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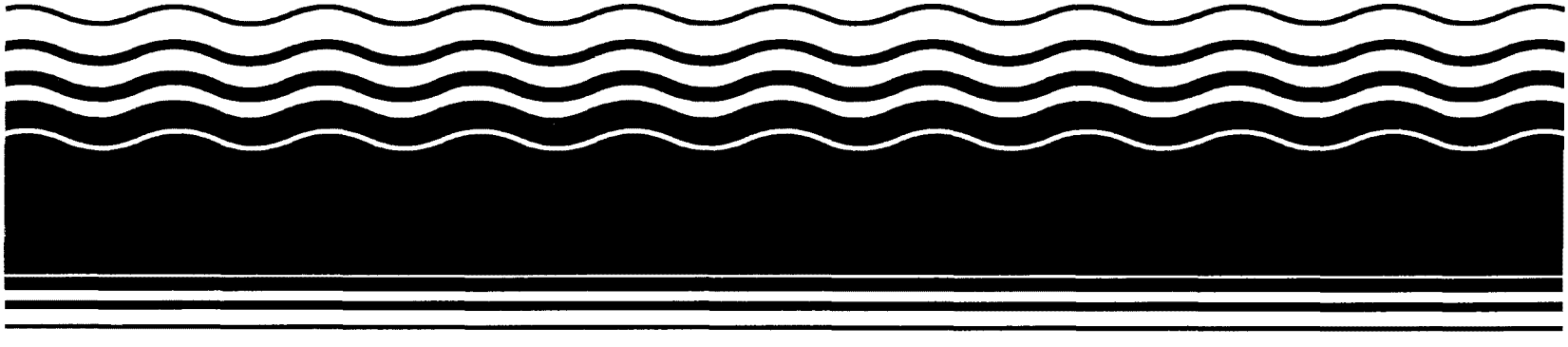
February 1996

EPA Superfund Record of Decision:

Interstate Lead Company (ILCO) Superfund Site (O.U. 3), Leeds, AL 9/29/1995



RECORD OF DECISION

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

FOR

OPERABLE UNIT THREE

INTERSTATE LEAD COMPANY (ILCO) SUPERFUND SITE

LEEDS, JEFFERSON COUNTY, ALABAMA

PREPARED BY

U. S. ENVIRONMENTAL PROTECTION AGENCY

REGION IV

ATLANTA, GEORGIA

DECLARATION
of the
RECORD OF DECISION
for
OPERABLE UNIT THREE

SITE NAME AND LOCATION

Interstate Lead Company (ILCO) Superfund Site
Leeds, Jefferson County, Alabama

STATEMENT OF BASIS AND PURPOSE

This decision document (Record of Decision) presents the selected remedial action for Operable Unit Three of the ILCO Superfund Site in Leeds, Alabama. The selected remedial action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, and to the extent practicable, the National Contingency Plan (NCP) 40 CFR Part 300. This decision is based on the administrative record for the ILCO Superfund Site. The State of Alabama has concurred with the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the ILCO Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF SELECTED REMEDY

The ILCO Site is divided into three operable units. Operable unit one (OU-1) was defined in the Record of Decision that was signed by EPA on September 30, 1991 and amended as part of the Record of Decision for operable unit two (OU-2). OU-1 includes soil, sediment, and groundwater contamination at the seven satellite sites located in and around the City of Leeds, excluding groundwater contamination at the ILCO Parking Lot satellite site. OU-2 was defined in the Record of Decision that was signed by EPA on October 13, 1994. OU-2 includes soil and groundwater contamination at the ILCO Main Facility, as well as groundwater contamination at the ILCO Parking Lot. Operable unit three (OU-3), which is enumerated by this Record of Decision, includes surface water, sediment, and biota contamination attributable to the ILCO Main Facility. The selected remedy for OU-3 requires response measures which will protect human health and the environment.

The major components of the selected remedy for OU-3 include:

- Natural attenuation (e.g., dilution, flushing, burial, etc.) of the contaminated sediment
- Recommending to the Alabama Department of Public Health (ADPH) that a fishing advisory be issued for the unnamed tributary and Dry Creek near the ILCO Main Facility
- Posting of warning signs along the unnamed tributary and Dry Creek to indicate the presence of contaminated sediment and the fish advisory
- Annual surface water, sediment, and biota monitoring
- Five-year reviews as required by CERCLA to evaluate the effectiveness of the selected remedy

STATUTORY DETERMINATIONS

The selected remedy for OU-3 is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action (unless such requirements are waived), and is cost-effective. EPA has determined that the selected remedy for OU-3 represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner at OU-3. The statutory preference for remedies that utilize permanent and treatment technologies solutions is not satisfied at OU-3. EPA has concluded that remedies which utilize permanent solutions and treatment technologies are impracticable and not cost-effective at OU-3 based on the results of the baseline risk assessment conducted for OU-3. The selected remedy for OU-3 represents the best balance of the nine criteria used by EPA to evaluate possible cleanup alternatives. A review will be conducted within five years from commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

29 SEP 95

RICHARD D. GREEN, ASSOCIATE DIRECTOR OF SUPERFUND AND EMERGENCY RESPONSE

DATE

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ILCO SUPERFUND SITE

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Decision Summary
for the
Record of Decision
for
Operable Unit Three

Interstate Lead Company (ILCO) Site
Leeds, Alabama

1.0 SITE LOCATION AND DESCRIPTION

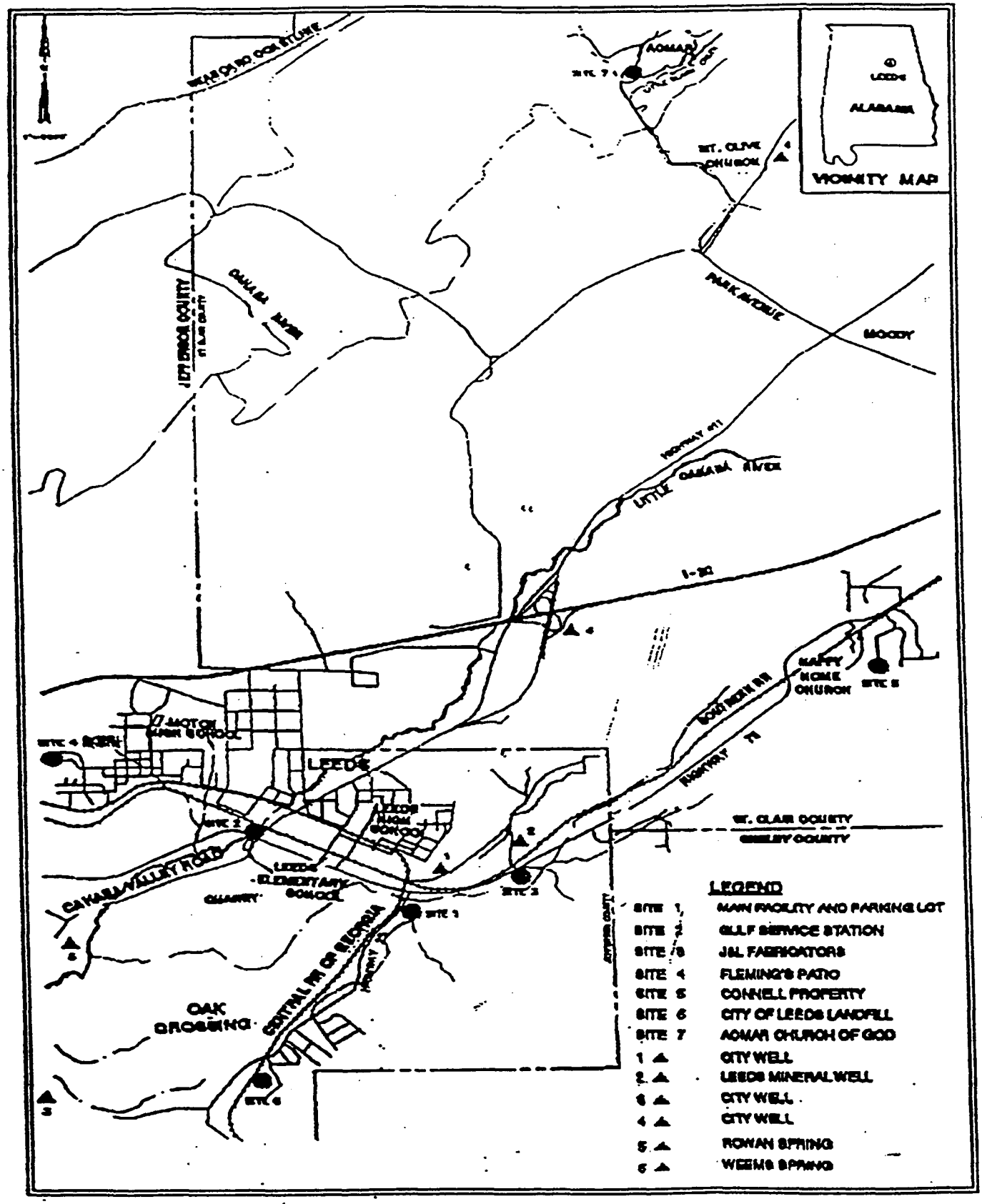
The Interstate Lead Company (ILCO) Superfund Site is located approximately 15 miles east of Birmingham, in Leeds, Jefferson County, Alabama (see Figure 1-1, Site Location Map). The ILCO Site consists of the ILCO Main Facility and seven satellite sites located in and around the City of Leeds, where lead-contaminated wastes from the ILCO Main Facility were disposed.

The ILCO Main Facility is located at 1247 Borden Avenue on the southwestern side of the City of Leeds. The ILCO Main Facility (including the ILCO Parking Lot across the street) occupies approximately 11.5 acres of real property, most of which is owned by ILCO with a portion owned by Interstate Trucking Company, Inc., an affiliated company. The ILCO Main Facility is bordered by an abandoned foundry and a wooded area to the south, an unnamed tributary to Dry Creek to the west, Borden Avenue and the ILCO Parking Lot to the north, and another business to the east (see Figure 1-2, Site Layout). The area is primarily industrial with a few residences within a half-mile radius.

The satellite sites include the ILCO Parking Lot, located across the street from the ILCO Main Facility; the Gulf/BP Service Station, located in the center of Leeds on U.S. Highway 78; J&L Fabricators, located east of Leeds on U.S. Highway 78; Fleming's Patio, located west of Leeds on Alaska Avenue; the Connell Property, located east of Leeds in St. Clair County; the Acmar Church of God, located off Acmar Road in Moody, Alabama; and the City of Leeds Municipal Landfill, located off Dunavant Road at the end of Peach Street.

