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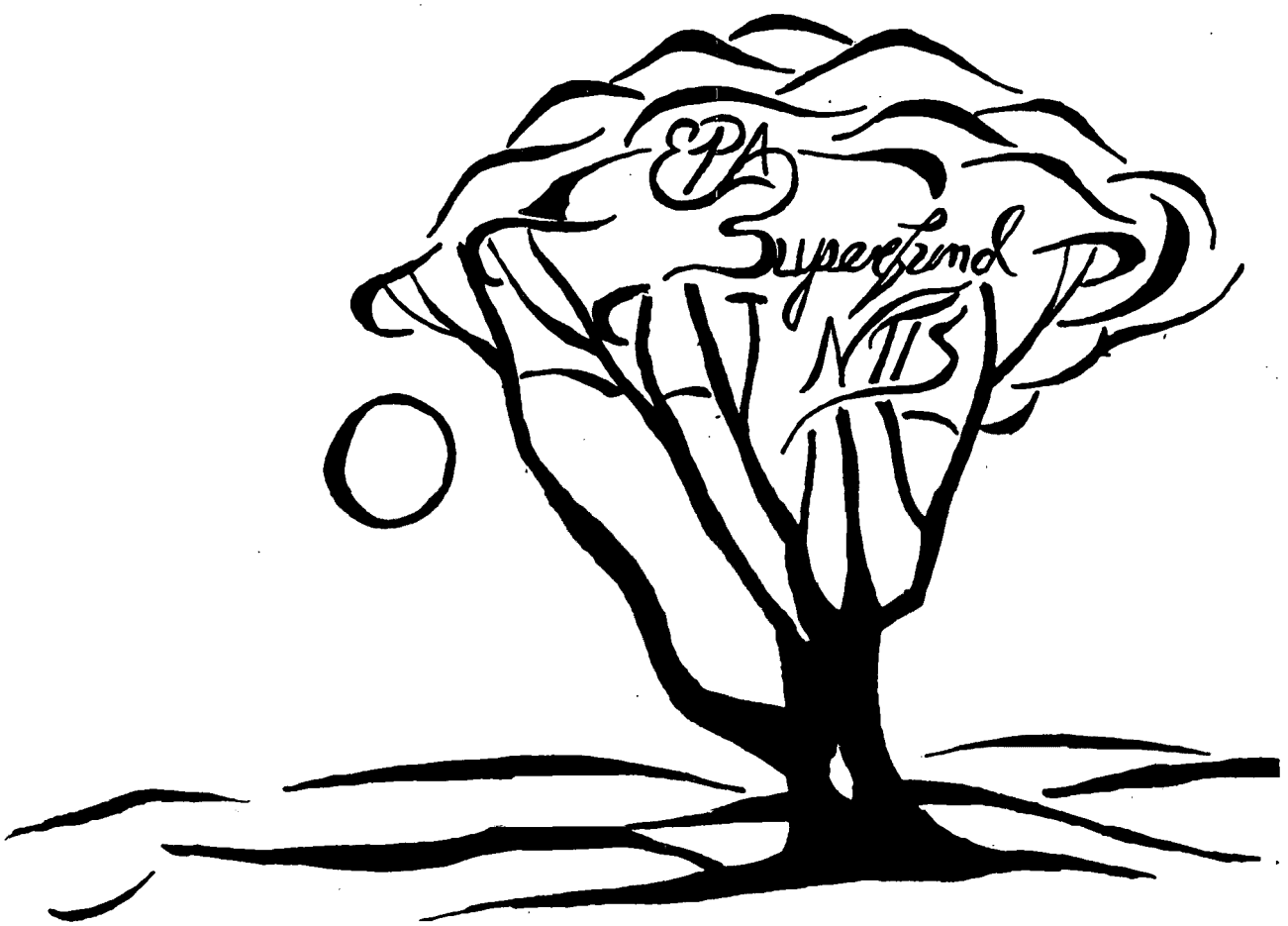
EPA Superfund Record of Decision:

Reeves Southeastern Galvanizing Corp. (O.U. 3), Tampa, FL 6/28/1994



RECORD OF DECISION
OPERABLE UNIT THREE
June 1994

Reeves Southeastern Superfund Site
Hillsborough County, Florida

REGION IV
Atlanta, Georgia

DECLARATION OF THE RECORD OF DECISION

SITE NAME AND LOCATION

Reeves Southeastern Corporation Site
Hillsborough County, Florida

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) document presents the selected remedial action for the Reeves Southeastern Corporation site in Hillsborough County, Florida. This ROD was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendment and Reauthorization Act (SARA) of 1986, 42 U.S.C. 9601 et seq., and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Section 105 of CERCLA), 40 CFR Part 300. This ROD is based on the Reeves Southeastern Site Operable Unit Three Administrative Record.

The State of Florida, as represented by the Florida Department of Environmental Protection (FDEP), has been the support agency during the Remedial Investigation and Feasibility Study process for the Reeves Southeastern site. In accordance with 40 CFR 300.430, FDEP, as the support agency, has provided input during this process. Based upon comments received from FDEP, it is expected that concurrence will be forthcoming; however, a formal letter of concurrence has not yet been received.

DESCRIPTION OF THE REMEDY

This operable unit is the third of three operable units planned for the site. The first operable unit selected for this site involves the remediation of the soils/sediment on the site. The second operable unit addresses the contamination in the northern surficial aquifer groundwater underlying the site.

The major components of the selected remedy include:

- No Action;
- Long-Term Monitoring of the North Wetland and unnamed creek;

DECLARATION STATEMENT

The EPA has determined that no action is necessary to ensure the protection of human health or the environment. The five year review will apply to the no action remedy because monitoring of the North Wetland and unnamed creek will be performed.

Patrick M Tobin for

John H. Hankinson, Jr.
Regional Administrator

6-28-94
Date

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RECORD OF DECISION
OPERABLE UNIT THREE
REEVES SOUTHEASTERN SUPERFUND SITE
HILLSBOROUGH COUNTY FLORIDA
DECISION SUMMARY

1.0 SITE NAME, LOCATION, AND DESCRIPTION

The Reeves Southeastern Corporation Site is located in central Hillsborough County, Florida. The site consists of two facilities located across the road from each other: the 17.36 acre Reeves Southeastern Galvanizing (SEG) facility on the north side of State Road (SR) 574 approximately 1200 feet west of Faulkenburg Road; and the 11.6 acre Reeves Southeastern Wire (SEW) facility located on the south side of SR 574 approximately 600 feet west of Faulkenburg Road. Originally, just the SEG facility was listed in the National Priorities List (NPL) and it was considered to be the site. Because contamination was discovered on the SEW facility during the RI, both facilities are now considered part of the site. Both facilities are still in operation. Two additional Superfund sites are located in the area. These are the Peak Oil site, which is located immediately west of the SEW facility and the Bay Drums site, which is located immediately west of the Peak Oil site. Figure One, taken from the Reeves site source characterization Feasibility Study (FS), shows a map of all three sites.

Currently, the area north of the SEG facility is Sabal Industrial Park, a development containing various light industrial and office buildings. The area south of the Reeves site is generally undeveloped, but does encompass about 400 acres owned by Hillsborough County that contains a wastewater treatment plant, a solid waste resource recovery facility and an area designated as the potential location of a new jail. There is no residential development in the immediate vicinity; the nearest being .25 miles east of the SEW facility. According to the Official Zoning Atlas for Hillsborough County (1985), the Reeves, Peak Oil and Bay Drums properties are all currently zoned for light manufacturing. All of this information would indicate that it is unlikely that the future use of the property would include residential development.

The largest building on the SEG facility is where commercial steel products are pre-treated and galvanized. There is also a small office building and maintenance shed. A 300 gallon tank situated in a small rectangular area in the northwest corner of the maintenance shed was used in the 1960s as a wastewater catch basin during electroplating. Two inactive liquid waste percolation/evaporation ponds are located in the north-central part of the property area. A waste-water pretreatment facility and a double-lined storage basin for settled solids are located on the northeast portion of the SEG.

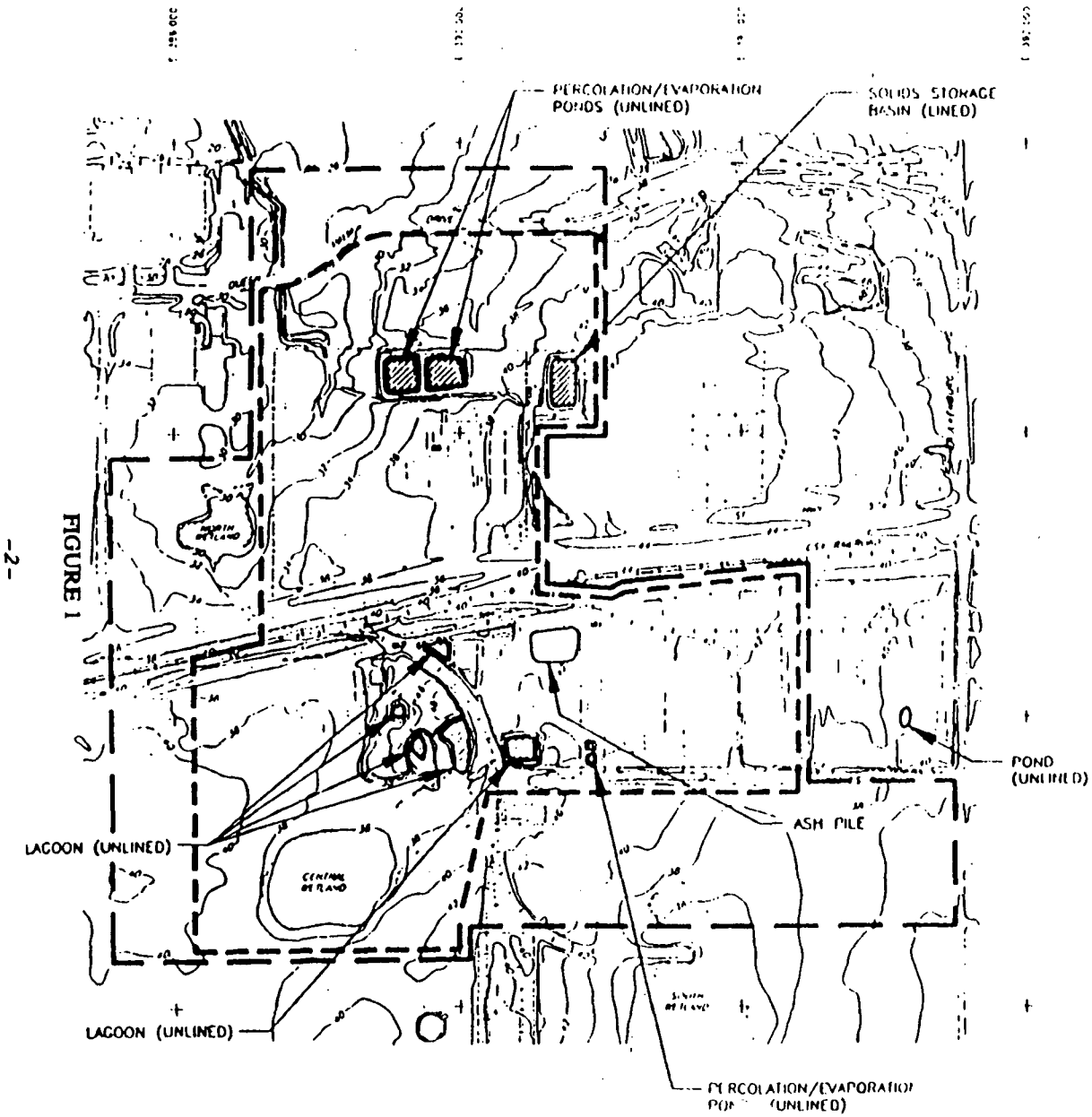

FIGURE 1

LEGEND

- RAILROAD
- FENCE
- UNIMPROVED ROADWAY
- DRAINAGE DITCH
- DIRECTION OF SURFACE WATER FLOW
- STANDING WATER
- TOPOGRAPHIC CONTOUR (NGVD DATUM) (2 FOOT CONTOUR INTERVAL) (FEET ABOVE MSL)
- MANMADE POND/LAGOON
- LIMITS OF STUDY AREA
- LIMITS OF SITE SOURCE INVESTIGATION

NOTES:

1. COORDINATE GRID IS REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM

SCALE

600 0 600 FEET

TOPOGRAPHIC PLAN
BAY DRUMS, PEAK OIL, AND REEVES
SUPERFUND SITES
TAMPA, FLORIDA

The largest building on the SEW facility is where steel wire is drawn, weaved into chain link fence, pre-treated and galvanized. The smaller building on the facility is an office building. There are three former percolation/evaporation ponds: one on the central western edge of the property (now backfilled); and two on the southwestern corner of the property. There are several offsite wetlands near the three sites. The North Wetland is the one that is associated with the Reeves site.

