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EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MO	2216090005

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Weldon Spring Raffinate Pits Site	MO. HWY 94, 2 miles south of U.S HWY 4C

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
St Charles	MO		St. Charles		

09 COORDINATES LATITUDE	LONGITUDE
38° 42' __.W	90° 44' __.N

10 DIRECTIONS TO SITE (Starting from nearest public road)

Take U.S. HWY 40 West from St. Louis, approx. 13 miles to Missouri HWY. 94, head south on HWY. 94, approx. 2 miles. Site is located on north side of 94.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
Department of Energy (DOE)	

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
			( )

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
Mallinckrodt Chemical Works/Atomic Energy Commission	

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)

☐ A. PRIVATE ☒ B. FEDERAL: Department of Energy (DOE) (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☐ YES DATE __/__/__ (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1958 (BEGINNING YEAR)	1965 (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Wastes present onsite include Raffinate sludges from uranium and thorium processing operations including uranium and thorium decay products and radium contaminated water. Also onsite are solid rubble and debris from destruction of the Weldon Spring Chemical Plant.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Wastes have been found to be low level radioactive. Sludges and waters are contained in unlined pits constructed directly in native soils. Several small areas of soil outside the pits have shown gamma levels above background.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 3 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Files	EPA Region VII	( )

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Corry J. Shedd	~~Weston~~ SUPERFUND	TAT 17	(816) 221-1722	03 / 20 / 86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

APR 30 1986
CERCLIS

APR 24 1986
SITE LOG

DOCUMENT NUMBER: __

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
MO	2210090005

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [X] C. SLUDGE
- [X] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS
- [ ] D. OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS 220,000

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [X] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE low radiation	220,000	cu. yards	
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SLU	Raffinate sludges from	Ra - 226	Surface impoundment	460 ± 130	pCi/g dry
	uranium & thorium processing,	Ra - 228		850 ± 85	"
	decay products, and water	TH - 232		120 ± 20	"
	contaminated with radium.	TH - 230		24,000 ± 1,000	"
	Pit #4 also contains drums	U - 238		710 ± 70	"
	& solid rubble from	U - 234		810 ± 80	"
	destruction of the Weldon	U - 235		40 ± 5	"
	Spring Chemical plant				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Radiological Survey Report for the Weldon Spring Raffinate Pits Site, Weldon Spring, Missouri - Bechtel National, Inc., August 1984.

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POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
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II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 61,400 — 04 NARRATIVE DESCRIPTION

Some nitrates have been detected in ground water. May not be attributable to Raffinate Pits, but to the former Weldon Spring Chemical Plant site.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

NONE DIRECTLY ATTRIBUTABLE TO THE RAFFINATE PITS SITE HAS BEEN OBSERVED.

01 ☒ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION

Walkover gamma surveys have detected gross CPM gamma levels in excess of background (approx. 6,000 counts/min.) is several localized spots. Potential contamination of airways onsite.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

NONE OBSERVED, BUT POTENTIAL MAY BE PRESENT DUE TO TNT AND DNT CONTAMINATION DETECTED AT ADJACENT CHEMICAL PLANT AND TRAINING AREA SITES.

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Site is enclosed by a 7 ft high security fence. In addition, each pit is enclosed by a smaller interior fence.

01 ☒ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: Unknown (acres) — 04 NARRATIVE DESCRIPTION

Wastes are contained in unlined impoundments directly in native soils. Potential for emigration of contaminants into surrounding soils. Walkover gamma surveys, bore holes gamma logs, and surface soil samples have shown radionuclide levels exceeding background levels in several localized spots.

01 ☒ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 61,400 — 04 NARRATIVE DESCRIPTION

None observed attributable to the Raffinate Pits Site, but location and construction of pits (unlined) present some potential.

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

No workers onsite

01 ☒ J. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ~3,000 — 04 NARRATIVE DESCRIPTION

Francis Howell high school is located within one mile east of the site. Potential exists for exposure to radiological contaminants via airways. In addition, Army Reserve/National Guards personnel are in the Training Area, west of the site.

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I. IDENTIFICATION	
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II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None observed, but proximity of wild-life areas to site presents a potential for adverse impact to area flora.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
None observed, but proximity of wildlife areas (Busch Wildlife Area, and Weldon Spring wildlife area) presents potential for adverse impact to area fauna. Bald Eagle is known to inhabit and nest along the Missouri River

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
The proximity of water bodies from which fish are caught presents a potential for contamination of food chain in the event of a release of contaminants from the site.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, runoff, standing liquids, leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown — 04 NARRATIVE DESCRIPTION
Sludges are contained in open, unlined impoundments constructed in native soil. Potential for emigration of contaminants into surrounding soils.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None Documented

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None Documented

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
None Documented

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
None Documented

III. TOTAL POPULATION POTENTIALLY AFFECTED: ~ 3,000

IV. COMMENTS
Water samples collected from the St. Charles County well field have shown radionuclide levels within exceptable levels. However, it may not be attributable to the Weldon Spring sites.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
- Hazard Ranking System analysis prepared for the Weldon Spring Chemical Plant (including Raffinate Pits); by NUS Corporation, 7/3/85
- Radiological Survey Report for the Weldon Spring Raffinate Pits Site, Bechtel Natl., Inc. - 8/84
- Assessment of the Weldon Spring Chemical Plant, Dept. of the Army, 3/1/76

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