ILCO operated a secondary lead smelting and lead battery recycling business from approximately 1970 to 1992 at the ILCO Main Facility. In March 1992, ILCO ceased operating pursuant to an order of a state court of Alabama. ILCO manufactured refined lead alloys through the smelting and refining of lead-bearing scrap materials. The primary materials reclaimed by ILCO were discarded lead-acid automobile and industrial batteries. The used batteries were cracked open and the lead plates and lead oxides were smelted in a blast furnace. Furnace slag was produced as a by-product and is regulated under the Resource Conservation and Recovery Act (RCRA) as a characteristic hazardous waste due to its lead content. Wastewater treatment sludge and baghouse dust were also generated. Wastewater treatment sludge is a RCRA regulated hazardous waste and baghouse dust is a RCRA listed hazardous waste (K069).

FIGURE 1-1, SITE LOCATION MAP



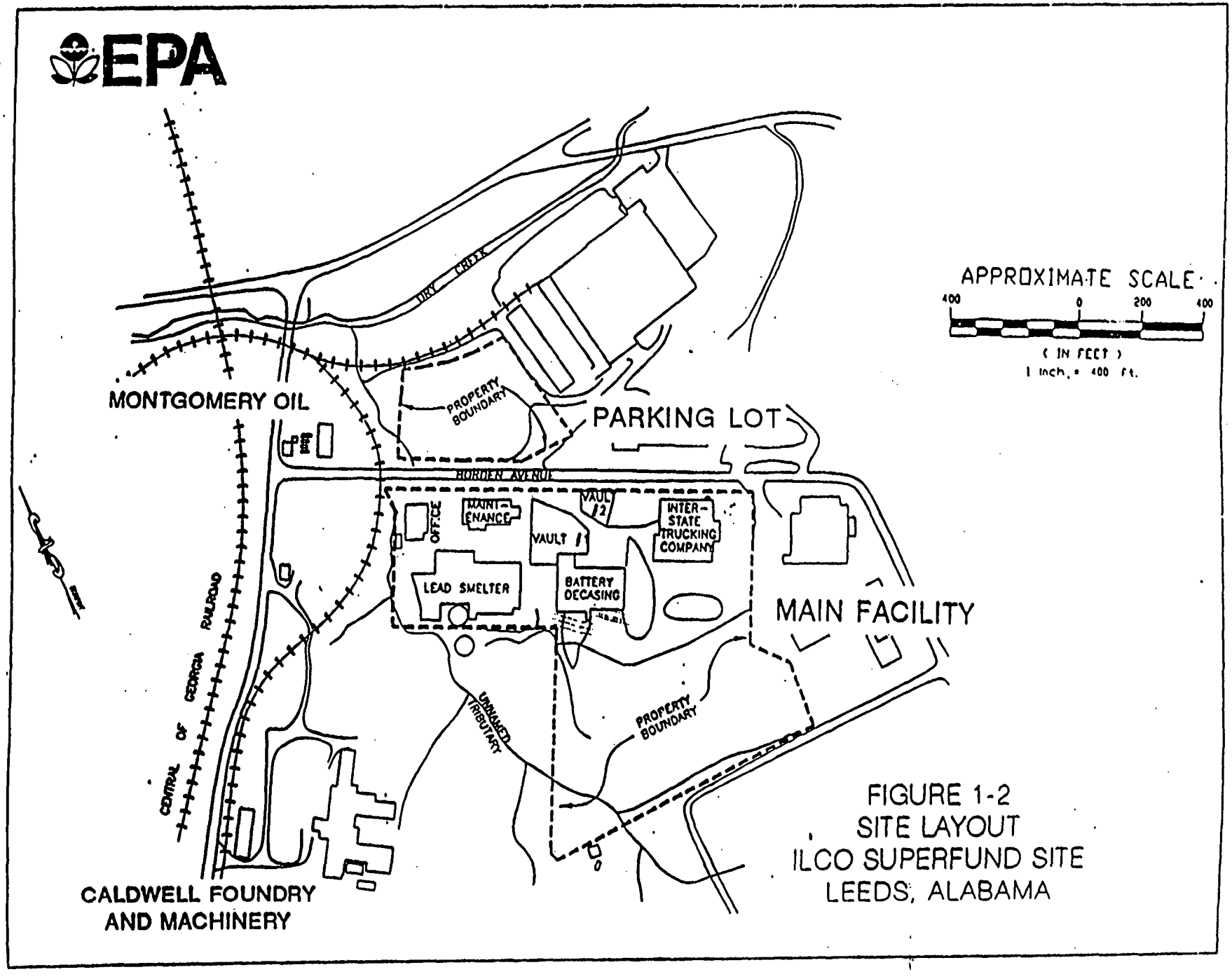


FIGURE 1-2
SITE LAYOUT
ILCO SUPERFUND SITE
LEEDS, ALABAMA

ILCO stored furnace slag, battery chips, and wastewater treatment sludge in piles on the ILCO Main Facility. Furnace slag generated by ILCO was used as fill material at the ILCO Main Facility and at the satellite sites. Wastewater treatment sludge and battery casings were also disposed of at the ILCO Main Facility and at some of the satellite sites.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

In May 1984, EPA and the Alabama Department of Environmental Management (ADEM) conducted a joint inspection of the ILCO Main Facility, which was found to be in violation of the interim status standards set forth in RCRA.

In March 1985, the United States brought suit against ILCO and its principal, Diego Maffei, seeking injunctive relief, penalties, and damages for violations of the Clean Water Act and RCRA. The government also sought to recover response costs pursuant to CERCLA for a removal action taken by EPA at the Acmar Church of God satellite site. The complaint also included a count for corrective action at the ILCO Main Facility. The case was brought in the United States District Court for the Northern District of Alabama (District Court Case). The State of Alabama intervened in the litigation asserting violations of Alabama's Water Pollution Control Act and Hazardous Waste Management and Minimization Act.

There was a partial settlement of the District Court Case in August 1988. A partial consent decree was entered requiring ILCO to conduct all necessary corrective actions and remediation of contaminated sediment in the surrounding waterways.

The outstanding issues were tried in July and August 1988. On December 10, 1990, the district court issued an Order and Findings of Fact and Conclusions of Law holding that the defendants had violated the Clean Water Act and RCRA and that injunctive relief and penalties were appropriate. The court also found that the defendants were liable for all response costs incurred by the United States in connection with the removal action at the Acmar Church of God satellite site.

In its December 10, 1990 Order, the district court did not enter a judgment but ordered the parties to endeavor to reach an agreement as to the relief which should be provided. The parties were unable to come to such an agreement, and each submitted a proposed final judgment. On October 8, 1991, the court entered a judgment. The district court granted injunctive relief and assessed a penalty of two million dollars against ILCO, in favor of the United States, for violations of RCRA and the Clean Water Act. In addition, the district court entered judgment in favor of the United States against ILCO and Diego Maffei, in the amount of $845,033.40, as reimbursement for response costs for the removal action at the Acmar Church of God satellite site. The district court also awarded a penalty in the amount of $1.5 million in favor of the State of Alabama. On appeal, the Eleventh Circuit Court issued a decision in favor of the United States

and the State of Alabama on every issue and affirmed the district court's award of civil penalties and response costs.

In June 1986, the ILCO Site (including the ILCO Main Facility and the seven satellite sites) was placed on the National Priorities List (NPL) of uncontrolled hazardous waste sites.

EPA conducted a Remedial Investigation/Feasibility Study (RI/FS) of the satellite sites (Operable Unit One) which was completed in July 1991. A proposed plan was issued shortly after completion of the RI/FS. After a public comment period, a Record of Decision (ROD) was signed on September 30, 1991, which set forth the selected remedy for Operable Unit One.

When ILCO ceased operations in March 1992, EPA initiated a removal action to mitigate the imminent threat associated with the abandoned ILCO Main Facility. During the removal action at the ILCO Main Facility, approximately 5,368 tons of lead contaminated slag, found stored in different areas around the facility, were removed to a permitted hazardous waste landfill. Approximately 200,000 gallons of lead contaminated sludge found in the onsite wastewater treatment system was removed, stabilized, and stockpiled onsite with contaminated soils excavated from the facility. Acid from several impoundments was collected and treated in the onsite wastewater treatment system, in addition to approximately 15,000,000 gallons of wastewater. The battery cracking building, the furnace building, and the small slag vault were demolished and decontaminated due to extensive lead contamination. The contents of the small slag vault were removed and stockpiled onsite with the contaminated soils. Waste encountered during the demolition of the furnace building included lead waste, baghouse dust, and a sulfur residue from the emissions system. The lead waste was stockpiled inside a building onsite. The baghouse dust was placed into two roll-off boxes, covered, labeled K069, and also stored inside a building onsite. The sulfur residue found inside the duct pipe was placed on the contaminated soil stockpile. During the demolition of the battery cracking building, process soils from the battery cracking operation were removed and stockpiled inside a building onsite. The process soils consisted of a mixture of battery chips and contaminated soils.

EPA conducted a RI/FS of the ILCO Main Facility (Operable Unit Two), which was completed in June 1994. A proposed plan was issued shortly after completion of the RI/FS. After a public comment period, a Record of Decision (ROD) was signed on October 13, 1995, which set forth the selected remedy for Operable Unit Two. The ROD for Operable Unit One was also amended as part of the ROD for Operable Unit Two.

The third and final operable unit consists of surface water, sediment, and biota contamination attributable to the ILCO Main Facility. EPA also conducted a RI/FS for Operable Unit Three which was completed in April 1995. The proposed plan setting forth EPA's preferred cleanup alternative was issued in July 1995.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Leeds Public Library at 802 Parkway Drive, S.E. in Leeds, Alabama is the local information repository for the ILCO Site. The proposed plan for Operable Unit Three was issued in July 1995 and a public comment period was established from July 25, 1995 to August 24, 1995. A public meeting on the proposed plan was held on August 17, 1995 at the Leeds Civic Center in Leeds, Alabama.

The administrative record for the ILCO Site is available to the public at both the information repository maintained at the Leeds Public Library and at the EPA Region IV Library at 345 Courtland Street in Atlanta, Georgia. The notice of availability for the proposed plan for Operable Unit Three was published in The Birmingham News on July 24, 1995 and August 10, 1995 and in The Leeds News on July 27, 1995 and August 13, 1995. Responses to the significant comments received during the public comment period are included in the Responsiveness Summary, which is part of this ROD and designated Appendix A.

