Anniston PCB Site
Natural Resource Damage Assessment and Restoration: Draft Assessment Plan

December 10 & 11, 2009
Draft Assessment Plan
Public Meetings
Presentation Objectives

- overview of the Natural Resource Damage Assessment and Restoration (NRDAR) process
- update on the NRDAR activities at the Anniston PCB Site
- overview of draft Anniston NRDAR Assessment Plan
- review schedule
- questions
Basic Differences B/W CERCLA & NRDAR

**CERCLA Process**
- EPA led
- Goals are the Overall Protection of Human Health and the Env.
- Reduction of toxicity, mobility or volume through treatment (Removing the PCBs)

**NRDAR Process**
- Natural Resource Trustee Led – ADCNR, GSA & USFWS
- Goals are to Make the Public WHOLE for injury to their resources. (Conducting Restoration)
What is Natural Resource Damage Assessment?

It is the **process** used by natural resource **trustees** to determine the nature and extent of injury to trust **resources** caused by an oil spill or release of a **hazardous substance** (PCBs).
The NRDAR Process – What we do!

• Basically, the Trustees assess the past, current and future PCB injuries to resources and identify and plan restoration actions to address these injuries.

• The money recovered from the responsible party is used to restore, replace or acquire the equivalent of the injured resource. (eye for an eye!)

• BASIC GOAL: Reimburse the public for the injuries as a result of the incident if the incident had never occurred through restoration.
Anniston PCB Site
Natural Resource Trustees

Alabama Department of Conservation and Natural Resources
Major Concepts in NRDAR

• Damages (usually $) are for compensation to injuries to natural resources or/and response actions

• Damages ($) are to be used for Restoration

• This is NOT a punitive process (not a fine)!!

• The Public and the PRPs are involved in the process
General Steps in the NRDAR Process

- Pre-assessment Screen:
  Final - February 2005
- Assessment Planning:
  Draft Stage 1 Assessment Plan
  November 2009
- Injury Determination:
  Ongoing
- Injury Quantification
- Damage Calculation
- Settlement or Litigation
- Restoration
What is Natural Resource Damage Assessment?

**concepts:**

... the process used by natural resource trustees to determine the *nature and extent* of injury to trust resources caused by an oil spill or release of a hazardous substance.
Anniston PCB Site
CERCLA Operable Units

- Operable Unit 1 – Residential Areas
- Operable Unit 2 – Non-Residential Areas
  - from facility to HWY 78
- Operable Unit 3 – Solutia Facility
  - includes South and West End Landfills
- Operable Unit 4 – Choccolocco Creek and associated floodplain
What is Natural Resource Damage Assessment?

**concepts:**

... the process used by natural resource trustees to determine the nature and extent of injury to trust resources caused by an oil spill or release of a hazardous substance.
Injury

... any adverse change in the condition of a resource caused by exposure to contaminants, including response actions

- examples: death, malformation, loss of reproductive capability, change in water quality, changes in soil quality, etc.
Examples of Injuries to Fish and Wildlife

- Death
- Disease
- Cancer
- Genetic Mutations
- Physical Deformities
- Behavioral Abnormalities
What is Natural Resource Damage Assessment?

**Concepts:**

...the process used by natural resource trustees to determine the nature and extent of injury to trust resources caused by an oil spill or release of a hazardous substance.
Anniston PCB Site
Natural Resources
- surface water
- groundwater
- soils
- sediment
- benthos
- mollusks
- fish
- terrestrial invertebrates
- reptiles and amphibians
- birds
- mammals
- threatened/endangered species (12)
What is Natural Resource Damage Assessment?

**concepts:**

... the process used by natural resource trustees to determine the nature and extent of injury to trust resources caused by an oil spill or release of a hazardous substance.
bottom-line:

... NRDA is designed to compensate the environment and public for injuries to natural resources resulting from the release of hazardous materials.

-compensation achieved through:
  - restoration, rehabilitation, replacement of injured resources
So What Is Restoration?

Returning **resources** to the condition they would have experienced if the hazardous exposure (PCBs) had never occurred.
Examples of Restoration

❖ Enhance or restore quality of existing habitat
  (ex. Planting trees in a bare area, stream restoration)

❖ Increase populations through reintroduction or restocking
  (ex. Fish)

❖ Purchase quality habitat for management by States,
  Tribes, or non-profit organizations
  (ex. wildlife management areas/parks)

❖ Public access and education
  (ex. Nature trails, fishing access, educational kiosks)
Recovery Plan for
SIX MOBILE RIVER BASIN AQUATIC SNAILS

