overburden monitoring wells and three bedrock wells, two existing overburden monitoring wells, an existing on-site bedrock production well, an old public supply source, and the town supply well. All water samples were analyzed for VOCs, BNAs, pesticides, PCBs, metals, cyanide, and physical characteristics. Well PB-03 and ground water source area PW-02 are considered to be representative of background conditions.

During Phase II, ground water samples were collected again from all wells discussed above. All samples were analyzed for the same parameters as in the Phase I round.

High concentrations of aluminum and iron (which are not priority metal contaminants) in Phase I and II data suggested that those water samples contained appreciable levels of particulate matter.

Particulates, if not part of the matter moving with ground water, may bias the results of metal analysis. This bias can lead to an over estimation of concentrations and imply exceedences of maximum contaminant levels (MCLs) where, in fact, there are none. Because of this, EPA decided to conduct a third sampling phase using a peristaltic pump rather than a bailer for purging and sampling of all the wells. Purging and sampling of the wells was performed at low extraction rates until turbidity stabilized. Once stabilized, an unfiltered water sample was taken for metals analysis. This procedure was used in order to limit the artificial entrainment of particulates which can occur if the well is overstressed during a bailing operation.

None of the sampled wells had organic compound concentrations above MCLs. None of the monitoring wells showed any detectable concentrations of VOCs during the Phase II sampling round.

BNAs were detected in four monitoring wells, with two of the wells showing very low but quantifiable concentrations. No pesticides or PCBs were detected in the wells sampled at the Site. No BNAs, pesticides, or PCBs were detected in the town water supply samples. (Note: Phase I BNA and pesticide/PCB data were rejected due to exceedence of sample holding times.)

Metal concentrations in off-site public supply wells, and on-site background, bedrock, and most overburden monitoring wells were quite low during sampling rounds one and two. However, concentrations for two priority metals in four overburden wells exceeded MCLs. The chromium MCL was exceeded in two wells in Phase I and two other wells in Phase II. The arsenic MCL was exceeded in one well in Phase I. The spotty nature of these exceedences coupled with elevated concentrations of aluminum and iron (which are non-priority metals) suggested to EPA as discussed above, that the data could be biased by particulate matter in the water samples. A third round of sampling was performed using low extraction rates during purging and sampling. Particulate matter in all water samples (as measured by turbidity) was quite low, as were all metal concentrations. There were no exceedences of MCLs.

It is the judgement of EPA that the elevated metal concentrations in Phase I and II are a result of the purge and sampling method (bailer) used at that time. Those metal concentrations are not characteristic or representative of the total metals load moving through the aquifer under natural flow conditions. Therefore, the Agency is using only the metal concentrations for water samples from Phase III to determine risk at the Site.

C. Ground Water Flow

RI data indicate that ground water moves in a southwesterly direction across the Site toward the Moosup River. Two surficial aquifers, a lower and upper aquifer, are present in the municipal well field

area. A low-permeability layer of silt and clay separates the upper and lower aquifers. However, based on the RI study, a low-permeability layer does not appear to exist under the Site and the overburden aquifer acts as one entity.

The RI data show levels in bedrock wells PB-01 and PB-02 are artesian (upward gradients). Water level elevations in these two wells suggest that locally, fractures in the bedrock may have a poor hydraulic connection with the surficial aquifer.

D. Surface Water

Twelve surface water samples were collected from the on-site pond and Spillway Channel, Sterling Pond, and the Moosup River during the RI. Phase I and II sampling locations are shown in Section 4 of the RI Report. All surface water samples were analyzed for complete VOCs, BNAs, pesticides, PCBs, metals, cyanide, and physical characteristics.

Twenty-one sediment samples were collected from the water bodies located on and adjacent to the Site during Phases I and II. Six sediment samples were collected during the most recent round of sampling completed in July 1992. These samples were used for a round of biological assay tests incorporating indigenous benthic organisms for analysis. All sediment samples contained greater than 30 percent solids to assure valid data. All the samples were analyzed for VOCs, BNAs, pesticides, PCBs, metals and cyanide.

No VOCs were detected in surface water at the Site. However, low-level VOC contamination is present in sediments at the Site. Acetone and 2-butanone were most frequently detected while methylene chloride, toluene, and carbon disulfide were less pervasive.

No BNAs, pesticides, or PCBs were detected in the surface water at the Site. However, BNAs are widely distributed across the Site in sediments and were detected at all sampling locations during Phases I and II. Section 4 in the RI Report contains the analytical results of sediment BNA, pesticide, and PCB analysis. Only four pesticides were detected and all concentrations were at or near detection levels.

With the exception of one sampling location, no metals were detected in surface water at concentrations above those typically occurring naturally. In sediments, only copper was detected at concentrations significantly exceeding background levels. Low levels of other metals were detected particularly from sediment samples collected downstream of the Site.

