(DOB 1999 C)

# Buried Transuranic-Contamination Waste and Related Materials Database

December 15, 1999

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### IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

Subsurface Disposal Area, Radioactive Waste Management Complex, Idaho National Engineering and Environmental Laboratory

# LOS ALAMOS NATIONAL LABORATORY

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Los Alamos National Laboratory TA-21 Material Disposal Area B - Disposal Pits

Los Alamos National Laboratory TA-50 Material Disposal Area C - Pits

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I. St	ımmary Es	timates	;	-									
γA.	Original	Materia	ıl (Empl	aced Wa	iste)								
1	a. Site/Area	ı Name a	ınd Locati	on: Los	Alamos Na	ational Labor	atory T	N-21 Material	Disposal A	rea A			
1	b. Origin:	contribut	tors are two s. In 1985,	50,000 gal the tanks w	d actively f lon tanks ( ere pumpe	or disposal c Generals Tai d and the ex	luring tw iks) which teriors de	nd contains to periods: 19 ch were used econtaminate stellevels of c	945 to 1949 for chemical d leaving ser	and 1969 to storage awayeral inches	1977. The pr	rimary TRU	waste
┌2	. Typeof Pla	acement	(check on	ly one):									
	a. Trenct	h/Pit Bui	rial			$\circ$	. Surfa	ice Testing					
	b. Greate	er Confir	nement Di	sposal (G	CD)	_		rground Te	esting				
	C. Underg	ground l	njection					r (Please S <sub>l</sub>					
	d. Spill o	r Surfac	e Discharg	ge			}	Mark V Toleron on The Commission of the	PP (APPRING VICE) (C. SMICH III)				
1	Remarks	):								<u> </u>			
3	a. Total vol	ume of a	ctual was	te emplac	ed (not in	cluding pa	ckagin	g):	14000 m <sup>3</sup>				
) 4	Please indi	icate how Volume Informa Interna LA-898	volumes we of contain ation obtain tional, Septis 32-MS, and	ere estima ers emplace ed from Co ember 1987	ted and preded reported omprehension. Alternate	ovide source as Not Ava ve Implement Transurani	e citatio lable. Itation P c Waste	l in B.1. Actu n(s)/report r lan for the DC Management ity Investigat	eference(s)  DE Buried T  Strategies a	in A.9 belov	y.	Drogues D	a alassa II
	☐ Liquid	1						<b>✓</b> Hetero	geneous D	ebris			
	<b>✓</b> Homog	geneous !	Solids (if	available	, as: Slu	dges	)	☐ Other	(please spe	ecify):			
	Remarks:	Pits use	ed for dispos	sal of Pu pr	ocessing a	nd early D&	D wastes	, and "Genera	als Tanks" w	hich contain	TRU sludge:	s.	
5.	Of the tota	l volume	reported	in 3 abov	e:								
	Estimated p	percent e	xceeding 1	00 nCi/g:		5 E	stimate	d percent be	tween 10-1		95		
	Total amou (These unit Percent con	s must be	the same	as those i	ised in 7 f	below.)		25 Ci	sed: Ci	(w	cight % or (	Ci %)	
	(Must be th	e same a	s those use	ed in 6 abo	ove.)							- ,	
	Am-241 I	Pu-238	Pu-239 47	Pu-240 47	Pu-241	Pu-242	U-233	Cm-244	Ra-266	Cf-252	Other 6	Other	Other
8.	Estimates p	provided	in Section	s 6 and 7	above ar	e based on	; initia	(emplaced)	values	If decaye	d, to what o	date?	
9.	Basis for war					values wer	e estim:	ited for 6 a	nd 7 and h	ow volume	s were calc	ulated for	3.

10. General level of confidence in the waste information:

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area A

(a) Summary Estimates

B. Contaminated Soil (if applicable)

Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing:

 0 m<sup>3</sup>

 Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Mostly solid form waste disposal, not likely to contaminate soil to TRU waste levels.

2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: %

Estimated percent between 10-100 nCi/g: %

 $3. \ \ Basis for the soil information, including supporting volume calculations and the report \ reference(s)/citation(s):$ 

4. General level of confidence in the soil information: Low

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area A

# II. Supporting Volume Detail

1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided.

		Volume with >1	00 nCi/g ( m³)	Volume with 10-	-100 nCi/g ( nr <sup>3</sup> )
	Total Volume	TRU	MTRU	LLW	MLLW
Emplaced Waste (combined)	14000	700		13300	
Liquids					
Homogeneous Solids					
Heterogeneous Solids	14000	700		13300	
Other (please specify)					
Contaminated Soil (best est.)					
Minimum Estimate					
Maximum Estimate					

2. The volume(s) of "waste emplaced" in this table represent:

# Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area A

### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and asociated soil, and/or for further breakouts.

### In-Place Management (Volume in nr3)

	No Action	Access/Install. Controls	In-Situ Containment	Containment	Туре	In-Situ Treatment	Treatment Type
Emplaced Waste		1	14000			P. C.	
TRU / MTRU			700				
aLLW / aMLLW			13300				
Contaminated Soil							7 . Mildida
TRU / MTRU							
aLLW / aMLLW							
		Removal fo	or Further Mana	gement (Volum	ein m <sup>3</sup> )		
	Collection and Treatment	Treatm	ent Type	Collection and Storage	Storage Type and Location		Disposal Location
Emplaced Waste		Treatm	ent Type				
Emplaced Waste		Treatm	ent Type				
		Treatm	ent Type				
TRU / MTRU		Treatm	ent Type				
TRU/MTRU aLLW/aMLLW		Treatm	ent Type				

S	Site/Area Name and Location: Lo	os Alamos National Laboratory TA-21 Material Disposal Area A
		•
IV.	7. Additional Supporting Information	on
	<ol> <li>Further supporting detail on resp indicated above.</li> </ol>	onse plans, as needed, including references or agreements that have resulted in the responses
	Project Plan for the Remediation of TA	1-21, February 1999.
	2. Additional information about condiscussed), including non-radiological	taminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet all content (e.g., hazardous chemicals), as appropriate.
	3. Additional status of environmenta additional notes on response plans.	l management activities, e.g., ongoing/planned investigations, major milestones, and any
	EM-40 Funded RCRA Corrective Meas Restoration Project.	sures Study planned during Fiscal Year 2003 through the Los Alamos National Laboratory Environmental

