Technical Interchange Meeting

SWMU Investigations and Closures
Ecological Risk Assessment for North Pasture
and
TRRP Tier 2 PCL Evaluation for Benzene at AOC-63

Camp Stanley Storage Activity
Boerne, TX

Parsons, DACA87-02-D-0005, Delivery Order DY01
September 14, 2007

Date: Friday, September 14, 2007

Time: 9:00 A.M. – 12:00 P.M.

Place: Austin, Texas

Subject: Ecological Risk Assessment Technical Approach for North Pasture and TRRP Tier 2 PCL Evaluation for Benzene at AOC-63

Attendees:

Glaré Sanchez	CSSA	321-662-3718
Chris Beal	CSSA/Portage	210-336-1171
Julie Burdey	Parsons	512-719-6062
Cheryl Overstreet	USEPA Region VI	214-665-6643
Greg Lyssy	USEPA Region VI	214-665-8317
John Wilder	TCEQ	512-239-2579
Sonny Rayos	TCEQ	512-239-2371
Wayne Elliot	USACE (Fort Worth)	817-886-1666
Bob Edwards	Noblis	210-408-5552
Ron Porter	Noblis	210-403-5406
Ken Rice	Parsons	512-719-6050
Carlos Victoria	Parsons	512-719-6007
Lea Aurelius	Parsons	512-719-6017
Stephen Mitchell	Weston	512-651-7104
Mike Chapa	Weston	210-248-2428
Katie Mittmann	Weston	512-651-7117

INTRODUCTION

All meeting attendees met in the Parsons office in Austin, TX. Julie Burdey (Parsons) opened the meeting stating the purpose of the meeting and opening introductions.

Meeting attendees included representatives from CSSA, TCEQ, USEPA (Region VI), USACE (Fort Worth), Noblis, Weston Solutions, Inc., and Parsons.

The list of attendees is provided above. The sign-in sheet including fax and e-mail addresses is provided in **Attachment A**.

OBJECTIVES OF MEETING

The objectives of the meeting were to discuss the ecological risk assessment (ERA) for the North Pasture and to get technical input from the USEPA and TCEQ for the proposed ERA approach. The ERA approach should fulfill TCEQ site closure requirements.

The technical discussion primarily focused on whether the North Pasture as a whole could be evaluated as one area for the ERA. Technical input from TCEQ and USEPA would then be used to prepare a Work Plan for the North Pasture ERA.

Participants from Weston Solutions, Inc. also gave a presentation regarding TRRP Tier 2 PCL evaluation for benzene at AOC-63. This presentation/discussion is also provided in these meeting notes.

OVERVIEW OF SWMUs AND ECOLOGICAL RISK EVALUATION

Ken Rice (Parsons) discussed background information and gave an overview of CSSA, the North Pasture, and the SWMUs of concern and other sites in the North Pasture.

Carlos Victoria (Parsons) discussed the proposed approach for the ERA, the physical extent of the ERA area (*i.e.*, the North Pasture), and the habitat distribution and key receptor species for the area.

A copy of the slides shown for the ERA presentation is provided in **Attachment B**. Other handouts for the presentation are provided in **Attachment C**. These handouts provide aerial photos of the SWMUs of concern and summary tables showing chemical constituents detected in site soils and comparison of detected chemical concentrations to residential PCL criteria.

A brief summary of the presentation and slides is given below.

Summary: North Pasture and SWMUs of Concern Summary (Ken Rice – Parsons) (Slides 5 – 13)

The four SWMUs of concern (APAR sites) in the North Pasture are SWMU B-2, SWMU B-8, SWMU B-20/21, and SWMU B-24. RFIs and removal actions have been completed at these sites. An additional site in the North Pasture is planned for investigation and cleanup activities (AOC-73). These sites are subject to closure under the Texas Risk Reduction Program (TRRP). Other SWMU or AOC sites in the North Pasture have been investigated and/or closed under previous TCEQ requirements.

An APAR is planned for the area and will include the four SWMUs within the North Pasture (SWMUs B-2, B-8, B-20/21, and B-24). These four SWMUs have similar chemical constituents (primarily metals) and have had similar removal actions previously performed (primarily sifting actions). A description of the sites and the chemical constituents remaining in soils at the sites above TCEQ ecological screening criteria (*i.e.*, contaminants of concern [COC]) are given below. The primary COCs at

the four sites are metals, particularly lead. The COCs remaining in soils at the sites also exceed the residential Tier 2 human health criteria.