The results of the biological assay testing indicate that no significant biological accumulation is occurring as a result of the concentrations of contaminants present in the sediments associated with the Site.

E. Air

The results of the continuous and fenceline air monitoring during the intrusive activity at the Site are negligible. The only significant sustained contamination readings were noted during the exploration of underground storage tanks (USTs) in the building depicted near grid location 7+50, 150 L in Section 4 of the RI Report. However, values obtained on soils quickly dissipated in the open air to nondetectable levels.

F. Underground Storage Tanks

A series of tank vents observed during a Site walkover in May of 1990 were investigated during the RI. The investigation included monitoring of the void-space of the tanks using an OVA probe, sampling of the tank contents, and a boring program designed to characterize the overburden immediately surrounding the tanks for signs of environmental impact. The three tanks were found to contain petroleum products. In addition, an area of soil adjacent to the tanks next to Building B10 also found to be contaminated with petroleum products.

A complete discussion of Site characteristics can be found in the Remedial Investigation Report in Section 3.

VI. SUMMARY OF SITE RISKS

A. Human Health Risk Summary

A 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. The public health risk assessment followed a four step process: 1) contaminant identification, which identified those hazardous substances which, 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) toxicity assessment, which considered the types and magnitude of adverse health effects associated with exposure to hazardous substances, and 4) risk characterization, 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. The results of the public health risk assessment for the Site are discussed below, followed by the conclusions of the environmental risk assessment.

Fifty-eight contaminants of concern, listed in Tables 1, 2, and 3 of this Record of Decision were selected for evaluation in the risk assessment. These contaminants constitute a representative subset of the more than 77 contaminants identified at the Site during the Remedial Investigation. The 58 contaminants of concern were selected

to represent potential Site related hazards based on toxicity, concentration, frequency of detection, and mobility and persistence in the environment. A summary of the health effects of each of the contaminants of concern can be found in **Section 6 and Appendix M** of the Risk Assessment in the RI.

Potential human health effects associated with exposure to the contaminants of concern 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 uses, most probable future uses, and location of the Site.

Potential current receptors of Site related contamination are trespassers on the Site and recreational users of the Moosup River. Under present conditions the Site is completely accessible to trespassers, therefore a trespasser scenario was developed for incidental ingestion of and dermal contact with surface soils. In addition, exposure to sediments from the Moosup River is likely by youths. Therefore, a recreational exposure scenario was developed for incidental ingestion and dermal contact with sediments. There is also a small pond on the Site and the frequent use of the Site by trespassers makes it a present and potential future exposure pathway. Therefore, a recreational exposure scenario was developed for incidental ingestion and direct contact with surface water.

Future land use of the Site is expected to involve industrial and commercial activity as it has in the past. Because there is reasonable certainty that the Site will continue to be used for industrial purposes and not residential purposes, an excavation worker scenario was also developed for direct contact and incidental ingestion of subsurface soils. Risk was also calculated based upon future residential exposure to both surface and subsurface soils, and ground water.

The following is a brief summary of the exposure pathways evaluated. A more thorough description can be found **in Section 6 of the RI.** For contaminated ground water, a lifetime of consuming 2 liters of water per day was assumed. For contaminated soil, dermal contact and incidental ingestion of soil was evaluated for a trespasser assuming exposure 91 days a year for 10 years. Dermal contact and incidental ingestion of soil was evaluated for an excavation worker assuming exposure 65 days a year for 1 year. For contaminated sediments, exposure to an adolescent (9-18 years old) was estimated. Dermal contact with and incidental ingestion of sediments was evaluated assuming exposure 52 days a year for 10 years. Dermal contact and incidental ingestion of surface water by an adolescent (9-18 years old) while swimming was evaluated assuming exposure 26 days a year for 10 years. For each pathway evaluated, an average and a reasonable maximum exposure estimate was generated corresponding to exposure to the average and the maximum concentration detected in that particular medium.

Excess lifetime cancer risks were determined for each exposure pathway by multiplying the exposure level with the chemical specific cancer 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. Current EPA practice considers carcinogenic risks to be additive when assessing exposure to a mixture of hazardous substances.

The hazard index was also calculated for each pathway as EPA's measure of the potential for non-carcinogenic health effects. A hazard quotient is calculated by dividing the exposure level by the reference dose (RfD) or other suitable benchmark for non-carcinogenic health effects for an individual compound. Reference doses have been developed by EPA to protect sensitive individuals over the course of a lifetime and they reflect a daily exposure level that is likely to be without an appreciable risk of an adverse health effect. RfDs are derived from epidemiological or animal studies and incorporate uncertainty factors to help ensure that adverse health effects will not occur. The hazard quotient is often expressed as a single value (e.g. 0.3) indicating the ratio of the stated exposure as defined to the reference dose value (in this example, the exposure as characterized is approximately one third of an acceptable exposure level for the given compound). The hazard quotient is only considered additive for compounds that have the same or similar toxic endpoint and the sum is referred to as the hazard index (HI). (For example: the hazard quotient for a compound known to produce liver damage should not be added to a second whose toxic endpoint is kidney damage).

