



Department of Energy

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3086

JUL 06 2000

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Division of Hazardous Waste Management
Ohio Environmental Protection Agency
401 East 5th Street
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DOE-0760-00

AISLE SPACING IN BUILDINGS 64 AND 65

Reference: Letter, J. Craig, U. S. DOE to T. Schneider, OEPA, "Thorium Mixed Waste Treatment and Storage in Buildings 64 and 65 - Fernald Environmental Management Project," dated June 25, 1997

In the above referenced letter, the Fernald Environmental Management Project (FEMP) provided information on the management of containers of thorium mixed waste being stored in Buildings 64 and 65. In this letter, it was stated that the FEMP would maintain a four-foot main aisle and a minimum aisle space of 22 inches between containers of mixed thorium waste. A recent assessment of thorium operations has indicated that containers of thorium mixed waste are being stored in these buildings without the required aisle spacing. These containers were being staged in this configuration on an interim basis to allow for further processing of the thorium material. However, a sitewide moratorium on the movement of containers of thorium waste initiated in July 1999 following the thorium fire incident resulted in these containers remaining in their current configuration. A map identifying the location of these storage areas in Buildings 64 and 65 is provided as Enclosure 1.

In order to minimize occupational doses in accordance with the Department of Energy's (DOE) As Low As Reasonably Achievable (ALARA) requirements, the FEMP is planning to retain the current storage configuration in these buildings until these containers are scheduled to be moved as part of thorium repackaging/shipping operations. Currently, there are no activities occurring in Building 65. Entry into this building solely to establish the required aisle spacing would result in additional radiological exposure to site personnel. Repackaging of thorium waste in Building 65 is planned to occur in September 2000. As part of these activities, the containers of thorium mixed waste will be reconfigured to address aisle spacing requirements for this building.

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A report of the thorium mixed waste inventory currently being stored in Building 65 is provided as Enclosure 2. This waste is being stored in five to 85-gallon containers overpacked into metal boxes. The boxes are stacked up to three high. A map identifying the current location of each container of thorium mixed waste in Building 65 is provided as Enclosure 3. These containers are identified on the map by their serial number.

In addition, there are three metal boxes containing thorium mixed waste currently being stored in Building 64 (Serial Numbers 155872, 176233, and 177528). One metal box (155872) is being stored with sufficient aisle spacing and is readily accessible. Box 177528 contains ten containers of mixed thorium waste ranging in size from 3 to 10 gallons. Four of these containers contain thorium dioxide, characterized as D008 - lead. Results from Real Time Radiography (RTR) indicate that there are no free liquids in these containers. Six containers contain miscellaneous samples characterized as D002 - corrosive, D005 - barium and D008 - lead. Two hundred pounds of lime have been added to the outer metal box as an absorbent. This box is visible on two sides. However, two boxes of nonhazardous thorium waste stacked in front of this box would have to be moved in order to gain access in the event of a release.

The third box (176233) is currently being stored in a location in Building 64 where it is not readily accessible to site personnel. In the event of a release, 18 boxes of nonhazardous thorium waste would have to be moved to access this container. This box contains two containers (5 and 55 gallons) of mixed thorium waste characterized as D009 - mercury. RTR conducted on the contents of this box has indicated that there are no free liquids associated with these mixed waste containers.

Due to ALARA concerns with the movement of thorium wastes, the FEMP is planning to leave these boxes in their current location until the boxes of nonhazardous thorium wastes have been moved out of Building 64 for off-site shipment. This is scheduled to occur by October 2000. Once these boxes have been moved, the three boxes of thorium mixed waste will be moved and stored with the required aisle spacing. Note that the FEMP is currently planning to remove all inventory from Buildings 64 and 65 by December 2000 to allow for decontamination and decommission activities to occur in these buildings.

Information on the mixed waste inventory currently being stored in Building 64 is provided as Enclosure 4. A map identifying the location of these containers in the Building 64 storage area is included as Enclosure 5. The containers are identified on the map by their serial number.

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If you have any questions regarding this information, please contact John Sattler at (513) 648-3145.

