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Department of Energy
Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831-8620

PROGRAM SITE PROJECT #

ROUTE TO: WHC 1
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1/18 DM
cc: Wayne Gregor
File
FFCA

Red LANL FFCO/96

January 10, 1996

FEB 05 1996

Ms. Pat Haight
Kentucky Division of Solid Waste
14 Reilly Road
Frankfurt, Kentucky 40601

Dear Ms. Haight:

TOXIC SUBSTANCES CONTROL ACT INCINERATOR RESIDUALS RESULTING FROM TREATMENT OF PADUCAH GASEOUS DIFFUSION PLANT WASTES

As requested during the teleconference on Monday, December 18, 1995, the following information is provided: 1) Resources Conservation and Recovery Act (RCRA) waste codes and radionuclides expected to be present in the residuals, 2) estimated quantities of residuals, which would be prorated to Paducah Gaseous Diffusion Plant (PGDP), together with formulas showing how the prorated share is calculated, and 3) available characterization information for residuals, which have been generated and are being disposed of at the Envirocare disposal facility in Utah. As discussed, PGDP liquid wastes will be coburned together with liquid waste from other sites, as well as solid waste (including soils added to moderate the burn temperature) from the Oak Ridge Reservation (ORR).

Radionuclide and hazardous constituent information is based on actual analyses of residuals generated to date, as well as review of the Toxic Substances Control Act (TSCA) Incinerator waste acceptance criteria. Table A provides a list of radionuclides that have been accepted for treatment and found in the residuals to date. Table B lists the waste codes that have been accepted for treatment and are associated with residuals generated to date. These tables represent characteristics anticipated to be associated with future TSCA Incinerator residuals.

Based on a more detailed review of the TSCA Incinerator permit, the listing provided in Table D includes all waste codes, which the TSCA Incinerator may accept and which could potentially be associated with residuals generated in the future. Although all the waste codes are listed in portions of the pending PGDP RCRA storage permit modification (Revision 10), there are six codes that are not included in all sections of the permit modification. The waste codes are F006, F008, U248, U328, U353, and U359. PGDP personnel will submit a permit modification (Revision 11) to add these six waste codes. Based on conversations between PGDP personnel and Kentucky Division of Solid Waste personnel, we understand this would be considered a minor permit modification.

Available analytical data for TSCA Incinerator sludge and ash generated to date and currently being disposed at the Envirocare facility is enclosed. As ORR solids are coburned in the incinerator beginning in Fiscal Year (FY) 1996, some constituent concentrations are expected to change; however, no new hazardous or radiological constituents are expected to be introduced. If new

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hazardous or radiological constituents not included in Tables A and B are introduced during FY 1996, we will notify you. Additional characterization data for residuals resulting from coburning of solids with the liquid wastes is expected to be available in the summer of 1996 and will be provided to you when available.

Table C contains estimated amounts of liquid waste to be received from PGDP and the corresponding estimated prorated share of TSCA Incinerator residuals which would be returned to PGDP if Oak Ridge's current method of direct disposal were to become unavailable. The quantity estimates for residuals generation and prorating of residuals are based on historical TSCA Incinerator operational information for "liquids only" burns. A detailed explanation of the prorating calculation is included in Table C. Although the information provided is based on the FY 1996 TSCA Incinerator Burn Plan, the same method would be used to prorate residues from treatment of PGDP liquids in future years.

The information provided in this letter applies only to the residuals generated from treatment of PGDP's liquid wastes in the TSCA Incinerator and does not apply to any residues that might be generated from the treatment of PGDP solids wastes in the future. The prorating assumptions for solids must be developed in the future based on operational experience gained through processing ORR solids. Quantity estimates and additional waste characterization information will be provided to address prorating of residues from processing solid waste as that information becomes available. This information can be included in a future version of the PGDP residuals management contingency plan.

Based on this information, please verify whether the residuals from treatment of the PGDP liquid waste scheduled for FY 1996 could be returned to the PGDP site for storage, if required as a contingency, under the terms of PGDP's RCRA storage permit and modifications discussed above. As discussed in the teleconference of January 3, 1996, return of the residuals would not take place until FY 1997. In particular, please verify whether the 1.6 drums of residuals resulting from the waste to be received and burned in January 1996 could be returned sometime in FY 1997, if necessary, under the terms of the storage permit and modifications discussed above.