Tables 1 through 7B can be found in Appendix A of this ROD.

Table 1 depicts the summary of contaminants of concern in ground water and their frequency of detection at the Site during the RI.

Table 2 depicts the summary of contaminants of concern in surface soils on the main Site and their frequency of detection during the RI.

Table 3 depicts the summary of contaminants of concern in subsurface soils at the main Site and their frequency of detection during the RI.

Table 4 depicts the carcinogenic risk summary for the contaminants of concern in ground water evaluated to reflect potential future

ingestion of ground water corresponding to the average and the reasonable maximum exposure.

Table 5 depicts the non-carcinogenic risks for the contaminants of concern in ground water evaluated to reflect potential future ingestion of ground water corresponding to the average and the reasonable maximum exposure scenarios.

Table 6 depicts the carcinogenic risk summary for the contaminants of concern in subsurface soil evaluated to reflect potential future ingestion and direct contact with subsurface soils corresponding to the average and reasonable maximum exposure scenarios.

Tables 7A and **7B** depict the cumulative risk summary for the carcinogenic and noncarcinogenic contaminants of concern for each pathway analyzed. For a more detailed analysis on the risk for each contaminant of concern, see Appendix L of the RI.

EPA has determined that the Site does not currently pose an unacceptable threat to human health. The ground water on Site does not currently pose a threat to human health because it is not currently used as a drinking water source. Water samples from the municipal supply well were tested and results indicate that current risks are insignificant.

Samples collected from the surface water indicate that surface water currently poses no carcinogenic risk. Noncarcinogenic inorganics were detected in surface water samples. However, ingestion of and dermal contact with Main Site surface water while swimming resulted in hazard index values below one ($3x10^{-3}$), an acceptable risk.

The current risk from exposure to contaminated soil was calculated for both carcinogens and non-carcinogens. These risks were all quite low and are found to be acceptable by EPA. EPA divided the Site into two areas of study for the purpose of calculating current risk from exposure to soils. These two areas are called the Main Site area and the Pigmented Waste Pile area. The carcinogenic risk from soil to trespassers and recreational users of the Pigmented Waste Pile area was very low ($1x10^{-8}$). The hazard index value for noncarcinogenic risk from soil to trespassers and recreational users of the Pigmented Waste Pile area was also very low -- less than one ($3x10^{-2}$). The carcinogenic risk from soils to trespassers on the Main Site area was estimated to be $1x10^{-4}$ and the hazard index value for noncarcinogenic risk from soils to trespassers of the Main Site area was estimated to be less than one ($8x10^{-2}$).

EPA also evaluated the human risk currently posed by sediments at the Site. Risk from exposure to Main Site sediments, collected from the Spillway Channel and the on-site pond, were evaluated for trespassers. The carcinogenic risk associated with these sediments was very low ($1x10^{-5}$). The hazard index value for noncarcinogenic risks to these sediments was lower than one -- ($3x10^{-2}$), and is

therefore, considered acceptable by EPA. The carcinogenic risk to a recreational user from Moosup River sediments collected near the Pigmented Waste Pile area and down-river calculated was estimated to be very low -- $4x10^{-6}$ and $1x10^{-6}$, respectively. The hazard index value for noncarcinogenic risks from these sediments was lower than one -- ($4x10^{-2}$ and $3x10^{-2}$ respectively). These risks are all quite small and are acceptable to EPA.

In addition to finding that the Site currently poses no unacceptable risk to human health, EPA has also determined that the Site will not pose a threat to human health in the future. The future carcinogenic and noncarcinogenic risks for surface water, Pigmented Waste Pile area surface soils, Main Site and all Moosup River sediments were estimated to be the same as the current risk outlined above and are, therefore, found to be acceptable to EPA.

After reviewing site-specific information, EPA has determined with reasonable certainty that the use of the Site in the future will remain industrial. Given this determination, EPA estimated the future risk in an industrial scenario to an excavation worker as the most probable and potential risk scenario. The carcinogenic risk under this scenario was estimated to be $2x10^{-5}$ and the noncarcinogenic risk had an estimated hazard index of 1. These risks are small and are, therefore, acceptable to EPA. Finally, the carcinogenic risk in the future from ingestion of ground water, after recalculation, poses a very small risk. See Table 7A. The hazard index for the maximum detected arsenic concentration in ground water (19 ug/L) slightly exceeds one. However, EPA does not believe that arsenic levels in ground water warrant taking action at the Site because the detected concentration is well below the MCL of 50 ug/L.