Aerial photographs from the 1950s show that the North Wetland and unnamed creek predated the SEG facility. In the late 1970s, the developers of Sabal Industrial Park submitted a permit application for the construction of a stormwater management system for the proposed development. The Permit Application Appraisal, dated May 9, 1978, included the unnamed creek as a part of the system and defined the unnamed creek as a swale. A letter from FDER dated December 31, 1981 states that the North Wetland drainage system is a part of the already existing stormwater management system for Sabal Park and a letter from the Southwest Florida Water Management District (SWFWMD) dated April 18, 1984 reconfirms this. The plat for the Sabal Park Master Drainage Plan that was submitted to SWFWMD in 1984 clearly shows that the unnamed creek and, by extension, the North Wetland are considered by Sabal Park to be a part of its stormwater management system. In the early 1990s, after the sampling for the WIS had taken place, the unnamed creek was dredged by an unknown party.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

The SEG facility was originally built and operated as Acme Plating and Galvanizing Company in the mid-1960s. In 1970, the facility was acquired by Metal Coatings, Inc, which merged into the Southeastern Galvanizing Corporation in 1971. Through internal reorganizations, Southeastern Galvanizing Corporation became the Southeastern Galvanizing Division of Reeves Southeastern Corporation. The SEG facility utilized two depressions as percolation/evaporation ponds for their wastewater. The ponds were later enlarged to their present size of 100' by 100' each, with 5' berms surrounding them and a below grade depth of about 10'. The ponds were used for disposing of process wastewater until 1982, when the current wastewater pretreatment system was installed. Wastewater from the facility is now discharged into the local publicly owned treatment works (POTW).

The SEW facility was originally built in 1955 and operated by Florida Wholesale Fence, Inc., a subsidiary of Reeves Fences, Inc. Through two mergers, Florida Wholesale Fence became the Southeastern Wire Division of Reeves Southeastern Corporation. The first percolation/evaporation pond for disposal of SEW's wastewater was built in 1955 and was used until it was backfilled

in the late 1960s. Its dimensions were approximately 75' long and 25' wide and was located along the central western border of SEW. A second pond was constructed prior to 1969; it was subdivided in 1975 to form the two current ponds in the southwest corner of the facility. Both ponds are approximately 35' by 35', and are surrounded by a 3' berm. The ponds were excavated to a depth of 3'. Discharge into these ponds ceased in 1980 when SEW began using its wastewater pretreatment program. Discharge from this facility also goes into the local POTW.

The U.S. EPA conducted a site investigation in 1981 that indicated elevated metal levels in surface water and groundwater at the SEG facility. Subsequently, the Florida Department of Environmental Protection (FDEP) (formerly the Florida Department of Environmental Regulation) conducted a survey of the types and magnitude of chemical contamination at SEG; this survey resulted in the 1982 placement of SEG on EPA's National Priorities List (NPL). Reeves contracted in 1985 with CH2MHill for a terrain conductivity survey utilizing electromagnetic induction technology to be performed at both SEW and SEG. The results indicated a possible groundwater contamination problem in the surficial aquifer underneath both facilities.

In 1988, the Reeves Southeastern Corporation and a group of potentially responsible parties (PRPs) for the adjacent Peak Oil site signed individual Administrative Orders of Consent (AOCs) to perform source characterization Remedial Investigations and Feasibility Studies (RI/FSs) at their respective sites. Under the AOCs, the Peak Oil PRPs agreed to perform a source characterization RI/FS at the Peak Oil site and the Reeves Southeastern Corporation would perform a source characterization RI/FS at its SEG and SEW facilities. EPA decided to perform a source characterization RI/FS at the Bay Drums site. The results of the source characterization RI/FS for the Reeves site and the resulting remedy decision is documented in the Operable Unit One - Record of Decision, October 1992. That remedy decision consists of the following: excavation of contaminated soils and sediments on the SEG and SEW facilities; backfilling of excavated areas with clean fill; solidification/stabilization of the contaminated soils and sediments; disposal of the solidified material above the water table on the SEG facility; and capping of the solidified material with a low permeability cap.

In addition to the source control RI/FSs, the Peak Oil and Bay Drums PRPs and the Reeves Southeastern Corporation agreed in a separate AOC to perform an area-wide groundwater RI/FS. The results of the groundwater RI/FS and the resulting remedy selection on the groundwater underlying the Reeves site are documented in the Operable Unit Two - Record of Decision, September 1993. The remedy decision consists of the following: natural attenuation of the Northern Surficial Aquifer; installation of additional monitor wells in the Northern

Surficial Aquifer; prevention of discharge of grou ater fr the Northern Surficial Aquifer into the surface wa in the unnamed creek; installation of a monitor well in t Upper Floridan Aquifer in the general vicinity of the former production wells on the Reeves SEG facility implementation of an intensive well survey within a one mile radius of the site; and completion of the remedial design for the contingency remedy. The contingency remedy, to be implemented 2.6 years after completion of the OU1 remedy should the OU2 remedy be failing, is to pump and tre the groundwater in the Northern Surficial Aquifer and then discharge the treated water into the POTW.

EPA conducted the Wetlands Impact Study (WIS) at the same time the area-wide groundwater RI/FS was being conducted by Reeves and the Peak Oil/Bay Drums PRPs. The risk assessment was provided by the PRP groups as a part of the area-wide RI. The FS was developed by EPA personnel information provided by the P groups and the WIS.

In February 1993, Reeves signed a Modification to the site-specific RI/FS AOC under which Reeves agreed to perform the Remedial Design for the OU1 remedy. For the Reeves OU1 and OU2 remedies, EPA issued a special notice letter (SNL) to the Reeves Southeastern Corporation on September 30, 1993. The SNL offered Reeves the opportunity to perform the OU1 and OU2 remedies and reimburse outstanding EPA past costs relating to the site. Reeves and EPA Region IV signed a Consent Decree (CD) in which Reeves agreed to perform the work, pay EPA's future oversight costs and reimburse EPA's past costs. The past cost amount was $297,778.28. The CD was referred to the Department of Justice (DOJ) on April 21, 1994.

3.0 HIGHLIGHTS OF COMMUNITY RTICIPATION

Community relations for the Reeves Site has, for the most part, been handled in conjunction with the Peak Oil and Bay Drums sites. Interest in the Reeves site itself has been minimal. What community interest that has been noted was focused on EPA activities at the other two Superfund sites. This is probably due to the removal at Peak Oil, where contaminated sludge from a lagoon was incinerated, and the removal at Bay Drums, where a large pile of roofing shingles had to be removed from the site in order to conduct the RI/FS.

The source control RI/FS was completed and presented to the public in August 1992. A public meeting was held at the Brandon Community College on August 18, 1992, at which the Agency's preferred alternative for the Reeves source control cleanup plan was presented. The preferred alternatives for the sources at the Peak Oil and Bay Drums sites were also presented at this meeting. The preferred alternative was, in fact, the cleanup plan that was selected in the October 1992 ROD. The area-wide groundwater

RI/FS was completed and presented to the public in February 1993. The public meeting was held on February 24, 1993. The preferred alternative presented at this meeting for the Reeves site was a pump-and treat remedy for the northern surficial aquifer. The selected remedy in the ROD was natural attenuation, with the pump-and-treat system selected as a contingency remedy. In addition, measures will be taken in the design process to prevent the surficial aquifer from draining into the unnamed creek. The only written comments received on the Reeves site from either comment period came from the Reeves Corporation itself.

The North Wetland WIS/FS and Proposed Plan for the Reeves Southeastern Site were released to the public on April 30, 1994. These documents were released in conjunction with the Peak Oil/ Bay Drums Central and South Wetlands WIS/FSs and Proposed Plans and were made available to the public in both the Administrative Record and the information repository maintained at the EPA Docket Room in Region IV and at the Brandon Public Library. The notice of availability of these documents and announcement of the pending public meeting was published in the Tampa Tribune on May 3, 1994. A public comment period was held from May 2 to May 31, 1994. The public meeting was held on May 11, 1994. At the meeting, representatives from EPA presented the two Proposed Plans and answered questions regarding the problems at the three sites and the wetlands remedial alternatives under consideration for the North, Central and South Wetlands. A response to the comments received for the North Wetland during the public comment period is included in the Responsiveness Summary, which is Appendix A of this ROD. This decision document presents the selected remedial action for the North Wetland and unnamed creek at the Reeves Southeastern Site, in Hillsborough County, Florida, chosen in accordance with CERCLA, as amended by SARA, and, to the extent practicable the National Contingency Plan. The decision for this site is based on the Administrative Record.

4.0 SCOPE AND ROLE OF OPERABLE UNIT

As with many Superfund sites, the problems at the Reeves Southeastern site are complex. As a result, EPA divided the work into three operable units (OUs). These are:

- OU One: Contamination in the soils and sediments;
- OU Two: Contamination in the groundwater;
- OU Three: Contamination in the North Wetland and unnamed creek.

OU One has been addressed in the Reeves OU One - ROD, October 1992. OU Two has been addressed in the OU Two - ROD, September 1993. The Reeves OU Three will address the North Wetland and unnamed creek. This is planned to be the final Operable Unit for

the Reeves site. The Peak Oil/Bay Drums OU Four will address the Central and the South Wetlands. The Peak Oil and Bay Drums OU Four will be selected in a separate ROD.

5.0 SUMMARY OF SITE CHARACTERISTICS

5.1 Scope

This section will discuss general site characteristics and outline the results of the WIS and other North Wetland sampling events. The issue of source contamination is addressed in the Operable Unit One - Record of Decision; the issue of groundwater contamination is addressed in the Operable Unit Two - Record of Decision.

5.2 General Site Characteristics

Climate in the Tampa area is characterized by mild winters and relatively long, humid, warm summers. Spring and fall tend to be dry, with the majority of the rainfall in the summer. The general topography is flat. The land use in the area is either industrial or undeveloped, with the nearest single family residential area being 0.25 miles east of the SEW facility. Topographically, surface elevations on the SEG facility range from 36 feet above mean sea level (MSL) at the southern boundary to 26 feet above MSL on the northern boundary. The southern portion of the SEW facility slopes gradually toward the south and southwest toward small wetland areas. The area around the two facilities is relatively flat.

The groundwater system beneath the area consists of two major water bearing units: a surficial aquifer and the Floridan aquifer system. The surficial aquifer, which is defined as a Class IIB aquifer, is from 8.5 feet to 37 feet thick with a saturated thickness of about 5 to 25 feet. It is separated from the Floridan aquifer by the Hawthorne formation, a clayey low-permeability layer from 16 to 40 feet thick. The surficial aquifer is hydraulically connected to the wetlands near the site and the flow direction varies seasonally. Water levels also fluctuate seasonally and change rapidly in response to rainfall and other natural influences. Although regionally the Floridan aquifer flows to the west-southwest, in the vicinity of the site the flow direction shifts to the northwest. This is thought to be due to the proximity of the site to the Tampa Bypass Canal, which reportedly cuts into the low-permeability layer and reaches the upper Floridan aquifer in several places. The Floridan aquifer is the primary source of drinking water and water for industrial use in Hillsborough County, however, there are no permitted wells which are used for drinking water in the general vicinity of the site. To EPA's knowledge, the surficial aquifer is not currently used for any purpose. It meets the criteria for classification as a Class IIB aquifer under EPA's groundwater

protection strategy. A Class IIB aquifer is considered a potential drinking water source.