CYLINDRICAL LOXOPLAX
FLAT PEBBLE SNAIL
PLICATE ROCK SNAIL
PAINTED ROCK SNAIL
ROUND ROCK SNAIL
LACY ELIMIA

U.S. Fish and Wildlife Service
Southeast Region
Atlanta, Georgia
Restore Habitat
Benefits Wildlife
Improve Water Quality
Create Riparian Buffer
Benefits Wildlife
Improve Water Quality
Anniston PCB Site NRDAR - Status

- Pre-assessment Screen
- **Assessment Planning**
- Injury Determination
- Injury Quantification
- Damage Calculation
- Settlement or Litigation
- Restoration
CERCLA ERA Process

- Screening-level
- Problem Formulation
- Study Design
- Field Reconnaissance
- Site Investigation
- Risk Characterization
- Risk Management

Remediation and Restoration Construction & Monitoring

NRDAR Process

- Pre-Assessment Screen
- Assessment Plan
- Injury Determination
- Injury Quantification
- Damage Assessment
- Settlement
Chapter 1: Introduction

- overview of the NRDA Process

- summary of the Anniston PCB Site Pre-Assessment Screen

- description of the intent and organization of the Plan

- details on the Public Comment process
Chapter 2: Background

- description of Assessment Area

- site history

- hazardous substance releases

- overview of CERCLA activities

2. Background Information on the Assessment Area

2.1 Description of the Site Assessment Area

The Anniston Facility is located approximately one mile west of downtown Anniston, Calhoun County, Alabama. The Facility encompasses approximately 70 acres of land in the Snow Creek watershed. Emanating from the Facility travels through a small stream (11th Street Ditch) to Snow Creek. From this confluence, Snow Creek extends about five river miles to Choccolocco Creek. Choccolocco Creek extends 5.4 river miles from the confluence with Snow Creek to Lake Logan Martin on the Coosa River. Lake Logan Martin was formed in 1964 following the construction of Logan Martin Dam on the main stem of the Coosa River. Logan Martin Dam is about 17 miles downstream of the Coosa River-Choccolocco Creek confluence.

The 11th Street Ditch and Snow Creek largely flow through urban areas within Anniston. However, a riparian area has established itself along portions of the 11th Street Ditch following the removal of structures and construction of fences along much of the stream course. Similarly, a riparian corridor borders much of Snow Creek. The mean stream flow of Snow Creek at the confluence of Choccolocco Creek is 28 cfs (1.3 MLD). The 10-year recurrence interval flow at this point is 6,850 cfs.

Choccolocco Creek downstream of Snow Creek is a broad, low-gradient stream. Mean monthly flows near the Snow Creek confluence range from 33 cfs in October to 264 cfs in March (Pearman et al. 2002). Downstream, flows near the confluence with the Coosa River range from monthly means of 291 cfs in September to 1,065 cfs in March. Peak flows range up to 30,900 cfs. Flooding occurs, on average, three to four times per year (NBL 3000). The broad floodplain bordering much of lower Choccolocco Creek consists of bottomland hardwood forests, open water and emergent wetlands, and agricultural lands (crop and pasture).

Choccolocco Creek discharges to Lake Logan Martin. Lake Logan Martin was created by the completion of Logan Martin Dam on the Coosa River in 1964. The Alabama Power Company constructed and operates the dam. Lake Logan Martin is 46 miles long; has a surface area of 13,265 acres; and has 275 miles of shoreline. The current maximum depth of the lake is 59 feet. Lake Logan Martin provides a variety of fish and wildlife habitats, and supports extensive water-oriented recreational activities.

Ley Dam, constructed in 1914, may have served to trap PCB-contaminated sediments in the Coosa River. Ley Dam is located approximately 30 miles downstream of Logan Martin Dam.
Chapter 3: Authorities

- review of legal authorities
- Trustee Agency authorities

- identification of natural resources considered in the NRDA

3. Authority of Trustees and Decision to Proceed with a Type B Assessment

3.1 Authority

Under Section 107 (f) of CERCLA, the Trustees, individually and together, are authorized to recover damages for injury to, destruction of, and loss of natural resources resulting from a release of hazardous substances from a facility. The Trustees will coordinate and cooperate in carrying out their trust responsibilities as suggested under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). More specifically, the NCP states that “where there are multiple trustees, because of conflicting or concurrent natural resources or concurrent jurisdiction, they should coordinate and cooperate in carrying out their trust responsibilities” (40 CFR § 300.615).

Under the DOI NRDA regulations, assessment plans must include a statement of the authority for asserting trusteeship or co-trusteeship for those natural resources addressed in the Assessment Plan [43 CFR § 11.31(a)(2)]. A general description of the authorities relied on by each Trustee in asserting trusteeship over natural resource(s) is given below. These descriptions are not meant to be an exhaustive and all-inclusive listing of each Trustee’s authority(ies). Importantly, each Trustee may have co-trustee authority over natural resources listed within the trusteeship of another Trustee.