1. S	ummary Es	timates							
A	. Original l	Material (Emplaced Waste)							
,	1a. Site/Area	Name and Location: Los Alamos Na	itional Laborato	ory TA-21 Material	Disposal Area I	B - Disposa	ıl Pits		
	1b. Origin:	Material Disposal Area (MDA) B was conspecified an area of 15 by 300 feet and 12 and waste disposal ended.	structed in 194 feet deep. Late	5 to handle wastes a er records indicate 4	after completely I trenches of var	filling MI rious sizes.	OA A in TA-21 A fire occurre	l. The initi ed at MDA	ial design B in 1948
Γ	2. Typeof Pla	cement (check only one):			<del></del>				
.	<ul><li>a. Trench</li></ul>	n/Pit Burial	○ e.	Surface Testing					
	O b. Greate	er Confinement Disposal (GCD)		inderground Te	sting				
	O c. Underş	ground Injection		Other (Please Sp	•				
	O d. Spill o	r Surface Discharge		ette et in et danske somme med op en in megenner og syntamise k. 141 e					
I	Remarks	:						<del>/*</del>	
	3a. Total vol	ume of actual waste emplaced (not in	cluding pack	aging): 2	21000 m <sup>3</sup>				
	3b. Total vol	ume of containers emplaced (includi	ng packaging	):	m <sup>3</sup>				
	This applie	s to 2a-d waste: soil contaminated from 2	d-f would be re	ported in B.1. Actu	ial waste volum	e is preferi	red over conta	ined volun	<b>1</b> e.
		icate how volumes were estimated and pr			eference(s) in /	4.9 below.			
	Remarks:	Volume of containers emplaced reported	as Not Availal	ole.					
		Information obtained from Alternate Tra 8982-MS, and TA-21 Operable Unit Rep	nsuranic Waste port, RCRA Fac	Management Strat	egies at Los Ala 1991.	ımos Natio	nal Laboratory	, L.J. Wall	ker, LA-
	4. Type of M	aterial (for 1a-d):							
	☐ Liquid	I		✓ Hetero	geneous Deb	ris			
)	☐ Homog	geneous Solids (if available, as:		) 🗌 Other	(please specif	(y):			
	Remarks:	Records indicate both chemical and radi organics, perchlorates, ethers, solvents, a radioactive debris was disposed in MDA curium, lanthanum, actinium, and fission	and pressurized  B. Principal ra	gases. Radioactive adioactive	debris from TA	A-21 operat olutonium.	ions, Trinity to	esting, and	other
	5. Of the tota	l volume reported in 3 above:							
	Estimated p	percent exceeding 100 nCi/g: 2.	.5 Est	mated percent be	tween 10-100	nCi/g:	97.5		
	(These unit	ant of TRU radionuclides in the origins must be the same as those used in 7	below.)						
		mponent key radionuclide(s): ne same as those used in 6 above.)	Pleas	e identify units u	sed: weight	(wei	ight % or Ci	<b>%</b> )	
	Am-241 I	Pu-238 Pu-239 Pu-240 Pu-241	Pu-242 l	J-233 Cm-244	Ra-266 (	Cf-252	Other .	Other	Other
8	3. Estimates p	provided in Sections 6 and 7 above a	e based on:	initial (emplaced)	values I	f decayed	, to what da	te?	
ç		easte information, notably how TRU ecords on pit contents and source term.	values were 6	estimated for 6 a					3.
1		vel of confidence in the waste inform	nation: Lo	w					

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area B - Disposal Pits

Summary Estimates

B. Contaminated Soil (if applicable)

Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing:

 0 m<sup>3</sup>

 Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Mostly solid form waste, some waste packaged. Assume no cross-contamination of soil.

2. Of this total volume of contaminated soil:

Estimated percent exceeding 100 nCi/g:

%

Estimated percent between 10-100 nCi/g:

%

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information:

Low

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area B - Disposal Pits

П.	Support	ing V	'olume	Detail
----	---------	-------	--------	--------

1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided.

		Volume with >1	00 nCi/g ( m³)	Volume with 10-	-100 nCi/g ( m
	Total Volume	TRU	MTRU	LLW	MLLW
Emplaced Waste (combined)	21000	525		15475	5000
Liquids					
Homogeneous Solids					
Heterogeneous Solids	21000	525		15475	5000
Other (please specify)					
ontaminated Soil (best est.)					
ontaminated Soil (best est.) Minimum Estimate					

2. The volume(s) of "waste emplaced" in this table represent:

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area B - Disposal Pits

### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and asociated soil, and/or for further breakouts.

# In-Place Management (Volume in m<sup>3</sup>)

	No Action	Access/Install. Controls	In-Situ Containment	Containment	Туре	In-Situ Treatment	Treatment Type
<b>Emplaced Waste</b>			21000		][	] [	
TRU / MTRU			525				
aLLW / aMLLW			20475				
Contaminated Soil							i
TRU/MTRU							
aLLW / aMLLW							
		Removal fo	or Further Mana	gement (Volum	einm <sup>3</sup> )		
	Collection and Treatment	Treatm	ent Type	Collection and Storage	Storage Type and Location	Collection and Disposal	Disposal Location
Emplaced Waste		Treatm	ent Type		Storage Type and Location		
Emplaced Waste TRU/MTRU		Treatm	ent Type		Storage Type and Location		
		Treatm	ent Type		Storage Type and Location		
TRU / MTRU		Treatm	ent Type		Storage Type and Location		
TRU / MTRU aLLW / aMLLW		Treatm	ent Type		Storage Type and Location		

Site/Area Name and Location:	Los Alamos National Laboratory TA-21 Material Disposal Area B - Disposal Pits
IV. Additional Supporting Inform	ation
1. Further supporting detail on a indicated above.	response plans, as needed, including references or agreements that have resulted in the responses
Project Plan for the Remediation o	of TA-21, February 1999.
2. Additional information about discussed), including non-radiolog	contaminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet gical content (e.g., hazardous chemicals), as appropriate.
additional notes on response plan	ental management activities, e.g., ongoing/planned investigations, major milestones, and any
)	

. Summary Estimates	
A. Original Material (Emplaced Waste)	
1a. Site/Area Name and Location: Los Alamos Nati	onal Laboratory TA-50 Material Disposal Area C - Pits
1b. Origin: Disposal pits used between 1948 and 1969,	containing 6 pits and a chemical pit.
2. Typeof Placement (check only one):	
a. Trench/Pit Burial	O e. Surface Testing
O b. Greater Confinement Disposal (GCD)	Of. Underground Testing
○ c. Underground Injection	Og. Other (Please Specify)
O d. Spill or Surface Discharge	Proceedings of the Control of the Co
Remarks:	,
3a. Total volume of actual waste emplaced (not inc	luding packaging): 103000 m <sup>3</sup>
3b. Total volume of containers emplaced (including	
	f would be reported in B.1. Actual waste volume is preferred over contained volume.
Please indicate how volumes were estimated and pro-	vide source citation(s)/report reference(s) in A.9 below.
Remarks: Volume of containers emplaced reported a	s Not Available.
8982-MS; Comprehensive Implementation	suranic Waste Management Strategies at Los Alamos National Laboratory, L.J. Walker, LA- n Plan for the DOE Defense Buried TRU-Contaminated Waste Program, Rockwell International 7; and Los Alamos National Laboratory OU 1147 (TA-50) RCRA Facility Investigation Work
4. Type of Material (for 1a-d):	
☐ Liquid	✓ Heterogeneous Debris
Homogeneous Solids (if available, as:	)  Other (please specify):
Remarks:	,
5. Of the total volume reported in 3 above:	
Estimated percent exceeding 100 nCi/g: 2.5	Estimated percent between 10-100 nCi/g: 97.5
6. Total amount of TRU radionuclides in the origin	al material: 196 Ci
(These units must be the same as those used in 7 be	
7. Percent component key radionuclide(s): (Must be the same as those used in 6 above.)	Please identify units used: Ci (weight % or Ci %)
	Pu-242 U-233 Cm-244 Ra-266 Cf-252 U Other Other
75 12.5	12.5
8. Estimates provided in Sections 6 and 7 above are	based on: initial (emplaced) values
9. Basis for waste information, notably how TRU va	alues were estimated for 6 and 7 and how volumes were calculated for 3.
10. General level of confidence in the waste informa	tion: Low

Site/Area Name and Location: Los Alamos National Laboratory TA-50 Material Disposal Area C - Pits

Summary Estimates

B. Contaminated Soil (if applicable)

Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing:

 0 m<sup>3</sup>

 Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Solid form waste disposal, not likely to contaminate soil to TRU waste levels.