This decision document presents the selected remedial action for Operable Unit Three of the ILCO Site, chosen in accordance with CERCLA, as amended, and to the extent practicable, the NCP. The decision for Operable Unit Three is based on the administrative record. The requirements under Section 117 of CERCLA/SARA for public and State participation have been met for this operable unit.

4.0 SCOPE AND ROLE OF OPERABLE UNITS

The problems at the ILCO Site are complex. As a result, EPA has divided the work into three manageable components called "operable units" in order to simplify remedial planning and response activities associated with the disposal and discharge of hazardous substances from the Site.

Operable Unit One (OU-1): Contaminated soil, groundwater, and sediment at the seven satellite sites are addressed in OU-1, excluding groundwater at the ILCO Parking Lot satellite site. Groundwater contamination at the ILCO Parking Lot is addressed in Operable Unit Two.

Operable Unit Two (OU-2): Contaminated soil at the ILCO Main Facility and contaminated groundwater at the ILCO Main Facility and the ILCO Parking Lot are addressed in OU-2.

Operable Unit Three (OU-3): Contaminated surface water, sediment, and biota in the unnamed tributary, Dry Creek, and the Little Cahaba River attributable to the ILCO Main facility are addressed in OU-3.

This ROD is for OU-3 of the ILCO Site and documents the selected remedy for contaminated surface water, sediment, and biota attributable to the ILCO Main Facility. Based on the results and recommendations of a biological assessment performed by EPA at the ILCO Site, EPA separated the unnamed tributary, Dry Creek, and the Little Cahaba River into a separate operable unit (OU-3) for further investigation of the surface water, sediment, and biota. This additional investigation began in July 1994 and was completed in April 1995.

5.0 SUMMARY OF SITE CHARACTERISTICS

5.1. Landforms

The ILCO Site is located in the Appalachian Valley and Ridge Physiographic Province, within the Cahaba Valley. The area is characterized by series of linear, sub-parallel ridges, developed on the underlying structurally deformed rock sequences, and separated by valleys of varying widths. Topographic relief in the area is moderate to high, with rapid changes of several hundred feet common.

5.2 Surface Water

Three significant surface water bodies are present in the Leeds area. These are the Cahaba River, located to the north of the City of Leeds; the Little Cahaba River, which runs through Leeds; and Dry Creek, a stream that runs near the ILCO Main Facility and ILCO Parking Lot and flows into the Little Cahaba River in the vicinity of the Leeds wastewater treatment plant. The general orientation of the major streams and rivers is parallel to the major topographic structures.

A smaller surface water body, identified as the unnamed tributary to Dry Creek, flows north, generally along the western boundary of the ILCO Main Facility, crosses under Borden Avenue, and ultimately drains into Dry Creek. The unnamed tributary has in the past received run-off water from the ILCO Main Facility that was highly contaminated with lead. Even though ILCO conducted a soil and sediment removal from the unnamed tributary in August 1990, some of the sediment in the stream immediately downgradient of the ILCO Main Facility still contains elevated levels of lead.

5.3 Geology

5.3.1 Regional Geology

The suite of rocks in the Cahaba Valley is typical of the Valley and Ridge and consists of sandstones and shales, commonly interbedded, as well as limestone and dolomitic limestone. The regional structure is typically characterized by northeast-southwest trending layers of rock, which are locally steeply inclined and frequently folded and

faulted. The larger structures generally dip to the southeast at angles up to 45 degrees and are intensely fractured and jointed.

5.3.2 Site-Specific Geology and Soils

The ILCO Main Facility is underlain by a veneer of unconsolidated material, consisting of weathered light-brown to dark-gray, sandy, silty, clayey alluvium that generally ranges from 5 to 20 feet thick. The Floyd Shale lies directly beneath the alluvium along the southeast border of the property; the contact between the Floyd Shale and the Hartselle Sandstone is in the same area. The Hartselle Sandstone is overlain by alluvium in the southeastern portion of the property and in the area previously occupied by the battery cracking building. The remainder of the ILCO Main Facility is underlain by the Pride Mountain Formation, which extends to the northwest in the vicinity of Dry Creek.

5.4 Groundwater

5.4.1 Regional Hydrogeology

Generally, groundwater is available, in some quantity, in four different horizons or formations in the Leeds area. These zones are not necessarily, in themselves, major regional aquifers, but rather represent hydrogeological conditions or situations in which a completed well may produce water more significantly than in others, such as massive shale formations, etc. The more shallow zones are usually unconfined, with the lower units sometimes occurring under confined conditions, depending on the geology of the overlying material. Because of the degree of fracturing observed in the area, it is conceivable that all zones may, to a certain extent, be interconnected in some areas. These zones include the following:

Surficial Aquifer - Consists of a thin layer of unconsolidated alluvial deposits that covers most of the valley. The maximum thickness is 20 feet. It is separated from the shallow aquifer system by a silty clay at some locations and is a very poor source of water to wells. Water occurs under unconfined conditions.

Shallow Aquifer - Consists of weathered to consolidated material in the upper part of the bedrock and is generally no more than 30 feet thick. It is separated from the underlying rock in some areas by a dense, dark-gray clay and is a very limited source of water to wells. Water occurs under unconfined conditions.

Fort Payne Chert Aquifer - Provides some of the water supply to the City of Leeds. City wells are installed to depths of 150-300 feet and located approximately one-half mile to the northeast of the ILCO Main Facility and the ILCO Parking Lot. The Fort Payne Chert Aquifer behaves similarly to a confined aquifer because of the lower permeability of the overlying formations. However, these lower

permeability formations do not prevent the movement of contaminants into the Fort Payne Chert Aquifer.

Ordovician Undifferentiated Aquifer - Consists of 1,000 feet of crystalline limestone. Two springs in this formation provide part of the water supply to the City of Leeds. The Weems Spring is located off Cemetery Road approximately 5 miles southeast of the Acmar Church of God satellite site in Moody, Alabama, north of Leeds. The Rowan Spring is located in Leeds at the intersection of Highway 119 and President Road.

5.4.2 Site Hydrogeology

Groundwater at the ILCO Main Facility occurs in the unconsolidated alluvium and underlying weathered zone of shales and generally occurs in unconfined conditions in the area. Water levels range from four feet to almost 50 feet below land surface. At the ILCO Main Facility, groundwater tends to flow toward Dry Creek and the unnamed tributary to the north and northwest of the area with infiltration into the underlying weathered shallow aquifer, which is in the Floyd Shale, the Hartselle Sandstone, and the Pride Mountain Formation. Data and information from groundwater monitoring wells indicate that water-bearing zones occur in joints and fractures deep in the shales under partially confined conditions.

6.0 SUMMARY OF SITE RISKS

ILCO's battery cracking and recycling operations have resulted in extensive lead contamination on and near the ILCO Main Facility. As stated previously, OU-3 specifically addresses the contamination in surface water, sediment, and biota in the streams located adjacent to and downstream of the ILCO Main Facility. EPA collected surface water, sediment, and biota samples during 1994 from the unnamed tributary, Dry Creek, and the Little Cahaba River and analyzed them for lead and other chemicals. In order to examine the potential risks associated with OU-3, EPA used the analytical results of the surface water, sediment, and biota samples to perform a Baseline Risk Assessment (BRA) on OU-3. The BRA evaluated the risk to human health and the environment which would result if no action was taken to address the contamination associated with OU-3.

6.1 Selection of Chemicals of Potential Concern

The first task of the BRA was to summarize the data collected for surface water, sediment and fish tissue used in the OU-3 assessment. The available data for these media include surface water and sediment data collected in July and December 1993 for the OU-2 RI, and surface water, sediment, and fish tissue data collected in March and July 1994 during the OU-3 Ecological Assessment. From these data, chemicals of potential concern were selected for detailed evaluation in the BRA. It is important to

recognize that the selection of a chemical of potential concern does not necessarily indicate that it poses a risk to human health or the environment. The selection of a chemical only indicates that a decision has been made to evaluate that chemical in the risk assessment to determine if the chemical could result in potential risks.

The chemicals selected as chemicals of potential concern in sediment and carried through the human health risk assessment are listed in Table 6-1. The selection of chemicals of potential concern for sediment was based on a comparison to concentrations in the background samples and identification of essential human nutrients. Chemicals whose maximum concentrations were less than twice the background value were eliminated from further evaluation. In addition, chemicals that are essential human

TABLE 6-1, SUMMARY OF INORGANIC CHEMICALS DETECTED IN SEDIMENT

(Concentrations presented in ppm)

Chemical	Frequency of Detection	Mean Sample Size	Arithmetic Mean	Range of Detection Limits	Range of Detected Concentrations	Background Comparison Values
In the Vicinity of the ILCO Site						
Aluminum	17 / 17	17	4,850	NU	2,800 - 8,600	9,800
* Antimony	2 / 21	21	4.94	3.5 - 20	15 - 26	ND (4.0)
* Arsenic	21 / 21	21	11.6	NU	4.8 - 26	19
* Barium	17 / 17	17	43.5	NU	12 - 120	81
Beryllium	13 / 17	17	0.48	1	0.33 - 0.89	1.3
* Cadmium	12 / 17	17	3.2	0.34 - 0.48	0.68 - 12	ND (0.38)
N Calcium	16 / 17	17	5,530	210	1,400 - 26,000	7,000
Chromium	17 / 17	17	20.5	NU	9.4 - 52	68
Cobalt	17 / 17	17	8.99	NU	1.7 - 21	93
* Copper	21 / 21	21	19	NU	6.4 - 48	29.2
Iron	17 / 17	17	15,300	NU	8,300 - 23,000	55,000
* Lead	21 / 21	21	1,010	NU	65 - 5,400	85.8
N Magnesium	17 / 17	17	1,920	NU	200 - 12,000	2,130
* Manganese	17 / 17	17	422	NU	30 - 1,700	1,660
* Mercury	2 / 21	21	0.062	0.05 - 0.2	0.09 - 0.25	ND (0.065)
Nickel	21 / 21	21	19.9	NU	6.5 - 38	51
N Potassium	17 / 17	17	521	NU	330 - 1,200	830
Selenium	12 / 17	17	1.42	1 - 2	0.99 - 2.5	4
Vanadium	12 / 17	17	15.6	20	14 - 27	36
* Zinc	21 / 21	21	85.6	NU	37 - 190	180
Downstream from the ILCO Site						
Arsenic	4 / 4	4	14	NU	10 - 17	32
Copper	4 / 4	4	14	NU	8.4 - 18	38
* Lead	4 / 4	4	157	NU	46 - 260	70
Mercury	3 / 4	4	0.086	0.05	0.05 - 0.14	0.17
Nickel	4 / 4	4	20.5	NU	18 - 24	30
Zinc	4 / 4	4	70.8	NU	60 - 81	164

* = Selected as a chemical of potential concern.
NU = Not used; chemical was detected in all samples.
ND = Not detected; detection limit shown in parentheses.
N = Chemical was not selected as a chemical of potential concern, because it is an essential human nutrient.

nutrients, such as calcium, magnesium, and potassium, were also eliminated from the list of chemicals of potential concern. Based on recommended dietary allowances and on the concentrations that were detected in sediment, these nutrients do not have adequate toxicity criteria to evaluate risks quantitatively and are unlikely to adversely affect humans.