Sincerely,



for

Jack R. Craig
Director

FEMP:Sattler

Enclosures

cc w/enclosures:

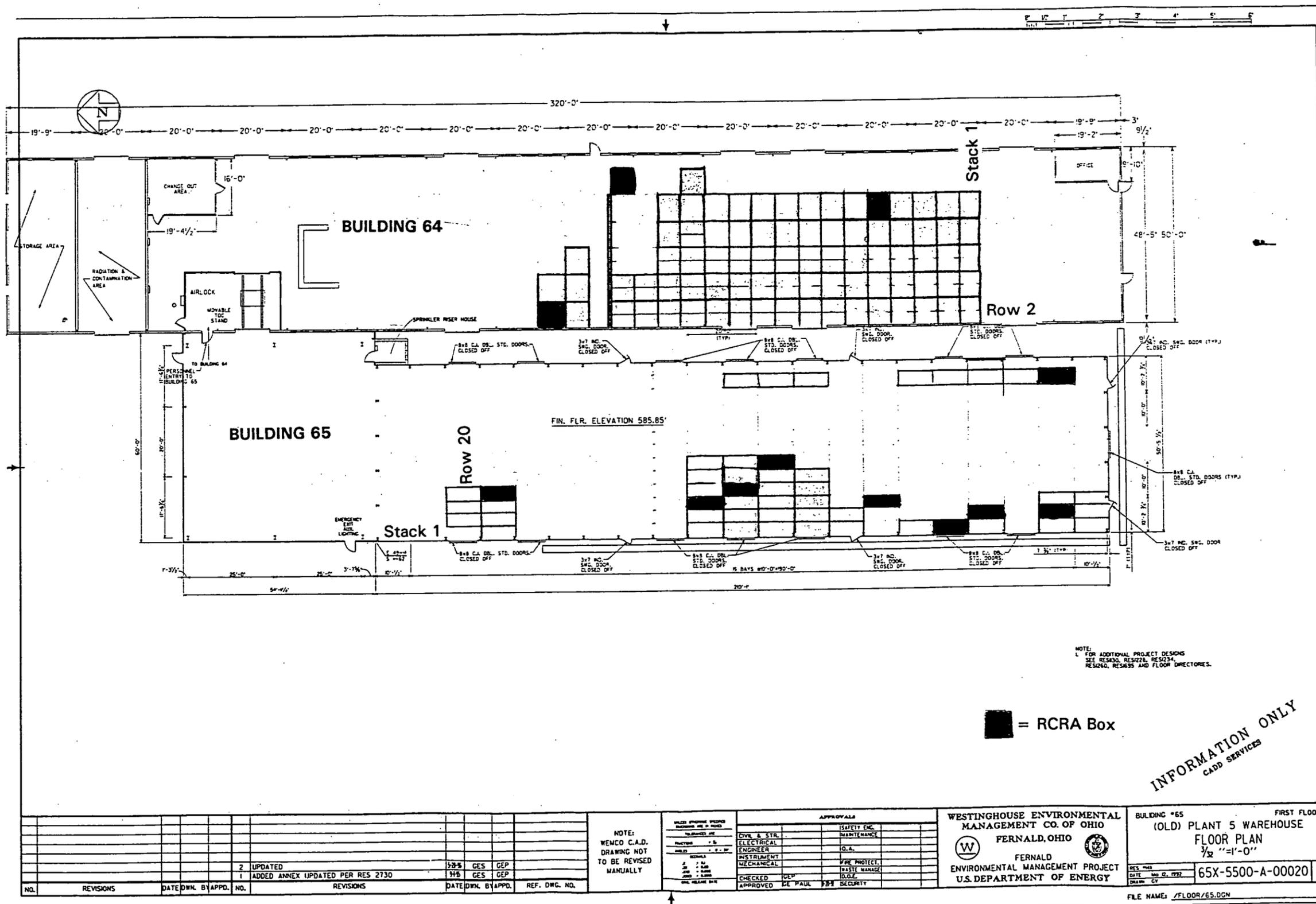
- J. Sattler, OH/FEMP
- M. Kopp, Fluor Fernald, Inc./50
- T. Poff, Fluor Fernald, Inc./65-2
- AR Coordinator, Fluor Fernald, Inc./78

cc w/o enclosures:

- A. Tanner, OH/FEMP
- ECDC, Fluor Fernald, Inc./52-7

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ENCLOSURE 1



INFORMATION ONLY
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ENCLOSURE 2