The North Wetland is located to the immediate west of the Reeves SEG facility. It is about 1.75 acres in size and is located in the maintained right-of-way of power lines and is the only one of the studied wetlands with a surface water inlet and outflow. After rain events, surface water inflow originates in a ditch paralleling SR 574 and running west between the Peak Oil/Bay Drums sites and the south side of the road. The topographic contour of the SEW facility would tend to cause surface water runoff to the south of the plant, not into the ditch. This ditch is joined by runoff from the Peak Oil/Bay Drums sites via a series of culverts that run from the sites under the CSX railroad and then into the drainage ditch. The surface water then runs through a culvert under SR 574 at the power lines and then enters the North Wetland. It exits the North Wetland and flows in a drainage ditch northeast and crosses the northwest corner of the SEG facility, where it is joined by a drainage ditch carrying runoff from the SEG facility. The drainage ditch (a.k.a the unnamed creek) then heads north, where it is joined by the runoff from the parking lots of various other office buildings and another road, and eventually flows into the retention pond for the stormwater drainage system at Sabal Industrial Park. The outflow from the retention pond flows into the Tampa Bypass canal. The classification of the wetland was conducted according to a U.S. Fish & Wildlife methodology. The vegetative classification is palustrine system, emergent/aquatic bed class.

5.3 Results of WIS and Additional Studies

The topography of the SEG site slopes toward the northwest. The drainage off the SEG facility is into a drainage ditch that runs from the east to the west of the facility, immediately south of the two ponds, then turns north and joins the unnamed creek immediately north of the northwest corner of the facility. Other sources of contamination for the North Wetland can potentially be identified. In particular, stormwater in an urban setting contains elevated levels of inorganics such as zinc, lead, copper, cadmium and chromium from vehicular use of highways and parking lots. The sources of such inorganics include vehicle parts such as brakes, tires and hydraulic fluids, as well as direct fallout from the atmosphere and degradation of highway materials.

A limited amount of sampling done for the WIS tested material from the site itself. Surface water from the two inactive ponds and soil from the eastern part of the SEG facility did not show significant toxicty to the test organisms. Sediments from the SEG ponds, however, are highly toxic. Other onsite soil areas that showed toxicity were the former drum storage area and the onsite drainage ditch. The onsite source areas that tested toxic

will be addressed by the Operable Unit One remed_ -hat was selected in the October 1992 Record of Decision.

Three phases of sampling were done for the North Wetland and the unnamed creek. Phase I sampling took place in November 1989 and Phase 2 sampling took place in January 1990. Phase 1 and Phase 2 were composed of both surface water and sediment sampling. Both Phase 1 and Phase 2 data were used in the WIS. On its own, Reeves undertook a third phase of sampling. This data was taken in 1993 and consisted only of sediment sampling. The sample points are shown on Figure Two. The sediment data is reported in Table One and the surface water data is reported in Table Two. The data reported in these two tables have been narrowed down to the data reported for the contaminants of concern (as selected in Chapter Three of this FS). The entire range of results can be found in Tables 4.5 and 4.6 of the WIS. The levels of metals found in the North Wetland are comparable to those found in the drainage ditch leading to it. The levels found during the WIS in the unnamed creek, after being joined by drainage off the SEG facility, were significantly higher than the levels in either the North Wetland or upgradient drainage ditch. However, since the field work for the WIS was completed, the unnamed creek has been dredged by an unknown entity. Sampling performed on Reeves' behest by its consultant in 1993 indicate that the current levels of contaminants of concern (COCs) in the unnamed creek are significantly lower than the levels found during the sampling for the WIS. Surface water levels in the North Wetland and upgradient drainage were comparable; the levels were significantly higher in the unnamed creek. There are no 1993 sample results for comparison purposes for the surface water.

The WIS concluded that the wetlands associated with the three Superfund sites provide a diversity for a balanced community of plants and animals. The ecological functions of these wetlands were rated as moderate to high. The apparent toxicity of the sediment does not appear to impair the wetland functions. On the other hand, the WIS showed that the unnamed creek associated with drainage from the SEG facility was severely impacted by heavy metal contamination.

6.0 SUMMARY OF SITE RISKS

6.1 Human Health Risks

6.1.1 Scope

A baseline risk assessment (BRA) was conducted as part of the RI to estimate the health or environmental problems that could result if the Northern Wetland was not remediated. A BRA represents an evaluation of the "No Action" alternative, in that it identifies the risk present if no remedial action is taken. The assessment considers environmental media and exposure

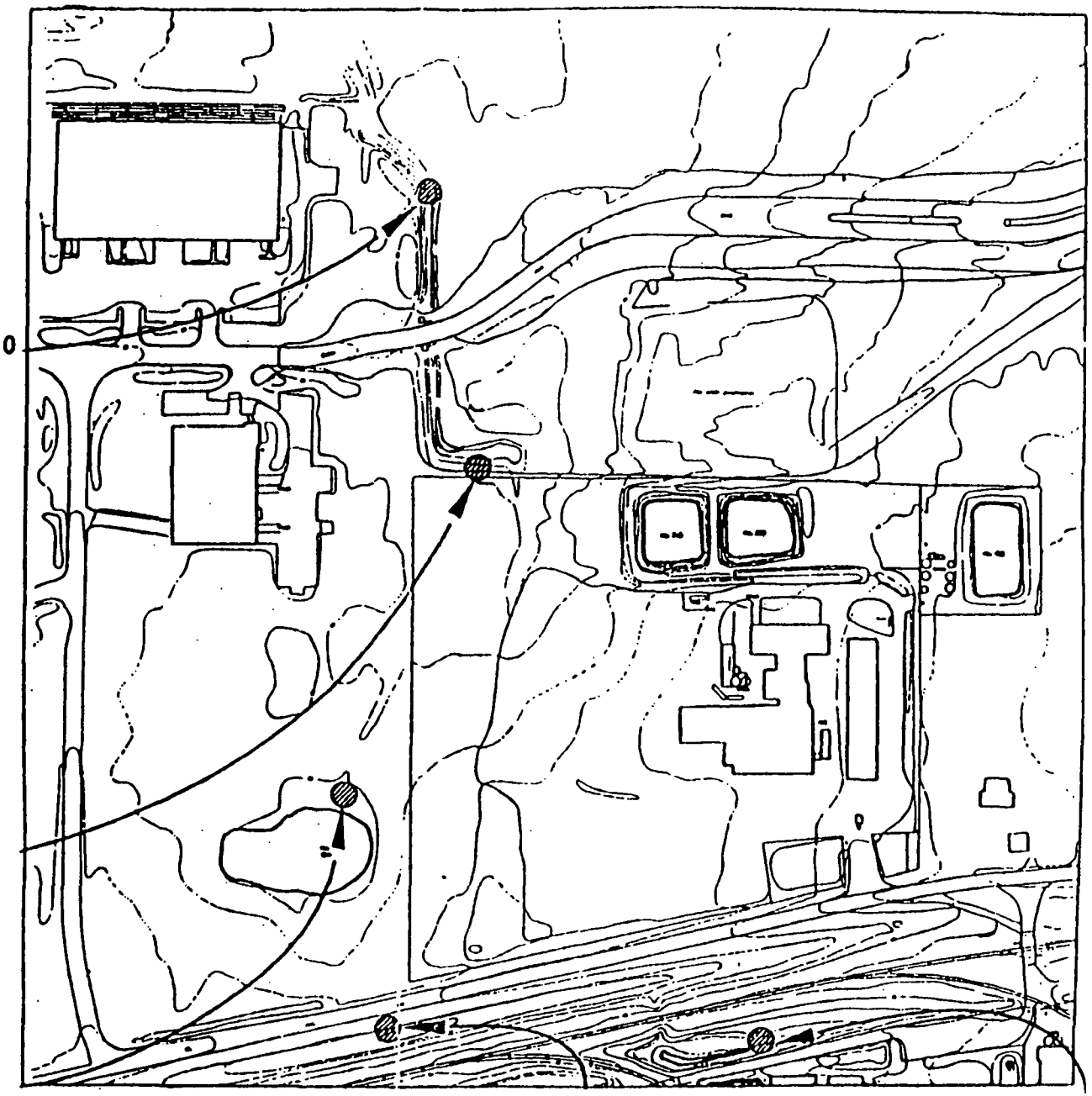

FIGURE 2

TABLE ONE
Sediment Data Summary (MG/KG)

Station	4		1		A (01-NOW)		B (01-UNC)			10		11[1]
Date 19-	89	93	89	93	89	93	89	90	93	89	93	89
arsenic	11.1	8.6	46N	5.2	12.7U	<2	NT	--	<2	3.4UN	<2	3.8U
cadmium	2.8N	6	2N	<1	1.1B	<1	.8B	--	<1	1.6N	<1	.25 UN
chromium	92.2N	320	168N	25	22.3	3	21.9	--	9	23.4	9	7.9N
lead	860	1100	3070	160	266	3	70.8	18	2.7	62.8	2.7	5U
mercury	.24	.4	.16	.3	1.1*	<.1	.22*	--	.5	.09	.5	.04
nickel	9.8	19	71.9	<8	4.5B	<8	9.7	--	<8	4.9B	<8	2B
zinc	2960	4500	4480N	470	355EN	6	11,200 EN	--	170	3430	160	153

1 - Station not sampled in 1993
U - Analyzed but not detected
B - Analyte present in associated blank
N - Spike sample recovery out of control limits
* - Duplicate analysis out of control limits
E - Estimated value due to interference

TABLE TWO
Surface Water Data Summary (UG/L)

Station	4	A (01-NOW)	B (01-UNC)		10
Date	11/10/89	11/30/89	11/30/89	1/9/90	11/10/89
arsenic	--	3B	41.2S	--	--
cadmium	--	--	9.8	--	--
chromium	--	--	135	16	--
lead	5.1	--	352	15	5W
mercury	--	NA	NA	--	--
nickel	--	4.1B	155	--	--
zinc	37.9	48.7	172000	11000	1410

(--) - non detect.
B - Analyte found in associated blank as well as in sample.
W - The post-digestion spike for furnace AA analysis is outside of the 85-115% control limits while sample absorbance is less than 50% of the spike absorbance.

pathways that could result in unacceptable levels of exposure in the foreseeable future. Data collected and analyzed during the RI provided the basis for the risk evaluation. The BRA process can be divided into four components: contaminant identification; exposure assessment; toxicity assessment; and risk characterization.

Two separate BRAs have been developed for this site: the first developed for the site-specific source control RI/FS; the second developed as part of the area-wide groundwater RI/FS. The source control BRA is discussed in detail in the Operable Unit One ROD (October 1992) and the Northern Surficial Aquifer BRA is discussed in detail in the Operable Unit Two ROD (September 1993). The BRA for the North Wetland and associated drainage ditch was developed as a part of the area-wide BRA. This section will discuss the BRA for the North Wetlands and associated drainage system.

6.1.2 Chemicals of Concern Identification

Based on the study area data, the BRA selected chemicals of potential concern (COPCs) to focus on those likely to pose the greatest threat to human health. The final list of COPCs for the site-wide BRA included chemicals found on all three sites. For reasons that are more fully explained in another Chapter, it has been determined that the main contributor to any potential problem in the North Wetlands is the Reeves SEG facility. Therefore the initial selection of COPCs for the North Wetlands would be the same as the COPCs identified in the Reeves Site Source Characterization Baseline Risk Assessment, February 1992. These COPCs are as follows:

- arsenic
- cadmium
- chromium
- gold
- lead
- mercury
- nickel
- polychlorinated biphenyls (PCBs)
- polynuclear aromatic hydrocarbons (PAHs)
- 1,2,4-trichlorobenzene
- zinc

Further examination of the COPCs for the source control RI/FS, however, reveals that the organic COPCs were found only on the Reeves SEW facility. The organics on the SEW facility were not a result of the facility itself, but rather were a spillover of contaminants from the immediately adjacent Peak Oil site. There is no complete pathway between the SEW facility and the North Wetlands. For that reason, the organic COPCs were eliminated from the list of indicator chemicals. Gold was eliminated from

the list because it was not found in the surface water or sediment of the North Wetland. The final list of chemicals of concern (COCs) for the North Wetlands and associated drainage areas is as follows:

- o arsenic
- o cadmium
- o chromium
- o lead
- o mercury
- o nickel
- o zinc

Appropriate exposure point concentrations (EPC) were then calculated for each COC. The COCs, the highest concentrations detected and the EPCs are found in Table Three.

