FUSRAP St. Louis Site Remediation Task Force
Alternative Sites Working Group
January 31, 1995

A meeting of the Alternative Sites Working Group was held on January 31, 1995 at 9:30 AM at the Hazelwood Interim Storage Site trailer. In attendance at the meeting were:

Jim Dwyer
Eileen O'Connor
Kay Drey
Jan Titus
Jack Frauenhoffer
Sally Price
Dan Tschirgi
Dan Wall (by phone)

The status of information requests was discussed. There has been no response from DOE. Jim Dwyer left the meeting to contact Dave Adler, Patti Hazel, and David Miller. He was able to reach David Miller, who faxed information to the workgroup on estimated Curie counts for different areas of the St. Louis Site.

Several items of information were brought to the meeting by workgroup members to assist in completing the alternative sites matrix. Jan Titus prepared an improved matrix with space to rank subcategories under each major criterian.

There was a lengthy discussion regarding what system of ranking should be used in the matrix. The merits of colors (green, yellow, orange), numbers, greatest vs. least impact, good and bad, etc. were discussed.

For the next meeting, Jan Titus will attempt to fill in the matrix to the extent that information was provided at this meeting. A system of numbering 1 through 5 will be proposed, with 1 being favorable, good, least impact, etc. and 5 being unfavorable, bad, greatest impact, etc. This will show where there is consensus and where we need additional information.

# *IMPACT ON PUBLIC HEALTH/ENVIRONMENT*

*Draft-January 23,1994*

## *POPULATION DENSITY*

### *AIRPORT AREA*

The airport area is located within the municipalities of Hazelwoood and Berkeley. The population of both these municipalities decreased from 1980 to 1990. The population of Berkeley was 15,922 in 1980 and 12,450 in 1990, a decrease of 21.8 percent (EWGCC 1991). The population of Hazelwood was 16,170 in 1980 and 15,324 in 1990, a decrease of 5.2 percent. SLAPS is located within Census Tract 2115 (Figure 2-16), with a population of 4,041. The total population in the 1.6 km (1 mi) census tracts surrounding SLAPS in 26,399.

The population center nearest SLAPS, with 75 to 100 people in this area, is located approximately 0.8 km (0.5 mi) west of the property in an industrially zoned area of Hazelwood. The next closest population center, is approximately 1.6 km (1 mi) northwest of SLAPS along Chapel Ridge Drive. The nearest residential areas to the Latty Avenue properties are located approximately 0.5 km (0.3 mi) to the east, in the City of Berkeley. Several high-density residential areas, which include single-family homes and apartment buildings, are located 1.2 to 1.6 km (0.8 to 1 mi) east and southeast of the Latty Avenue properties in both Hazelwood and Berkeley (SAIC 1992). The average occupancy over the 10,399 occupied dwellings is 2.5 people per dwelling.

### *ENVIROCARE*

Currently, people do not live near the Envirocare site (p.5-67).

## *TRANSPORTATION OF WASTES*

### *SLAPS*

The transportation risk for Alternative 3, consolidation and capping, of the April 1994 FS/EIS is the lowest of the excavation/disposal alternatives. The mode of contaminated media transport is via 10-$yd^3$ dump trucks from SLDS to SLAPS at a travel distance of approximately 21 km (13 miles) one way. The estimated number of traffic accident related injuries and traffic fatalities to the public are 2.3 and 0.94, respectively. The established number of traffic accident related injuries and traffic fatalities to the transportation crew are 8.6 and 0.066, respectively. The estimated number of career (cancer?) incidents that would be experienced by the public and transportation crew, assuming no traffic accidents, would be $2.0 \times 10^{-5}$ and $4.1 \times 10^{-4}$, respectively.The estimated number of cancer incidents that would be experienced by both the public and transportation crew involved in traffic accidents during waste transport would be $7.2 \times 10^{-5}$ (p. 5-44)

*(Transportation of Waste contd.)*
*ENVIROCARE*

The following risks are based on railroad transport over an estimated distance of 6,300 km (3,900 miles) one way:

Assuming the $25 million per year DOE budget cap and the resulting time required to implement a dispoal option plan to Envirocare, the estimated number of **traffic accident** related injuries and traffic fatalities to the **public** range from 5.3 to 6.1 and 2.3 to 2.6, respectively. The estimated number of traffic accident related injuries and traffic fatalities to the **transportation crew** range from 21 to 14 and 0.16 to 0.18, respectively.
The estimated number of **cancer incidents** that would be experienced by both the public and transportation crew involved in a traffic accident during waste transport range from 0.053 to 0.061 (p. 5-102). Another estimate of the public radiologically related lifetime cancer incidents is in the range of 0.001 to 0.08 cancers for the shipment of wastes ( p. 5-116).