At the Site, there are very low levels of contaminants in the ground water, surface water, surface and subsurface soils and sediments. The cancer and non-cancer risks that would result from current or probable future exposure to these contaminants are very slight and are within a range that EPA considers acceptable. This strongly supports the decision to select No Action.

B. Ecological Risk Summary

Sediment toxicity testing was performed by EPA on two benthic invertebrate organisms, chironomus tentans and hyallela azteca. Sediment samples were homogenized and placed into test chambers and then overlain with water and CaCO3. Each chamber was then inoculated with 20 organisms. The tests were performed to assess the sensitivity of these organisms to the sediment samples. At the end of ten days the organisms were removed, counted and measured.

The data from the hyallela azteca test did not indicate toxic effects in survival or growth from any of the sediment samples. The chironomus tentans test did not indicate any toxic effects on survival but did have some effect on growth from the sediments

sampled from the on-site pond. However, the effects on growth were not significant enough to warrant any remedial action. A more complete discussion of the results of the toxicity testing performed can be found in Section 6 of the RI.

VII. DESCRIPTION OF NO ACTION ALTERNATIVE

No construction activities would be associated with the No Action decision. However, both ground water and sediment monitoring would be performed to provide information regarding the nature of ground water and area sediment in the event that any changes should occur.

At a minimum, quarterly monitoring for the first year followed by semi-annual monitoring for the next four years would be performed to confirm that no unacceptable exposures will occur in the future. The need for additional monitoring wells would be examined. These, plus a subset of the existing monitoring wells, and the public supply well, would be selected as ground water monitoring points. In addition, the ground water monitoring would provide a better understanding of rate of ground water flow. Due to the present low concentration of contaminants at the Site, the analytical methods that would be used for ground water must be capable of achieving very low detection limits. In addition to the monitoring and consistent with CERCLA, the Site would be reviewed at least once every five years to confirm that the decision to take no action remains protective. The estimated net present worth of the five-year monitoring program would be $263,000.00.

VIII. DOCUMENTATION OF NO SIGNIFICANT CHANGES

EPA presented a Proposed Plan (preferred No Action alternative) on August 21, 1992 for remediation of the Site based on the results of both the human health and ecological risk assessments performed as part of the RI. The No Action alternative presented in the Proposed Plan includes monitoring of the ground water and sediments at the Site for a minimum of five years. The Proposed Plan described EPA's proposal to take no further action at the Revere Textile Prints Corporation Site. No significant changes have been made to the No Action recommendation described in the Proposed Plan.

IX. STATE ROLE

The Connecticut Department of Environmental Protection has reviewed the various alternatives and has indicated its support for the No Action decision. The State of Connecticut concurs with the selected remedy for the Revere Textile Prints Superfund Site. A copy of the declaration of concurrence is attached as Appendix D.

APPENDIX A

Human Health Risk Tables

TABLE 1:
SUMMARY OF CONTAMINANTS
OF CONCERN IN (GROUND WATER)

Contaminants of Concern	Average Concentration (ug/l)	Maximum Concentration (ug/l)	Frequency of Detection*
Tetrachloroethylene	3	14	1/40
Chrysene	2	1	1/20
Phenol	3	6	2/20
Aluminum	86	2560	12/16
Arsenic	7	19	2/16
Barium	10	102	12/16
Chromium	2	4	1/16
Copper	4	124	3/16
Iron	1583	2500	14/16
Manganese	203	2096	13/16
Zinc	6	12	3/16

* Frequency of detection values were calculated using the geometric mean where a value of one-half the detection limit was incorporated into the equation for contaminant non-detect values.

TABLE 2:
SUMMARY OF CONTAMINANTS
OF CONCERN IN SOILS (MAIN SITE- -SURFACE)

CONTAMINANT OF CONCERN	AVERAGE CONCENTRATION (ppb)	MAXIMUM CONCENTRATION (ppb)	FREQUENCY OF DETECTION
Acetone	8	280	3/37
Methylene Chloride	5	310	13/37
Toluene	3	10	4/37
Xylenes	3	31	9/33
Acenapthene	76	2400	11/23
Acenapthylene	81	4000	12/22
Anthracene	85	14000	22/28
Benzo(a)anthracene	159	32000	28/29
Benao(a)pyrene	169	32000	29/30
Benzo(b)fluor anthene	263	44000	29/30
Benzo(g,h,i) perylene	115	12000	23/29
Benzo(k)fluor anthene	202	16000	28/30
Benzoic Acid	258	310	4/21
Chrysene	186	38000	30/30
Dibenzo(a,h) anthracene	81	5700	/28
Dibenzofuran	67	3000	12/23
Fluoranthene	290	77000	30/30
Fluorene	78	4500	12/24
Indeno(1,2,3, cd)pyrene	118	19000	28/30
2 Methylnaptha lene	82	2200	8/21
Napthalene	85	3500	10/22
N Nitrosodi phenylamine	72	250	5/20
Phenathrene	221	54000	27/29
henol	70	170	6/20
Pyrene	277	67000	30/30