6.1.3 Exposure Assessment Information

Generally, there are two scenarios developed for the BRA: a current use scenario; and a potential future use scenario. The North Wetland presents a potential route of exposure through wading and subsequent contact with chemicals in the water. For the current use scenario, exposures are assumed to occur to trespassers near the site. These individuals would be exposed through dermal contact and incidental ingestion of sediments and incidental contact with sediment. Direct ingestion of surface water was not considered because the water in the wetland would not ordinarily be considered suitable for drinking. Incidental ingestion of the surface water was not considered because the wetland is too shallow for swimming. For the future use scenario, exposures are assumed to occur to children and teenagers living at the site. The exposure pathways would remain the same. The summary of exposure pathways and scenarios can be found in Tables Four through Seven.

6.1.4 Toxicity Assessment Information

Slope factors (SFs) have been developed by EPA's Carcinogenic Assessment Group for estimating excess lifetime cancer risks associated with exposure to the potentially carcinogenic contaminant(s) of concern. SFs, which are expressed in units of $(mg/kg\text{-}day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Slope factors are derived from the results of human epidemiological studies or chronic animal bioassays to which animal-to-human extrapolation and uncertainty factors have been applied (e.g., to account for the use of animal data to

TABLE THREE Summary of Chemical Concentrations of the Chemicals of Concern in the North Wetlands			
Chemical	Media	Concentration surface water (ug/l) sediment (mg/kg)	
		Highest Concentration Detected	Exposure Point Concentration
Arsenic	surface water	3	2
	sediment	12.7	8.7
Cadmium	surface water	ND	--
	sediment	1.6	1.28
Chromium	surface water	ND	--
	sediment	108	73.8
Lead	surface water	5	4
	sediment	266	177
Mercury	surface water	ND	--
	sediment	1.1	0.712
Nickel	surface water	6	6
	sediment	4.9	4.7
Zinc	surface water	1410	971
	sediment	3430	2200

TABLE FOUR Summary of Exposure Pathways for the North Wetland
Current Use Condition/Onsite Trespasser
o Dermal contact with sediments
o Dermal contact with surface waters
o Incidental ingestion of sediments
Future Use Conditions/Onsite Resident
o Dermal contact with sediments
o Dermal contact with surface waters
o Incidental ingestion of sediments

TABLE FIVE
Ass ptions Used to Estimate Exposure via Ingestion of Sediment

Parameter	Current Use Trespasser	Future Use Resident
Chemical Concentrations in Sediment	see EPCs in Table Three	
Ingestion Rate (mg/day)	100	100
Exposure Frequency (days/year)	30	30
Exposure Duration (years)	9	9
Body Weight (kg)	35	35
Average Time (days) Noncarcinogens Carcinogens	 3,285 25,550	 3,285 25,550

TABLE SIX Assumptions Used to Estimate Exposure via Dermal Contact of Sediment		
Parameter	Current Use Trespasser	Future Use Resident
Chemical Concentrations in Sediment	see EPCs in Table Three	
Skin Area Exposed (cm^2)	1520	1520
Deposition Factor ($mg/cm^2/day$)	0.2	0.2
Exposure Frequency (days/year)	30	30
Exposure Duration (years)	9	9
Body Weight (kg)	30	30
Average Time (days) Noncarcinogens Carcinogens	 3,285 25,550	 3,285 25,550
Absorption Factor (unitless)	Chemical Specific	Chemical Specific

TABLE SEVEN - Assumptions Used to Estimate Exposure via Dermal Contact with Surface Water		
Parameter	Current Use Trespasser	Future Use Resident
Chemical Concentrations in Sediment	see EPCs in Table Three	
Skin Area Exposed (cm^2)	1520	1520
Dermal Permeability Coefficient (cm/hr)	Chemical Specific	
Exposure Time (hours/day)	1	1
Exposure Duration (years)	9	9
Exposure Frequency (days/year)	30	30
Body Weight (kg)	35	35
Average Time (days) Noncarcinogens Carcinogens	 3,285 25,550	 3,285 25,550
Absorption Factor (unitless)	Chemical Specific	Chemical Specific

predict effects on humans). Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects from exposure to contaminant(s) of concern exhibiting noncarcinogenic effects. RfDs, expressed in units of mg/kg-day, are estimates of lifetime daily exposure levels for humans, including sensitive individuals. Estimated intakes of contaminant(s) of concern ingested from contaminated drinkingwater can be compared to the RfD. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans). The Chronic Daily Intake (CDI) factors and the applicable route-specific Slope Factors for the chemicals of concern can be found in Table Eight.

Environmental contamination with lead presents a problem in the development of the BRA. This is because the "normal" background exposures to lead from sources such as food, water and air together contribute a substantial fraction of what EPA considers the "acceptable" level of exposure and because the normally accepted measure of maximum allowable exposure is expressed not as a daily intake as is for most chemicals, but as a concentration in the blood. EPA has examined several procedures for assessing lead and currently recommends the Uptake/Biokinetic (UBK) model be used to predict blood lead concentrations resulting from environmental concentrations of lead. For this BRA, version 0.4 of the UBK model was used. Blood levels for cancer risk is calculated from the following equation:

Risk = CDI x SF

children from 0 - 6 years of age were modeled. Based on a directive from EPA Region IV, acceptable exposures were defined as those that result in predicted blood levels of less than 10 ug/dl in at least 95% of the exposed children.

6.1.5 Risk Characterization Information

For carcinogens, risks are estimated as the incremental probability of an individual developing cancer over a life-time as a result of exposure to the carcinogen. Excess life-time where:

risk = a unit less probability (e.g., 2E-6) of an individual developing cancer;

CDI = chronic daily intake averaged over 70 years (mg/kg-day);SF = slope-factor, expressed as $(mg/kg\text{-}day)^{-1}$

These risks are probabilities that are generally expressed in scientific notation (e.g., 1E-6). An excess lifetime cancer risk of 1E-6 indicates that, as a reasonable maximum estimate, an

TABLE EIGHT Summary of Chronic Rfds and Slope Factors			
Chemical	Oral Toxicity		
	RfD (mg/kg/day)	SF 1/(mg/kg/day)	Reference
Arsenic	3.00E-4	1.75	IRIS
Cadmium	5.00E-4	NA	IRIS
Chromium	5.00E-3	NA	IRIS
Lead	NA	NA	UBK model used instead
Mercury	3.00E-4	NA	HEAST
Nickel	2.00E-2	NA	IRIS
Zinc	3.00E-1	NA	IRIS

individual has a 1 in 1,000,000 additional chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at a site. The National Contingency Plan (NCP) states that sites should be remediated to chemical concentrations that correspond to an upper-bound cancer risk to an individual not exceeding 1E-6 to 1E-4 excess lifetime risk.

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., life-time) with a reference dose derived for a similar exposure period. The ratio of exposure to toxicity is called a hazard quotient (HQ). By adding the HQs for all contaminant(s) of concern that affects the same target organ (e.g., liver) within a medium or across all media to which a given population may reasonably be exposed, the Hazard Index (HI) can be generated.

The HQ is calculated as follows:

Non-cancer HQ = CDI/RfD

where:

CDI = Chronic Daily Intake

RfD = reference dose; and

CDI and RfD are expressed in the same units and represent the same exposure period (i.e., chronic, subchronic, or short-term).

Using these procedures, the lifetime cancer rates estimated to be caused by the surficial aquifer at these sites can be found in Table Nine. The hazard index due to ingestion of surficial aquifer water for both future use scenarios are greater than 1.0. The results can be seen in Table Ten. The results for both the carcinogenic and the noncarcinogenic COCs were well within the range that EPA considers acceptable.

The UBK model predicts as its output a probability curve around the geometric mean of the blood lead concentrations, from which the 95th percentile of the children's blood level concentration can be determined. The model calculated that the percent of exposed children predicted to have blood levels below 10 ug/dl is 99.70%.

6.2 Environmental Risks

6.2.1 Scope

The Area-Wide Wetland Impact Study (WIS) has two objectives: (1) to evaluate the ecological status of wetlands in the study area; and (2) to extend the toxicity testing to include possible source

TABLE NINE Cancer Risk by Individual Pathway		
SCENARIO/EXPOSED POPULATION	RISK	CHEMICAL
CURRENT USE - TRESPASSER		
Dermal Contact, Surface water	2E-9	
Ingestion, Sediment	1E-6	
Dermal Contact, Sediment	9E-8	
FUTURE USE - RESIDENT		
Dermal Contact, Surface water	2E-9	
Ingestion, Sediment	1E-6	
Dermal Contact, Sediment	9E-8	

TABLE TEN Hazard Index Estimates by Pathway		
SCENARIO/EXPOSED POPULATION	RISK	CHEMICAL
CURRENT USE - TRESPASSER		
Dermal Contact, Surface water	0.0003	
Ingestion, Sediment	0.03	
Dermal Contact, Sediment	0.001	
FUTURE USE - RESIDENT		
Dermal Contact, Surface water	0.0003	
Ingestion, Sediment	0.03	
Dermal Contact, Sediment	0.001	

materials, soil, surface water and samples from the three sites. Since the source material from the Reeves site is addressed in Operable Unit One, that information is not further discussed here.

Five wetlands were considered in the Area-Wide WIS. These wetlands are: The North Wetland; the Central Wetland; the South Wetland; the Spray Field Wetland and the Cypress Pond Wetland. The latter two wetlands have no relation to any of the three sites, but instead were selected as comparison wetlands based on their hydrologic, vegetative, and sediment similarities to the three site related wetlands.

6.2.2 Bioaccumulation

Overall, fish and crayfish sampled from the various wetland areas that comprise this study were not impacted with a wide spectrum of chemicals at concentrations grossly over background. The exception is the very high concentrations of iron and zinc found in either fish or crayfish samples from the unnamed creek. Several inorganic analytes were widely present over the area sampled at concentrations moderately over background. These include aluminum, barium, copper, iron, manganese, titanium and zinc. Mercury concentrations in tissue analyzed were typically lower than the national mean values. However, three of the four samples of fish and crayfish taken from the reference wetlands exceeded criteria proposed for the protection of birds that may prey upon them.

6.2.3 Environmental Toxicity Assessment

This section discusses the results of the toxicological assessment performed to determine the impact constituents may have upon the biota. Samples of water, soils and sediment were evaluated for toxicity based on acute and chronic test results after various organisms were exposed to various site media. Water samples were tested using a bacterium, a freshwater algae, a small freshwater cladoceran, a freshwater fish and a species of lettuce. Sediment samples were eluated and the eluates produced were tested using the same suite of organisms. The data generated indicated the following:

- The waters of the North, Central, and South Wetlands showed little toxicity to the organisms tested;
- The sediments of each wetland area studied were at least chronically toxic to daphnia;
- The water and sediment of the unnamed creek at the northeast corner of the Reeves SEG facility were toxic to almost all organisms tested;

- The sediments of the Cypress Pond were highly toxic to fish, daphnids, algea, and bacteria.

It should be noted that, since the WIS was completed, some unknown entity has dredged the unnamed creek area that was highly toxic. As discussed in Section 5.3 of this ROD, data taken in 1993 indicates the levels in the sediments are now lower than the levels found in the WIS.

6.3 Uncertainties and Limitations in the BRA Process

Risk assessment provides a systematic means for organizing, analyzing, and presenting information on the nature and magnitude of risks posed by chemical exposures. Nevertheless, uncertainties and limitations are present in all BRAs because of the quality of available data and the need to make assumptions and develop inferences based on incomplete information about existing conditions and future circumstances. These uncertainties and limitations should be recognized and considered when discussing quantitative risk estimates. In general, the uncertainties and limitations in the BRA can be classified in the following categories:

- environmental sampling and laboratory measurement;
- mathematical fate and transport modeling;
- receptor exposure assessment; and
- toxicological assessment.