THORIUM MIXED WASTE INVENTORY STORED IN BUILDING 65

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Serial Number (Outer Container)	Inventory Number (Inner Container)	MEF Number	Waste Description	EPA Waste Codes	Net Weight (lbs.)
165889 170061	W909773	3431	Miscellaneous Thorium Samples	D002, D005, D008	24
	W903808	3428	Scrap Thorium Dioxide	D008	34
	W903809	3428	Scrap Thorium Dioxide	D008	34
	W903810	3428	Scrap Thorium Dioxide	D008	34
	W903811	3428	Scrap Thorium Dioxide	D008	36
	W903812	3428	Scrap Thorium Dioxide	D008	34
	W903813	3428	Scrap Thorium Dioxide	D008	36
	W903814	3428	Scrap Thorium Dioxide	D008	34
	W903815	3428	Scrap Thorium Dioxide	D008	36
	W903816	3428	Scrap Thorium Dioxide	D008	34
	W903817	3428	Scrap Thorium Dioxide	D008	36
	W903818	3428	Scrap Thorium Dioxide	D008	38
	W903819	3428	Scrap Thorium Dioxide	D008	34
	W903820	3428	Scrap Thorium Dioxide	D008	34
	W903821	3428	Scrap Thorium Dioxide	D008	36
	W903822	3428	Scrap Thorium Dioxide	D008	34
	W903823	3428	Scrap Thorium Dioxide	D008	36
	W903824	3428	Scrap Thorium Dioxide	D008	34
	W903825	3428	Scrap Thorium Dioxide	D008	36
	W903826	3428	Scrap Thorium Dioxide	D008	36
	W903827	3428	Scrap Thorium Dioxide	D008	34
	W903828	3428	Scrap Thorium Dioxide	D008	34
	W903946	3428	Scrap Thorium Dioxide	D008	36
	W903947	3428	Scrap Thorium Dioxide	D008	34
	W903948	3428	Scrap Thorium Dioxide	D008	36
	W903949	3428	Scrap Thorium Dioxide	D008	36
	W903950	3428	Scrap Thorium Dioxide	D008	34
	W904158	3428	Scrap Thorium Dioxide	D008	36
	W904159	3428	Scrap Thorium Dioxide	D008	36
	W904160	3428	Scrap Thorium Dioxide	D008	36
155884	W909494	40230	Miscellaneous Thorium	D009	548
155852	W909477	3429	Thorium Dioxide Powder	D008	142
	W909478	3429	Thorium Dioxide Powder	D008	408
	W909479	3429	Thorium Dioxide Powder	D008	262
	W909480	3429	Thorium Dioxide Powder	D008	416
	W909537	3430	Scrap Salts and Floor Sweepings	D007	174
	W909539	3430	Scrap Salts and Floor Sweepings	D007	216

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THORIUM MIXED WASTE INVENTORY STORED IN BUILDING 65

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Serial Number (Outer Container)	Inventory Number (Inner Container)	MEF Number	Waste Description	EPA Waste Codes	Net Weight (lbs.)
155990	W909470	3429	Thorium Dioxide Powder	D008	354
	W909483	3429	Thorium Dioxide Powder	D008	380
	W909484	3429	Thorium Dioxide Powder	D008	476
	W909485	3429	Thorium Dioxide Powder	D008	426
	W909486	3429	Thorium Dioxide Powder	D008	450
	W909487	3430	Scrap Salts and Floor Sweepings	D007	180
	W907695	3428	Scrap Thorium Dioxide	D008	81
	W907725	3428	Scrap Thorium Dioxide	D008	39
	W907726	3428	Scrap Thorium Dioxide	D008	37
	W909877	3430	Scrap Salts and Floor Sweepings	D007	66
155932	W909902	3429	Thorium Dioxide Powder	D008	386
	W909903	3429	Thorium Dioxide Powder	D008	344
	W909904	3429	Thorium Dioxide Powder	D008	418
	W909905	3429	Thorium Dioxide Powder	D008	420
	W903480	3431	Miscellaneous Thorium Samples	D002, D005, D008	88
	W909774	3429	Thorium Dioxide Powder	D008	22
	W909771	3431	Miscellaneous Thorium Samples	D002, D005, D008	24
	W909772	3431	Miscellaneous Thorium Samples	D002, D005, D008	32
	W909504	3429	Thorium Dioxide Powder	D008	508
	W909505	3429	Thorium Dioxide Powder	D008	668
155886	W909506	3429	Thorium Dioxide Powder	D008	442
	W909507	3429	Thorium Dioxide Powder	D008	478
	W909508	3429	Thorium Dioxide Powder	D008	366
	W909509	3429	Thorium Dioxide Powder	D008	438
155892	W909512	3429	Thorium Dioxide Powder	D008	384
	W909755	3431	Miscellaneous Thorium Samples	D002, D005, D008	30
	W909756	3431	Miscellaneous Thorium Samples	D002, D005, D008	36
	W909760	3431	Miscellaneous Thorium Samples	D002, D005, D008	46
	W909762	3431	Miscellaneous Thorium Samples	D002, D005, D008	46
67043	904978	3431	Miscellaneous Thorium Samples	D002, D005, D008	165
60567	W907139	40230	Miscellaneous Thorium	D009	479