- SWMU B-2. Small arms ammunition trench and burning area. COC exceeding TCEQ ecological screening criteria: lead.
- SWMU B-8. Popping furnace; fired small arms ammo brass disposal area (piles of fire bricks, ammo shells). COCs exceeding TCEQ ecological screening criteria: lead, barium, copper, and zinc.
- SWMU B-20/21. Former OB/OD area; ammunition disposal areas. For all on-going and future activities, SWMUs B-20 and B-21 have been combined into one site. COCs exceeding TCEQ ecological screening criteria within the sifted soils: lead, copper, and mercury. Zinc also exceeded the residential Tier 2 human health criteria.
- SWMU B-24. Spent ammo/rockets area. No COCs exceed ecological screening criteria; however, the concentration of 2,4-dinitrotoluene (DNT) exceeded the residential Tier 2 human health criteria.

Summary: Ecological Risk Assessment Approach – Carlos Victoria – (Parsons) (Slides 14 – 22)

The overall CSSA habitat composition and the North Pasture habitat composition were discussed. The vegetation communities at CSSA consist of woodlands, shrublands, and savannas, and an herbaceous community that is predominantly composed of bluestem grasses. The acreage of CSSA land consisting of these community types was presented in *Slide 18*. The North Pasture is predominantly woodland; the sites within the North Pasture are predominantly composed of herbaceous grass cover.

Key receptors identified at CSSA include white-footed mouse, short-tailed shrew, and gray fox (mammals); and American Robin, bobwhite, red-tailed hawk, black-capped vireo, and golden-cheeked warbler (birds). The black-capped vireo and golden-cheeked warbler are threatened or endangered (T&E) species. The results of presence-absence and habitat surveys for the two T&E species were shown in *Slides 20 and 21*.

OPEN DISCUSSION

The meeting was open for discussion during and following the slide presentation. The following technical issues were discussed in the order presented below.

Steve Mitchell (Weston) mentioned that Weston has performed ERA work to fulfill site closure requirements for three landfill sites at Camp Bullis. The three landfills were each assessed separately and an individual screening was performed; a single APAR for the three sites was prepared. Camp Bullis neighbors CSSA and has similar ecological habitat, community types, and receptors.

TCEQ (John Wilder) also mentioned that Kelly AFB performed an ERA for a large portion of that base within a single ERA and that it may provide helpful information. Based on this input, both the Camp Bullis and Kelly AFB ERAs would provide useful tools for preparing the North Pasture ERA Work Plan.

Mr. Wilder mentioned that the use of consistent methodology could be applied to all grouped sites across CSSA once an appropriate approach was developed.

TCEQ and EPA stated that they did not want to use an ERA approach that only evaluates individual sites on a site-by-site basis.

Cheryl Overstreet (EPA) mentioned that one of EPA's concerns is that the North Pasture ERA, or any grouped-sites ERA, not average out (statistically) the concentrations of constituents detected in the small areas into large areas, thereby diluting exposure point concentrations. *An example of this was brought up later in the meeting (see discussion below).*

Mr. Victoria discussed area use factors. Area use factors (AUF) are used in the exposure calculations and are expressed as the percent of expected area use for individual receptors. The AUF for the key receptors in the North Pasture and area immediately around the North Pasture need to be determined and included in the Work Plan. For example, the AUF for the gray fox is 100% based on the fox being a year-round resident. The AUF for certain birds and other species will depend on the individual species migratory range.

Ms. Overstreet stated that an ERA technical approach (Work Plan) should be developed by CSSA/Parsons. (This would be a grouped-sites ERA approach.) Once this is developed, the EPA could conduct site visits to verify that the conceptual models are representative of site conditions.

Sonny Rayos (TCEQ) mentioned that it wasn't appropriate to do all of the CSSA sites at the end of all investigations/cleanup activities because there are sites at CSSA where site investigations/cleanup actions are still taking place or will be taking place in the future and such an approach would delay site closures at sites already identified for closure. The best way would be to go forward with closing sites in the North Pasture.

The group then discussed the site in the North Pasture where investigation/cleanup is not completed (AOC-73). This could lead to a level of uncertainty in the North Pasture ERA. If high levels of contaminants were to be detected at the site, then this would result in a high level of uncertainty in the ERA. It was mentioned that AOC-73 is expected to be cleaned up leaving no levels of COCs above criteria. It was also mentioned that AOC-73 is believed to be a rancher's old dump site and that the contaminant levels are expected to be low. Thus, even though there is this uncertainty, as long as this uncertainty is discussed in the Work Plan and the ERA, we could move forward with closing the North Pasture.