The BRA is based on surface water and sediment data specific to the sites gathered for the Area-Wide RI. The quality of data depends on the adequacy of the set of rules or procedures that specify how a sample is selected and handled. The quality assurance and quality control procedures used to minimize uncertainties were based on Region IV procedures and were reviewed and approved in advance by EPA. They are described in detail in the RI Report.

The use of mathematical models to predict the fate and transport of chemicals is accepted by EPA, however, EPA does not specify which models would be the most appropriate to use in any given situation. Because few models have been authoritatively verified by field observations, there is some uncertainty associated with their use. Tradeoffs in the various models between simplicity, generality and accuracy are made on a site specific basis and are based in part of the professional judgement of the technical staff involved in that particular site.

In the BRA, a large number of assumptions are made to assess potential human exposure. In the absence of site specific data,

many of this BRA's assumptions were assumptions made PA. As can be expected any time that an assumption is made, e is some dispute as to the appropriate level of conserva should be factored into that assumption.

Available scientific information is currently insufficient to provide a thorough understanding of all the toxic properties of chemicals to which humans are potentially exposed. This makes it necessary in some cases to infer these properties by extrapolating them from data obtained under other conditions of exposure, generally in experimental laboratory animals. This may introduce uncertainties of two types into the BRA: those related to extrapolating from one species to another and those related to extrapolating from the high exposure doses usually used in experimental animal studies to the lower doses usually estimated for human exposure situations.

7.0 DESCRIPTION OF ALTERNATIVES

7.1 Applicable or Relevant and Appropriate Requirements (ARARs)

Section 121 (d)(2)(A) of CERCLA specifies that Superfund Remedial Actions must meet any Federal standard, requirement, criteria or limitation that is determined to be an applicable or relevant and appropriate requirement (ARAR). ARARs fall into three categories: contaminant-specific; location-specific; and action-specific. Some rules do not specifically apply to a remedial action; however, because of the subject matter, they may provide some guidance in implementing a chosen RA. These rules are called to-be-considered (TBCs). Potential ARARs and TBCs can be found in Tables Eleven through Thirteen.

7.2 Description of Alternatives

7.2.1 Description of Process

The contaminated material both at the site and in the North Wetland and unnamed creek was evaluated in regard to the applicability of the RCRA Land Disposal Requirements (LDRs) and it was determined that the RCRA LDRs were not an ARAR.

Based on the WIS results, EPA conducted a FS to identify and evaluate appropriate remedial alternatives for minimizing risks to people and the environment which could be caused by contaminated surface water and sediments in the North Wetland and the unnamed creek. EPA considered six remediation alternatives in the wetlands FS. Those six alternatives are listed in the FS as Alternatives 1A, 1B, 2, 3A, 3B and 3C. Two of these alternatives are variations of the mandatory no action alternative developed as required by the National Contingency Plan (NCP). The no action alternative is developed to provide a baseline comparison of human health and environmental benefit to

TABLE ELEVEN Potential Chemical-Specific ARARs and TBCs			
Authority/ Requirement	Description	Status	Consideration in the FS
Federal			
Clean Water Act (CWA), Section 304(a)(1), Ambient Water Quality Criteria (AWQC)	Health based criteria for chemicals - designed to protect aquatic life and human health	To Be Considered	Considered in development of remedial alternatives
State			
Florida Surface Water Quality Standards, FAC 17-302	Establishes minimum surface water quality for designated classes	Relevent and Apprpriate	Considered in development of remedial alternatives

TABLE TWELVE Potential Location-Specific ARARs and TBCs			
Authority/ Requirement	Description	Status	Consideration in the FS
Federal			
Executive Order on the Protection of Wetlands, 40 CFR Part 6, Appendix	Requires federal agencies to avoid, to the extent possible, the adverse impacts associated with destruction or loss of wetlands	Relevant and Appropriate	Consideration if remedy involves alteration of wetland
Fish and Wildlife Act, 40 CFR 6.302	Requires EPA to coordinate with federal and state agencies if the remedy would modify any stream or other water body. Remedy must contain provision for protection of fish and wildlife resources	Applicable	Consideration if remedy involves discharge to, or alteration of, wetlands and streams
Endangered Species Act (50 CFR Part 402)	Requires action to conserve endangered species for activities in critical habitats. The DOI Fish and Wildlife Service and DOC NOAA need to be consulted	Applicable	Consideration if site is located in the area of a critical habitat for endangered or threatened species

CWA Dredge and Fill Provisions, 40 CFR Part 230	Restricts discharge of dredge or fill material that will have an adverse impact on wetlands.	Relevant and Appropriate	Consideration in the development of alternatives if remedy involves dredging, filling, or other excavation activities near or in wetland
State			
Florida Regulation of Stormwater Discharge, FAC 17-25.020(14)	Definition of a "Stormwater Discharge Facility"	Relevant and Appropriate	Consideration in the development of remedial action objectives
Florida Regulation of Stormwater Discharge, FAC 17-25.020(16)	Definition of a "Swale"	Relevant and Appropriate	Consideration in the development of remedial action objectives
Florida Regulation of Stormwater Discharge, FAC 17-25.025	Defines the design and performance standards required of a stormwater management system.	Relevant and Appropriate	Consideration in the development of remedial action objectives

Florida Rules on Hazardous Waste Warning Signs, FAC 17-736	Requires use of appropriate warning signs to inform public of potentially harmful conditions at the site.	Applicable	May be required on borders of Wetland

TABLE THIRTEEN Potential Action-Specific ARARs and TBCs			
Authority/ Requirement	Description	Status	Consideration in the FS
Federal			
Identification and Listing of Hazardous Waste, 40 CFR Part 261	Identifies solid wastes which are subject to regulation as hazardous waste	Applicable	Considered in development of alternatives
Land Disposal Restrictions (LDRs), 40 CFR 268	Regulations identify hazardous wastes that are restricted from land disposal and define the circumstances under which an otherwise prohibited waste may continue to be disposed.	Applicable	Considered in development of alternatives
Water Quality Standards [CWA 402(a)(1)]	Effluent limitations are required to achieve all appropriate state water quality standards	To Be Considered	Considered in the development of remedial alternatives

State			
Florida Surface Water Standards, FAC 17-302.300	Antidegradation policy for surface water quality. Prohibits discharge of wastes into Florida waters without treatment to protect beneficial uses	Relevant and Appropriate	Considered in the development of remedial alternatives if a remedy involves discharge to surface water that are considered "waters of the state"
Florida Hazardous Waste Rules, FAC 17-730	Florida hazardous waste management regulations	Applicable	Considered in the development of remedial alternatives if a remedy involves hazardous waste treatment, storage or disposal
Florida Permit Regulations, FAC 17-4	Establishes procedures and requirements to obtain a permit from FDER	Applicable	Considered in the development of remedial alternatives if a Florida permit is required

that which ia provided by the active remediation alternatives. In conjunction with the source characterization and groundwater RI/FSs, the North Wetland FS was developed. It assumes that the Reeves selected source control and groundwater remedial actions will be implemented.

7.2.2 Alternative 1A - No Action Alternative

For this alternative, no action would be taken to remove orcontrol any of the constituents of the sediments in the North Wetland. The North Wetland and the unnamed creek would be left in their present condition without disturbing the sediments. A no action response provides a baseline assessment for comparison with other alternatives for the North Wetland and unnamed creek that contain greater levels of response. Under no action, no remedial technologies would be implemented. However, these other operable units will improve the general conditions in the area and thus should have a beneficial effect on the North Wetland.

TOTAL COST: $0

7.2.3 Alternative 1B - No Action/Monitoring

Monitoring of the sediments would be conducted at intervals over a period of eight years to verify that the improved conditions in the North Wetland is maintained. Under no action/monitoring, no remedial technologies would be implemented in the North Wetland.

TOTAL COST: $39,860

7.2.4 Alternative 2 - Filling of Wetland and Unnamed Creek

Filling of the North Wetland and the unnamed creek would involve the removal of vegetation and placement of clean fill over areas of sediment that exceed the clean-up goals established by the EPA. It would further be necessary to construct a replacement detention pond and replacement swale to handle the stormwater management functions currently handled by the North Wetland and the Drainage Swale. It may also be necessary to prepare and implement a mitigation plan for the wetland that would be destroyed.

TOTAL COST:

with land purchase - $546,250
without land purchase - $316,250

7.2.5 Alternatives 3A, 3B and 3C - Excavation of Sediments

These alternatives would involve the excavation of sediments. Excavated sediments would have to be placed on adjacent land or disposed off site. Due to the low levels of constituents in the

sediments, it would not be necessary to place the excavated sediments in a RCRA Subtitle C hazardous waste landfill or to treat the sediments by solidification or other means. However, it would be necessary to determine a location for placement of the sediments. Three options have been identified as possibilities. Those options are as follows:

- Alternative 3A - disposal in industrial waste landfill in Georgia;
- Alternative 3B - disposal in Springhill Regional Sanitary Landfill in Graceville, Florida;
- Alternative 3C - disposal in Pinellas County Landfill in St. Petersburg, Florida.

After completion of the excavation activities, the excavated area would have to be backfilled with clean soil from an off-site location, and the original contours would have to be established. It then would be necessary to replant the site with appropriate vegetation. Monitoring of the vegetation would be necessary for a period of three years to verify the establishment of the plants.

TOTAL COST:

- Alternative 3A - $2,526,550
- Alternative 3B - $2,003,300
- Alternative 3C - $2,311,644

8.0 SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

8.1 Criteria for Evaluating Remedial Alternatives

In selecting its preferred cleanup alternative, EPA uses nine criteria to evaluate each of the detailed alternatives developed in the FS. Those nine criteria are explained in more detail in Figure Three on the next page. The comparison of the six alternatives using those criteria can be found in the remainder of Section 8 of this ROD.

8.2 Threshold Criteria

8.2.1 Overall Protection of Human Health and the Environment

Protection of human health and the environment is provided by Alternatives 2, 3A, 3B and 3C. Alternatives 1A and 1B provide slighter lesser protection of the environment in that these alternatives would leave levels of two metals that are slightly above the ER-Ls.

CRITERIA FOR EVALUATING REMEDIAL ALTERNATIVES

In selecting its preferred cleanup alternative, EPA uses the following criteria to evaluate each of the alternatives developed in the Feasibility Study (FS). The first two criteria are essential and must be met before an alternative can be considered further. The next five are used to further evaluate EPA's proposed plan after public comment period has ended and comments from the State have been received. All nine criteria are explained in more detail here.

Overall Protection of Human Health and the Environment *- Assesses degree to which alternative eliminates, reduces, or controls health and environmental threats through treatment, engineering methods, or institutional controls.*

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) *- Assesses compliance with Federal/State requirements.*

Cost *- Weighing the benefits of a remedy against the cost of implementation.*

Implementability *- Refers to the technical feasibility and administrative ease of a remedy.*

Short-Term Effectiveness *- Length of time for remedy to achieve protection and potential impact of construction and implementation of a remedy.*

Long-Term Effectiveness *- Degree to which a remedy can maintain protection of health and environment once cleanup goals have been met.*

Reduction of Toxicity, Mobility, or Volume Through Treatment *- Refers to expected performance of the treatment technologies to lessen harmful nature, movement or amount of contaminants.*

State Acceptance *- Consideration of State's opinion of the preferred alternative.*

Community Acceptance *- Consideration of public comments on the preferred alternative and the Proposed Plan.*

FIGURE 3

8.2.2 Compliance with ARARs

All of the alternatives meet ARARs.

8.3 Primary Balancing Criteria

8.3.1 Long-Term Effectiveness and Permanence

Alternatives 1A and 1B have the least long-term effectiveness inthat nothing would be done. Alternative 2 has relatively more long-term effectiveness because it prevents further degradation of the environment by preventing contact between the contaminated media and the ambient environment. Alternatives 3A, 3B and 3C provide the most long-term effectiveness and permanence by permanently removing the contaminated media from the site.

8.3.2 Reduction of Toxicity, Mobility, or Volume

Alternatives 1A and 1B wouldn't result in any reduction of toxicity, mobility or volume. Alternative 2 would result in a reduction of toxicity and mobility by preventing contact between the contaminated media and the ambient environment. This alternative would not affect volume. Alternatives 3A, 3B and 3C offer the reduction of toxicity, mobility and volume by permanently removing the contaminated media from the site. However, given the proximity of the North Wetland to the road, there is the possibility that this may not be a permanent condition.

