

Environmental Bulletin

Volume 19 Number 1
January 4, 2008

from the Savannah River Site

Early Action Fact Sheet Issued for Lower Three Runs Integrator Operable Unit

Introduction

This Early Action Fact Sheet is being issued by the United States Department of Energy (DOE) with concurrence from the United States Environmental Protection Agency (EPA) and South Carolina Department of Health and Environmental Control (SCDHEC). The purpose of this Early Action Fact Sheet is to describe the additional proposed early response actions for the Lower Three Runs (LTR) Integrator Operable Unit (IOU) and to provide for public involvement in the decision-making process. The first Early Action Fact Sheet for LTR was issued November 3, 2004.

IOU Program

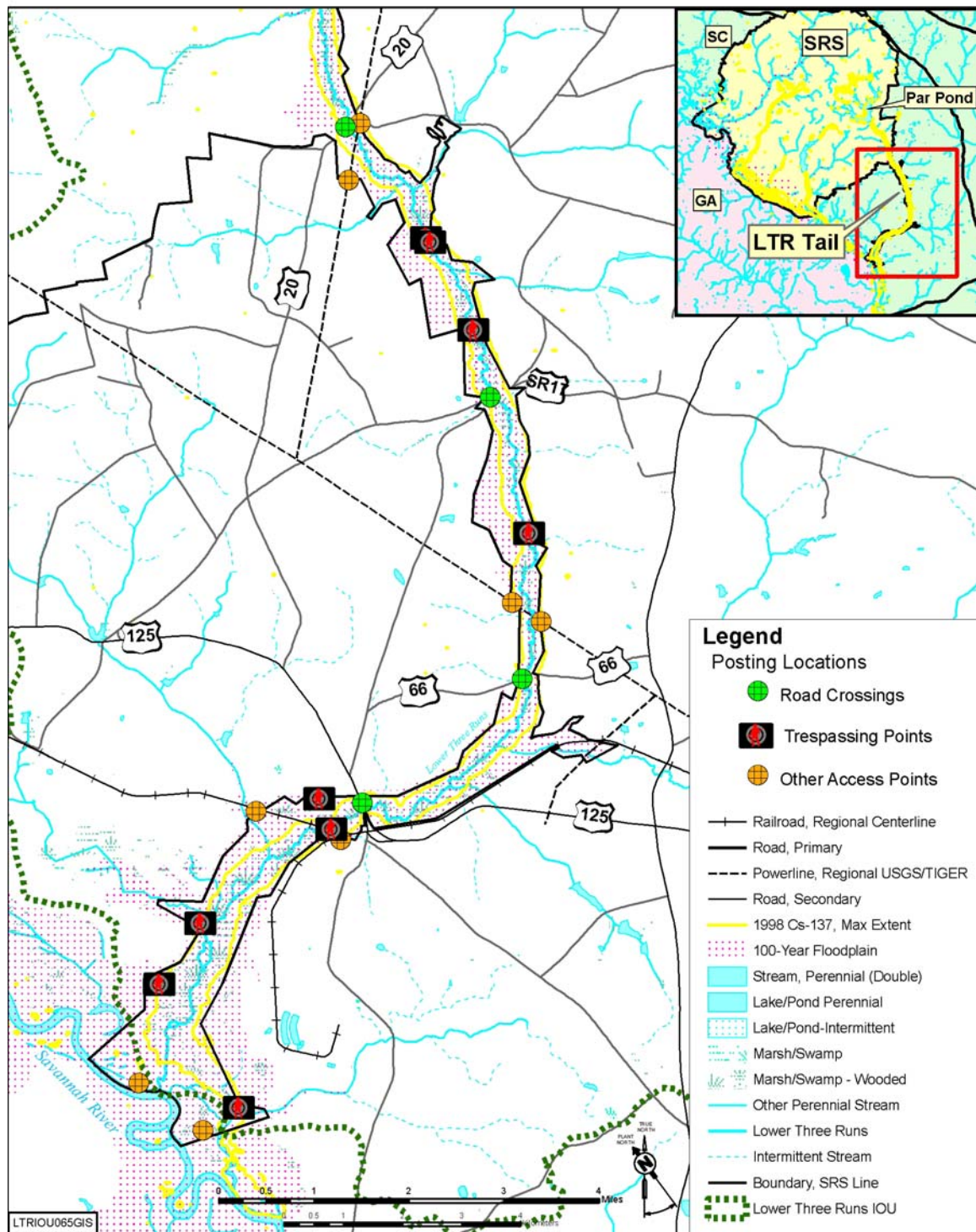
The LTR Creek and floodplain is one of six Savannah River Site (SRS) IOUs corresponding to each of the major onsite watersheds. IOUs are defined as surface water bodies (e.g., streams and lakes) and associated wetlands, including the sediment, floodplain soil, and related biota (animal and plant life). IOUs are evaluated to determine if past releases of contamination from SRS pose unacceptable risks to the environment, SRS workers, or off-site general public.