If you have questions or need additional information, please call Joy Sager of my staff at (423) 576-0850.

Sincerely,

Larry L. Radcliffe, Director
Waste Management and Technology
Development Division

Enclosures

(cc's on page 3)

cc w/enclosures:
E. Leming, TDEC, OR
V. Adams, EW-96
W. Cahill, EW-91
N. Carnes/R. Blumenfeld, CC-10
J. Hodges, EF-21
B. Hightower, K-1037, MS 7357
T. Morris/L. Mezga, K-1037, MS 7357

TABLE A

RADIONUCLIDES IN TSCA INCINERATOR RESIDUES TO DATE

Cs-137, Pa-234m, Co-57, Co-60, I-131, Np-237, Sr-89/90, Tc-99, Th-228, Th-230, Th-232, Th-234, Pu-238, Pu-239, Am-241, U-234, U-235, U-238

TABLE B

RCRA WASTE CODES FOR TSCA INCINERATOR RESIDUES TO DATE

F001, F002, F003, F004, F005, F006, F039
U002, U003, U019, U031, U037, U052, U070, U078, U080, U103, U108, U112, U117, U121, U122, U131, U154, U161, U188, U196, U210, U211, U213, U220, U226, U228, U239, U359

TABLE C

PADUCAH GASEOUS DIFFUSION PLANT
PRORATED RESIDUALS

1996	Liquids Treated	Prorated Sludge	Prorated Ash	Total Prorated Residual Amount
Jan.	85,000 lb	1.5 drums (654 lb)	0.1 drum (35 lb)	1.6 drums (689 lb)
FY	434,300 lb	7.5 drums (3340 lb)	0.4 drum (180 lb)	7.9 drums (3520 lb)

As wastes are treated in the TSCA Incinerator, the volume is reduced.

1. Sludge

Based on historical data, the volume reduction factor for estimating the volume of residual sludge resulting from the treatment of liquid wastes is 26:1. Since these sludges are approximately 90 to 95% water, their volume is further reduced by a factor of 5:1 through dewatering. The final volume reduction factor for sludge is 130:1. The prorated amount of sludge is calculated by applying this volume reduction factor to the amount of liquid waste processed (i.e. 85,000 lb / 130 = 654 lb).

2. Ash

Based on historical data, the volume reduction factor for estimating the volume of residual ash resulting from the treatment of liquid wastes is 2400:1. The prorated amount of ash is calculated by applying this volume reduction factor to the amount of liquid waste processed (i.e. 85,000 lb / 2400 = 35 lb).

The sludge residues are not expected to change significantly in character due to the introduction of solids being coburned with liquids. The soils being coburned with the liquids and combustible solids will be present mainly in the ash residues. In order to minimize concerns related to the return of residual ash containing Oak Ridge soils to PGDP, while assuring the quantity of residues returned is equitable and consistent with the volume of original waste treated, the total prorated residuals amount could be returned as dewatered sludge (i.e. 1.6 drums of sludge would be returned, rather than 1.5 drums of sludge and 0.1 drums of ash)

TABLE D
SUMMARY OF WASTE CODES ACCEPTED AT THE TSCA INCINERATOR

Hazardous Waste	Hazard	EPA Hazardous Waste Code
	Ignitable	D001
	Corrosive	D002
	Toxic	D004
Arsenic	Toxic	D005
Barium	Toxic	D006
Cadmium	Toxic	D007
Chromium	Toxic	D008
Lead, Spent Batteries	Toxic	D009
Mercury	Toxic	D010
Selenium	Toxic	D011
Silver	Toxic	D012
Endrin	Toxic	D013
Lindane	Toxic	D014
Methoxychlor	Toxic	D015
Toxaphene	Toxic	D016
2, 4-D	Toxic	D017
2, 4, 5-TP	Toxic	D018
Benzene	Toxic	D019
Carbon Tetrachloride	Toxic	D020
Chlordane	Toxic	D021
Chlorobenzene	Toxic	D022
Chloroform	Toxic	D023
o-Cresol	Toxic	D024
m-Cresol	Toxic	D025
p-Cresol	Toxic	D026
Cresol (specific isomer is unknown)	Toxic	D027
1.4-Dichlorobenzene	Toxic	D028
1.2-Dichloroethane	Toxic	D029
1.1-Dichloroethylene	Toxic	D030
2.4-Dinitrotoluene		