8.3.3 Short-Term Effectiveness

The short-term effectiveness of Alternatives 1A and 1B is higher than that of Alternatives 2, 3A, 3B and 3C. The reason is that there is some minimal hazard to workers who would be involved in the construction of these four alternatives.

8.3.4 Implementability

Alternatives 1A and 1B have no administrative barriers to implementation. Alternative 2 may require mitigation under the Clean Water Act in addition to the alternative as described. Alternatives 2, 3A, 3B and 3C will require obtaining the permission of the property owners of the land on which the North Wetland and the unnamed creek are located. Alternatives 3A, 3B and 3C may require permits to transport and dispose of the contaminated material.

8.3.5 Cost

The cost of the six alternatives are compared below:

- Alternative 1A - $0

- Alternative 1B - $39,860
- Alternative 2
  w/ land purchase - $546,250
  w/out land purchase - $316,250
- Alternative 3A - $2,526,550
- Alternative 3B - $2,003,300
- Alternative 3C - $2,311,644

8.4 Modifying Criteria

8.4.1 State Acceptance

The State of Florida, as represented by the Florida Department of Environmental Regulation (FDEP), has been the support agency during the Remedial Investigation and Feasibility Study process for the Reeves Southeastern site. In accordance with the 40 CFR 300.430, FDEP, as the support agency, has provided input during this process. Based upon comments received from FDEP, it is expected that concurrence will be forthcoming; however, a formal letter of concurrence has not yet been received.

8.4.2 Community Acceptance

The general public in the community expressed no major concerns about the selected remedy during the public comment period. The comments are discussed in detail in the Responsiveness Summary, which is Appendix A of this ROD.

9.0 SELECTED REMEDY

9.1 Selection of Remedy

Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of alternatives and public and state comments, EPA has selected alternative 1B, the No Action/Monitoring remedy, as the remedy for this site. Results of the Wetlands Impact Study and the Area-Wide Baseline Risk Assessment indicated that no action is necessary at the site. However, because contaminants were found at levels above background in wetland sediment and surface water, monitoring of wetland surface water, sediment, and the nearby surficial aquifer shall be conducted.

The purpose of the selected remedy is to assess the overall ecologic status of the North Wetland and unnamed creek as the Operable Units One and Two remedies are being implemented. Monitoring data shall be compared to past wetland data, Florida Surface Water Standards (F.A.C, 17-302) and NOAA sediment ER-L

and ER-M screening values. The remedies for Operable Units One and Two (described in detail in the ROD-OU1, Reeves Site, October 1992 and the ROD-OU2, Reeves Site, September 1993) are expected to significantly reduce or eliminate the potential for the Reeves Southeaster site to act as sources of contamination to the North Wetland and unnamed creek. However, If monitoring indicates a potential threat to human health or the environment, EPA, in consultation with the State of Florida, will reconsider the protectiveness of this alternative and the need for additional remedial actions.

The estimated cost for the remedy is $39,860. This Selected Remedy is protective of human health and the environment.

9.2 Major Components of the Remedy

The No Action/Monitoring remedy consists of ecological assessments of the wetlands for a period of at least 8 years, to be performed on no less that a semiannaual basis for the first 5 years. The 8 year time period was selected to parallel the approximately eight year time period that the OU2 natural attenuation remedy is anticipated to take. If the OU2 groundwater remedy takes longer than eight years, then the monitoring of the North Wetland and unnamed creek will be extended to match the monitor period for the OU2 remedy. Depending on the final selection of the engineering measures that will be undertaken to prevent infiltration of the surficial aquifer into the unnamed creek, the installation of surficial aquifer monitor wells immediately upgradient of the unnamed creek, for the purpose of monitoring the discharge of the surficial aquifer into the surface water in the unnamed, may be required. Every effort shall be made to time the monitoring schedule such that one or two assessments occur before work begins on the Operable Units One and Two remedies. The remaining assessments shall occur once the Operable Unit One and Two remedies have been implemented. Each assessment shall include the following:

a. General vegetation surveys to assess the composition and health of the plant communities and collection of samples to assess relative abundance and diversity of aquatic vertebrates and invertebrates.

b. Sampling and analysis of wetland surface water, sediment, and biota. At a minimum, assays shall be conducted for the COCs identified in the FS and Section 6 of this ROD. Toxicity and Bioaccumulation analysis shall be conducted at least once each year of sampling (at a minimum, 8 rounds in all).

c. Field measurement of hardness, Ph, temperature, dissolved oxygen and conductivity at each sampling station.

d. Monitoring selected surficial aquifer wells for the same parameters as in part b and c of this section.

The wetland remedial action will be considered complete when the following conditions are met:

a) (1) engineering measures taken to prevent discharge of groundwater to the unnamed creek have proven to be effective; or

(2) monitoring wells immediately upgradient of the unnamed creek demonstrate that groundwater discharging to the surface water in the unnamed creek does not exceed F.A.C. 17-302 surface water standards for site-related contamination;

b) Operable Unit Two groundwater cleanup goals identified in the OU2 ROD (or any subsequent modification of those cleanup goals) have been met; and

c) a review of post-ROD monitoring data confirms the effectiveness of the selected remedy in providing adequate protection of human health and the environment.

9.3 Compliance with ARARs

The Florida Administrative Code Chapter 17-302 Maximum Contaminant Levels (MCLs) for class III surface water bodies are considered to be ARARs for the site wetlands. NOAA ER-M/ER-L values are not ARARs for this site, but will serve as guidelines to assess overall conditions in the wetlands. The Florida surface water standards and the NOAA ER-Ls may not be initially met by the selected remedy. However, these values are expected to be achieved over a short period of time once the source and groundwater remedies are implemented. Once the Reeves source and groundwater remedial actions are implemented, the potential for contaminant transport from the Reeves Southeastern facilities will be significantly reduced.

10.0 DOCUMENTATION OF SIGNIFICANT CHANGES

In the North Wetland FS, F.A.C. 17-302 was listed as a TBC rather than as an ARAR. In listing it as a TBC, EPA was narrowly focusing on its application to surface water runoff from the road and other non-site sources. F.A.C. 17-302 is an ARAR in regard to hazardous substances discharges into the surface water from the site. The ARARs table in the ROD has been modified to reflect this change.

RECORD OF DECISION
OPERATIVE UNIT THREE

APPENDIX A
RESPONSIVENESS SUMMARY

Reeves Southeastern Superfund Site
Hillsborough County, Florida

RESPONSIVENESS SUMMARY
REEVES SOUTHEASTERN SUPERFUND SITE
HILLSBOROUGH COUNTY, FLORIDA

I. Overview

The United States Environmental Protection Agency (EPA) held a public comment period from May 2, 1994 to June 1, 1994 for interested parties to comment on EPA's Proposed Plan for Operable Unit (OU) Three addressing the North Wetland and unnamed creek at the Reeves Superfund Site. The comment period was originally set to end on May 31, but because the newspaper ran the notice a day late, on May 3, the comment period was extended to June 1. During this comment period, the EPA held a public meeting at the Brandon Campus of the Hillsborough Community College on May 11, 1994. At this time, EPA representatives presented both the results of the studies undertaken at the site and EPA's preferred alternative for addressing the surface water and sediment contamination in the North Wetland and unnamed creek. EPA also informed the audience about the one day extension of the public comment period.

A summary of EPA's response to comments received during the public comment period, known as the responsiveness summary, is required under Section 117 of CERCLA. EPA has considered all of the comments summarized in this responsiveness summary in determining the final selected remedy presented in the Record of Decision for OU Three.

This responsiveness summary consists of the following sections:

I. Overview: This section provides an overview of the contents of the responsiveness summary.

II. Background of Community Involvement an Concerns: This section provides a brief history of community interest and concerns regarding the Peak Oil/Bay Drums site.

III. Summary of Major Questions and Comments Received from the General Public During the Public Comment Period and EPA's Responses: This section presents both oral and written comments submitted by the public and interested government agencies during the public meeting and public comment period, and provides the responses to these comments.

IV. Summary of PRP Comments and EPA's Responses: This section presents comments submitted by the PRP, the Reeves Southeastern Corporation, and EPA's reply to those comments. These comments were contained in the June 1, 1994 letter from Gayle Carlson, Esq., (Reeves' attorney) to Martha Berry, RPM/EPA. The PRP's comments

are subdivided into three sections: comments on the Proposed Plan; the Feasibility Study; and the Administrative Record.

II. Background of Community Involvement and Concerns

In accordance with Sections 113 and 117 of CERCLA, EPA has conducted community relations activities at the Reeves site to ensure that the public remains informed concerning progress at the site. EPA periodically issued press releases to keep the public informed. There was moderate local press coverage of EPA's activities, and EPA held meetings with county and state officials to advise them of the progress at the site.

A community relations plan (CRP) was developed in 1988 and revised in 1989 to establish EPA's plan for community participation during remedial activities. Following completion of the Wetlands Impact Study and Feasibility Study (WIS/FS), a Proposed Plan fact sheet was mailed to local residents and public officials in May 1994. The fact sheet detailed EPA's preferred alternative for addressing the contamination in the North Wetland and unnamed creek. Additionally, the Administrative Record for the site, which contains site related documents including the WIS and FS reports and the Proposed Plan, was made available for public review at the information repository in the Brandon Public Library. A notice of the availability of the Administrative Record for the Reeves site was published in the Tampa Tribune on May 3, 1994.

Finally, EPA held a public meeting in Brandon, Florida on May 11, 1994 at the College to discuss the remedial alternatives under consideration and to answer any questions concerning the Proposed Plans for the North, Central and South Wetlands at the Bay Drums, Peak Oil and Reeves Superfund Sites. Although attendance was fairly low, a few concerns were raised during this meeting. Questions were raised concerning all three wetlands sites; this Responsiveness Summary only addresses comments directed towards all three sites in general or the North Wetland in particular. Comments that apply specifically to the Central and South Wetlands and proposed remedies are addressed in the Responsiveness Summaries for the ROD for those wetlands. EPA's responses to these concerns from the meeting and from written comments that were submitted to the Agency are summarized in Section III. The Reeves Southeastern Corporation also submitted a number of questions in writing. Because Reeves is the PRP, its comments are addressed separately in Section IV. A transcript of this public meeting was prepared by a certified notary public, and this document is a part of the Administrative Record upon which the remedy selected in the OU Three Record of Decision is based.

Following the issuance of the final Record of Decision for OU

Three, EPA will continue to keep the community informed about progress at the site through fact sheets and informal information meetings. Additionally, design and construction documents pertaining to the implementation of OU Three will be placed in the information repository at the Brandon Public Library.

III. Summary of Major Questions and Comments Received from the General Public During the Public Comment Period and EPA's Responses

1. Comment: In the Proposed Plan, the following statements are made concerning the results of the WIS:

   a. The sediment of each wetland area studied were at least chronically toxic to daphnia.

   b. The water and sediment of the unnamed creek at the northeast corner of the Reeves SEG facility were toxic to almost all organisms tested.

   c. The sediments of the Cypress Pond were highly toxic to fish, daphnids, algea, and bacteria.

   How would the preferred alternative, No Action/Monitoring, satisfactorily address these issues?

   Response: The responses to these issues are addressed in the order they were asked:

   a. Of the five wetlands studied, two, the Cypress Swamp and the Spray Field Wetland, were studied to provide "background" data for the WIS. CERCLA only authorizes EPA to demand cleanup of problems caused by the Superfund site. Since the toxicity to the daphnia also resulted from the sediments in the two background wetlands, EPA concluded that this was not a problem that could be attributed to contamination from the site.

   b. The WIS found that the water and sediment from this area was indeed highly toxic. However, visual observation since the completion of the WIS by several people familiar with how the unnamed creek historically looked indicated that the unnamed creek had been dredged and straightened out by an unknown entity since the WIS sampling event. Sediment sampling conducted by Reeves in 1993 confirmed that the levels of COCs in the sediment were dramatically lower than the levels found during the WIS. It is EPA's conclusion that the current levels of COCs in the sediment would

not cause significantly more toxicity to aquatic organisms that would be caused by sediment from the background wetlands. To assure that this is the case, EPA is proposing to require an extensive monitor plan that would require chemical characterization, bioaccumulation and toxicological analyses testing over a period of years. If the monitoring required under the plan shows that there is extensive toxicity posed by the current levels of COCs, then EPA will use that information to reassess the appropriateness of the remedy.

c. EPA is not authorized under CERCLA to address the Cypress Swamp as a part of this project because the Cypress Swamp is not a part of, or affected by, the Reeves site. It was used as a background wetland for the WIS.