TABLE 2: (cont.)
SUMMARY OF CONTAMINANTS
OF CONCERN IN SOILS (MAIN SITE- -SURFACE)

CONTAMINANT OF CONCERN	AVERAGE CONCENTRATION (ppb)	MAXIMUM CONCENTRATION (ppb)	FREQUENCY OF DETECTION
4,4 DDT	8	27	1/16
4,4 DDD	8	9	2/16
Aluminum	8790000	4994070	10/10
Arsenic	4614	12100	10/10
Barium	39914	184500	10/10
Cadium	262	1200	1/10
Chromiun	7638	27700	10/10
Cobalt	2375	5300	7/10
Copper	123868	1040000	9/10
Iron	7087716	18200000	10/10
Lead	47184	339000	10/10
Manganese	102431	200000	10/10
Mercury	100	980	4/10
Nickel	5620	31200	9/10
Vanadium	12767	111000	9/10
Zinc	37147	297000	8/10

TABLE 3:
SUMMARY OF CONTAMINANTS OF CONCERN
IN SOILS (MAIN SITE SUBSURFACE)

CONTAMINANT OF CONCERN	AVERAGE CONCENTRATION (PPB)	MAXIMUM CONCENTRATION (PPB)	FREQUENCY OF DETECTION
ACETONE	9	480	8/78
METHYLENE CHLORIDE	5	310	16/78
TOLUENE	3	12	7/78
XYLENES	3	6100	11/74
ACENAPTHENE	115	2400	12/31
ACENAPTHYLENE	108	4000	14/30
BENZO(A)ANTHRACENE	192	32000	31/ . ?
BENZO(A)PYRENE	178	32000	32/38
BENZO(B)FLUORANTHENE	287	44000	32/38
BENZO(g,h,i)PERYLENE	147	12000	26/37
BENZO(k)FLUORANTHENE	231	16000	30/38
BENZOIC ACID	417	310	4/29
CHRYSENE	217	38000	33/38
DIBENZO(a,h) ANTHRACENE	107	5700	22/36
DIBENZOFURAN	101	3000	14/31
FLUORANTHENE	332	77000	33/38
FLUORENE	112	4500	14/32
INDENO 1,2,3,CD PYRENE	150	19000	30/38
2 METHYLNAPHTHALENE	121	2200	10/29
NAPTHALENE	127	3500	12/30
N NITROSODI PHENYLAMINE	104	250	6/28
PHENOL	106	170	6/28
PYRENE	307	67000	34/38
4,4,DDD	5	9	2/48
4,4 DDT	5	27	1/48
ALUMINUM	5550474	2610000	19/19
ARSENIC	2535	12100	17/19

TABLE 3: (cont.)
SUMMARY OF CONTAMINANTS OF CONCERN
IN SOILS (MAIN SITE SUBSURFACE)

CONTAMINANT OF CONCERN	AVERAGE CONCENTRATION (PPB)	MAXIMUM CONCENTRATION (PPB)	FREQUENCY OF DETECTION
BARIUM	29916	184500	19/19
CADIUM	282	1500	4/19
COBALT	1953	9100	9/19
CHROMIUM	6342	27700	18/19
COPPER	57972	1040000	17/19
IRON	6393460	18200000	19/19
MANGANESE	118619	2420000	19/19
MERCURY	83	980	5/19
NICKEL	4343	31200	16/19
VANADIUM	8874	2300	16/19
ZINC	26399	297000	16/19
LEAD	18594	339000	18/19

TABLE 4:
CARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION OF GROUNDWATER

Contaminant of Concern (class)	Concentration (ug/l) avg	max	Exposure Factor (1/kg/day)	Cancer Potency Factor (mg/kg/day)-1	Risk Estimate avg	RME
Tetrachloroethylene B2	3	14	$1.2x10^{-2}$	$5.01x10^{-2}$	$2X10^{-6}$	$8X10^{-6}$
Chrysene	2	1	$1.2X10^{-2}$	$5.79x10^{+0}$	$2X10^{-4}$	$7X10^{-5}$
Arsenic	7	19	$1.2X10^{-2}$	$1.75x10^{+0}$	$1X10^{-4}$	$4X10^{-4*}$

*The MCL for Arsenic is set at 50 ug/L. The carcinogenic risk posed by arsenic at 50 ug/L in ground water will approximate $2x10^{-3}$. The highest concentration found onsite was 19 ug/l, well below the MCL. Recent studies indicate that many skin tumors arising from oral exposure to arsenic are non-lethal and that the dose-response curve for the skin cancers may be sublinear (in which case the cancer potency factor used to generate risks estimates may be overestimated). It is Agency policy to manage these risks downward by as much as a factor of ten. As a result, the carcinogenic risk for arsenic at this site would be $4x10^{-5}$, one order of magnitude lower than the calculated risk level in the above table.