TABLE D
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Hazardous Waste	Hazard	EPA Hazardous Waste Code
Heptachlor	Toxic	D031
Hexachlorobenzene	Toxic	D032
Hexachlorobutadiene	Toxic	D033
Hexachloroethane	Toxic	D034
Methyl Ethyl Ketone	Toxic	D035
Nitrobenzene	Toxic	D036
Pentachlorophenol	Toxic	D037
Pyridine	Toxic	D038
Tetrachloroethylene	Toxic	D039
Trichloroethylene	Toxic	D040
2, 4, 5-Trichlorophenol	Toxic	D041
2, 4, 6-Trichlorophenol	Toxic	D042
Vinyl Chloride	Toxic	D043
Spent Halogenated Solvents, Sludges from the Recovery of Specific Solvents	Toxic	F001 and F002
Spent Non-Halogenated Solvents, Sludges from the Recovery of Specific Solvents	Ignitable	F003
Spent Non-Hazardous Solvents, Sludges from the Recovery of Specific Solvents	Toxic	F004
Spent Non-Halogenated Solvents Sludges from the Recovery of Specific Solvents	Ignitable, Toxic	F005
Waste Water Treatment Sludges from Electroplating Operations except from Specific Processes	Toxic	F006
Plating Bath Residues from the Bottom of Plating Baths from Electroplating Operations where Cyanides are used in the Process	Reactive, Toxic	F008

TABLE D
SUMMARY OF WASTE CODES ACCEPTED AT THE TSCA INCINERATOR

"P" and "U" HAZARDOUS WASTE CODES

The basis for hazardous designation for all EPA Hazardous Waste Codes is derived from Tennessee Rule Chapter 1200-1-11-.02. The name of the substance is also found in Tennessee Rule Chapter 1200-1-11-.02.

"P" Hazardous Waste Codes

P001	P013	P027	P041	P056	P069	P084	P099	P113
P002	P014	P028	P042	P057	P070	P085	P101	P114
P003	P015	P029	P043	P058	P071	P087	P102	P115
P004	P016	P030	P044	P059	P072	P088	P103	P116
P005	P017	P031	P045	P060	P073	P089	P104	P118
P006	P018	P033	P046	P062	P074	P092	P105	P119
P007	P020	P034	P047	P063	P075	P093	P106	P120
P008	P021	P036	P048	P064	P076	P094	P108	P121
P009	P022	P037	P049	P065	P077	P095	P109	P122
P010	P023	P038	P050	P066	P078	P096	P110	P123
P011	P024	P039	P051	P067	P081	P097	P111	
P012	P026	P040	P054	P068	P082	P098	P112	

TABLE D
SUMMARY OF WASTE CODES ACCEPTED AT THE TSCA INCINERATOR

"P" and "U" HAZARDOUS WASTE CODES

The basis for hazardous designation for all EPA Hazardous Waste Codes is derived from Tennessee Rule Chapter 1200-1-11-.02. The name of the substance is also found in Tennessee Rule Chapter 1200-1-11-.02.

"U" Hazardous Waste Codes

U001	U028	U056	U083	U111	U137	U164	U191	U221
U002	U029	U057	U084	U112	U138	U165	U192	U222
U003	U030	U058	U085	U113	U140	U166	U193	U223
U004	U031	U059	U086	U114	U141	U167	U194	U225
U005	U032	U060	U087	U115	U142	U168	U196	U226
U006	U033	U061	U088	U116	U143	U169	U197	U227
U007	U034	U062	U089	U117	U144	U170	U200	U228
U008	U035	U063	U090	U118	U145	U171	U201	U234
U009	U036	U064	U091	U119	U146	U172	U202	U235
U010	U037	U066	U092	U120	U147	U173	U203	U236
U011	U038	U067	U093	U121	U148	U174	U204	U237
U012	U039	U068	U094	U122	U149	U176	U205	U238
U014	U041	U069	U095	U123	U150	U177	U206	U239
U015	U042	U070	U096	U124	U151	U178	U207	U240
U016	U043	U071	U097	U125	U152	U179	U208	U243
U017	U044	U072	U098	U126	U153	U180	U209	U244
U018	U045	U073	U099	U127	U154	U181	U210	U246
U019	U046	U074	U101	U128	U155	U182	U211	U247
U020	U047	U075	U102	U129	U156	U183	U213	U248
U021	U048	U076	U103	U130	U157	U184	U214	U249
U022	U049	U077	U105	U131	U158	U185	U215	U328
U023	U050	U078	U106	U132	U159	U186	U216	U353
U024	U051	U079	U107	U133	U160	U187	U217	U359
U025	U052	U080	U108	U134	U161	U188	U218	
U026	U053	U081	U109	U135	U162	U189	U219	
U027	U055	U082	U110	U136	U163	U190	U220	