2. Comment: In the Proposed Plan, EPA states that implementation of the preferred alternative would leave levels of two metals slightly above the ER-Ls. After reviewing the data in Table 1 of the Proposed Plan, it appears that the ER-Ls are exceeded in the sediments for each of the seven metals represented. Chromium was found in levels up to four times the ER-L level, lead up to eighty-eight times, mercury up to 1.6 times, nickel up to 2.4 times and, finally, zinc at levels up to 93 times. Please explain this discrepancy.

Response: In making this statement in the Proposed Plan, EPA was referring to the 1993 data taken from sample points A, B and 10. Sample points 4 and 1 are upstream from the North Wetland and the levels found in these samples are most likely the result of stormwater runoff from the road. Information found in Appendix A of the FS states that metals, including lead and zinc, are a significant component of road runoff. Sample points A, B and 10, which are all downstream from sample points 4 and 1, are the sample points affected by surface water runoff from the SEG facility. Based on the most recent sampling from these three sampling points, implementation of the preferred alternative would leave levels of two metals slightly above the ER-Ls.

3. Comment: Are NOAA's ER-Ls for inorganics applicable to the sediments in the wetlands, the unnamed creek and the Cypress Pond? If not, please state what

specific criteria are to be used in assessing toxicological risk of the contaminants to various organisms.

Response: Screening Guidelines for Inorganics were developed and are used by the National Oceanographic and Atmospheric Administration (NOAA). The ER-L levels are the lowest screening levels used by NOAA for purposes of evaluating the effect of sediments in wetland areas. These ER-L levels are the most conservative of NOAA's screening levels for sediments and do not necessarily indicate that sediment should be remediated to these levels. Other screening concentrations established by NOAA and used by the EPA Region IV in the WIS are the Effects Range--Median (ER-M) and the Overall Effects Threshold ("Threshold") levels. EPA does not have any promulgated standards for sediment, nor does EPA have a standard methodology for selecting acceptable sediment levels on a site specific basis.

4. Comment: In the NWFS, it was stated that the contaminated sediments in the unnamed creek had been removed by an unnamed entity prior to the 1993 sampling event. Does EPA know who this entity is or where this entity took the material?

Response: EPA is not aware of who this entity is or where it took the material.

5. Comment: The Florida Games and Florida Fresh Water Commission have a list of animals, specifically birds, that are not on the federal endangered species list. When considering the potential effects on endangered species, does EPA look at lists of animals designated by state agencies or does EPA just use species that are listed by the U.S. Fish & Wildlife Service?

Response: The concern behind this question seemed to be that EPA did not consider State concerns when analyzing potential effects on endangered species. However, CERCLA/SARA mandates that both the federal and the state government designate agencies to function as Natural Resource Trustees (NRTs). One of the major mandates of the NRTs is to determine potential adverse effects on natural resources, which include wildlife and plantlife, as well as threatened and endangered species. Formerly in the State of Florida, there were two agencies designated as NRTs: the Department of

Environmental Regulation; and the Department of Natural Resources. Recently, these two agencies were merged into one, the Florida Department of Environmental Protection (FDEP). Both the federal and the state NRTs had input into the entire wetlands investigation process and have concurred that the preferred alternative in the Proposed Plan will be protective of both human health and the environment.

IV. Summary of PRP Comments and EPA's Responses

The Proposed Plan

1. Comment: The "Description and History" section includes a detailed description of Reeves Southeastern Corporation ("Reeves") and the Superfund studies conducted at Reeves' Southeastern Galvanizing ("SEG") and Southeastern Wire ("SEW") properties. This section incorrectly gives the impression that the North Wetiand is part of the Southeastern Galvanizing site.

It is important to note that the North Wetland is not and has never been a part of the property owned by Reeves. It also is important to note that only the small portion of the drainage swale (referred to in the Proposed Plan as the "unnamed creek") that crosses the northwest corner of Reeves' SEG property is owned by Reeves. The remainder of the drainage swale is owned by a third party. Additionally, Reeves has never conducted any activities in or around the North Wetland.

Based on the information in the Area-Wide Hydrologic Remedial Investigation Report ("Area-Wide RI") and the North Wetland Feasibility Study ("NWFS"), impacts to the North Wetland would have resulted from sources other than Reeves. As the NWFS notes, the Area-Wide RI states that the stormwater runoff at the SEG property flows north and west into the drainage swale, not to the North Wetland. In addition, the NWFS (page 2-3) notes that the levels of inorganics in the North Wetland are comparable to those in the upgradient drainage ditch that flows into the North Wetland via the culvert under State Road 574.

The Proposed Plan and the Record of Decision to be issued subsequently should include discussions of the many other sources of potential impacts to the

North Wetland and the drainage swale, which are discussed in the NWFS. These other sources include, but are not limited to, air emissions from the Hillsborough County Resource Recovery Plant and stormwater runoff from ditches along State Road 574, from a culvert under State Road 574 (draining a 49-acre watershed south of the highway, including the Peak Oil and Bay Drums Superfund Sites and the railroad tracks), and from west of the North Wetland (including drainage through a large area formerly an automobile salvage yard and still containing remnants of junked vehicles and debris), and stormwater from ditches, storm sewer outfalls and sheetflow runoff from roadways, parking lots and other areas in an industrial and office park.

In spite of statements to the contrary in certain EPA documents, these culverts remain open, and in fact there are other culverts from the Peak Oil and Bay Drums Sites to the ditches along the railroad tracks that are still open (see the letter from John Goolsby contained in the Reeves' submittal by Gayle B. Carlson to David Abbott dated October 5, 1993, which is part of the Administrative Record). We want to emphasize the continuing influences from these sites as well as the likelihood that contaminants will be released from the Peak Oil and Bay Drums Sites to the North Wetland during the remedial actions scheduled to take place at those sites.

Response: EPA does not dispute the significant points of this comment, therefore, EPA has no response. However, EPA emphasizes that the implementation of the remedies for the Peak Oil/Bay Drums sites, if properly done, should not result in the release of contamination from those sites.

2. Comment: Pages 2 and 4 of the Proposed Plan discuss only Operable Units One and Two that will be conducted by Reeves. This discussion should also include the operable units for the Peak Oil and Bay Drums Sites because these other operable units may affect the conditions in the North Wetland and in the drainage swale. The effects could be beneficial (e.g., reducing contaminants in a source area) and/or detrimental (e.g., creating the release of contaminants during construction of a remedial action).

Response: To date, EPA has not found it useful to summarize

the selected operable unit remedies for all three sites in its decision documents. To provide the histories for all three sites would be very cumbersome and would only grow more so as the various RD/RAs are implemented. EPA does agree with the point that the source control RD/RAs at the Peak Oil/Bay Drums sites may have an impact on the North Wetland and unnamed creek if the RD/RAs are not properly implemented.

3. Comment: The first paragraph on page 4, the phrase "within a one mile radius of the site" should be omitted to reflect the EPA's revised scope of work for the Reeves OU2.

Response: This revision will be made as appropriate in future documents.

4. Comment: Page 5 of the Proposed Plan states as follows: "Based on data developed in the Wetlands Impact Study ("WIS"), it has been determined that the main contributor to any potential problem in the North Wetlands is the Reeves SEG facility." This conclusion is not drawn in the WIS, and the WIS actually states that surface water drainage from the Peak Oil and Bay Drums sites flows to the North Wetiand via a drainage ditch and a culvert under SR 574 (see pages 2-3 and 5-1 of the WIS). With respect to the SEG property, the WIS states, in much less conclusive terms than reported on page 5 of the Proposed Plan, that surface runoff from the SEG property "appears probable" (see page 5-1 of the WIS). Further, contrary to this inconclusive intimation in the WIS, we show below in the Feasibility Study comments that the SEG facility could not have contributed to any impacts in the North Wetland. It is clear from information reported in the Area-Wide RI (see pages 4-76 through 4-78), the WIS (see pages 2-3 and 5-1), and the North Wetland Feasibility Study (see, e.g., pages 2-7, 3-6, and 3-20) that there are many sources that may have affected and may be affecting the North Wetland.

Response: There are many potential sources of contamination of the North Wetland, of which the SEG facility is probably one. The topography of the southwest corner of the SEG facility slopes towards the North Wetland; therefore any contaminated soils in that area could have been carried by stormwater runoff in[illegible] the wetland. Regardless of the many sources o[illegible] contamination for the North w[illegible] and,

there is no question that the SEG facility is the main contributor of contamination in the unnamed creek and this is the area of offsite contamination that was of most concern to EPA and to the natural resource trustees.

5. Comment: At the top of the right-hand column on page 8 of the Proposed Plan, there is a reference to "by contaminated groundwater in the Northern Surficial Aquifer." It appears that the above phrase should be deleted and replaced by "by the North Wetland and the drainage swale."

Response: This error will be corrected in future documents.

6. Comment: Reeves agrees with the EPA's selection of Alternative 1 B for the North Wetland OU3. Reeves notes, however, that the cost estimate included in the Proposed Plan may be significantly understated, depending on the types of testing required (see Comment 5 below in the comments on the North Wetland Feasibility Study).

Response: EPA concurs that the cost estimate in the Proposed Plan does not reflect the cost of the types of testing requested by the natural resource trustees. However, the cost estimate is accurate in its relationship to the other cost estimates and, thus, fulfills its requirement to provide an accurate comparison of the relative costs of the alternatives.

<u>The Feasibility Study</u>

1. Comment: With respect to Sections 1.2.1 (Site Description) and 1.2.2 (Site History) of the NWFS, we here incorporate Comment 1 from the Proposed Plan discussion above.

Response: Please refer to EPA's response to Comment #1 on the Proposed Plan.

2. Comment: With respect to Section 1.2.2 of the NWFS, we also here incorporate Comment 2 from the Proposed Plan discussion above.

Response: Please refer to EPA's response to Comment #2 on the Proposed Plan.

3. Comment: In the last paragraph of Section 1.2.2.1 (page 1-6), the phrase "within a one mile radius of the site" should be deleted to reflect the EPA's

revised scope of work for the Reeves OU2.

Response: This change will be reflected in future documents.

4. Comment: Reeves disagrees with the statement in Section 2.2.1.1 (page 2-8) that "for the reasons that are more fully explained in another Chapter, it has been determined that the main contributor to any potential problem in the North Wetlands is the Reeves SEG facility." There simply is no other chapter in the NWFS that discusses any basis for the foregoing conclusion. To the contrary, as stated in Comments 1 and 4 from the Proposed Plan discussion above, impacts to the North Wetland have resulted from sources other than Reeves. As the NWFS itself notes throughout, all the topographical information collected during the Area-Wide RI shows that the stormwater runoff at the SEG property flows north and west into the drainage swale, not to the North Wetland. The NWFS includes several discussions of the many other sources of potential impacts to the North Wetland and the drainage swale (e.g., page 2-7 in the last paragraph of Section 2.1.2, page 3-6 in the next to last paragraph of Section 3.2.2, page 3-20 in the second full paragraph, page 6-7 in the second paragraph of Section 6.3.3.2, page 6-1 0 in the last paragraph of Section 6.3.4.2, page 6-12 in the second paragraph of Section 6.3.5.2, and page 6-1 5 in the second paragraph of Section 6.3.6.2). In addition, we note that the report in Appendix A to the NWFS and the information in the August 6, 1993, letter from Gayle B. Carlson to Martha Berry (copy attached) show the many sources of contaminants found in urban stormwater in Florida.