*IN-STATE FUSRAP DISPOSAL FACILITY-(OFFSITE)*

This facility is assumed to be within 161 km (100 mi) of the St. Louis site. The $25 million per year DOE budget cap is once again assumed . Waste transport by way of truck is assumed for the purpose of costing the disposal option. These risks were based on truck transport over 2,400 km (1500 mi) for 62,600 truckloads.
The estimated number of **traffic accident** related injuries and traffic fatalities to the **public** range from 3.3 to 3.8 and 1.4 to 1.6, respectively. The estimated number of traffic accident related injuries and traffic accident related fatalities to the **transportation crew** range from 12 to 14 and 0.10 to 0.11, respectively.The estimated number of **cancer incidents** that would be experienced by the public and transportation crew, assuming no traffic accidents, range from 0.0016 to 0.0019 and $5.0 \times 10^{-4}$ to $5.8 \times 10^{-4}$, respectively. The estimated number of cancer incidents that would be experienced by the public and transportation crew involved in traffic accidents during waste transport range from $8.8 \times 10^{-5}$ to $1.0 \times 10^{-4}$ (p.5-100).

## *AIR/WATER/LAND/LIVING CREATURES*

*SLAPS*

*AIR*

*A. Short Term-* The effect of this alternative on air quality is a short-term increase in fugitive dust during excavation of the accessible soils in the downtown and airport areas, transport of the soil to the consolidation area, and construction of the cap at SLAPS. Air quality would be affected by releases of particulates and radon gas into the atmosphere during excavation of soils. The volume released depends on many variables, such as the surface area exposed, degree of soil agitation or movement, radionuclide concentration, rate of air movement, temperature, and humidity (p. 5-43).

*B. Long Term- ?*

*WATER*

Alternative 3, consolidation and capping (FS/EIS 4/94), would achieve a long-term positive effect on groundwater quality by removing the contaminant source at all of the vicinity properties, including HISS. A cap at SLAPS would reduce infiltration of precipitation and thereby reduce contaminant leaching. The potential for contaminants to be transported into drainage areas and Coldwater Creek from surface water runoff would be reduced. A slurry wall system, which includes drainage capability through an existing pathway, could be installed and used as an option to isolate the contaminated groundwater and associated soils from interacting with the uncontaminated groundwater.Because the groundwater at the St. Louis site meets the requirements of a Class IIIA aquifer and is of poor quality (Section 2.2.4.2), there is no concern for its being used as a future drinking water source. Therefore, groundwater ARARs do not apply. Alternative 3 would procuce slight sediment loading of the Mississippi River, but have minimal effect on the pallid sturgeon. Discharge of contaminated groundwater would continue to occur, but any contaminants reaching the river would be diluted to a level that would not negatively affect the pallid sturgeon or its habitat.

*LAND*

*A. Wetlands*-Placing the cap at SLAPS and the ball field would not directly disturb the wetlands located along Coldwater Creek . Alternative 3 would damage wetlands located southwest of Futura and some riparian habitats present between SLAPS and HISS/Futura. Soil excavation and sediment dredging would occur in the existing wetlands located near Futura and would indirectly affect downstream wetlands by temporarily resuspending soil and sediments.

*B.Floodplains*- Under Alternative 3, remedial actions will be taken within the boundary of the 100-year floodplain at the downtown and airport areas.(The proposed cap area will not lie within the boundaries of the 100-year floodplain after implementation-p.5-49).

*C. Biota Effects*- Short term effects during soils excavation would produce a slightly negative effect until the affected areas could be revegetated. Alternative 3 would remove or disrupt the growth of herbaceaous vegetation and woody shrubs at SLAPS and the ball field.

*LIVING CREATURES*

Invertebrate, small mammal (e.g., rabbits and mice), and bird activity would be disrupted in the area. During excavation and construction of the cap, there would be displacement or mortality of some invertebrates, amphibians, reptiles, and small mammals. The increased human activity, diminished availability of prey, and smaller hunting areas could reduce the nimber of raptors in the area. Vegetation and recovery would be facilitated by revegetation.Continued discharge of groundwater would have minimal effect of the Mississippi River aquatic biota (Sec. 5.2.1.5).Aquatic species in the river are not *expected* to be affected by residual contamination because of the large dilution volume in the river.