2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g:

Estimated percent between 10-100 nCi/g: %

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information:

Low

Site/Area Name and Location: Los	Alamos National Labor	atory TA-50 Material I	Disposal Area C - Pits		
)					
II. Supporting Volume Detail					
1. Please provide for the initial v	waste and contamin	ated soil, with addi	tional breakouts as	can be provided.	
		Volume with >1	00 nCi/g ( m <sup>3</sup> )	Volume with 10	-100 nCi/g ( m <sup>3</sup>
	Total Volume	TRU	MTRU	LLW	MLLW
Emplaced Waste (combined)	103000	1925	675	75300	25100
Liquids					
Homogeneous Solids					
Heterogeneous Solids	103000	1925	675	75300	25100
Other (please specify)					
)					
Contaminated Soil (best est.)	:		;		
Minimum Estimate					
Maximum Estimate					

Site/Area Name and Location: Los Alamos National Laboratory TA-50 Material Disposal Area C - Pits

### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and associated soil, and/or for further breakouts.

### In-Place Management (Volume in nr3)

	No Action	Access/Install. Controls	In-Situ Containment	Containment	Гуре	In-Situ Treatment	Treatment Type
Emplaced Waste			103000				
TRU / MTRU			2600				100
aLLW / aMLLW			100400				
Contaminated Soil							
TRU / MTRU							
aLLW / aMLLW							
		Removal fo	or Further Mana	gement (Volume	in m <sup>3</sup> )		
	Collection and Treatment	Treatm	ent Type	Collection and Storage	Storage Typ		
Emplaced Waste		Treatm	ent Type				
Emplaced Waste TRU/MTRU		Treatm	ent Type				
		Treatm	ent Type				
TRU / MTRU		Treatm	ent Type				
TRU / MTRU aLLW / aMLLW		Treatm	ent Type				

Site/Area Name and Location: Lo	s Alamos National Laboratory TA-50 Material Disposal Area C - Pits
IV. Additional Supporting Information	n
<ol> <li>Further supporting detail on respindicated above.</li> </ol>	onse plans, as needed, including references or agreements that have resulted in the responses
2. Additional information about cont discussed), including non-radiologica	aminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet content (e.g., hazardous chemicals), as appropriate.
additional notes on response plans.	management activities, e.g., ongoing/planned investigations, major milestones, and any
EM-40 Funded RCRA Corrective Meas Restoration Project.	ares Study planned during Fiscal Year 2001 through the Los Alamos National Laboratory Environmental

A. Original Materia	al (Emplaced W	aste)				
la. Site/Area Name a	and Location: Los	Alamos National Labora	itory TA-54 Material I	Disposal Area G - Pits		
Californ	reas received a combin iia ceased disposal of N	(TA-54) Material Dispo ation of TRU waste, LLV MLLW in MDA G when area is approximately 33,	V, Mixed Activation P etrievable arrays were	roducts, and Mixed LLN	W (MILW) The	DOF/University of
2. Typeof Placement	(check only one):					
a. Trench/Pit Bu	rial	() e	Surface Testing			
O b. Greater Confi	nement Disposal (C		Underground Tes	tina		
O c. Underground			Other (Please Spe	-		
O d. Spill or Surfac	e Discharge	<b>○</b>	Other (Frease Spi			
Remarks:						60
3a. Total volume of	actual waste empla	ced (not including pa	ckaging): 18	4000 m <sup>3</sup>		9
3b. Total volume of				m <sup>3</sup>		144
This applies to 2a-d	waste: soil contamin	ated from 2d-f would be	reported in B.I. Actua	ul waste volume is prefe	erred ove <mark>r con</mark> tai	ned volume.
Please indicate how	volumes were estim	ated and provide source	citation(s)/report re	ference(s) in A.9 belov	v.	
Remarks: Volum	ne of containers empla	ced reported as Not Appl	cable.			100
volum known additic Compe	e prior to 1971, and 12 TRU waste were disponal TRU waste has be osite Analysis for Los.	ppendix 2e of the TA-54 28,0000 cubic meters of to osed before 1971, and 75 en placed in a non-retrie Alamos National Laborat es at Los Alamos Nationa	otal pit disposal volum cubic meters of TRU able configuration. In ory Material Disposal	ne after 1971. Of the to waste were placed in the information obtained from Area G. LAUR-97-85.	tal pit volume, 4, ne pits after 1971. m Performance A	710 cubic meters of After 1979 no
4. Type of Material (	for 1a-d):					
Liquid			<b>☑</b> Heterog	geneous Debris		and a
☐ Homogeneous	Solids (if available	e, as:	) 🗌 Other (	please specify):		2016
Remarks:						$\sqrt{2}$
5. Of the total volum	e reported in 3 abo	ve:				/4/
	exceeding 100 nCi/g		stimated paraent has	ween 10-100 nCi/g:	97.4	· ~
	_			/ ween 10-100 nC1/g:	97.4	
6. Total amount of T	e the same as those		<b>11:</b> 20844 Ci	/		
7. Percent componen		s): Ple	ase identify units us	ed: Ci (w	eight % or Ci %	ō)
Am-241 Pu-238	Pu-239 Pu-240	Pu-241 Pu-242	U-233 Cm-244	Ra-266 Cf-252	Other (	Other Other
8. Estimates provided	I in Sections 6 and	7 above are based on	initial (emplaced) v	alues If decaye	ed, to what date	e?
9. Basis for waste info		now TRU values were				

10. General level of confidence in the waste information:

I. Summary Estimates

Site/Area Name and Location: Los Alamos National Laboratory TA-54 Material Disposal Area G - Pits

**Summary Estimates** 

B. Contaminated Soil (if applicable)

1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing:  $0 \text{ m}^3$  Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Solid form waste disposal, not likely to contaminate soil to TRU waste levels.

2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: %

Estimated percent between 10-100 nCi/g: %

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information: Low

# II. Supporting Volume Detail

1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided.

		Volume with >16	00 πCi/g ( m <sup>3</sup> )	Volume with 10	-100 nCi/g ( m <sup>3</sup>
	Total Volume	TRU	MTRU	LLW	MLLW
Emplaced Waste (combined)	184000	4785		179215	]
Liquids				7 P 44 A 100.	
Homogeneous Solids					
Heterogeneous Solids	184000	4785		179215	
Other (please specify)					
ono (prease specify)			Van and and and and and and and and and a		
Contaminated Soil (best est.)					

2. The volume(s) of "waste emplaced" in this table represent:

Site/Area Name and Location: Los Alamos National Laboratory TA-54 Material Disposal Area G - Pits

### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and associated soil, and/or for further breakouts.