The materials that have been submitted on behalf of Reeves and the points that the EPA itself has made in various documents indicate numerous PRPs in connection with the North Wetland and the drainage swale. The materials submitted on behalf of Reeves also show Reeves is not responsible for impacts to the North Wetland. The EPA should consider identifying the appropriate PRPS.

Response: Please refer to EPA's response to Comment #4 on the Proposed Plan.

5. Comment: In Section 5.2.2, the NWFS states that monitoring of the sediments will be conducted over a period of eight years and that chemical characterization,

bioaccumulation and toxicological analyses, as well as other types of environmental testing, should be considered in the development of the final monitoring plan. In the discussion of costs of the No Action/Monitoring alternative in Section 6.3.2.5, the NWFS notes that the cost estimate includes only the sediment sampling because cost figures for the chemical characterization, bioaccumulation and toxicological analyses were not readily available. Thus, depending on the additional sampling that ultimately is selected, the costs of the No Action/Monitoring alternative may be substantially higher.

Reeves objects to the requirement of sampling of the sediments twice a year for the first five years. Reeves requests that this portion of the NWFS be changed to specify sampling of the sediments once a year for the entire eight-year sampling period.

In addition, Reeves objects to the inclusion of chemical characterization, bioaccumulation and toxicological analyses in this alternative. The monitoring of the sediments on an annual basis will be sufficient to track the status of the North Wetland and drainage swale.

The North Wetland does not belong in the Superfund process because it is part of a stormwater management system. Any effects found in the North Wetland are the same as those found in hundreds of stormwater management systems throughout Florida (see the submittals attached to the August 6, 1993, letter from Gayle B. Carlson to Martha Berry). Neither the EPA nor the Florida DEP has ever suggested that CERCLA and all of its requirements should be imposed on all those other stormwater management systems. Therefore, the bioaccumulation and toxicological assessments should not be required for the North Wetiand and drainage swale, particularly when nothing has shown Reeves to be responsible for the North Wetiand, when the sediments from the drainage swale have already been removed by some other party, and when the OU2 ROD requires Reeves to provide a barrier in the drainage swale.

Response: EPA disagrees with this comment. At the beginning of the RI/FS process, there was ample reason to suspect that runoff from either the SEG or the SEW facility was carrying contamination into these

bodies. Although the results of the WIS indicate that the North Wetland itself is impacted by a number of different sources, this most certainly was not intuitively obvious at the beginning of the process. Certainly, there can be no question that the main contributor of contamination to the sediments in the unnamed creek is drainage off of the SEG facility. The sample with the highest levels of metals from the offsite wetlands/drainage ditches was found in the unnamed creek at the point where it was joined by the drainage ditch off of the SEG facility. The samples from this area showed significant toxicity. The two significant reasons that cause EPA to consider monitoring in the area, rather than an active remediation remedy, are: (1) sampling from 1993 indicates that these highly contaminated sediments have been removed from the area; and (2) components from the OU1 and OU2 remedies, when implemented, should prevent recontamination of the unnamed creek from the SEG facility.

EPA also disagrees with the assertion that CERCLA should not be applied to the North Wetland and unnamed creek because these areas are a part of a permitted stormwater management system. Although this fact is considered when EPA considers the potential land use aspects of the risk and remedy selection process, it would not prevent EPA from taking an action in these areas. The issue of the stormwater management system had a more direct impact on whether or not certain state regulations would be ARARs, not whether EPA had the legal authority to order a remedial action in the wetland.

EPA believes that the bioaccumulation and the toxicity testing is necessary for the monitoring program because the levels left in the sediments are slightly above the ER-Ls established by NOAA. Although the ER-Ls are not considered "cleanup criteria", they are useful in determining what levels of contaminants are of no concern vs. what levels are probably not of concern but should be monitored. It is EPA's opinion that the current state-of-the-art knowledge about sediment contaminant levels does not yet allow for regulatory establishment of cleanup levels. Therefore, the decision on cleanups of sediment should be made based on site-specific data concerning the impact of those actual sediments on

the flora and fauna at the site. Without the types of testing suggested in the NWFS, mere knowledge of the levels of contaminants in the sediments would not provide information that could be used in determining whether the site is not having a significant adverse affect on the North Wetland and unnamed creek.

It should be noted that the parameters of the monitoring plan will be established in the final, EPA approved, Work Plan for implementing the No Action/Monitoring alternative and will be subject to modification based on the results of that monitoring.

6. Comment: While not critical to the substance of the NWFS, there are a few typographical errors that we noted in reviewing the report. We are providing a list of the corrections below for your use in producing the final version of the NWFS.

Page No.	Correction
ES-4	The words "may be" should be omitted at the end of the third to last line on the page.
1 - 2	The word "Southwestern" should be changed to "Southeastern" in the fourth line from the bottom of the page.
1 - 4	The first two words on the fourth line of the page need a space between them. The same change should be made for the first two words on the sixth line of the page. Additionally, the word "Galvanizing" should be added between the words "Southeastern" and "Division" in the fifth line from the bottom of the page.
1 - 6	The word "Part" in the sixth line from the bottom of the page should be "Park."
2 - 20	The word "later" should be "latter" in the fourth line from the bottom of Section 2.2.2.1. The work "creed" should be "creek" in the fifth line on Section 2.2.2.2.
2 - 21	The word "discuss" should be "discusses" in the first line of Section 2.2.2.3. The word "toxilogical" should be "toxicological" in the last line on the page.

2 - 22 The word "that" should be added after "conservatism" in the next to last line of the third paragraph.

3 - 9 The word "and" should be "any" in the fifth line of the second block of the second column. In the third block of the fourth column, it appears that either something is missing or there are extra words.

3 - 12 The references to FAC 1 7-020(14) and 1 7-020(16) should be to FAC 1 7-25.020(14) and 1 7-25.020(16).

3 - 1 7 The order of the words "the that" in the third line of Section should be reversed.

5 - 1 The word "is" should be "are" in the third line of Section 5.2.2.

Response: EPA will be using the NWFS information in its preparation of the OU3 ROD and will make the necessary corrections in that document. The NWFS found in the Administrative Record will not be revised further.

The Administrative Record

1. Comment: Section 3.7, Item 1: All the even-numbered pages of the authorizing statutes were omitted, probably because they were not copied from the reverse sides of the odd numbered pages. In addition, only part of the Memorandum of Agreement between FDER and SWFWMD concerning delegation of authorities between FDER and SWFWMD is included. Please add to the OU3 Administrative Record ("AR") all these missing pages.

The diskette referenced in this item was not included in the AR. We have been advised by representatives of the Peak Oil and Bay Drums Groups that the contents of the diskette are identical to the contents of the "Assessment of U.S. EPA Bay Drums, Peak Oil and Reeves Southeastern Area-Wide Wetland Impact Study: (1) Comments on Wetland Impact Study; (2) Remediation Alternatives" that accompanied Robert L. Rhodes, Jr.'s letter of October 29, 1993, to David Lloyd, which also is part of the OU3 AR. If there are differences between the diskette and that submittal of October 29, 1993, Reeves reserves its rights to comment on the diskette contents later.

Response: In reference to Item 1, the accompanying statutes in the copy of the AR in the EPA Records Center was complete. EPA will make sure the final AR that goes out with the ROD has the correct pages. In reference to the SWFWMD Memorandum of Agreement, the pages duplicated in the AR reflect the pages that are attached to the original item in EPA's files. The files for this project to not contain a complete copy of MOU. In reference to the diskette mentioned in this item, a search of the files did not reveal a copy of the diskette. Therefore the contents of the diskette, if different from the document referenced in this comment, will not be concluded in the Operable Unit Three AR.

2. Comment: Section 3.8, Item 1: It also appears that only one side of each page of this report was copied (i.e., only the odd-numbered pages were included). After discovering the missing pages on May 24, we requested and received the complete copy from Region IV, but we have not had a chance to review the report fully. Reeves reserves the right to submit supplemental comments on this item, including comments concerning the appropriateness of including this report in the Administrative Record.

Response: In reference to this report, the copy of the AR in the EPA Records Center was complete. EPA will make sure the final AR that goes out with the ROD has the correct pages.

3. Comment: Section 3.10, Items 1-12: Although letters requesting comments on the Wetlands Impact Study Plan (WISP) and responses to those letters are included, the WISP itself is not included in the AR. Reeves requests that the WISP be included in the Administrative Record, as well.

The EPA requested comments on the WISP from a number of people, but only three responses are included in the AR. Please advise us whether there were other responses, and if so, provide us with copies. Reeves reserves its rights to comment on any additional responses following receipt of the copies.

Response: A copy of the WISP has been located and will be added to the final AR. A review of the site files did not turn up any additional replies to the comment request letters.

4. Comment: Section 3.1 0, Items 13-14: These two memoranda refer to two attachments, the WISP and "a 1986 paper by an Assistant Attorney General with the US Department of Justice, Land and Natural Resources Division," which were not included in the AR. Reeves requests a copy of the 1986 Department of justice paper and reserves its rights to submit comments on that paper following receipt, including comments concerning the appropriateness of including this report in the Administrative Record.

Response: EPA has searched the Reeves, Peak Oil and Bay Drums files and was unsuccessful in locating the DOJ attachment to these two memos. Therefore, it will not be possible to include the DOJ paper in the Operable Unit Three AR.

5. Comment: Section 3.1 0, Item 23: This memorandum from Waynon Johnson of NOAA states that the flow of stormwater under the railroad track south of SR 574 has been eliminated. This is an incorrect statement. As reported in a letter from John Goolsby of Heidt & Associates, the culvert under the railroad track south of SR 574 is open, and stormwater continues to flow through the culvert. The letter from Mr. Goolsby is attached to the submittal on behalf of Reeves from Gayle B. Carlson dated October 5, 1993, which is part of the AR at item 25, § 3.1 0.

There also is an incorrect statement concerning flow from the "unnamed creek" into Six Mile Creek before it reaches the Tampa Bypass Canal. Flow actually is into the Mango Canal and then into the Tampa Bypass Canal.

Response: EPA agrees that this comment is correct.

6. Comment: Additional Items- Reeves requests that the following items be added to and made a part of the OU3 North Wetland Administrative Record:

The Reeves' OU1 and OU2 Administrative Records (which can be incorporated by reference), including the following letters and all documents referenced in and attached to the following letters: the letter from Gayle B. Carlson, Trenam, Simmons, et al., (September 1 7, 1992) regarding documents proposed to supplement the Site Source Administrative Record, the follow-up letter from Gayle B. Carlson, Trenam, Simmons, et al.,

(September 22, 1992) regarding the same, the letter from Gayle B. Carlson, Gayle B. Carlson, P.A. (April 21, 1993) regarding documents proposed to supplement the OU2 Administrative Record (this letter is already in the OU3 AR), and the follow-up letter from Gayle B. Carlson, Gayle B. Carlson, P.A. (April 22, 1993) regarding the same.

Aerial photographs prepared by the EPA's Environmental Photographic Interpretation Center, entitled "Site Analysis-Reeves Southeastern Corporation; Peak Oil; Bay Drum--Brandon, Florida--Volume 2," TS-PIC-85117, December 1985.

Letter from Gayle B. Carlson to Martha Berry dated August 6, 1993.

Supplemental Analysis of Remedial Alternative 1 Source Control/Monitoring Operable Unit Two, Reeves Southeastern Corporation, July 1993, prepared by RUST Environment & Infrastructure.

Response: The letters referenced in the second paragraph of this comment all have to do with items that Reeves requested be added to the OU1 and 2 ARs. These issues were resolved by EPA at the time these ARs were assembled and do not have an impact on the remedy selection process for the OU3 remedy. Therefore, these letters will not be added to the OU3 AR.

The letter from Gayle B. Carlson to Martha Berry dated August 6, 1993 and the Supplemental Analysis of Remedial Alternative 1 Source Control/Monitoring Operable Unit Two, Reeves Southeastern Corporation, July 1993 are considered by EPA to be remedial design issues for the OU2 selected remedy. For that reason, these two documents will not be added to the OU3 AR.

EPA agrees that the aerial photographs prepared by the EPA's Environmental Photographic Interpretation Center and the Reeves OU1 and 2 ARs were used in the remedy selection process and will add them to the final OU3 AR.