TABLE 5:
NON-CARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION OF GROUNDWATER

Contaminant of concern (class)	Concentration (ug/l) avg	max	Exposure Factor (l/kg/day)	Reference Dose (mg/kg/day)	Target Endpoint of Toxicity	Hazard Quotient avg	RME
Tetrachloroethylene B2	3	14	1.2x10-2	1x10-2	liver	.01	.03
Phenol D	4	6	1.2x10-2	6x10-1	reduced fetal body wt.	.0001	.0003
Arsenic A	7	19	1.2x10-2	3x10-4	keratosis	.7	2 *
Barium	4	10	1.2x10-2	5x10-2	increased bld pressure	.006	.06
Chromium A	2	4	1.2x10-2	5x10-3	no effect	.01	.02
Copper D	4	124	1.2x10-2	4x10-2	G.I.distress	.003	.09
Iron D	1583	25000	1.2x10-2	5x10-1	CNS effects	.09	1
Maganese D	203	2096	1.2x10-2	1x10-1	no effect	.06	.6
Zinc D	6	12	1.2x10-2	2x10-1	Anemia	.0008	.002

* The Hazard Index for the maximum detected arsenic concentration of 19 ug/L slightly exceeds one. EPA does not believe that arsenic levels in groundwater warrant taking action at this site because the HI is only slightly above a HI of one and because the maximum detected concentration is well below the MCL of 50 ug/L.

TABLE 6:
CARCINOGENIC RISKS FOR THE FUTURE INGESTION OF SUBSURFACE SOILS BY EXCAVATION WORKER

CONTAMINANT OF CONCERN	CONCENTRATION MG/KG AVG	RME	EXPOSURE FACTOR MG/KG/DAY	CANCER POTENCY MG/KG/DAY	RISK ESTIMATE AVG	RME
METHYLENE CHLORIDE B2	.005	.31	$1.7X10^{-2}$	$7.5X10^{-3}$	$6.57x10^{-13}$	$4.01x10^{-11}$
BENZO(a) ANTHRACENE B2	.192	32	$1.7X10^{-2}$	$7.3x10^{+0}$	$2.45x10^{-08}$	$4.08x10^{-06}$
BENZO(a) PYRENE B2	.178	32	$1.7X10^{-2}$	$7.3x10^{+0}$	$2.27x10^{-08}$	$4.08x10^{-06}$
BENZO(b) FLUORANTHENE B2	.287	44	$1.7X10^{-2}$	$7.3x10^{+0}$	$3.65x10^{-08}$	$5.60x10^{-06}$
BENZO(k) FLUORANTHENE B2	.231	16	$1.7X10^{-2}$	$7.3x10^{+0}$	$2.94x10^{-08}$	$2.14x10^{-06}$
CHRYSENEB2	.218	38	$1.7X10^{-2}$	$7.3x10^{+0}$	$2.77x10^{-08}$	$4.84x10^{-06}$
DIBENZO-(a,h) ANTHRACENE B2	.107	57	$1.7X10^{-2}$	$7.3x10^{+0}$	$1.36x10^{-08}$	$7.26x10^{-07}$
INDENO (1,2,3) PYRENE B2	.151	19	$1.7X10^{-2}$	$7.3x10^{+0}$	$1.92x10^{-08}$	$2.42x10^{-06}$
N-NITROSO DIPHENYL AMINE B2	.105	.25	$1.7X10^{-2}$	$4.9x10^{-3}$	$8.95x10^{-12}$	$2.14x10^{-11}$
4,4 DDD B2	.006	.009	$1.7X10^{-2}$	$2.4x10^{-1}$	$6.74x10^{-12}$	$1.13x10^{-11}$
4,4 DDT B2	.005	.027	$1.7X10^{-2}$	$3.4X10^{-1}$	$9.58x10^{-12}$	$4.80x10^{-11}$
ARSENIC A	2.5	1.21	$1.7X10^{-2}$	$1.75X10^{+0}$	$7.74x10^{-08}$	$3.69x10^{-07}$
BERYLLIUM B2	.35	1.17	$1.7X10^{-2}$	$4.3x10^{+0}$	$2.63x10^{-08}$	$8.78x10^{-07}$
					TOTAL RISK $2.77X10^{-07}$	$2.50X10^{-05}$

Table 7A and 7B below depict the cumulative risk summary for the carcinogenic and noncarcinogenic contaminants of concern for each pathway analyzed. For a more detailed analysis on the risk for each contaminant of concern, see Appendix L of the RI.