INCINERATOR SLUDGE

Table 2: Analytical Results from Individual Drums and Composite (May 16, 1995 Validated Data)

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
TCLP Metals (mg/L)					
Antimony	NA	NA	NA	<0.50	2.1
Arsenic	6	0.0394	0.0617	<0.50	5.0
Barium	17	0.313	0.971	<10	7.6
Beryllium	NA	NA	NA	<0.010	0.014
Cadmium	17	0.0359	0.065	<0.10	0.19
Chromium	17	0.0411	0.094	<0.50	0.86
Lead	17	0.0907U	.15U	<0.50	0.37
Nickel	NA	NA	NA	1.9	5.0
Thallium	NA	NA	<0.05[1]	<0.20	0.16
Selenium	17	0.0199	0.0544	<0.50	0.30
Silver	17	0.0340U	0.05U	<0.50	0.078
Vanadium	NA	NA	NA	<0.10	0.23
Zinc	NA	NA	NA	0.53	5.3
Mercury	17	0.0002U	0.0002U	<0.02	0.025

[1] Analytical Results indicate "total metal concentration (ppm) of thallium is < 1.0 ppm. Utilizing accepted industry standard of dividing "total metals concentration" by 20 to estimate minimum TCLP (mg/L) results in estimated value of < 0.05 thus satisfying Land Disposal Requirements (LDR) Universal Treatment Standards (UTS).

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
TCLP Volatile Organics (mg/L)[2]					
Carbon Tetrachloride	25	0.04832	0.058U	0.05U	0.5
Chlorobenzene	25	4.42600	10U	10U	100
Chloroform	25	0.2900	0.6U	0.6U	6.0
Tetra-chloroethene	11	0.05	0.05U	0.07U	0.7
Trichloroethene	11	0.07	0.07U	0.05U	0.5
Vinyl Chloride	25	0.0608	0.1U	0.02U	0.2
1,2-Dichloroethane	25	0.04800	0.05U	0.05U	0.5
1,1-Dichloroethene	11	0.07	0.07U	0.07U	0.7
2-Butanone (Methyl ethyl ketone)	25	8.8520	20U	20U	200
Benzene	25	0.04800	0.05U	0.05U	0.5
1,4-Dichlorobenzene	25	0.06	0.1U	0.75U	7.5

[2]Results from total analyses available in Attachment 2.2. All individual volatile analytes below required reporting limit.

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
TCLP Base-Neutral, Acids[3]					
2,4-Dinitrotoluene	25	0.06	0.1U	0.013U	0.02
Hexachlorobenzene	25	0.06	0.1U	0.013U	0.13
Hexachlorobutadiene	25	0.06	0.1U	0.05U	0.5
Hexachloroethane	25	0.06	0.1U	0.3U	3.0
Nitrobenzene	25	0.06	0.1U	0.2U	2.0
Pyridine	14	0.1	0.1U	0.5U	5.0
2,4,6-Trichlorophenol	25	0.28	0.5U	0.2U	2.0
Pentachlorophenol	25	0.28	0.5U	10U	100
O-Cresol	11	0.01	0.01U	10U	200
M&P-Cresol	11	0.02	0.02U	40U	200
2,4,5-Trichlorophenol	25	0.28	0.5U	40U	400
1,4-Dichlorobenzene	25	0.06	0.1U	0.75U	7.5
TCLP Pesticides (mg/L)					
Chlordane	25	0.01397	0.003U	<0.003	0.03
Endrin	25	0.00101	0.002U	<0.002	0.02
Lindane	25	0.017666	0.04U	<0.04	0.4
Heptachlor	25	0.000418	0.0008U	<0.0008	0.008

[3]All individual analyte results included in Attachment 2.2. All detects were phthalate esters, common lab contaminants.