The chemicals selected as chemicals of potential concern in surface water and carried through the human health risk assessment are also listed in Table 6-2. As for sediment, the selection of chemicals of potential concern for surface water was also based on a comparison to background data and identification of essential human nutrients.

Lead was the only chemical of potential concern that was considered for fish tissue. Lead was selected as a chemical of potential concern in filet fish from Dry Creek and the Little Cahaba River. Lead was also selected as a chemical of potential concern in the forage (whole-body) fish caught in the unnamed tributary, Dry Creek, and the Little Cahaba River.

TABLE 6-2
SUMMARY OF INORGANIC CHEMICALS DETECTED IN SURFACE

(Concentrations presented in ug/L except where noted)

Chemical	Frequency of Detection	Mean Sample Size	Arithmetic Mean	Range of Detection Limits	Range of Detected Concentrations	Background Comparison Values
In the Vicinity of the ILCO Site (e):						
* Aluminum	14 / 14	14	377	NU	100 - 920	670
Arsenic	5 / 14	8	2.96	2.5	2.6 - 5	10
Barium	14 / 14	14	37.3	NU	24 - 51.3	67
Calcium	14 / 14	14	47.9	NU	27 - 73.5	96
N Iron	14 / 14	14	0.774	NU	0.31 - 1.5	1.23
* Lead	15 / 18	18	24.3	2.5	3.4 - 140	83.1
Magnesium	14 / 14	14	7.76	NU	3.6 - 12.5	15.2
* Manganese	14 / 14	14	272	NU	11 - 870	340
Molybdenum	5 / 14	14	6.43	5.0	9.25 - 22	36
* Nickel	1 / 14	14	5.5	10	12	ND (10)
Potassium	14 / 14	14	2.58	NU	1.3 - 5.8	6.8
Sodium (f)	14 / 14	14	30.6	NU	3.1 - 72	102
Strontium	14 / 14	14	136	NU	63 - 240	327
Titanium	11 / 14	14	9.71	5.0	6.25 - 22	22.4
* Zinc	11 / 14	14	6.96	5.0	5.4 - 15.1	13.6
Downstream from the ILCO Site						
* Lead	4 / 4	4	7.28	NU	6.3 - 8.5	ND (2.5)

* = Selected as a chemical of potential concern.
NU = Not used; chemical was detected in all samples.
ND = Not detected; detection limit shown in parentheses.
N = Chemical was not selected as a chemical of potential concern, because it is an essential human nutrient, detected at concentrations below its allowable daily intake.

6.2 Human Toxicity Assessment

The next step of the BRA, the human toxicity assessment, was performed in order to identify numerical toxicity criteria with which to assess human health exposures. For lead, no surface water or sediment screening levels exist, thus EPA screening levels for soil and groundwater were identified and presented as surrogate values. In addition, no EPA-approved screening levels were available for lead in fish, therefore, lead screening values found in other sources (i.e., Eisler [1988] report) were presented. The health effects information available for lead and the criteria that were used to assess potential adverse effects associated with lead exposures at OU-3 are summarized in Table 6-3.

6.3 Human Exposure Assessment

A human exposure assessment was then performed to determine which human exposure pathways could potentially be complete at OU-3 under current and future land use conditions. Currently the Site is not operating; therefore, only exposures to nearby residents were evaluated in the current land use scenario.

Under future land use conditions, it was assumed that the area around the Site could become residential in the future. For each complete exposure pathway, the chemical concentrations assumed to be contacted (i.e., the exposure point concentrations) were derived in the human exposure assessment. These values were either the 95% upper confidence limit on the arithmetic mean concentration or the maximum detected concentration, whichever was less. The exposure point concentrations for lead were used in a direct comparison to the lead criteria identified in the toxicity assessment, and, for fish, were input into the IEUBK model. The exposure point concentrations for other chemicals of potential concern were combined with reasonable maximum estimates of the extent, frequency, and duration of exposure in order to calculate chemical doses.

For chemicals of potential concern other than lead, quantitative dose-response data were compiled from EPA's Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEASTs), and the Environmental Criteria and Assessment Office (ECAO).

6.4 Human Risk Characterization

Using the human exposure and toxicity information, potential human health risks for each chemical of potential concern, except lead, and selected exposure pathway were evaluated. For lead, the potential for human health risks was assessed by comparing lead exposure point concentrations to the most applicable EPA screening criteria. In addition, the lead concentrations of fish caught in the streams near the ILCO Site were input into the IEUBK lead model to determine the percentage of a child's diet that could be fish (caught in the unnamed tributary or in Dry Creek immediately downstream of the ILCO Main Facility) without resulting in adverse health affects to the child.

Table 6-3

Summary of Screening Level Concentrations for Lead

Exposure Medium	Screening Level Health Criteria	Source
SEDIMENT	400 ppm	A USEPA (1994e) residential screening level for soil was used to indicate whether lead concentrations in sediment could cause adverse health effects. This concentration is based on expected responses to background lead exposures input into USEPA's integrated exposure uptake/biokinetic (IEUBK) model.
SURFACE WATER	15 ppb	The groundwater drinking water maximum contaminant level (MCL) of 15 ppb (USEPA 1990b) was used for comparison purposes only.
FISH	0.3 ppm	The screening criteria for protection of human health associated with ingestion of fishery products was obtained from an Eisler (1988) report. Although not stated specifically in the Eisler (1988) report, this value is most likely based on the World Health Organization's (1972) maximum safe level (0.3 ppm) in fish tissue for human consumption.

For comparative purposes, daily doses have been calculated for consumption of the sediment, surface water, and fish at the lead screening levels listed above. For sediment, the lead screening level of 400 ppm was multiplied by a child soil ingestion rate of 200 mg/day resulting in a daily dose of lead of 0.08 mg Pb/day. For surface water, the drinking water MCL for lead of 15 ppm was multiplied by a daily water ingestion rate of 2 L/day resulting in a daily dose of 0.03 mg Pb/day. For fish, a conservative ingestion assumption (i.e., an intake rate of 100 grams of fish per day) was multiplied by the 0.3 ppm safe level for fish, resulting in a daily dose of 0.03 mg Pb/day.

For OU-3, EPA developed screening level concentrations for lead in sediment, surface water, and fish. Since no human health based cleanup level has been developed for lead in sediment, a screening level of 400 parts per million (ppm) was selected for lead in sediment based on EPA's residential screening level for soil. This screening level was used to indicate whether lead concentrations in sediment could cause adverse health effects to humans. Based on the soil criteria, concentrations of lead in sediment from the unnamed tributary and Dry Creek in the immediate vicinity of the ILCO Main Facility could potentially result in a risk to human health if no action were taken to reduce the potential risk. Based on the soil criteria, concentrations of lead in sediment in the Little Cahaba River and Dry Creek further downstream from the ILCO Main Facility are unlikely to result in a risk to human health or the environment.

Since no screening criteria or cleanup levels have been developed for lead in surface water, a screening level of 15 micrograms per liter (ug/L) was selected. This screening level was selected for comparison purposes only, based on the maximum contaminant level (MCL) of 15 ug/L for lead in drinking water. The lead concentrations in surface water in the immediate vicinity of the ILCO Main Facility exceeded the screening level; however, the screening level is based on drinking water exposures and water from the surface water bodies in OU-3 is not used for drinking water. Exposures to surface water in the immediate vicinity of the ILCO Main Facility are likely to include dermal (skin) contact exposures only and lead is poorly absorbed through the skin. Therefore, skin contact exposures to lead in surface water are not likely to cause adverse health effects to humans. As a result, concentrations of lead in surface water from all OU-3 streams are not likely to result in a risk to human health or the environment.

As with surface water and sediment, no EPA-approved screening levels have been developed for lead in fish. Therefore, a screening level of 0.3 ppm was selected for fish, based on a U.S. Fish and Wildlife Service health-protective concentration of 0.3 ppm. The lead concentrations in all forage (whole-body) fish caught in the OU-3 streams exceeded the screening level for lead in fish. However, only the fish caught near the ILCO Main Facility exceeded the screening level for lead in filet fish. Since the screening level for lead was exceeded in some of the sampled fish, EPA used the IEUBK lead model to assess the potential risk to children from only ingesting fish from OU-3 of the ILCO site. Lead concentrations in other exposure media to which the same child would be exposed were assumed to be at average background concentrations (IEUBK model default values) in order to determine the risks from only ingesting the lead-contaminated fish; lead in soil and groundwater at the ILCO site is known, from previous studies of other operable units at the ILCO site, to be at unacceptable levels and remediation is planned for these media. The IEUBK model was used to backcalculate the maximum amount of fish from OU-3 that could be consumed by a child without adverse health effects to the child. The IEUBK lead model showed that between 1.3% to 28% of a child's meat diet could be fish (caught in the unnamed tributary or in Dry Creek immediately downstream of the ILCO Main Facility) without resulting in a risk to the child. At the maximum lead concentrations detected in fish, the risk assessment determined that 1.3% (forage fish) and 10% (filet fish) of a child's

meat diet could be fish (caught in the unnamed tributary or in Dry Creek immediately downstream of the ILCO Main Facility) without resulting in a risk to the child. At the average lead concentrations detected in fish, the risk assessment determined that 3.8% (forage fish) and 28% (filet fish) of a child's meat diet could be fish (caught in the unnamed tributary or in Dry Creek immediately downstream of the ILCO Main Facility) without resulting in a risk to the child. It should be noted that this is a very conservative analysis, since the risk assessment results are based on the protection of the most sensitive receptors (i.e., young children from 0.5 to 7 years old). This analysis focused on children rather than adults since children are known to be much more sensitive to the effects of lead than adults. The percentages determined in this analysis are also protective of adults consuming fish from the ILCO OU-3 streams. In addition, the concentrations of lead in filet fish caught in the Little Cahaba River and Dry Creek further downstream from the ILCO Main Facility were below 0.3 ppm and, therefore, do not pose a human health risk. The conclusions drawn from these comparisons are summarized in Table 6-4.