TABLE 7A:
SUMMARY OF CARCINOGENIC RISKS ESTIMATES
FOR THE REVERE SITE

SCENARIO	RECEPTOR	PRESENT/FUTURE	INCREMENTAL RISK AVERAGE	INCREMENTAL RISK REASONABLE MAXIMUM
GROUNDWATER	RESIDENT	FUTURE	$3x10^{-04*}$	$5x10^{-04*}$
MAIN SITE SURFACE SOILS	TRESPASSER	PRESENT		
DERMAL CONTACT			$1x10^{-06}$	$8x10^{-05}$
TOTAL			$1x10^{-07}$	$2x10^{-05}$
			$1x10^{-06}$	$1x10^{-04}$
PIGMENTED WASTE PILE SURFACE SOIL				
INGESTION	TRESPASSER/ RECREATIONAL USER	PRESENT/FUTURE	$9x10^{-09}$	$9x10^{-09}$
DIRECT CONTACT	TRESPASSER/ RECREATIONAL USER		$2x10^{-09}$	$2x10^{-09}$
TOTAL			$1x10^{-08}$	$1x10^{-08}$
MAIN SITE SURFACE/ SUBSURFACE SOIL				
INGESTION	RESIDENT	FUTURE	$1x10^{-05}$	$8x10^{-04}$
DERMAL CONTACT	RESIDENT	FUTURE	$1x10^{-06}$	$1x10^{-04}$
TOTAL			$1x10^{-05}$	$9x10^{-04}$
MAIN SITE SEDIMENTS (SPILLWAY CHANNEL/ POND)				
INGESTION	TRESPASSER	PRESENT	$1x10^{-06}$	$9x10^{-06}$
DERMAL CONTACT	TRESPASSER	PRESENT	$2x10^{-07}$	$2x10^{-06}$
TOTAL			$1x10^{-06}$	$1x10^{-05}$
INGESTION	RESIDENT	FUTURE	$7x10^{-06}$	$5x10^{-05}$
DERMAL CONTACT	RESIDENT	FUTURE	$9x10^{-07}$	$8x10^{-06}$
TOTAL			$8x10^{-06}$	$6x10^{-05}$

TABLE 7A: (cont.)
SUMMARY OF CARCINOGENIC RISKS ESTIMATES
FOR THE REVERE SITE

SCENARIO	RECEPTOR	PRESENT/FUTURE	INCREMENTAL RISK AVERAGE	INCREMENTAL RISK REASONABLE MAXIMUM
MOOSUP RIVER SEDIMENTS (NEAR PIGMENTED WASTE PILE)				
INGESTION	RECREATIONAL USER	PRESENT/FUTURE	$2x10^{-06}$	$3x10^{-06}$
DERMAL CONTACT	RECREATIONAL USER	PRESENT/FUTURE	$4x10^{-07}$	$6x10^{-07}$
TOTAL			$2x10^{-06}$	$4x10^{-06}$
MOOSUP RIVER SEDIMENTS (DOWNGRADIENT)				
INGESTION	RECREATIONAL USER	PRESENT/FUTURE	$7x10^{-07}$	$1x10^{-06}$
DERMAL CONTACT	RECREATIONAL USER	PRESENT/FUTURE	$1x10^{-07}$	$2x10^{-07}$
TOTAL			$8x10^{-07}$	$1x10^{-06}$

*The MCL for Arsenic is set at 50 ug/L. The carcinogenic risk posed by arsenic at 50 ug/L in ground water will approximate $2x10^{-3}$. The highest concentration found outside was 19 ug/l well below the MCL. Recent studies indicate that many skin tumors arising from oral exposure to arsenic are non-lethal and that the dose-response curve for the skin cancers may be sublinear (in which case the cancer potency factor used to generate risks estimates may be over-estimated). It is Agency policy to manage these risks downward by as much as a factor of ten. As a result, the carcinogenic risk for arsenic at this site would be $4x10^{-5}$, one order of magnitude lower than the calculated risk level in the above table.