The investigation of IOUs is performed in three phases. Phase I, which has been completed for all IOUs, included the evaluation of existing data and historical information. Phase II involves the ongoing sampling and evaluation of new data to determine if

contamination levels call for consideration of an early response action. Phase III will include the final risk assessment with the final remedial decisions to be documented in a Record of Decision. The LTR IOU is in the Phase II stage.

Lower Three Runs IOU Background

The LTR IOU is located in the southeastern portion of SRS (see figure on following page). P-Area Reactor and R-Area Reactor are the two primary SRS facilities located within the LTR watershed. In addition, the watershed contains a 2,500-acre lake (PAR Pond) used by both P Reactor and R Reactor during reactor operations. From the PAR Pond Dam, LTR flows approximately 19 miles south to southwest before it enters the Savannah River. Beginning at State Route 20 (Patterson Mill Bridge), the SRS boundary narrows on both sides of the creek to a strip of land known as the LTR tail. The LTR tail section is owned by DOE and is bounded on both sides by private property. The LTR tail section generally consists of the creek and the 1/8- to 1/4-mile-wide densely vegetated floodplain on each side of the creek. There are four public roads, a railroad, and two power lines that cross the LTR tail where public access to contamination in the LTR tail section is possible. However, members of the public entering SRS property at any locations along the LTR tail are trespassing, and are subject to prosecution.



Trespassing locations and other potential access points in LTR tail.

Contaminant of Concern

Cesium-137 is a radioactive fission product from P Reactor and R Reactor which ceased operations in 1988 and 1964, respectively. Cesium-137 binds securely to stream sediments, and the radioactivity is reduced by one-half every 30 years through decay. The Phase II evaluations of the LTR IOU identified cesium-137 contamination below the PAR Pond Dam in floodplain sediments along the entire length of the LTR tail section. Analysis of fish throughout LTR has also shown the presence of cesium-137.

Risk Evaluation

Cesium-137 is a concern to human health because at elevated levels, it can increase the chance of developing cancer. Cesium -137 was not found at levels in the LTR IOU that would present an increased risk of cancer to the off-site general public. However, it was determined that the cesium-137 levels could pose an unacceptable health risk (increased cancer incidence of greater than 1 in 10,000) to SRS workers and potential trespassers on the SRS that may have frequent and prolonged contact with contaminated floodplain sediments.

The LTR Phase II IOU investigations also include an ecological evaluation. Results from the evaluation indicate that no early action is needed at this time to protect the environment (e.g. animal and plant life).

Early Action

As specified in the November 3, 2004, Early Action Fact Sheet, actions taken to prevent the inadvertent exposure to cesium-137 by SRS workers and unintentional trespassers included the installation

and inspection of warning signs and fencing at public road crossings along the LTR tail section. A reconnaissance survey conducted in 2005 identified evidence of trespassing in the LTR floodplain at locations along the tail section, indicating that the 2004 early actions alone are not adequately protective of an inadvertent trespasser.

The DOE, with agreement from the EPA and SCDHEC, proposes to implement the following additional institutional controls to mitigate the potential risk to unintentional trespassers from exposure to cesium-137:

- Notification of adjacent property owners
- Posting and maintenance of additional signs at likely and observed locations of ingress
- Removal of unauthorized structures (e.g. deer stands, rope swings) on DOE property
- Additional reconnaissance surveys

Annual inspections and maintenance of all signs will be conducted to ensure they are in place and readable. Results of the inspections and reconnaissance surveys will be documented in subsequent LTR Periodic Reports. Actions (such as additional postings) will be taken in a timely manner (initiated within 30 days) if inspections identify previously unidentified evidence of trespassing.

The warning signs state, “Caution, Unauthorized Entry Prohibited, Chemical or Radioactive Contaminants May be Present, Contact Savannah River Site Public Involvement 1-800-249-8155.” Maintenance of signs and removal of unauthorized structures will continue as long as contaminant levels warranting early action remain, or until the final remedial actions are implemented. The cost of

implementing these proposed additional early actions is approximately \$50,000.

Thus far, signs have been posted at all the trespassing and access points identified in the 2005 reconnaissance (see figure on page 2). Another reconnaissance of the portion of LTR between Patterson Bridge and Hwy. 125 conducted in 2007 found no additional evidence of trespassing activities. Security patrols have also been increased, including helicopter overflights.

Public Involvement – Responsiveness Summary

This document will be available for public comment a minimum of 30 days after notice of its availability to the public. It will also be presented to the SRS Citizens Advisory Board.

If there is interest in discussing this early action approach, a public meeting may be requested. Comments on the Early Action Fact Sheet should be sent to Mr. Paul Sauerborn. For additional information or to request a public meeting contact:

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Copies of the LTR Periodic Report can be found in the SRS Administrative Record which is available in the information repositories listed below:

- DOE Public Reading Room at the Gregg-Graniteville Library at the University of South Carolina-Aiken campus in Aiken, SC; and

- Thomas Cooper Library Government Documents Department at the University of South Carolina in Columbia

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