Table 6-4

Summary of Conclusions Regarding Lead

SEDIMENT	Based on the soil criteria, concentrations of lead in sediment from the Unnamed Tributary and Dry Creek in the immediate vicinity of the ILCO Main Facility could contribute to or result in an unacceptable risk. Concentrations of lead in sediment from the Little Cahaba River and Dry Creek further downstream of the ILCO Main Facility are unlikely to contribute to or result in an unacceptable risk.
SURFACE WATER	Concentrations of lead in surface water are unlikely to significantly contribute to or result in an unacceptable risk.
FISH	The lead concentrations in all forage fish caught in the OU-3 streams and only in filet fish caught near the ILCO Main Facility exceeded the screening level for lead in fish. The concentrations of lead in filet fish caught in the Little Cahaba River and Dry Creek further downstream of the ILCO Main Facility were less than the screening level. The results of the IEUBK lead model showed that between 1.3% to 28% (depending on the fish lead concentrations used in the model) of a child's meat diet could be fish (caught in the unnamed tributary or in Dry Creek immediately downstream of the ILCO Main Facility) without resulting in a risk to the child.

For the chemicals of potential concern other than lead, upper-bound excess lifetime cancer risks for carcinogenic chemicals and hazard quotient and hazard index values for noncarcinogenic chemicals were estimated. The upper-bound excess lifetime cancer risks were compared to USEPA's risk range for health protectiveness at Superfund Sites of $1x10^{-6}$ to $1x10^{-4}$. This range is representative of risks that must be considered in the selection of remedial alternatives. The noncarcinogenic hazard quotients and hazard indices were compared to a value of one, since hazard quotients/indices greater than one indicate a potential for adverse health effects. Tables 6-5 and 6-6 present risk estimates for human exposure pathways quantitatively evaluated under current and future land use conditions, respectively.

Table 6-5

Summary of Quantitative Risk Estimates for Potentially Complete Human Exposure Pathways Under Current Land Use Conditions

[Nearby Teenage Trespasser]

Exposure Medium Exposure Point Receptor Exposure Route	Upper Bound Excess Lifetime Cancer	Predominant Chemicals[b]	Hazard Index for Noncarcinogenic Effects[c]	Predominant Chemicals[d]
Sediment:				
In the Vicinity of the ILCO Site:				
Incidental	$8x10^{-7}$	——	$3x10^{-2}$	——
Dermal contact	$5x10^{-8}$	——	$1x10^{-2}$	——
Downstream from the ILCO Site:				
Incidental	NC	——	$2x10^{-4}$	——
Dermal contact	NC	——	$2x10^{-4}$	——
Surface Water:				
In the vicinity of the ILCO Site:				
Dermal contact	NC	——	$1x10^{-1}$	——

Table 6-6

Summary of Quantitative Risk Estimates for Additional Potentially Complete Human Exposure Pathways Under Future Land Use Conditions

[Child Resident]

Exposure Medium Exposure Point Receptor Exposure Route	Upper Bound Excess Lifetime Cancer	Predominant Chemicals[b]	Hazard Index for Non-carcinogenic	Predominant Chemicals[d]
Sediment:				
In the vicinity of the ILCO Site:				
Incidental ingestion	$8x10^{-6}$	Arsenic	$2x10^{-1}$	——
Dermal contact	$1x10^{-7}$	——	$3x10^{-2}$	——
Surface Water:				
In the vicinity of the ILCO Site:				
Dermal contact	NC	——	$4x10^{-1}$	——

[a] The upper bound individual excess lifetime cancer risk represents the probability, over background risks, than an individual may develop cancer over a 70-year lifetime as a result of the exposure conditions evaluated.
[b] The predominant chemicals are those which were associated with cancer risks greater than $1x10^{-4}$.
[c] The hazard index indicates whether or not exposure to mixtures of noncarcinogenic chemicals may result in adverse health effects. A hazard index less than one indicates that adverse human health effects are unlikely to occur. A hazard index greater than one indicates that adverse human health effects may potentially, but not necessarily, occur.
[d] The predominant chemicals are those which were associated with hazard quotients greater than 1.

NC = Not Calculated. Carcinogenic toxicity values were not available for any chemicals of potential concern in this medium.

6.5 Risk-Based Remediation Goals

The risk assessment also included risk-based remediation goals for the chemicals and pathways evaluated in the human health risk assessment that were associated with upper-bound excess lifetime cancer risks greater than $1x10^{-6}$ or for which hazard indices were greater than one. These goals incorporate the exposure scenarios and exposure assumptions that were developed in the human health risk assessment.

As shown in the Tables 6-5 and 6-6, the only chemical associated with cancer risks greater than $1x10^{-6}$ was arsenic (for which a risk of $8x10^{-6}$ [slightly greater than the lower end of the risk range] was calculated for incidental ingestion of sediment by a hypothetical future child resident). No hazard indices were greater than one. As a result, the only risk-based remediation goal that was developed in the risk assessment was for a future child's incidental ingestion of arsenic. The risk-based remediation goal was developed using a target risk level of $1x10^{-6}$, an EPA benchmark. Based on the conservative toxicity criteria, exposure assumptions, and risk methodologies used for developing the risk-based remediation goal for arsenic, the goal was calculated to be 1.87 ppm.

The remediation goal should also be compared to Site-specific or background levels when considering remedial action. Because the arsenic background values in the vicinity of the ILCO Main Facility range from 4.8 - 26 ppm, and because the reasonable maximum exposure concentration that was used in the risk assessment was 14 ppm, it appears that the onsite and background concentrations are similar.

Based on the results and conclusions of the human health risk assessment, a performance standard of 400 ppm was established for lead in sediment in the unnamed tributary and Dry Creek. No cleanup levels were established for lead in surface water, because the risk assessment showed that lead concentrations in surface water are unlikely to result in a risk to human health or the environment. In addition, no cleanup levels were established for arsenic in sediment, because the reasonable maximum exposure concentration used in the risk assessment for arsenic was within background levels at the Site.

6.6 Environmental Risk

An ecological risk assessment (ERA) was conducted for OU-3 to evaluate the impacts to aquatic receptors and piscivorous wildlife. Adverse effects to aquatic receptors were evaluated using risk quotients representing a comparison of surface water and sediment exposure point concentrations to chemical concentration levels from scientific literature below which adverse effects are not likely to occur. Potential adverse effects to aquatic receptors were also evaluated using data from EPA biological investigations on the OU-3 streams, including a habitat assessment, toxicity tests, and macroinvertebrate survey. Piscivorous wildlife were evaluated by comparing the estimated daily dose to belted kingfisher resulting from consuming lead-contaminated fish with toxicological benchmarks from the literature.

Comparisons of surface water and sediment levels to scientific literature suggest that the aquatic invertebrates may be adversely affected. Nevertheless, it should be noted that actual Site-specific biological sampling on the OU-3 streams indicated no significant observable adverse effects seem to be occurring. The reason for this disparity may be that the lead and the other chemicals of potential concern are bound to sediment particles and, as a result, may not be very bioavailable or may be bioavailable but in non-toxic forms. The results of the fish tissue analyses indicate that some of the lead in the sediment in the unnamed tributary and Dry Creek is being taken up by fish. However, the results of the ecological risk assessment indicate that adverse effects to aquatic receptors and piscivorous wildlife from consuming lead-contaminated fish are unlikely, even when using very conservative exposure assumptions. As a result, concentrations of lead in sediment and surface water in the OU-3 streams are not likely to result in an environmental risk.

7.0 DESCRIPTION OF ALTERNATIVES

The site-specific remedial alternatives represent a range of distinct waste-management strategies addressing the human health and environmental concerns. Although the selected

remedial alternative will be further refined as necessary during the design phase of the remedial action, the following analysis reflects the fundamental components of the various alternatives evaluated during the Feasibility Study for OU-3.

EPA evaluated four cleanup alternatives for contaminated sediment in the unnamed tributary and Dry Creek in the immediate vicinity of the ILCO Main Facility. A brief description of each of the sediment alternatives is given below.

ALTERNATIVE 1: NO ACTION

The no-action alternative involves no further cleanup for any of the contaminated media at the site; current conditions would change only through natural attenuation processes (e.g., dilution, flushing, burial, etc.). The purpose of including the no-action alternative is to provide a baseline with which the other alternatives can be compared. The no-action alternative would, however, include conducting 5-year reviews, as required by the Superfund law, to evaluate the effectiveness of the no-action alternative. The purpose of the 5-year reviews would be to determine whether the action remains protective of human health and the environment.

ALTERNATIVE 2: LIMITED ACTION

Limited action consists of controls to limit exposure to contaminated media. The purpose of these activities is to limit exposure to contaminated sediment and the ingestion of contaminated fish tissue. The limited action alternative would include:

- Natural attenuation (e.g., dilution, flushing, burial, etc.) of the contaminated sediment.
- Recommending to the Alabama Department of Public Health (ADPH) that a fishing advisory be issued for the unnamed tributary and Dry Creek near the ILCO Main Facility.
- Posting warning signs along the unnamed tributary and Dry Creek to indicate the presence of contaminated sediment and the fish advisory.
- Annual surface water, sediment, and biota monitoring.
- 5-year reviews as required by CERCLA to evaluate the effectiveness of the limited-action alternative.

EPA, in cooperation with ADPH, would also evaluate the feasibility of a community education program designed to educate the community on the potential health effects caused by being exposed to contaminants from OU-3 of the ILCO site.

ALTERNATIVE 3: CONTAINMENT

Alternative 3 for sediment would involve installing a barrier over the most highly contaminated sediment in portions of the unnamed tributary and Dry Creek. The barrier would isolate and prevent further migration of and exposure to the contaminated sediment. This alternative consists of a multimedia layer of rip-rap (rocks) overlying a geotextile fabric. As required by CERCLA, controls and monitoring to evaluate long-term protectiveness would also be performed.

The area to be capped is based on lead concentrations in the sediment exceeding 400 ppm. A predesign effort to confirm and further define the area to be capped would be needed.

The sequence of cleanup activities for the unnamed tributary and Dry Creek would be:

- Selected areas along the unnamed tributary and Dry Creek where lead concentrations in sediment exceed 400 ppm would be cleared to provide access for equipment and vehicles.

- A rerouting system, consisting of dikes, pumps, and a piping network, would be constructed to temporarily divert surface water around the affected stream segments during construction.