TABLE 7B:
SUMMARY OF THE NONCARCINOGENIC RISKS ESTIMATES FOR THE REVERE SITE

SCENARIO	RECEPTOR	PRESENT/FUTURE	AVERAGE	REASONABLE MAXIMUM
MAIN SITE SURFACE SOIL				
INGESTION	TRESPASSER	PRESENT	$2x10^{-02}$	$8x10^{-02}$
DERMAL CONTACT	TRESPASSER	PRESENT	$3x10^{-05}$	$3x10^{-03}$
TOTAL			$2x10^{-02}$	$8x10^{-02}$
PIGMENTED WASTE PILE SURFACE SOIL				
INGESTION	TRESPASSER/ RECREATIONAL USER	PRESENT/FUTURE	$3x10^{-02}$	$3x10^{-02}$
DERMAL CONTACT	TRESPASSER/ RECREATIONAL USER	PRESENT/FUTURE	$2x10^{-09}$	$2x10^{-09}$
TOTAL			$3x10^{-02}$	$3x10^{-02}$
MAIN SITE SURFACE/ SUBSURFACE SOIL				
INGESTION	ADULT RESIDENT	FUTURE	$2x10^{-02}$	$1x10^{-01}$
DERMAL CONTACT	ADULT RESIDENT	FUTURE	$4x10^{-05}$	$4x10^{-03}$
TOTAL			$2x10^{-02}$	$1x10^{-01}$
INGESTION	CHILD RESIDENT	FUTURE	$2x10^{-01}$	$1x10^{+00}$
DERMAL CONTACT	CHILD RESIDENT	FUTURE	$2x10^{-04}$	$2x10^{-02}$
TOTAL			$2x10^{-01}$	$1x10^{+00}$
MAIN SITE SEDIMENTS (SPILLWAY CHANNEL/POND)				
INGESTION	TRESPASSER	PRESENT	$1x10^{-02}$	$3x10^{-02}$
DERMAL CONTACT	TRESPASSER	PRESENT	$5x10^{-05}$	$4x10^{-04}$
TOTAL			$1x10^{-02}$	$3x10^{-02}$
INGESTION	ADULT RESIDENT	FUTURE	$8x10^{-03}$	$2x10^{-02}$
DERMAL CONTACT	ADULT RESIDENT	FUTURE	$4x10^{-05}$	$3x10^{-04}$
TOTAL			$8x10^{-03}$	$2x10^{-02}$
INGESTION	CHILD RESIDENT	FUTURE	$7x10^{-02}$	$2x10^{-01}$
DERMAL CONTACT	CHILD RESIDENT	FUTURE	$2x10^{-04}$	$1x10^{-03}$
TOTAL			$7x10^{-02}$	$7x10^{-02}$

TABLE 7B: (cont.)
SUMMARY OF THE NONCARCINOGENIC RISKS ESTIMATES
FOR THE REVERE SITE

SCENARIO	RECEPTOR	PRESENT/FUTURE	AVERAGE	REASONABLE MAXIMUM
MOOSUP RIVER SEDIMENTS (NEAR PIGMENTED WASTE PILE)				
INGESTION	RECREATIONAL USER	PRESENT/FUTURE	$1x10^{-02}$	$4x10^{-02}$
DERMAL CONTACT	RECREATIONAL USER	PRESENT/FUTURE	$1x10^{-04}$	$1x10^{-04}$
TOTAL			$1x10^{-02}$	$4x10^{-02}$
MOOSUP RIVER SEDIMENTS (DOWNGRADIENT)				
INGESTION	RECREATIONAL USER	PRESENT/FUTURE	$6x10^{-03}$	$3x10^{-02}$
DERMAL CONTACT	RECREATIONAL USER	PRESENT/FUTURE	$2x10^{-05}$	$3x10^{-05}$
TOTAL			$6x10^{-03}$	$3x10^{-05}$
MAIN SITE SURFACE WATER (SPILLWAY CHANNEL/POND)				
INGESTION	TRESPASSER/ RESIDENT	PRESENT/FUTURE	$4x10^{-04}$	$3x10^{-03}$
DERMAL CONTACT	TRESPASSER/ RESIDENT	PRESENT/FUTURE	$9x10^{-08}$	$8x10^{-07}$
TOTAL			$4x10^{-04}$	$3x10^{-03}$

STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

165 CAPITOL AVENUE HARTFORD, CONNECTICUT 06106

September 30, 1992

Timothy R.E. Keeney
Commissioner

Ms. Julie Belaga
Regional Administrator
US EPA Region I
JFK Federal Building
Boston, MA 02203

Dear ~~Ms. Belagar~~ Julie,

The Connecticut Department of Environmental Protection (DEP) concurs with the federal Environmental Protection Agency's (EPA) decision to take no further remedial action at this time under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) at the Revere Textile Prints Superfund Site in Sterling, Connecticut. EPA's proposal includes provisions for monitoring surface and ground waters potentially affected by the site for a minimum period of five years to ensure that no unanticipated impacts occur. The decision is described in detail in the Proposed Plan dated August, 1992.

DEP and EPA are aware that there are contaminants remaining in soil and groundwater at the site. DEP recognizes that EPA's no remedial action decision is based on the results of risk assessment calculations which EPA is required to use as a basis for its remedial action decision. DEP is also aware that the Town of Sterling, as owner of the site, has implemented institutional controls to minimize the potential for contact with contaminants on site. DEP and EPA are in agreement that there are waste materials on site, including but not limited to solid wastes and petroleum product tanks, which are outside the purview of CERCLA and must be dealt with under other state and/or federal authorities.

Concurrence with EPA's selected remedy for the Revere Textile Prints Site shall in no way affect the Commissioner's authority to institute any proceeding to prevent or abate violations of law, prevent or abate pollution, recover costs and natural resource damages, and to impose penalties for violations of law, including but not limited to violations of any permit issued by the Commissioner.

Sincerely,

Timothy R. E. Keeney
Commissioner

TREK:CAL:hc