*ENVIROCARE*

*AIR*

Local air quality might be impacted by wind dispersal of the untreated soils because of high wind speeds and sparse vegetation (DOE 1992).

*WATER*

The Envirocare site is located in an arid environment in which precipitation is low, so the potential for human exposure to surface water or groundwater contaminated by any contribution from the St. Louis waste would be small. The disposal cell at the Envirocare site, if chosen, would be located about 45 km (28 mi) from the nearest perennial water body. Because conditions at the site are arid, construction of a disposal cell at the Envirocare site using good engineering practices would not affect local surface water during the remedial action period (DOE 1992). The current monitoring well program at the Envirocare site includes sampling of about 10 to 42 wells located around the existing disposal cell. Samples are routinely analyzed for contaminants that are representative of the waste types present in the cell. Envirocare of Utah, Inc. would be expected to conduct activities for monitoring the containment effectiveness at the Envirocare site. The potential effects on groundwater resulting from the potential failure of a disposal cell were evaluated with a conservative model.The results indicate that cell failure would have no significant effect on offsite groundwater quality at the Envirocare site (DOE 1992).

*LAND*

Cell construction and maintenance at the Envirocare site would result in the permanent loss of approximately 113 ha (33 acres) of semidesert shrubland, assuming that the area requirements would be the same as at the St. Louis site for the same volume of waste (p. 5-74).

Because of the limited biota present in the area due to ongoing waste management activities and natural conditions, few impacts to local biota are expected, and any impacts would be temporary (DOE 1992). (p. 5-73)

*LIVING CREATURES*

Some wildlife in the vicinity of the site could be temporarily affected by noise, human activity, and fugitive dust associated with the construction of the disposal cell, transport of the waste to the site, and placement of the waste into the cell. No federal listed species, state listed species, or critical habitats are known to occur at the Envirocare site(p.5-74).However, the USFWS has identified the federal endangered bald eagle and peregrine falcon as possibly occurring in the area. Because of the distances from the Envirocare site to the bald eagle wintering areas and the peregrine falcon hack sites, no impacts are expected from cell construction and waste placement activities. The human activity at the Envirocare site likely preclude the use of the immediate surroundings by this bird. Because of the absence of aquatic habitats and state listed species in the area, no impacts to these resources expected.

## ***WORKER EXPOSURE***

*SLAPS*

Under Alternative 3, remedial workers may experience increased exposure to site-related contamination, particularly airborne particulates, radon gas, and external gamma radiation. For DOE activities, occupational radiation exposure is strictly regulated under DOE Order 5480.11. Strict adherance to DOE Order 5480.11, OSHA regulations, site health and safety plans, and site construction plans (i.e., dust control plan, decontamination plan, erosion control plan) would minimize any potential for remedial worker exposure to site-related contamination. These effects

are expected to be controlled with proper mitigative measures such as temporary enclosures and personal protective clothing. The non-radiological occupational hazards associated with Alternative 3 would be similaar to those encountered at any large construction project involving heavy excavating and hauling equipment. It is calculated that 115 construction-related injuries will occur and that the risk of a fatality is 0.02.

Constuction-related injuries and risk of fatality figures were listed as follows (p.5-68):

- Onsite Cell and Beneficial Reuse — 145 injuries and 0.03 fatalities
- In-State — 121 injuries and 0.02 fatalities
- East-West — 184 injuries and 0.03 fatalities
- Commercial — 79 injuries and 0.01 fatalities
- DOE — 79 injuries and 0.01 fatalities

*Envirocare* ?

## COSTS

*SLAPS*

The 30 year cost to implement the Alternative 3 remedial action is $312 million (appdx B). The cost to monitor the capped disposal facility and the institutionally controlled access-restricted soil sites would be $590,000 annually. A perpetual fund of $20 million would be established to cover this annual cost.

*Envirocare*

The total 30-year cost for the Alternative 5-Complete Excavation/Disposal is $405 to $1,310 million(p. 5-124)

Formerly Utilized Sites Remedial Action Program (FUSRAP)

# ADMINISTRATIVE RECORD

## for the St. Louis Site, Missouri

U.S. Department of Energy