- The streambed channel would be cleared of debris (i.e., large rocks, tree limbs) and graded to ease installation of the liner.

- An appropriate non-woven geotextile fabric would be placed in the graded channel.

- The geotextile liner would be covered with rip-rap for scouring protection.

- The surface water rerouting system would be removed once the rip-rap has been successfully placed.

- All equipment and materials that come in contact with contaminated sediment would be decontaminated.

- The stream banks would be revegetated to prevent excess erosion of banks.

After site construction activities, the following controls would be initiated:

- Warning signs would be posted along the unnamed tributary and Dry Creek to indicate the presence of contaminated sediment beneath the cap and to warn against excavation or other disturbances.

- The cap would be inspected annually and repaired as needed.

ALTERNATIVE 4A: REMOVAL WITH ACID LEACHING TREATMENT

Alternative 4A would involve a more aggressive cleanup approach than the previously described alternatives. It would entail removal of sediment with lead concentrations greater than 400 ppm from the unnamed tributary and Dry Creek and transportation to the ILCO Main Facility for treatment and disposal along with contaminated soil from OU-2. The alternative would not include controls, monitoring, or operations and maintenance (O&M) because no lead-contaminated sediment above 400 ppm would remain at OU-3. The components of this remedy would include:

- Removal - Contaminated sediment would be removed using high-pressure washing, vacuum cleaning, and excavation methods. Removed material would be loaded into watertight trucks for transporting a short distance to the ILCO Main Facility.

- Treatment - Contaminated sediment would initially be dewatered before entering the acid leaching treatment process for soil from OU-2.

- Disposal - Disposal of treated sediment would be onsite at the ILCO Main Facility along with treated soil from OU-2.

- Lead recycling - Thermal treatment (i.e., secondary smelting) would be used for recycling lead residuals from acid leaching, as specified and discussed in Section 9.0 of the ROD for OU-2.

ALTERNATIVE 4B: REMOVAL WITH SOLIDIFICATION/STABILIZATION TREATMENT

Alternative 4B involves the removal of sediment from the unnamed tributary and Dry Creek and transportation to the ILCO Main Facility for treatment, as described above under Alternative 4A. The treatment process for the sediment in this alternative would be solidification/stabilization and onsite disposal under a multimedia cap. The process is specified as the contingent treatment option in Section 9.0 of the ROD for OU-2 in the event the treatability study results for acid leaching do not meet performance goals. Like Alternative 4A, this alternative would not include such activities as controls, monitoring, or O&M because no lead-contaminated sediment above 400 ppm would remain at OU-3.

8.0 SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

The remedial action alternatives selected for OU-3 were formulated to provide a range of discrete options to attain the remedial action objectives established for OU-3. These alternatives generally satisfy NCP requirements regarding the development of alternatives, including treatment to address principal threats and a range of treatment options that vary in the degree of treatment as well as the type and quantity of treated residuals or untreated waste requiring long-term management.

This section documents the comparative analysis conducted to evaluate the relative performance of each alternative in relation to each of the evaluation criteria. The purpose is to identify the relative advantages and disadvantages of each alternative. The key tradeoffs that must be balanced in the selection of remedy can then be identified. As stated in the NCP [40 CFR 300.430 (f)], the evaluation criteria are arranged in a hierarchial manner that are then used to select a remedy for a site based on the following categories:

Threshold Criteria:

Overall Protection of Human Health and the Environment
Compliance with ARARs

Primary Balancing Criteria:

Long-Term Effectiveness and Permanence
Reduction of Toxicity, Mobility, or Volume
Short-Term Effectiveness
Implementability
Cost

Modifying Criteria:

State Acceptance
Community Acceptance

COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES FOR SEDIMENT

EPA used the criteria listed above to evaluate each sediment alternative to determine which would best reduce the contamination and potential risk for ILCO OU-3.

Overall Protection of Human Health and the Environment

A comparison of the relative protectiveness of the OU-3 alternatives is limited by the small levels of risk reduction possible at OU-3. Alternatives 3 and 4 would reduce the potential for exposures to contaminated sediment in the unnamed tributary and Dry Creek. Alternative 4 would go one step further by actually removing the contaminated sediment. Both of these alternatives, however, would be constrained by the requirements associated with construction activities in Dry Creek and possible RCRA requirements. These constraints would add uncertainty to any conclusions regarding the protectiveness of either alternative.

Natural processes, combined with the cleanup of the ILCO Parking Lot and the ILCO Main Facility under the OU-1 and OU-2 remedial actions, respectively, should eventually cause lead concentrations in the unnamed tributary and Dry Creek to decline to health-based

levels. Alternative 2, involving controls that should minimize exposures to the contaminated sediment, would be more protective than Alternative 1 (no action) and may be as protective as Alternatives 3 and 4 given the uncertainties associated with the implementation of either of those alternatives.

Compliance with ARARs (Standards)

The most difficult to implement in compliance with Applicable or Relevant and Appropriate Requirements (ARARs) or, in other words, Federal and State requirements would be Alternative 4 because the activities include excavation, transport, handling, storage, treatment, and disposal. If testing shows some of the sediment to be RCRA characteristic waste, implementation of Alternative 4 must comply with the appropriate RCRA requirements. Alternative 4 could, however, be designed and implemented so as to attain compliance with RCRA and other ARARs.

Both Alternatives 3 and 4 would also have to comply with Clean Water Act requirements related to capping of aquatic environments and resuspension of sediment into surface waters or wetlands. Compliance with these requirements should be possible but is expected to increase both the schedule and cost of Alternatives 3 and 4. Alternatives 1 (No Action) and 2 (Limited Action) would have the least difficulty meeting ARAR requirements because they would only have to comply with the Alabama Water Use Classifications.

Long-Term Effectiveness and Permanence

The lowest level of residual risk and the highest degree of permanence would be associated with Alternative 4 (Removal, Treatment, and Disposal), which involves removal of all sediment contamination above health-based levels. The long-term effectiveness of this alternative would be further enhanced because it requires no O&M activities. The effectiveness and permanence of Alternative 3 would depend on long-term maintenance of the cap and other engineering controls. Alternative 2 would also be effective as long as the public follows the warning signs and/or fish advisory. Effectiveness and permanence of risk reduction for Alternative 2 would be dependent on the maintenance of the controls. Historical lead analysis data of sediment from ILCO OU-3 indicate that Alternative 1 could eventually result in a permanent solution for OU-3. However, the time to achieve this level of risk reduction would be dependent on natural processes, such as redistribution and dilution of contaminated sediment downstream of the ILCO site.

Reduction of Toxicity, Mobility, or Volume

Alternatives 1 and 2 would not affect the toxicity, mobility, or volume of contaminated sediment in ILCO OU-3. Any reduction of toxicity or volume would be dependent on natural redistribution and dilution of contaminated sediment downstream of the site. Alternative 3 (Containment) does not involve treatment, therefore, there would be no reduction of toxicity or volume of contaminated material. Alternative 3 would achieve a reduction in

mobility by isolating the contamination under a multi-media cap, as long as the cap and other engineering controls are maintained. Alternative 4 (Removal, Treatment and Disposal) would achieve the greatest reductions in toxicity, mobility, and volume through the removal, treatment, and disposal of sediment with lead contamination above health-based levels.

Short-Term Effectiveness

Alternatives 1 and 2 (No Action and Limited Action), involving no onsite cleanup activities, would result in no additional risks to the community or workers beyond those currently associated with this site. Much greater impacts to these receptors are possible if Alternatives 3 or 4 are implemented, because both involve construction activities within or handling of contaminated sediment. The transport of contaminated sediment through the Leeds community and increased potential for releases during treatment (air emissions, dust, runoff, odors, etc.) would make Alternative 4 the least effective from a short-term perspective. Potential impacts to the community, site workers, and the environment for all of the alternatives would be minimized through proper use of engineering controls, monitoring, and appropriate health and safety procedures.

The time required to implement protectiveness would be the quickest for Alternative 2 (less than 1 year), however, time required to achieve protectiveness would be dependent on the public following the warning signs and/or fish advisory. The longest time to achieve protectiveness would be for the no action alternative, which would be dependent on natural processes to reduce lead concentrations in OU-3 sediment. A reliable estimate of the time for this to occur is not available, but there is evidence that it is already occurring. The rate at which concentrations decline in the sediment are expected to increase following implementation of the remedies for OU-1 (which includes the ILCO Parking Lot) and OU-2 (the ILCO Main Facility). If so, the time to achieve protectiveness for no action may not be significantly greater than that associated with capping or removal, given the expected delays due to complications associated with capping or excavation in Dry Creek.

Implementability

Alternatives 1 and 2 (No Action and Limited Action) would be the most easily implemented as neither would require design or construction activities. Alternative 3 (Containment) would involve common construction techniques which are considered technically feasible and routine. Alternative 4 (Removal, Treatment, and Disposal) would involve removal using conventional construction equipment and a relatively complex treatment train. The treatment process has been demonstrated to be effective in the treatment of lead contaminated sediment but has more uncertainty from an implementability perspective than the placement of a geotextile liner and rip-rap.

The administrative feasibility of implementing Alternatives 3 and 4 is uncertain given the applicability of the Clean Water Act Section 404 permitting process. The question of

whether a permit can actually be obtained is an unknown. Even if EPA is granted an exemption from the administrative requirements of the permit, complying with the substantive portions may be a problem, especially for Alternative 3, which would convert an ecologically healthy creek into a rip-rap lined industrial-type drainage ditch.

Cost

A summary of the present worth, capital, and O&M costs for each of the alternatives is presented in Table 8-1. Alternative 1 would be the least expensive, while Alternative 4A would be the most expensive.

State Acceptance

The State of Alabama, as represented by the Alabama Department of Environmental Management (ADEM), has been the support agency during the RI/FS process for the ILCO Site. In accordance with 40 CFR 300.430, as the support agency, ADEM has participated in this process. The State of Alabama, as represented by ADEM, has concurred with the selected remedy.

Table 8-1
Summary of Present-Worth Costs Sediment Cleanup Alternatives

Alt No.	Description	Capital Cost	Total O&M Cost	Total Present Worth Cost
1	No Action	$ 0	$105,000	$ 105,000
2	Limited Action	$ 5,800	$529,700	$ 535,500
3	Containment	$ 451,500	$606,800	$1,058,300
4A	Removal with Acid Leaching	$1,403,600	$0	$1,403,600
4B	Removal with Stabilization	$1,191,000	$115,200	$1,306,200

Note: Alternative 4B is a contingency treatment in the event the acid leaching treatability study results do not meet performance criteria.