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
Methoxychlor	25	0.44066	1U	<1.0	10
Toxaphene	25	0.0233	0.05U	<0.05	0.5
TCLP Herbicides (mg/L)					
Silvex	19	0.030	0.1U	<0.004	1.0
2,4-D	19	0.27	1U	<0.02	10.0
2,4,5T	14	0.005	0.005U	<0.02	.2
PCBs (arochlor) (ug/g)	25	0.3251	0.95U		50 ppm
PCBs (congeners)	See Table 1				2.0 ppm per TSCA permit

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
Radiochemistry (pCi/g)[4],[5]					
Total Activity	Biased Low			7.69E3 (+/- 2.4E2)	
Alpha Activity	27	8078.7 (2423.6)	13798.5 (4139.5)	2.84E3 (+/- 1.5E2)	
Beta Activity	27	10516.1 (3154.8)	19796.2 (5938.8)	3.32E3 (+/- 1.2E2)	
Cs-137	26	<0.74 (.222)	<2.1 (.63)	-8.37E-2 (+/- 1.9E-1)	5.6E2
Pa-234m	18	8251.50 (2475.5)	17310 (5193)	3.14E3 (+/- 6.4E1)	Daughter of U-238
Th-234	19	7947.223 (2384.1)	15800 (4740)	9.46E1 (+/-4.3)	Daughter of U-238
Co-60	25	<0.40	<1.2	NA	3.6E2
Np-237	27	3.40 (1.02)	9.7 (2.91)	2.08-E1 (+/- 7.2E-1)	2.0E3
Sr-89/90	26	7.74 (2.32)	21.7 (6.51)	-6.44 (+/- 1.7E1)	2.0E4

[4] Average and Maximum values on the containers were reported on a dry weight basis. "As received" values have been calculated by multiplying by the maximum solids value (30%) and are displayed within the parentheses.

[5] Ac-228, Tl-208, Bi-212 are daughters of Th-232 and Pb-214 is the daughter of U-238; all daughter activity is accounted for by the parent.

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
Tc-99	27	<6.06	24.8 (7.44)	1.05E2 (+/- 4.1E1)	1.9E5
Th-230	27	31.15 (9.34)	108 (32.4)	1.26E1 (+/-2.8)	1.5E4
Th-232 (Based on Th-228 daughter concentration)	27	4.2 (1.26)	9.8 (2.9)	2.33E0 (+/- 1.2E0)	6.8E2
Pu-238	27	3.03 (0.91)	10.8 (3.24)	2.35E0 (+/- 1.1EO)	1.0E4
Pu-239	27	15.17 (4.55)	77.6 (23.3)	3.97E0 (+/- 1.4EO)	9.9E3
Am-241	35	4.10 (1.23)	90.3 (27.1)	3.17E-1 (+/- 7.8E-1)	2.3E2
U-234	27	2133.5 (640)	4975 (1492.5)	NA	3.7E4
U-238	35	3771.7 (1131.5)	12190 (3657.0)	2.09E3 (+/- 3.4E1)	2.8E4
U-235	47	128.5 (38.5)	565.2 (169.5)	6.90E1 (+/- 6.7E-1)	7.7E2
U-235 (wt%)	23	0.46	0.58	0.50	
Total U (ug/g)	15	20776.6 (6232.8)	42560 (12768)	4855	

Analyte	No. of Samples	Av.	Max.	Composite	EnviroCare Limit
Wet Chemistry					
pH	25	7.68	9.92	8.3	
Total Cyanide (ug/g)	13	1.640	3.28U	<1	
Reactive Cyanide (ug/g)	20	<0.14	0.25U	NA	
Sulfide (ug/g)	18	<6.68	10	NA	
Oil and Grease (mg/Kg)	NA			<250	
Paint Filter Test	9	none		none	
Density (g/ml)	25	1.91	2.66	0.973	
Total Organic Halides (ug/g)	24	<25	82	<25	

U: Not detected at the lower reporting limit
NA: Not Analyzed

Martin Marietta Energy Systems, Inc.