# In-Place Management (Volume in m<sup>3</sup>)

	No Action	Access/Install. Controls	In-Situ Containment	Containmen	1 Туре	In-Situ Treatment	Treatme	nt Type
Emplaced Waste			184000	7 10 11 Million	 			
TRU / MTRU			4785					
aLLW / aMLLW			179215					
Contaminated Soil								
TRU / MTRU								
aLLW / aMLLW								
	Collection and Treatment		or Further Mana	Collection and Storage	ne in m <sup>3</sup> ) Storage Typand Location			isposal
Emplaced Waste		The second secon						
TRU / MTRU								
aLLW / aMLLW								
Contaminated Soil			50 dd 190 dd					
TRU / MTRU						Street printer p 1, management of the street		
aLLW / aMLLW						pa del mino o compresa montrales.		

Si	ite/Area Name and Location: Lo	os Alamos National Laboratory TA-54 Material Disposal Area G -	Pits
IV.	Additional Supporting Information	on	
	1. Further supporting detail on respindicated above.	onse plans, as needed, including references or agreements that have re	esulted in the responses
	2. Additional information about cont discussed), including non-radiologica	taminants (e.g., further detail about those identified in I.A.7, or other if content (e.g., hazardous chemicals), as appropriate.	radionuclides not yet
	3. Additional status of environmental additional notes on response plans.	l management activities, e.g., ongoing/planned investigations, major m	ilestones, and any
	EM-40 Funded RCRA Facility Investiga	ation (RFI) and Corrective Measures Study planned during Fiscal Year 2000 - 200 storation Project. Draft RFI Report for TA-54 is scheduled for final release Septem	l through the Los Alamos iber 1999.

1. S	I. Summary Estimates		
· , A	A. Original Material (Emplaced Waste)		
/	1a. Site/Area Name and Location: Los Alamos National Laboratory TA-50 Material Disposal Area C - Shafts		
į	1b. Origin: Disposal pits used between 1948 and 1969 containing 107 shafts. Reports estimate that 50 percent of	the shafts contain TRU w	/aste.
Γ:	2. Typeof Placement (check only one):		
	○ a. Trench/Pit Burial ○ e. Surface Testing		
	b. Greater Confinement Disposal (GCD)     f. Underground Testing		
	○ c. Underground Injection ○ g. Other (Please Specify)	•	
(	O d. Spill or Surface Discharge		
,	Remarks:		
	3a. Total volume of actual waste emplaced (not including packaging): 140 m <sup>3</sup>		
	3b. Total volume of containers emplaced (including packaging): m <sup>3</sup>		
	This applies to 2a-d waste: soil contaminated from 2d-f would be reported in B.1. Actual waste volume is prefer	red over contained volum	1e.
	Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in A.9 below.	,	
	Remarks: Volume of containers emplaced reported as Not Available.		
	Information obtained from Alternate Transuranic Waste Management Strategies at Los Alamos Natio 8982-MS; Comprehensive Implementation Plan for the DOE Defense Buried TRU-Contaminated W. Westinghouse, E-JIO-025, September 1987; and Los Alamos National Laboratory OU 1147 (TA-50) Plan, May 1992.	acte Program Poekwall In	
4	4. Type of Material (for 1a-d):		
	☐ Liquid ✓ Heterogeneous Debris		
	☐ Homogeneous Solids (if available, as: ) ☐ Other (please specify):		
	Remarks:		
5	5. Of the total volume reported in 3 above:		
	Estimated percent exceeding 100 nCi/g: 50 Estimated percent between 10-100 nCi/g:	50	
6	6. Total amount of TRU radionuclides in the original material: 57 Ci		
_	(These units must be the same as those used in 7 below.)		
7	7. Percent component key radionuclide(s): Please identify units used: Ci (we (Must be the same as those used in 6 above.)	ight % or Ci %)	
	Am-241 Pu-238 Pu-239 Pu-240 Pu-241 Pu-242 U-233 Cm-244 Ra-266 Cf-252	Other Other	Other
8	8. Estimates provided in Sections 6 and 7 above are based on: initial (emplaced) values   If decayed	, to what date?	
9	9. Basis for waste information, notably how TRU values were estimated for 6 and 7 and how volumes	•	ł
	and the following states and the following states are the following states and the following states are the following sta	carearatest 101 5	
10	10. General level of confidence in the waste information: Low		

Site/Area Name and Location: Los Alamos National Laboratory TA-50 Material Disposal Area C - Shafts

) Summary Estimates

B. Contaminated Soil (if applicable)

1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing: 0 m<sup>3</sup>

Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Solid form waste disposal, not likely to contaminate soil to TRU waste levels.

2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: %

Estimated percent between 10-100 nCi/g: %

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information: Low

Site/Area Name and Location:	Los Alamos National Laboratory TA-50 Material Disposal Area C - Sha	afts
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# II. Supporting Volume Detail

1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided.

		Volume with >1	00 nCi/g ( m <sup>3</sup> )	Volume with 10-	·100 nCi/g ( m³)
	Total Volume	TRU	MTRU	LLW	MLLW
Emplaced Waste (combined)	140	70		70	
Liquids					
Homogeneous Solids					
Heterogeneous Solids	140	70		70	
Other (please specify)					
Contaminated Soil (best est.)					
Minimum Estimate					
Maximum Estimate					
				The state of the s	

2. The volume(s) of "waste emplaced" in this table represent:

### Site/Area Name and Location: Los Alamos National Laboratory TA-50 Material Disposal Area C - Shafts

### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and associated soil, and/or for further breakouts.

# In-Place Management (Volume in m<sup>3</sup>)

	No Action	Access/Install. Controls	In-Situ Containment	Containmen	Туре Т	In-Situ reatment	Treatment Type
Emplaced Waste			140				
TRU / MTRU			70				
aLLW / aMLLW			70				
Contaminated Soil							
TRU / MTRU							
aLLW / aMLLW							
	Collection and Treatment		or Further Mana	Collection and Storage	ne in m <sup>3</sup> )  Storage Type and Location	Collection and Disposal	Disposal Location
Emplaced Waste					:		
TRU / MTRU						,	*****
aLLW / aMLLW				!			
Contaminated Soil	····						
TRU / MTRU							
aLLW / aMLLW				<u> </u>			

EM-40 Funded RCRA Corrective Measures Study planned during Fiscal Year 2001 through the Los Alamos National Laboratory Environmental Restoration Project.