Community Acceptance

Based upon comments expressed at the proposed plan public meeting and written and oral comments received during the public comment period, the reaction of the Leeds community to the selected remedy at the ILCO Site has been favorable.

9.0 SUMMARY OF SELECTED REMEDY FOR OU-3

Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of alternatives and public and State comments, EPA has selected a cleanup remedy for OU-3. The total present worth cost of the selected remedy, Limited Action, is estimated at $535,500.

A. Selected Remedy

Based on the comparison of sediment alternatives and the results of the risk assessment, EPA selects Alternative 2, Limited Action, for reducing potential risks posed by sediment contamination in OU-3 (the unnamed tributary and Dry Creek). The purpose of the limited action alternative is to limit exposure to contaminated sediment and to limit ingestion of contaminated fish tissue. The limited action alternative includes:

- Natural attenuation (e.g., dilution, flushing, burial, etc.) of the contaminated sediment.
- Recommending to the Alabama Department of Public Health (ADPH) that a fishing advisory be issued for the unnamed tributary and Dry Creek near the ILCO Main Facility.
- Posting of warning signs along the unnamed tributary and Dry Creek to indicate the presence of contaminated sediment and the fish advisory.
- Annual surface water, sediment, and biota monitoring.
- 5-year reviews as required by CERCLA to evaluate the effectiveness of the limited-action alternative. The 5-year reviews would primarily involve a comprehensive evaluation of the monitoring data.

EPA, in cooperation with ADPH, will also evaluate the feasibility of a community education program designed to acquaint the community with the potential health effects caused by being exposed to contaminants from the ILCO site.

Warning signs will be posted along creek and tributary access points. The warning signs will warn the public against the exposure to contaminated sediment and against the consumption of fish from the unnamed tributary and Dry Creek.

Surface water, sediment, and biota samples will be collected annually from the unnamed tributary and Dry Creek. Additional sampling events may be requested by EPA, such as sampling after major rainfall events, in order to monitor different flow conditions in the unnamed tributary and Dry Creek. In addition, EPA may also request additional sampling events, as determined necessary by EPA and the State of Alabama, prior to remediation of the ILCO Main Facility and the ILCO Parking Lot to ensure early detection of any increased contaminant levels and/or contaminant migration.

Game fish samples will be prepared in accordance with the FDA filet method (i.e., filet including the rib cage and belly flap with skin on and scales off - except for catfish where the skin is removed), while forage fish will be whole-body composite samples. All samples will be analyzed for total lead.

Monitoring will commence within one to two years of signing this ROD. The monitoring program will be conducted under the direction of EPA. Surface water, sediment, and biota monitoring stations will be selected by EPA, in consultation with the State of Alabama, prior to beginning the monitoring program and will be based primarily on previous sampling results. Data collected from the monitoring events will allow EPA to evaluate contamination trends in the surface water, sediment, and biota of the unnamed tributary and Dry Creek. These trends will be used to support decisions to modify the monitoring program as needed.

The primary purpose of the monitoring program is to ensure that natural attenuation is working, that the lead levels in surface water, sediment, and/or biota are decreasing versus increasing over time, and that the lead contamination is not migrating further downstream. If the monitoring results show that lead concentrations in surface water, sediment, and/or biota are actually increasing over time, as compared with previous sampling results, and/or contamination is migrating further downstream, the limited action remedy will be re-examined by EPA, in consultation with the State of Alabama.

The monitoring results will be incorporated into the 5-year reviews required by CERCLA to ensure that human health and the environment continue to be protected by the selected remedy, that natural attenuation processes are effective, and that sediment performance standards continue to be appropriate.

The monitoring program will continue until EPA approves a 5-year review concluding that the selected remedy has achieved continued attainment of the sediment performance standards and remains protective of human health and the environment.

The cost of the selected remedy, Limited Action, is estimated to be $535,500.

The selected remedy for sediment at OU-3 is consistent with the requirements of Section 121 of CERCLA and the National Contingency Plan. The selected remedy is protective of human health and the environment and will attain all Federal and State requirements that

are legally applicable or relevant and appropriate to the remedial action (unless such requirements are waived). The selected remedy for OU-3 represents the best balance of the nine criteria used by EPA to evaluate possible cleanup alternatives.

B. Performance Standards

Based on the results and conclusions of the baseline risk assessment conducted for OU-3, a performance standard of 400 ppm is established for lead in sediment in the unnamed tributary and Dry Creek.

C. Compliance Monitoring

Annual surface water, sediment, and biota monitoring shall be conducted at OU-3 in the unnamed tributary and Dry Creek. Data collected from the annual monitoring will allow EPA to evaluate contamination trends in the surface water, sediment, and biota of the unnamed tributary and Dry Creek. These trends will be used to support decisions to modify the monitoring program as needed. In addition, if the monitoring results show that lead concentrations in surface water, sediment, and/or biota are actually increasing over time, as compared to previous sampling results, and/or migrating further downstream, the limited action remedy will be re-examined by EPA, in consultation with the State of Alabama. The monitoring results will be incorporated into the 5-year reviews required by CERCLA to ensure that human health and the environment continue to be protected by the selected remedy and that natural attenuation processes are effective. The monitoring program will continue until EPA approves a 5-year review concluding that the selected remedy remains protective of human health and the environment and has achieved continued attainment of all Federal and State ARARs (unless such ARARs are waived) established in Section 10.2 of this ROD and the sediment performance standards established in Section 9.0 of this ROD.

10.0 STATUTORY DETERMINATION

EPA's primary responsibility at Superfund Sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA establishes additional statutory requirements and preferences. These specify that, when complete, the selected remedy must also meet all identified Federal and State ARARs (unless such ARARs are waived), be cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. A review will be conducted within five years from commencement of the remedial action for OU-3 to ensure that the remedy continues to provide adequate protection of human health and the environment. The following sections discuss how the selected remedy for OU-3 meets these statutory requirements.

10.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy, Limited Action, is protective of human health and the environment. Natural processes, combined with the cleanup of the ILCO Parking Lot and the ILCO Main Facility under the OU-1 and OU-2 remedial actions, respectively, should eventually cause lead concentrations in the unnamed tributary and Dry Creek to decline to health-based levels. In addition, the selected remedy involves institutional controls that should minimize exposures to the contaminated sediment and biota in OU-3 while natural attenuation processes are in progress.

10.2 ATTAINMENT OF THE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

The selected remedy must comply with the substantive requirements of Federal and State laws and regulations which have been determined to constitute applicable or relevant and appropriate requirements (ARARs).

Applicable requirements are those cleanup standards, control standards, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Superfund site.

Relevant and appropriate requirements are those cleanup standards, control standards, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a Superfund site, address problems or situations sufficiently similar (relevant) to those encountered and that are well-suited (appropriate) to circumstances at the particular site.

Chemical Specific ARARs

Chemical-specific ARARs are specific numerical quantity restrictions on individually-listed chemicals in specific media.

Alabama Water Quality Standards, ADEM Admin. Code R. 335-6-10 Alabama's Water Quality Standards are relevant and appropriate with respect to non-point source discharges emanating from the Site as these standards set forth numerical and narrative standards for surface water in the State of Alabama. However, in order to comply with such standards, portions of the unnamed tributary, Dry Creek, and the Little Cahaba River would need to be drained and re-routed during excavation of sediment. As a result, the diverse aquatic communities living in these waters would be destroyed. Further, Site-specific biological sampling conducted during the RI for OU-3 indicated that there are no adverse impacts on the diversified aquatic communities living in the OU-3 streams. Accordingly, EPA has concluded that compliance with these standards would result in a greater risk to the

environment and, therefore, invokes a waiver pursuant to CERCLA Section 121(d)(4)(B), 42 U.S.C §9621(d)(4)(B), for Alabama's Water Quality Standards.

Location-Specific ARARs

Location-specific ARARs are restrictions placed upon the concentration of hazardous substances or the conduct of activities on the basis of location.

Alabama's Water Use Classifications, ADEM Admin. Code R. 335-6-11. Dry Creek and the unnamed tributary are classified as fish and wildlife streams and, therefore, Alabama's Water Use Classifications are relevant and appropriate.

Action-Specific ARARs

Action-specific ARARs are technology or activity based requirements or limitations or actions taken with respect to cleanup. No action-specific ARARs have been identified for the selected remedy for OU-3 of the ILCO Site.

10.3 COST EFFECTIVENESS

Based on the information available, the selected remedy provides the best balance of evaluation criteria and is the least expensive of the sediment alternatives (except for the no action alternative). EPA believes the selected remedy for OU-3 will reduce the risks to human health and the environment at an estimated cost of $535,500.

10.4 UTILIZATION OF PERMANENT SOLUTIONS TO THE MAXIMUM EXTENT PRACTICABLE

EPA has determined that the selected remedy for OU-3, based on the results of the BRA, represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner at OU-3. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA has determined that the selected remedy provides the best balance of trade-offs in terms of long-term effectiveness and permanence, reduction in toxicity, mobility, or volume, short-term effectiveness, implementability, and cost, while also considering the statutory preference for treatment as a principal element and considering State and community acceptance. The statutory preference for remedies that utilize permanent solutions is not satisfied at OU-3. EPA has concluded that remedies which utilize permanent solutions are impracticable and not cost-effective at OU-3 based on the results of the baseline risk assessment not showing a significant risk posed to human health or the environment by OU-3. The selected remedy for OU-3 is consistent with the requirements of Section 121 of CERCLA and the National Contingency Plan to the extent practicable. The selected remedy is protective of human health and the environment and will attain all identified Federal and State ARARs. The selected remedy for OU-3 represents the best balance of the nine criteria used by EPA to evaluate possible cleanup alternatives.

10.5 PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

The selected remedy for OU-3 utilizes treatment technologies to the extent practicable. The statutory preference for remedies that employ treatment as a principal element is not satisfied. EPA has concluded that remedies which employ treatment technologies are impracticable and not cost-effective at OU-3 based on the results of the baseline risk assessment not showing a significant risk posed to human health or the environment by OU-3. However, it was determined that the selected remedy for OU-3 is consistent with the requirements of Section 121 of CERCLA and the National Contingency Plan to the extent practicable. The selected remedy is protective of human health and the environment and will attain all identified Federal and State ARARs. The selected remedy for OU-3 represents the best balance of the nine criteria used by EPA to evaluate possible cleanup alternatives.