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ENCLOSURE 3

BUILDING 65 STORAGE AREA

Rows	2	3	4	5	6	7	8	9	10	11	12	13	19	20
Stack 1	Level 3	114503		155832				W144823	W020-742	169862	169872	165986	66638	
	Level 2	60555		155798				W144827	P-003-4331	158684	169894	169861	66605	
	Level 1	57540	127328	155818	170061	420795		W144822		158687	169740	169908	66643	
Stack 2	Level 3			155884					85 & 55 Gal.	169863	165990		66640	
	Level 2			155759					Drum, No	170380	165882		66616	
	Level 1	66591	60567	156715				W144826	Markings	169881	169851	169847	66631	127024
Stack 3	Level 3									169867	165989		66586	W188228
	Level 2						155572			169892	165987		114323	W188231
	Level 1	127875	127865				177110		W172466	169890	169857	155858	127607	W188234
Stack 4	Level 3								W172465	170365	155852		67043	
	Level 2								W172464	169950	155932		66737	
	Level 1									170173	165889	155964	66476	W188235
Stack 5	Level 3								W162620	169833	170358			
	Level 2									169835	155564			
	Level 1									169868	157824	170225		
Stack 6	Level 3									165897	155421			
	Level 2									158697	169853	177182		
	Level 1									155990	177172	165977		

													156074
													177188
Stored On East Wall	155886	170228	481958	177545	155984								
	155892		170354						W043422	W043432	W043410		
			169821						W043423	W043426			
									W043424	W043425			

 = Contains RCRA Material
 = Shield Boxes

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ENCLOSURE 4

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THORIUM MIXED WASTE INVENTORY STORED IN BUILDING 64

Serial Number (Outer Container)	Inventory Number (Inner Container)	MEF Number	Waste Description	EPA Waste Codes	Net Weight (lbs.)
176233	W908142	40230	Miscellaneous Thorium	D009	16
	W908146	40230	Miscellaneous Thorium	D009	472
155872	W909890	3429	Thorium Dioxide Powder	D008	436
	W909892	3429	Thorium Dioxide Powder	D008	438
	W909893	3429	Thorium Dioxide Powder	D008	428
	W909891	3429	Thorium Dioxide Powder	D008	438
177528	W909594	3429	Thorium Dioxide Powder	D008	15
	W909593	3429	Thorium Dioxide Powder	D008	15
	W909602	3429	Thorium Dioxide Powder	D008	7
	W909601	3429	Thorium Dioxide Powder	D008	22
	W900782	3431	Miscellaneous Thorium Samples	D002, D005, D008	56
	W909612	3431	Miscellaneous Thorium Samples	D002, D005, D008	15
	W909611	3431	Miscellaneous Thorium Samples	D002, D005, D008	18
	W909608	3431	Miscellaneous Thorium Samples	D002, D005, D008	63
	W909604	3431	Miscellaneous Thorium Samples	D002, D005, D008	79
	W909603	3431	Miscellaneous Thorium Samples	D002, D005, D008	48

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ENCLOSURE 5

BUILDING 64 STORAGE AREA (Serial Numbers)

Stack	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Level 3	170207	170263	165979	170371	156036	177715	155774	177745	156036	177654	176227	169732	169870	177144	155893	155974
Level 2	170433	169715	165950	158686	158272	177734	177502	156051	156000	156033	156022	169708	169720	170349	155853	158628
Level 1	158698	166000	165886	165910	177732	157746	156015	156024	156035	156270	156044	158689	158688	155561	177454	155894
Level 3	170368	170362	165883	165959	156071	155916	156065	155848	156002	156031	176231	177522	155585	177186		
Level 2	169831	170408	158645	165893	155951	156003	155917	176234	155775	156027	156076	177531	165999	177107		
Level 1	170363	170370	165884	170375	170067	176247	156059	156012	157880	170085	156254	177451	165918	177167	177147	156060
Level 3	169717	170237	169913	169915	170112	155766	155835	156026	155778	156268	156011	177174	158279	177175		
Level 2	169728	169880	169712	165895	157865	177657	156043	155788	156238	177729	155801	158463	155874	177189		
Level 1	158691	169706	170004	169722	156008	155860	157881	155869	155836	156078	176237	158499	155867	177081		
Level 3	170137	176229	169719	155899	176204	170106	155765	177711	155862	156001	155922	177523	165362	177517		
Level 2	155771	165899	165952	177737	177730	156030	156017	177605	156020	155805	170086	155270	177163	158263		
Level 1	170123	156009	165844	169860	170023	155763	176248	177666	176245	155859	177602	158466	177472	158228		
Level 3													170445	155557		
Level 2	170051	170062	170086	176240	176233	176246	176228	156016	156253	155809	158301	158461	170364	177131		
Level 1	177689	170027	169983	176226	156018	155865	155925	176206	176219	155900	158493	158475	169961	165389		
Level 3																
Level 2													156045			
Level 1													155875			155872

Row 8 Row 9

Level 3	156040	177528
Level 2	170082	155878
Level 1	156072	66754

Stack 1

Level 3	177672
Level 2	176220
Level 1	170081

Stack 2

Level 3	
Level 2	176218
Level 1	177673

Stack 3

☐ = Contains RCRA Material

■ = Shield Boxes