1b. Origin: Since These	ne and Location: Los A e 1957, Technical Area 54 ( e areas received a combinat nafts is 580 square meters a	TA-54) Material D ion of TRU waste,	isposal Area LLW, mixe	(MDA) G ha	s been the products, and	rimary dispos	sal area for TF ' (MLLW). T	RU waste ar he total surf	nd LLW. face area of
	ent (check only one):	nd the pit area is ap	oproximater		re meters.				
a. Trench/Pit	• ,	C	) a Sime	ce Testing					
1 _	nfinement Disposal (GC			rground Tes	- <b>4</b> :				
O c. Undergroun	• '	,		rground Tes r (Please Sp	• •				
O d. Spill or Sur	-		g. Othe	r (Flease Sp	ecny)				
Remarks:			<u></u>						
					2				
	of actual waste emplace		-	-	1050 m <sup>3</sup>				
	of containers emplaced				m <sup>3</sup>				
	n-d waste: soil contaminat now volumes were estimat							ained volui	ne.
				n(s)/report re	elerence(s) i	n A.9 below	•		
	lume of containers emplace								
voli kno add Cor	e primary data source is Ap ume prior to 1971, and 900 wn TRU waste were dispo- itional TRU waste has been nposite Analysis for Los A nsuranic Waste Manageme	cubic meters of tot sed before 1971, an placed in a non-re lamos National Lab	tal shaft disp id 75 cubic i strievable co poratory Mat	osal volume a neters of TRU nfiguration. I erial Disposal	ofter 1971. ( waste were nformation of Area G, LA	Of the total she placed in the obtained from UR-97-85, M	naft volume, 1 shafts after 1 n Performance (arch 1997: a	.2 cubic me 971. After Assessmer	eters of 1979 no
4. Type of Materia	al (for 1a-d):						,		
☐ Liquid			*	✓ Hetero	geneous De	ebris			
☐ Homogeneo	us Solids (if available,	as:	)	Other (	please spe	cify):			
Remarks:									
5. Of the total volu	ime reported in 3 above	<b>2:</b>							
Estimated percen	nt exceeding 100 nCi/g:	0.5	Estimate	d percent be	tween 10-1	00 nCi/g:	99.5		
	TRU radionuclides in at be the same as those u		erial:	3630 Ci					
	ent key radionuclide(s)		Please ide	ntify units us	sed: Ci	(we	eight % or C	i %)	
(Must be the san	ie as those used in 6 abo	ve.)							
Am-241 Pu-23	8 Pu-239 Pu-240	Pu-241 Pu-24	12 U-233	Cm-244	Ra-266	Cf-252	Other	Other	Other
8. Estimates provid	ded in Sections 6 and 7	above are based	on: initia	l (emplaced) v	/alues	If decayed	l, to what d	ate?	
	nformation, notably ho			ated for 6 ai	id 7 and h				3.
	f confidence in the was	·	Low						

I. Summary Estimates

Site/Area Name and Location: Los Alamos National Laboratory TA-54 Material Disposal Area G - Shafts

**Summary Estimates** 

B. Contaminated Soil (if applicable)

1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing: 0 m<sup>3</sup>

Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Solid form waste disposal, not likely to contaminate soil to TRU waste levels.

2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: %

Estimated percent between 10-100 nCi/g: %

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information: Low

Site/Area Name and Location: Los Alamos National Laboratory TA-54 Material Disposal Area G - Shafts

# II. Supporting Volume Detail

1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided.

		Volume with >1	00 nCi/g ( m <sup>3</sup> )	Volume with 10	Volume with 10-100 nCi/g ( m <sup>3</sup>		
	Total Volume	TRU	MTRU	LLW	MLLW		
Emplaced Waste (combined)	1050	6		1044			
Liquids	The second secon				[		
Homogeneous Solids							
Heterogeneous Solids	1050	6	•	1044			
Other (please specify)					1		
Contaminated Soil (best est.)					,		
	;						
Minimum Estimate							

2. The volume(s) of "waste emplaced" in this table represent:

Site/Area Name and Loca	ttion: Los Alamo	s National Laboratory	TA-54 Material I	Disposal Area G - S	Shafts
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### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and asociated soil, and/or for further breakouts.

# In-Place Management (Volume in m<sup>3</sup>)

	No Action	Access/Install. Controls	In-Situ Containment	Containment	Type Tr	In-Situ reatment	Treatment Type
Emplaced Waste			1050				
TRU / MTRU			6				
aLLW / aMLLW			1044				
Contaminated Soil							
TRU / MTRU	,						
aLLW / aMLLW							*
		B 14			_		
	Collection and Treatment		er Further Mana	Collection and Storage	Storage Type and Location	Collection and Disposal	Disposał Location
Emplaced Waste				Collection	Storage Type		Disposal Location
Emplaced Waste TRU/MTRU				Collection	Storage Type		,
				Collection	Storage Type		,
TRU / MTRU				Collection	Storage Type		,
TRU/MTRU aLLW/aMLLW				Collection	Storage Type		,

Site/Area Name and Location:	Los Alamos National Laboratory TA-54 Material Disposal Area G - Shafts
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- IV. Additional Supporting Information
  - 1. Further supporting detail on response plans, as needed, including references or agreements that have resulted in the responses indicated above.
  - 2. Additional information about contaminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet discussed), including non-radiological content (e.g., hazardous chemicals), as appropriate.
  - 3. Additional status of environmental management activities, e.g., ongoing/planned investigations, major milestones, and any additional notes on response plans.

EM-40 Funded RCRA Facility Investigation (RFI) and Corrective Measures Study planned during Fiscal Year 2000 - 2001 through the Los Alamos National Laboratory Environmental Restoration Project. Draft RFI Report for TA-54 MDA G is scheduled for final release September 1999.

I. St	ummary Estimates		
A.	Original Material (Emplaced Waste)		
	<ul><li>1a. Site/Area Name and Location: Los Alamos Nati</li><li>1b. Origin: TA-21 DP West Pu and U Processing</li></ul>	onal Laboratory TA-21 Material Disposal Are	a T - Shaft Disposal
<b>┌</b> 2	2. Typeof Placement (check only one):		
	🔾 a. Trench/Pit Burial	O e. Surface Testing	
	b. Greater Confinement Disposal (GCD)	O f. Underground Testing	
	○ c. Underground Injection	Og. Other (Please Specify)	
	Od. Spill or Surface Discharge	The state of the s	
!	Remarks: Fifty-six shafts between eight and 85 feet and grout form.	below ground surface which received liquid to	reatment sludges and effluent in a cement paste
3	3a. Total volume of actual waste emplaced (not inc	luding packaging): 3800 m <sup>3</sup>	
3	3b. Total volume of containers emplaced (including	g packaging): m <sup>3</sup>	
	This applies to 2a-d waste: soil contaminated from 2d-	f would be reported in B.1. Actual waste volu	une is preferred over contained volume.
	Please indicate how volumes were estimated and pro		n A.9 below.
	Remarks: Volume of containers emplaced reported a		
	Information obtained from Alternate Trans 8982-MS; and TA-21 Operable Unit Repo	suranic Waste Management Strategies at Los A ort, RCRA Facility Investigation, 1991.	Alamos National Laboratory, L.J. Walker, LA-
4	4. Type of Material (for 1a-d):		
	☐ Liquid	☐ Heterogeneous De	ebris
i.	✓ Homogeneous Solids (if available, as:	) 🔲 Other (please spec	cify):
	Remarks: Grout containing sludges from liquid wast	e treatment, disposed in 56 shafts between eig	ht and 85 feet below ground surface.
5	5. Of the total volume reported in 3 above:		
	Estimated percent exceeding 100 nCi/g: 95	Estimated percent between 10-10	00 nCi/g; 5
6	5. Total amount of TRU radionuclides in the origin (These units must be the same as those used in 7 be	al material: 4000 Ci	
7.	7. Percent component key radionuclide(s): (Must be the same as those used in 6 above.)	Please identify units used: Ci	(weight % or Ci %)
	Am-241 Pu-238 Pu-239 Pu-240 Pu-241	Pu-242 U-233 Cm-244 Ra-266	Cf-252 Other Other Other
	92 3 2	0.1	2.9
8.	3. Estimates provided in Sections 6 and 7 above are	based on: initial (emplaced) values	If decayed, to what date?
9.	. Basis for waste information, notably how TRU va	alues were estimated for 6 and 7 and ho	ow volumes were calculated for 3.
	Los Alamos National Laboratory EM/SWO TRU Databass (distributed by initial activity: Am-241: 92%; Pu-238: 6 shafts.	e indicates that the total curies discharged to the	he shafts after 1971 was 3 445 75 Ci
10	0. General level of confidence in the waste informa	tion: Medium	