11.0 DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for OU-3 was released for public comment in July 1995. The Proposed Plan identified Alternative 2, Limited Action, as the preferred alternative at OU-3. EPA has reviewed all written and verbal comments submitted during the public comment period. The only significant changes made based on the comments received and an evaluation by EPA of the proposed remedial action are:

- EPA modified the monitoring program to be conducted under the selected remedy for OU-3 to state that EPA may request additional sampling events, such as sampling after major rainfall events, to monitor different flow conditions in the unnamed tributary and Dry Creek.

- EPA modified the monitoring program to be conducted under the selected remedy for OU-3 to include surface water sampling in addition to the proposed sediment and biota sampling.

- EPA modified the monitoring program to be conducted under the selected remedy for OU-3 to state that EPA may request additional sampling events, as determined necessary by EPA in consultation with the State of Alabama, prior to remediation of the ILCO Main Facility and the ILCO Parking Lot to ensure early detection of increased contaminant levels and contaminant migration.

APPENDIX A

ILCO SUPERFUND SITE

RESPONSIVENESS SUMMARY

Comment #1:

A choice among the four alternatives listed for cleanup at the ILCO OU-3 site yields only a single alternative that even approaches being acceptable. That is alternative 4 - removal and treatment of the contaminated sediment. Alternatives 1-3 do little or nothing to protect the public health or the larger ecosystem formed by the Cahaba, it's tributaries, and the watershed.

EPA's Response:

A comparison of the relative protectiveness of the OU-3 alternatives is limited by the small levels of risk reduction possible at OU-3. EPA agrees that alternative 4 would reduce the potential for exposures to contaminated sediment in OU-3 by actually removing the contaminated sediment. However, implementation of this alternative would be constrained by the requirements associated with construction activities in Dry Creek and possible RCRA requirements. These constraints add uncertainty to any conclusions regarding the protectiveness of alternative 4. Natural processes, combined with the cleanup of the ILCO Main Facility and the ILCO Parking Lot, should eventually cause lead concentrations in OU-3 to decline to health-based levels. As stated in the risk assessment, the risk associated with the contaminated sediments and fish is very uncertain, so any decline would benefit both people and the environment. EPA's preferred alternative, alternative 2, involves controls that should minimize exposures to the contaminated sediment and, given the uncertainties associated with implementation of alternative 4, alternative 2 may be as protective as alternative 4. In addition, the ecological risk assessment concluded that the concentrations of lead in sediment in the OU-3 streams are not likely to result in an ecological risk. Despite the presence of lead concentrations in excess of EPA's conservative 400 mg/kg screening level at some locations downstream from the ILCO Main Facility in the unnamed tributary and Dry Creek, EPA's macroinvertebrate surveys and toxicity tests indicated no adverse impact from site-derived contaminants on the aquatic communities in OU-3. As a result, EPA believes that alternative 2 will be protective of public health and the larger ecosystem formed by the Cahaba. However, if the OU-3 monitoring results show that lead concentrations in sediment and biota are actually increasing over time and/or migrating further downstream, the selected remedy, alternative 2, will be re-examined by EPA, in consultation with the State of Alabama, to ensure the protection of human health and the environment.

Comment #2:

Considering EPA's nine criteria for evaluating the alternatives, since alternatives 1 and 2 are very similar, what made EPA choose alternative 2 over alternative 1?

EPA's Response:

The human health risk assessment determined that concentrations of lead in sediment and fish from the unnamed tributary and Dry Creek in the vicinity of the ILCO Main Facility could contribute to or result in an unacceptable risk to human health. Although this risk is uncertain, there is still the potential for adverse impacts to people from exposure to contaminated sediments and ingestion of contaminated fish. As a result of this potential risk to human health, EPA believes that alternative 2 is more protective than alternative 1. Alternative 1, unlike alternative 2, does not involve any controls to minimize exposure to contaminated sediment and ingestion of contaminated fish. Alternative 2 also includes annual monitoring of the sediment and biota to ensure that lead levels are not increasing over time and to ensure that the alternative continues to remain protective of human health and the environment. As a result, EPA prefers alternative 2 over alternative 1. Alternative 2 provides the best balance of the nine criteria used by EPA in evaluating alternatives for cleanup.

Comment #3:

How long will it take to implement alternative 2 at the ILCO OU-3 site?

EPA's Response:

The monitoring program should commence within one to two years of signing this Record of Decision, as long as there are no delays to the project. Other components of alternative 2, such as the fish advisory and warning signs, should be implemented even sooner than the monitoring program. The monitoring program will continue until EPA approves a 5-year review concluding that the selected remedy remains protective of human health and the environment, has achieved continued attainment of all Federal and State ARARs established in Section 10.2 of this ROD, and has achieved the sediment performance standards established in Section 9.0 of this ROD.

Comment #4:

If alternative 2 is enacted and EPA does annual monitoring on OU-3, will EPA monitor different flow conditions, such as after a rainfall event, or will EPA strictly use base flow?

EPA's Response:

EPA agrees that the monitoring program should include monitoring of different flow conditions versus just base flow conditions alone. As a result, EPA will modify the monitoring program to

be conducted under the selected remedy for OU-3 to state that EPA may request additional sampling events, such as sampling after major rainfall events, to monitor different flow conditions.

Comment #5:

Only sediment and biota are proposed for monitoring of OU-3. It is realized that surface water does not pose a threat at this time, but since sediment and biota samples have to be taken, wouldn't it be beneficial to have surface water data to reference if there were changes in the future?

EPA's Response:

EPA agrees that surface water data may be useful to reference if there are changes in the future to the selected remedy for OU-3. As a result, EPA will modify the monitoring program to be conducted under the selected remedy for OU-3 to include annual surface water sampling, in addition to sediment and biota sampling.

Comment #6:

EPA should consider sampling OU-3 on a quarterly basis until the source of the contamination is removed (i.e., the contaminated soils at the ILCO Main Facility and the ILCO Parking Lot). Quarterly sampling episodes would allow early detection of increased contaminant levels and contaminant migration.

EPA's Response:

EPA agrees that additional sampling events may be necessary until the time that the source of the contamination is removed, but EPA does not necessarily believe that sampling on a quarterly basis is required. EPA will modify the monitoring program to be conducted under the selected remedy for OU-3 to state that EPA may request additional sampling events, as determined necessary by EPA, in consultation with the State of Alabama, prior to remediation of the ILCO Main Facility and the ILCO Parking Lot to ensure early detection of any increased contaminant levels and contaminant migration.

Comment #7:

According to EPA's technical documents, the unnamed tributary and Dry Creek in the vicinity of the ILCO site do not support large populations of edible fish because of the small size of the streams. In fact, no fish were caught at several stations along the unnamed tributary and at the reference station near the Leeds Memorial Park. For these reasons, the ILCO PRP Steering Committee does not believe that the record supports the need for issuance of a fishing advisory for the unnamed tributary and Dry Creek near the ILCO Main Facility.

EPA's Response:

EPA disagrees that the record does not support a need for issuance of a fishing advisory for the unnamed tributary and Dry Creek. The human health risk assessment determined that there was a potential risk associated with consuming contaminated fish from the unnamed tributary and Dry Creek in the vicinity of the ILCO Main Facility. EPA agrees that there were no fish caught at several stations along the unnamed tributary and at the reference station, however, several fish, some of edible size and some exceeding EPA's screening level for lead in fish, were caught at some of the stations on the unnamed tributary and at most of the stations on Dry Creek. Therefore, in order to protect the public from any risk associated with consuming contaminated fish from the unnamed tributary and Dry Creek, EPA believes that a fish advisory is warranted. As a result, EPA will recommend to the Alabama Department of Public Health (ADPH) that a fishing advisory be issued for the unnamed tributary and Dry Creek. However, the decision on whether or not to actually issue the fishing advisory will be made by ADPH, not EPA.

Comment #8:

The results of EPA's OU-3 remedial investigation, coupled with data from previous studies, have confirmed a declining trend in the stream sediment lead levels during recent years. EPA has attributed this declining trend to the cessation of operations at the Interstate Lead Company, to EPA's removal project which reduced the levels of lead in soil at the ILCO Main Facility thereby minimizing the potential for storm water runoff impacts from the site, and to the hydraulic characteristics of the unnamed tributary which have caused erosion of sediment to occur from most areas in the stream channel. The declining trend in stream sediment lead levels suggests that annual sediment and biota monitoring may not be necessary. The ILCO PRP Steering Committee instead urges EPA to reevaluate the frequency of monitoring on an ongoing basis, in light of the results of the previous sediment and biota monitoring and the status of remedial activities at the ILCO Main Facility and the ILCO Parking Lot. As remedial activities proceed and as declining trends in sediment lead levels continue to be observed, the Steering Committee believes that there should be the flexibility to reduce the frequency of the monitoring program or to eliminate it.

EPA's Response:

EPA agrees that the data, in general, has shown a declining trend in the stream sediment lead levels over time. However, samples taken during 1994 actually showed an increase in lead concentrations over what had been detected in past sampling episodes. As a result, EPA feels that monitoring, at least on an annual basis, is necessary until such time that the monitoring results show that the sediment lead levels are consistently decreasing over time. EPA believes that annual monitoring is necessary to ensure that natural attenuation is working, that the lead levels are decreasing versus increasing over time, and that the lead contamination is not migrating further downstream. As a result, the monitoring program will continue until EPA, in consultation with the State of Alabama, approves a five-year review concluding that the selected remedy has

achieved continued attainment of the sediment performance standards and remains protective of human health and the environment. Data collected from the monitoring events will allow EPA, however, to evaluate contamination trends in the sediment and biota in OU-3 and these trends will be used to support decisions to modify the monitoring program as needed.

APPENDIX B

STATE OF ALABAMA CONCURRENCE LETTER

ILCO SUPERFUND SITE

RECORD OF DECISION

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

James W. Warr
Acting Director
~~John Smith, Director~~

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September 29, 1995

Mr. John H. Hankinson, Jr.
Regional Administrator
U.S. Environmental Protection Agency
345 Courtland St. NE
Atlanta, GA 30365

Re: Interstate Lead Company (ILCO)
Leeds, Alabama

Dear Mr. Hankinson:

The Alabama Department of Environmental Management has reviewed the draft Record of Decision for Operable Unit 3 at the referenced facility. After review by our staff and in consultation with EPA staff, we agree with the approach recommended in this document. ADEM concurs with the Record of Decision for Operable Unit 3.

Should your staff have questions or comments, please contact Mr. David Thompson at 334-213-4322.

Sincerely,

James W. Warr
Acting Director

JWW/dwt

pc: Kimberly Q. Lanterman, RPM
David Thompson, SAC