3.1.1 Alabama Department of Conservation and Natural Resources and the Geological Survey of Alabama Natural Resource Trusteeship Authority

The Commissioner of ADCNR and the State Geologist of GSA have been designated by the Governor of Alabama as lead State Trustee and Co-Trustee, respectively, for State natural resources pursuant to Sections 101(3)(G)(3) of CERCLA [42 U.S.C. § 9601 et seq.] and Section 311 of the Federal Water Pollution Control Act of 1972, as amended (Clean Water Act) [33 U.S.C. §§ 1251 et seq.].
Chapter 4: Coordination and Previous Actions of Trustees

4. Coordination and Previous Actions of Trustees

On February 12, 2005, the DOI finalized a preassessment screen and determination for the site. On June 16, 2005, in accordance with 43 C.F.R. § 11.32(e)(2)(ii)(A), the DOI wrote a letter transmitting a notice of intent to perform an assessment to the PRPs and inviting their participation in the development and performance of the assessment. The PRPs responded on July 25, 2005, expressing their commitment to continued cooperation with the Trustees and all other stakeholders in the assessment process.

5. Confirmation of Exposure to Natural Resources and Preliminary Determination of Recovery Period

The DOI NRDA regulations state that an assessment plan should confirm that at least one of the natural resources identified as potentially injured in the preassessment screen has in fact been exposed to the . . . hazardous substance.” 43 C.F.R. § 11.37(a). A natural resource has been exposed to a hazardous substance if “all or part of [it] is, or has been, in physical contact with . . . a hazardous substance, or with media containing the . . . hazardous substance.” 43 C.F.R. § 11.14(g). The DOI regulations also state that “whenever possible, exposure shall be confirmed using existing data” from previous studies of the assessment area. 43 C.F.R. § 11.37(b). The following sections provide confirmation, based on a review of available preliminary existing data, that a number of potentially injured resources within the Site have been exposed to hazardous substances, including, but not limited to, PCBs. These resources include:

- Surface water resources, including surface water and sediments;
- Groundwater resources;
- Geologic resources; and,
- Biological resources.

The following discussion is not a complete review of existing information regarding Site resource exposure to hazardous substances, but is sufficient to confirm exposure of various resources to PCBs in compliance with the DOI regulations. A preliminary determination of the recovery period for the Site’s natural resources is also presented in this chapter.

5.1 Surface Water Resources
Chapter 5: Confirmation of Exposure

- provides evidence/justification for NRDA action
- evaluates available data for:
  - surface water resources
  - groundwater resources
  - geological resources
  - biological resources
- estimates time for recovery

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5.1 Surface Water Resources
Chapter 6: Stage 1 Injury Assessment

- describes proposed injury assessment approach
- identifies data sources
- evaluates exposure pathways
- defines injury criteria

* Injury Determination and QuantificationSteps

these processes typically are slow relative to the mass of PCBs in the sediment because of
the very low vapor pressure and hydrophobicity of PCB molecules (Erickson 1997).

Because of the persistence of PCBs in the environment, natural recovery of PCB
contamination will proceed very slowly in the Site. Sediment burial and downstream
particulate transport are typically the primary loss mechanism for PCBs in riverine
systems (e.g., Velleux and Endicott 1994). However, PCBs buried in deeper sediment
may be re-exposed through anthropogenic activities (e.g., dredging, boating) or through
high-flow events. Although the Trustees are unable to quantify an expected natural
recovery period for the Site at this time, the chemical nature of PCBs and what is known
regarding loss of PCBs from environmental systems demonstrate that the natural
recovery period is expected to be very long, at least on the order of many decades.

6. Stage I Injury Assessment

Chapter 4 provided information confirming that natural resources at the Site, including
surface water, sediments, soils, and biological resources, have been exposed to PCBs. To
evaluate the nature, extent, and degree of injury to exposed natural resources, the
Trustees will conduct a Stage I injury assessment. The purpose of the injury assessment is
to determine whether natural resources have been injured (43 C.F.R. § 11.61), to identify
the environmental pathways through which injured resources have been exposed to
hazardous substances (43 C.F.R. § 11.63), and to quantify the degree and extent (spatial
and temporal) of injury (43 C.F.R. § 11.71).

As discussed in Chapter 1, the Trustees will conduct the Site NRDA in stages. The Stage
I Assessment will be conducted primarily with existing information and with information
from the RIFS activities, potentially supplemented with a limited amount of additional
data collected to ensure the best use of RIFS data for injury assessment purposes. The
Stage II Assessment, if necessary, will encompass new investigations where required.
The Trustees will prepare, and make public, specific sampling and analysis plans, either
as appendices or supplements to the final Stage II Assessment Plan.