Medium

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area T - Shaft Disposal

**Summary Estimates** 

B. Contaminated Soil (if applicable)

1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing: 0 m<sup>3</sup> Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below. Remarks:

%

2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: % Estimated percent between 10-100 nCi/g:

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information: Medium

Site/Area Name and Location: Los	Alamos National Labor	atory TA-21 Material	Disposal Area T - Shar	ft Disposal		
II. Supporting Volume Detail						
1. Please provide for the initial	waste and contamin	ated soil, with add	itional breakouts as	can be provided.		
		Volume with >1	100 nCi/g ( m <sup>3</sup> )	Volume with 10-100 nCi/g ( m <sup>3</sup> )		
	Total Volume	TRU	MTRU	LLW	MLLW	
Emplaced Waste (combined)	3800	3610		190		
Liquids						
Homogeneous Solids	3800	3610		190		
Heterogeneous Solids						
Other (please specify)						
Contaminated Soil (best est.)						
Minimum Estimate						

Maximum Estimate

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area T - Shaft Disposal

### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and asociated soil, and/or for further breakouts.

# In-Place Management (Volume in nr3)

	No Action	Access/Install. Controls	In-Situ Containment	Containment	t Type	In-Situ Treatment	ר	Freatment Type
Emplaced Waste			3800					
TRU / MTRU			3610					
aLLW / aMLLW		And the second s	190					
Contaminated Soil								
TRU / MTRU		5						
al 1 W/ aMI 1 W								
aLLW / aMLLW		Removal fo	or Further Mana					
	Collection and Treatment		or Further Mana	gement (Volun Collection and Storage	ne in m <sup>3</sup> ) Storage Typand Location	oe Coll on and [	lection Disposal	Disposal Location
				Collection	Storage Typ	oe Coll on and [		,
				Collection	Storage Typ	oe Coll on and [		,
Emplaced Waste				Collection	Storage Typ	oe Coll on and I		,
Emplaced Waste  TRU / MTRU  aLLW / aMLLW				Collection	Storage Typ	oe Coll		,
Emplaced Waste TRU/MTRU				Collection	Storage Typ	oe Coll		,

S	Site/Area Name and Location: Los Alar	mos National Laboratory TA-21 Material Disposal Area T - Shaft Disposal
)		Joseph Land Copesial Med Condition of the Condition of th
IV.	IV. Additional Supporting Information	
	1. Further supporting detail on response plindicated above.	lans, as needed, including references or agreements that have resulted in the responses
	Project Plan for the Remediation of TA-21, Fel	oruary 1999.
	2. Additional information about contamina discussed), including non-radiological conte	nts (e.g., further detail about those identified in I.A.7, or other radionuclides not yet nt (e.g., hazardous chemicals), as appropriate.
	3. Additional status of environmental mana additional notes on response plans.	gement activities, e.g., ongoing/planned investigations, major milestones, and any
	EM-40 funded RCRA Corrective Measures Stur Restoration Project.	dy planned during Fiscal Year 2001 through the Los Alamos National Laboratory Environmental
)	)	

## I. Summary Estimates

)A.	Original Material (Emplaced Waste)							
1:	a. Site/Area Name and Location: Los Alamos Natio	nal Labora	tory TA-49 Materia	ıl Disposal Are	a AB - Hydi	ronuclear Te	st Shafts	
11	o. Origin: Technical Area (TA-49) was used for an inter of plutonium, uranium, lead, and beryllium w	nse period o vere used in	of experimental act nuclear safety and	ivity from 195 related experi	through 19	061 during w derground sh	hich a signifi afts.	cant amoun
┌2.	Typeof Placement (check only one):							
	a. Trench/Pit Burial	○ e.	Surface Testing	g				
	b. Greater Confinement Disposal (GCD)	⊙ f.	Underground T	esting				
	c. Underground Injection	○ g.	Other (Please S	Specify)				
	d. Spill or Surface Discharge							
1	Remarks: Unpackaged source term in 44 shafts between	een 31 and	142 feet below gro	und surface.			<del>"</del>	
38	a. Total volume of actual waste emplaced (not incli	uding pac	:kaging):	4400 m <sup>3</sup>				
31	o. Total volume of containers emplaced (including This applies to 2a-d waste: soil contaminated from 2d-f Please indicate how volumes were estimated and prov	would be r	reported in B.1. Ac	nr <sup>3</sup> tual waste volt reference(s) i	une is prefe. n A.9 below	rred over co	ntained volun	w.
	Remarks: Volume of containers emplaced reported as shots.						ited by each o	f the 44
4.	Type of Material (for 1a-d):							
	☐ Liquid		☐ Heter	rogeneous De	ebris			
n,	☐ Homogeneous Solids (if available, as:		) 🗹 Othe	r (please spe	cify): TR	J contamina ounding exp	tion distribute eriment locat	ed in soil ions.
)	Remarks: The experiments involved high explosive di at the bottom of shafts.	spersal of	significant quantitio	es of special nu	clear mater	al, lead, ber	yllium, and ur	anium-238
5.	Of the total volume reported in 3 above:							
	Estimated percent exceeding 100 nCi/g: 100	Es	stimated percent b	etween 10-1	00 nCi/g;	0		
	Total amount of TRU radionuclides in the origina (These units must be the same as those used in 7 bel Percent component key radionuclide(s): (Must be the same as those used in 6 above.)	ow.)	1: 302.24 kg	used: weig	ht (we	eight % or (	Ci %)	
	Am-241 Pu-238 Pu-239 Pu-240 Pu-241 I	Pu-242	U-233 Cm-244	4 Ra-266	Cf-252	U-235 31	U-238 56	Pu 13
8.	Estimates provided in Sections 6 and 7 above are l	pased on:	initial (emplaced	) values	If decaye	d, to what		13
	Basis for waste information, notably how TRU val				•			3
	TA-49 Operable Unit RCRA Facility Investigation Work P				willift	o were ear	. aiaitu 101 .	74
10.	General level of confidence in the waste informat		ledium					

Site/Area Name and Location: Los Alamos National Laboratory TA-49 Material Disposal Area AB - Hydronuclear Test Shafts

- . Summary Estimates
  - B. Contaminated Soil (if applicable)
    - 1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing: m<sup>3</sup>

      Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks: Volume and contaminant information for contaminated soil/rock is reported in Section I.A, Original Material (Emplaced Waste).