Mr. Wilder mentioned a concern about using a grouping of sites that does not address dual exposure for contaminants that extend beyond the North Pasture. The Work Plan should discuss exposure potential for species with home ranges beyond the North Pasture. Mr. Victoria agreed and stated that the Work Plan will discuss the habitats and receptors for the North Pasture and the area around the North Pasture. He mentioned that the North Pasture was primarily Oak-Juniper woodlands and that the sites are primarily herbaceous, surrounded by the Oak-Juniper woodlands. Mr. Victoria stated that the ERA approach would select representative species that will represent the potential receptors at CSSA.

Mr. Victoria stated the trophic levels include insectivores and herbivores. Some discussion from the various attendees concerned adding deer and mouse as potential receptors. Mr. Victoria agreed that use of those receptors would be considered. Deer was brought up

again at the end of the meeting and it was added that deer would be considered in the ERA if an important pathway to deer is identified.

Bob Edwards (Noblis) asked if plant data were collected (*e.g.*, for deer eating grass). Mr. Victoria stated that plant data are expensive to collect and thus not collected. Mr. Victoria also mentioned that transfer factors are used *(i.e.*, based on uptake of COCs from soils to plants), stating that transfer factors are based on extensive data and are appropriate for the ERA and are recommended by TCEQ. Mr. Mitchell also added that plant data would be collected in a scenario where concentrations of COCs were extremely high and thus lead into a Phase II type investigation.

Mr. Victoria again talked about the T&E species present at CSSA (golden-cheeked warbler and black-capped vireo). He mentioned that warbler habitat is predominant in the North Pasture and also that the vireo is generally a high-canopy species and this habitat is less common at CSSA. Mr. Victoria stated that among the first questions we might address is how much of the diet is in the herbaceous habitats at the sites and what is the feeding range of these species.

Mr. Lyssy brought up the tanks in the North Pasture. There was some discussion about the two tanks in this area, that there are no perennial streams, and that there are some intermittent streams. These need to be discussed and addressed in the Work Plan.

Mr. Lyssy and Ms. Burdey asked TCEQ/EPA for additional input on the main issues/concerns that need to be addressed in developing the Work Plan. In addition to the items previously discussed during the meeting, TCEQ stated the following points:

- The ERA should identify receptor species and not fail to consider key receptors in the area.
- The ERA should identify the home range of the species.
- The ERA should identify what units are considered and what units are not considered, and why.

Mr. Lyssy mentioned the regulatory schedule and stated that the CMSs for the sites would include the risk assessments.

TCEQ brought up the issue again of not diluting the exposure concentrations. For example, if there is a hot spot and only one 95% UCL is calculated for each chemical across all the units, then the exposure point concentrations would be diluted. SWMU B-8 was mentioned as having a hot spot. Mr. Rice stated that removal actions are planned for hot spots (approximately 1,000 cubic yards) including SWMU B-8.

Mr. Rayos brought up caves at CSSA. Caves have not been identified in the North Pasture, however Parsons would consider caves as part of the Work Plan, discussing whether or not they are considered and why.

Before the meeting was closed, Ms. Burdey stated that a Work Plan would be prepared and submitted for review and input from CSSA, TCEQ, and EPA. A site visit would then be scheduled for Mr. Lyssy and Ms. Overstreet.

BENZENE TIER 2 PCL FOR AOC-63 (WESTON SOLUTIONS, INC.)

Mike Chapa (Weston) discussed on-going investigations at AOC-63 regarding low level benzene concentrations observed within the soil matrix at the site. The slides used in Weston's discussion are provided in **Attachment D**. Weston calculated Tier 2 PCLs for benzene at the site and is intending to request TCEQ concurrence for use of the Tier 2 PCLs for the pending Affected Property Assessment Report/No Further Action (APAR/NFA) document. Mr. Chapa presented the site-specific data used for the Tier 2 PCL calculations and Mr. Mitchell indicated that these calculations utilize the same Soil Attenuation Modeling (SAM) to calculate the Tier 1 PCLs which utilize default parameters. Mr. Rayos indicated that he would prefer a vertical delineation of contamination investigation be conducted to confirm the SAM results (*i.e.*, no impact to groundwater). If there is no presence of benzene within the vertical extent prior to groundwater, then the Tier 2 PCLs would be sufficient for use in the pending APAR/NFA documentation.

Weston indicated that further investigation regarding vertical extent of benzene will be conducted by sampling the soil/rock interface at AOC-63.