6.1 Injury Assessment Approach

Injury is defined in the DOI regulations as a “. . . measurable adverse change, either long-
or short-term, in the chemical or physical quality or the viability of a natural resource
resulting either directly or indirectly from exposure to a . . . release of a hazardous
substance, or exposure to a product of reactions resulting from the . . . release of a
hazardous substance.” The definition of “injury,” “destruction,” and “loss” 43 C.F.R. § 11.14(v). The injury assessment will involve two
basic steps, injury determination and injury quantification, as indicated below:

1. Injury determination. The Trustees will determine whether an injury to one or
more natural resources has occurred as a result of releases of hazardous
substances [43 C.F.R. § 11.62]; and,
Chapter 7: Damage Determination

- describes proposed approach to place a value on injured resource
- describes restoration planning objectives and processes
- describes coordination with the CERCLA action

* Damage Calculation Step

6.5 Procedures for Sharing Data

The DOI NRDA regulations state that an assessment plan includes:
- Procedures and schedules for sharing data, split samples, and results of analyses, when requested, with any identified potentially responsible parties and other natural resource Trustees [43 C.F.R. § 11.31(a)(4)].

To facilitate the data-sharing process, PRPs and other state or federal agencies will be provided with an opportunity, as deemed appropriate, to obtain a copy of the database(s) used in the Stage I Assessment. If PRPs or state or federal agencies wish to receive such data, a written request identifying the data desired should be submitted to:

U.S. Fish and Wildlife Service
Attn: Karen Marlowe
1208 Main Street
Daphne, AL 36526

The Trustees will provide the data to the PRPs and any other interested parties once the data have been validated and deemed suitable for distribution. In addition, the Trustees will explore opportunities to split samples with the PRPs in order to assure data quality and/or enhance data usability.

7. Stage I Damage Determination

This chapter describes the Trustees’ approach for conducting the Stage I damage determination. Section 7.1 provides an overview of the approach to be used by the Trustees in the Stage I Assessment. Section 7.2 describes the approach for the Stage I restoration planning and costing, and Section 7.3 describes the approach for the Stage I determination of compensable values. Sections 7.4 describes the relationship between the NRDA damage determination and the response actions being conducted as part of the ongoing RFS.

7.1 Overview of Approach to Damage Determination

The purpose of a damage determination is to “establish the amount of money to be sought in compensation for injuries to natural resources resulting from a . . . release of a hazardous substance” [43 C.F.R. § 11.900(b)]. The DOI regulations define the measure of damages as restoration costs plus, at the discretion of the Trustees, compensable values for intangible losses [43 C.F.R. § 11.900(b)]. Restoration costs are the costs of restoration actions that restore the injured resources and services to baseline, which is the condition that would have existed had the hazardous substance release(s) not occurred [43 C.F.R. §11.14(e)].
Chapter 8: References

8. References


### Appendix A

**Threatened and Endangered Species from the Anniston PCB Site**
Anniston PCB Site Draft NRDAR Assessment Plan

• A copy may be downloaded at http://www.fws.gov/daphne

• Or, request a copy from:

  Karen Marlowe
  Propst Hall, Rm. 229
  800 Lakeshore Drive
  Birmingham, AL  35229-2234
  (205)726-2667
  karen_marlowe@fws.gov
Anniston PCB Site Draft NRDAR Assessment Plan

- Open comment period from Nov ____ to Jan 31, 2010.

- Send comments to:
  Karen Marlowe
  Propst Hall, Rm. 229
  800 Lakeshore Drive
  Birmingham, AL  35229-2234
  (205)726-2667
  karen_marlowe@fws.gov
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Schedule:

- release plan for public review Nov 2009
- 60-day review period Nov 2009-
  - public meeting(s) Jan 2010
- respond to comments/finalize plan Feb 2010
- Phase 1 field sampling with CERCLA Dec 2010 +
- restoration scoping Dec 2010 +
- Phase 2 studies ?
In Summary

- The Trustees (ADCNR, GSA, and USFWS) are **not** part of the Partial Consent Decree with EPA and Solutia/Pharmacia!!
- The Public and Responsible Parties **are** involved in the NRDAR process.
- The NRDAR process is **not** punitive.
- Restoration of injured **resources** is the **primary** objective of the Natural Resource Damage Assessment and Restoration (NRDAR) process.
- Provide your comments on the Draft Assessment Plan by **January 31, 2010**.
- Start thinking about restoration projects or types that you would like to see in your community.
Questions?

Contact:
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