- 2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: %

  Estimated percent between 10-100 nCi/g: %
- 3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):
- 4. General level of confidence in the soil information: Low

Site/Area Name and Location: Los	Alamos National Labor	atory TA-49 Materia	al Disposal Area AB - I	Hydronuclear Test Shaf	ts
II. Supporting Volume Detail					
1. Please provide for the initial	waste and contamin	ated soil, with add	litional breakouts a	s can be provided.	
		Volume with >	100 nCi/g ( m³)	Volume with 10	0-100 nCi/g ( m <sup>3</sup> )
Emplaced Waste (combined)	Total Volume	TRU	MTRU	LLW	MLLW
Liquids	1400	4400			
Homogeneous Solids	4400	4400			
Heterogeneous Solids					
Other (please specify)					
Contaminated Soil (best est.)					
Minimum Estimate					
Maximum Estimate					

Volume of actual waste I.A.3.a

Los Alamos National Laboratory TA-49 Material Disposal Area AB - Hydronuclear Test

In-Situ

#### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and associated soil, and/or for further breakouts.

In-Situ

Access/Install.

Controls

No Action

## In-Place Management (Volume in m<sup>3</sup>)

	No Action	Controls	Containment	Containmer		eatment	Treatment Type
Emplaced Waste			4400				
TRU / MTRU			4400				
aLLW / aMLLW							
Contaminated Soil							
TRU / MTRU							
aLLW / aMLLW							
Empley 130	Collection and Treatment		or Further Man	agement (Volur Collection and Storage	Storage Type and Location	Collection and Disposal	Disposal Location
Emplaced Waste							
TRU/MTRU			-13.60			!	
aLLW / aMLLW	<u> </u>			P. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.			
Contaminated Soil		The state of the s					
TRU / MTRU							
aLLW / aMLLW							

(Response plans are often similar for mixed/non-mixed materials, so they have been combined above. Please use a "/" to separate entries where response plans differ, or provide additiona information in IV below.

Los Alamos National Laboratory TA-49 Material Disposal Area AB - Hydronuclear Test

## IV. Additional Supporting Information

1. Further supporting detail on response plans, as needed, including references or agreements that have resulted in the responses indicated above.

Stabilization Plan for Implementing Interim Measures and Best Management Practices at PRSs 49-001 (b,c,d, and g), July 14, 1998.

- 2. Additional information about contaminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet discussed), including non-radiological content (e.g., hazardous chemicals), as appropriate.
- 3. Additional status of environmental management activities, e.g., ongoing/planned investigations, major milestones, and any additional notes on response plans.

EM-40 Funded RCRA Corrective Measures Study planned during Fiscal Year 2004 through the Los Alamos National Laboratory Environmental Restoration Project.

I. :	Summary Est	timates								
	A. Original N	Material (Emp	laced Waste)							
	1a. Site/Area	Name and Loca	tion: Los Alamos	National Labora	tory TA-21 Material	Disposal Are	ea T - Absorp	tion Beds		
			u and U Processing							
Γ	-2. Typeof Pia	cement (check o	nly one):				-	***	<del></del>	
	a. Trench	/Pit Burial		○ e.	Surface Testing					
	O b. Greate	r Confinement [	Disposal (GCD)		Underground Te	sting				
	O c. Underg	round Injection		_	Other (Please Sp	•••				
	O d. Spill or	Surface Discha	rge		The second secon					
•		tritium facilities	beds that received ratharge was recorded frat DP East.	om 1943 to 196	7. Early discharges	onstruction of were from Pu	f TA-21-35 T and U opera	reatment Factions; later dis	ility, and tre scharges we	eated waste are from
			's emplaced (inclu			m <sup>3</sup>				
•			il contaminated from				u <b>ne is pr</b> efer	red over cont	ained volu	ne.
	Please indi	cate how volumes	were estimated and	provide source	citation(s)/report r	eference(s) i	n A.9 below.		anca roun	·
	Remarks:	Volume of conta	niners emplaced repor	ted as None.						
		Information obta 8982-MS; and Ta	ined from Alternate T A-21 Operable Unit F	ransuranic Was Report, RCRA F	e Management Strat	egies at Los / 1991.	Alamos Natio	nal Laboratoi	ry, L.J. Wal	ker, LA-
	4. Type of Ma	aterial (for 1a-d)	):							
	☐ Liquid				☐ Hetero	geneous De	ebris			
	✓ Homog	geneous Solids (	if available, as:		) 🗌 Other	(please spe	cify):			
	Remarks:									
	5. Of the total	l volume reporte	d in 3 above:							
	Estimated p	ercent exceeding	100 nCi/g:	6 Es	timated percent be	etween 10-1	00 nCi/g:	94		
			nuclides in the ori	ginal materia			C			
		nponent key rad e same as those u		Plea	se identify units u	sed: Ci	(we	ight % or Ci	i %)	
	Am-241 P	Pu-238 Pu-239	Pu-240 Pu-24	1 Pu-242	U-233 Cm-244	Ra-266	Cf-252	Other	Other	Other
	8. Estimates p	rovided in Section	ons 6 and 7 above	are based on:	initial (emplaced)	values	If decayed	, to what da	ate?	
	9. Basis for wa	aste information.	, notably how TRI	U values were	estimated for 6 a	nd 7 and ho	ow volumes	were calcu	lated for :	3.
	10. General lev	vel of confidence	in the waste infor	matian M	edium					

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area T - Absorption Beds

- Summary Estimates
  - B. Contaminated Soil (if applicable)
    - 1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing:
      Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

Remarks:

- 2. Of this total volume of contaminated soil: Estimated percent exceeding 100 nCi/g: %

  Estimated percent between 10-100 nCi/g: %
- 3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):
- 4. General level of confidence in the soil information: Medium

 $0 \text{ m}^3$ 

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area T - Absorption Beds

### II. Supporting Volume Detail

1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided.

		Volume with >1	00 пСі/g (_m²)	Volume with 10-100 nCi/g (m <sup>3</sup> )			
	Total Volume	TRU	MTRU	LLW	MLLW		
Emplaced Waste (combined)	2700	162		2538			
Liquids							
Homogeneous Solids	2700	162		2538			
Heterogeneous Solids							
Other (please specify)							
Contaminated Soil (best est.)							
Minimum Estimate							
Maximum Estimate							

2. The volume(s) of "waste emplaced" in this table represent:

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area T - Absorption Beds

#### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and asociated soil, and/or for further breakouts.

## In-Place Management (Volume in m<sup>3</sup>)

	No Action	Access/Install. Controls	In-Situ Containment	Containmer	nt Type	In-Situ Treatment	Treatment Type
Emplaced Waste			2700			7	
TRU / MTRU			162				
aLLW / aMLLW			2538				
Contaminated Soil							
TRU / MTRU							
aLLW / aMLLW							
		Removal fo	or Further Mana	gement (Volur	ne in m <sup>3</sup> )		
	Collection and Treatment		or Further Mana	gement (Volur Collection and Storage	me in m <sup>3</sup> )  Storage Typ and Locatio		
Emplaced Waste				Collection	Storage Typ		
Emplaced Waste TRU/MTRU				Collection	Storage Typ		
				Collection	Storage Typ		
TRU / MTRU				Collection	Storage Typ		
TRU / MTRU aLLW / aMLLW				Collection	Storage Typ		

(Response plans are often similar for mixed/non-mixed materials, so they have been combined above. Please use a "/" to separate entries where response plans differ, or provide additiona information in IV below.

Site/Area Name and Location:	Los Alamos National Laboratory TA-21 Material Disposal Area T - Absorption Beds
IV. Additional Supporting Inform	ation
<ol> <li>Further supporting detail on indicated above.</li> </ol>	response plans, as needed, including references or agreements that have resulted in the responses
Project Plan for the Remediation o	of TA-21, February 1999.
2. Additional information about of discussed), including non-radiolog	contaminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet gical content (e.g., hazardous chemicals), as appropriate.
3. Additional status of environme additional notes on response plans	ntal management activities, e.g., ongoing/planned investigations, major milestones, and any
EM-40 Funded RCRA Corrective N Restoration Project.	Measures Study planned during Fiscal Year 2001 through the Los Alamos National Laboratory Environmental

#### I. Summary Estimates

A.	Original	Material	(Emplaced	Waste)
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- 1a. Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area V Laundry Absorption Beds
- 1b. Origin: Material Disposal Area (MDA) V is a 3,561 square meter site containing three absorption beds that occupy 1,390 square meters. The pits received between 400 and 8,000 gallons per day liquid effluent from 1945 to 1961 from the radioactive laundry facility. Some of the liquids discharged to the beds included greater than 10 nCi/g Pu liquids totaling 0.1 curie.

2. Typeof Placement (check only one):	
a. Trench/Pit Burial	O e. Surface Testing
O b. Greater Confinement Disposal (GCD)	O f. Underground Testing
O c. Underground Injection	O g. Other (Please Specify)
Od. Spill or Surface Discharge	- S. State (Charles)
Remarks:	
3a. Total volume of actual waste emplaced (not inc	cluding poolinging). 4200 3
3b. Total volume of containers emplaced (including	
This applies to 2a-d waste. soil contaminated from 2d-	f packaging):  If would be reported in B.1. Actual waste volume is preferred over contained volume.  povide source citation(s)/report reference(s) in A.9 below.
Remarks: Volume of containers emplaced reported a	
Information obtained from Alternate Tran 8982-MS; and TA-21 Operable Unit Repo	isuranic Waste Management Strategies at Los Alamos National Laboratory, L.J. Walker, LA-ort, RCRA Facility Investigation, 1991.
4. Type of Material (for 1a-d):	
☐ Liquid	Heterogeneous Debris
☐ Homogeneous Solids (if available, as:	) Other (please specify): Absorption beds constructed of cobbles, gravel, overburden and underlying tuff.
Remarks: Three absorption beds for liquid waste effi	luent from radioactive laundry facility. Contamination is located as a "rind" on cobble surfaces
5. Of the total volume reported in 3 above:	on coolid surfaces
Estimated percent exceeding 100 nCi/g: 0	Estimated percent between 10-100 nCi/g: 100
6. Total amount of TRU radionuclides in the origin	<u> </u>
(These units must be the same as those used in 7 be	elow.)
7. Percent component key radionuclide(s): (Must be the same as those used in 6 above.)	Please identify units used: Ci (weight % or Ci %)
Am-241 Pu-238 Pu-239 Pu-240 Pu-241	Pu-242 U-233 Cm-244 Ra-266 Cf-252 Other Other Other
8. Estimates provided in Sections 6 and 7 above are	based on: initial (emplaced) values
9. Basis for waste information, notably how TRU va	alues were estimated for 6 and 7 and how volumes were calculated for 3.
10. General level of confidence in the waste informa	tion: Medium
	413 N 3 13
	0.1200
	Medium  O 1 413 00 00 00 00 00 00 00 00 00 00 00 00 00
	; · ·

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area V - Laundry Absorption Beds

... Summary Estimates

B. Contaminated Soil (if applicable)

1. Estimated total volume of soil contaminated by the emplaced waste (solid or liquid) or by past testing: Please indicate how volumes were estimated and provide source citation(s)/report reference(s) in B.3 below.

 $m^3$ 

Remarks: Reported as Not Available.

2. Of this total volume of contaminated soil:

Estimated percent exceeding 100 nCi/g:

%

Estimated percent between 10-100 nCi/g:

%

3. Basis for the soil information, including supporting volume calculations and the report reference(s)/citation(s):

4. General level of confidence in the soil information:

Site/Area Name and Location: Los Alamos National Laboratory TA-21 Material Disposal Area V - Laundry Absorption Beds II. Supporting Volume Detail 1. Please provide for the initial waste and contaminated soil, with additional breakouts as can be provided. Volume with  $>100 \text{ nCi/g} (\text{m}^3)$ Volume with 10-100 nCi/g ( nr<sup>3</sup>) **Total Volume** TRU **MTRU** LLW MLLW **Emplaced Waste (combined)** 4300 4300 Liquids Homogeneous Solids Heterogeneous Solids Other (please specify) 4300 4300 Cobbles, gravel, overburden and tuff Contaminated Soil (best est.) Minimum Estimate

2. The volume(s) of "waste emplaced" in this table represent:

Maximum Estimate

Volume of actual waste I.A.3.a

Los Alamos National Laboratory TA-21 Material Disposal Area V - Laundry Absorption Beds

#### III. Anticipated Plans

Per baselines, as can be provided - e.g., only for the total intial waste and asociated soil, and/or for further breakouts.

## In-Place Management (Volume in nr3)

	No Action	Access/Install, Controls	In-Situ Containment	Containment Type	In-Situ Treatment	Treatment Type
Emplaced Waste						
TRU / MTRU					-	
aLLW / aMLLW						
Contaminated Soil						
TRU/MTRU						
aLLW / aMLLW	L				Andrew or the second of the se	
			1		1	

## Removal for Further Management (Volume in $m^3$ )

	, ( )					
	Collection and Treatment	Treatment Type	Collection and Storage	Storage Type and Location	Collection and Disposal	Disposal Location
Emplaced Waste			·		*** * *********************************	
					4300	
TRU/MTRU				S COMMENT OF THE PARTY OF THE P	And the second s	
aLLW / aMLLW	1	the second secon		,	1,211	
			A common contract to the second section of	The second section of the second seco	4300	
Contaminated Soil				A. A	T	
TD41/A/TD1:			The second secon	in the same of the		
TRU/MTRU	Commence of the commence of			The second secon		
aLLW / aMLLW	A second					
		L.,	Service of the servic			

(Response plans are often similar for mixed/non-mixed materials, so they have been combined above. Please use a "/" to separate entries where response plans differ, or provide additiona information in IV below.

Los Alamos National Laboratory TA-21 Material Disposal Area V - Laundry Absorption  $\mathsf{Reds}$ 

# IV. Additional Supporting Information

1. Further supporting detail on response plans, as needed, including references or agreements that have resulted in the responses indicated above.

Project Plan for the Remediation of TA-21, February 1999.

- 2. Additional information about contaminants (e.g., further detail about those identified in I.A.7, or other radionuclides not yet discussed), including non-radiological content (e.g., hazardous chemicals), as appropriate.
- 3. Additional status of environmental management activities, e.g., ongoing/planned investigations, major milestones, and any additional notes on response plans.

EM-40 Funded RCRA Corrective Measures Study planned during Fiscal Year 2002 through the Los Alamos National Laboratory Environmental Restoration Project.