Summary of Analytical Results for TSCA Liquid Burn Ash Generated Between October 29, 1991 and December 14, 1993

Customer Sample Number:		TSCA-9257			TSCA-9258			TSCA-9254			TSCA-9260			TSCA-9250			TSCA-9252			TSCA-9253		
Drum Number:		40819-1			20680-1			20667-2			20691-1			20667-1			20684-1			20691-2		
Laboratory Sample # for Major Analyses:		940510-102			940513-018			940513-025			940513-043			940513-060			940517-010			940517-013		
PARAMETER:	U/M																					
PCB:																						
Aroclor-1254	ug/kg	ND			390		J	820			ND			ND			ND			ND		
Homolog	ug/g	0.013			0.37			0.87			0.009			0.12		J	0.015		J	0.009		J
Dioxins/Furans:		NR			NR			NR			NR			NR			NR			NR		
TCLP (Metals:)																						
As	mg/L	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d
Ba	mg/L	< 1		d	< 1		d	< 1		d	< 1		d	< 1		d	< 1		d	< 1		d
Cd	mg/L	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d
Cr	mg/L	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d
Pb	mg/L	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d
Ni	mg/L	2.9			1.3			0.45			1.8			2			1			0.68		
Se	mg/L	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d
Ag	mg/L	< 0.7		d	< 0.07		d	< 0.07		d	< 0.07		d	< 0.07		d	< 0.07		d	< 0.07		d
Hg	mg/L	< 0.0005			0.0052			< 0.0005			< 0.0005			< 0.0005			< 0.0005			< 0.0005		
TCLP for VOA:																						
Methyl ethyl ketone	mg/L	0.056		J	ND			ND			ND			ND			0.11		J	0.11		J
TCLP for BNA:	mg/L	ND			ND			ND			ND			ND			ND					
TCLP for Hg:	mg/L	ND			ND			ND			ND			ND			ND					
Radiochemical:			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)	
Tc-99	pCi/g	11.1	2.9		50.3	6.3		47.7	6.1		10.8	4.9		75	6.8		14.9	2.7		9.92	2.6	
Total Activity	pCi/g	1160	35		3840	80		2650	70		335	41		3070	73		372	23		570	26	
Np-237	pCi/g	0	8.1		13.8	16		0	16		0	16		8.7	12		0.96	3.9		4.23	6	
Pu-238	pCi/g	-2.22	2.5		-4.44	5		-3.2	3.9		-3.25	4		-2.47	4.4		0	8		0	8.5+	
Pu-239	pCi/g	-2.22	2.5		-2.66	4.2		-2.4	4.2		-3.25	4		-1.65	2.7		0	8		0	8.5	
Th-228	pCi/g	2.3	2.2		0	2.7		0.69	24		0	2		0	2		-0.332	1.1		0	1.4	
Th-230	pCi/g	4.99	3.0		3.07	3.8		8.97	5.3		2.11	3.1		3.56	3.8		0.995	2		0.706	2	
Th-232	pCi/g	0	1.3		0	2.7		0.69	1.4		0	2.4		2.84	2.8		0.663	0.94		0.706	1	
Th-234	pCi/g	265	21	H	841	60	H	575	80	H	51.7	41	H	696	160		93.4	36	H	119	26	H
U-234	pCi/g	235	13		789	56	J	611	34		55.8	9.1		699	35		74.6	6.6		240	14	
U-235	pCi/g	8.61	0.92		35.6	8.4		22.4	4.3		6.24	7.2	E	25.8	2		2.84	6.1	E	5.09	3.3	
U-238	pCi/g	402	17	*	1080	65	J	870	40		87	11		772	37		113	8.1		319	16	
Cs-137	pCi/g	0.363	0.84	E	-0.177	4.5	F	3.57	3.2		-2.91	4.4	F	0.52	1.7	E	2.68	5.8	E	0.824	2.9	E
Pa-234	pCi/g	425	120	H	1420	730	H	704	610	H	1050	682	H	887	240	H	489	1000	HE	-176	530	HF
Alpha Activity	pCi/g	386	34		1250	81		822	67		56.3	31		988	72		136	18		186	21	
Beta Activity	pCi/g	456	29		1450	67		982	57		140	30		1160	60		150	17		256	21	
K-40	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Ra-226	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Nb-95	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Cd-109	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Am-241	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Mo-99	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Pb-212	pCi/g	NR			NR			NR			NR			NR			NR			NR		
Ac-228	pCi/g	NR			NR			NR			NR			NR			NR			NR		

Martin Marietta Energy Systems, Inc.

Summary of Analytical Results for TSCA Liquid Burn Ash Generated Between October 29, 1991 and December 14, 1993

Customer Sample Number:		TSCA-9257		TSCA-9258		TSCA-9254		TSCA-9260		TSCA-9250		TSCA-9252		TSCA-9253	
Drum Number:		40819-1		20680-1		20667-2		20691-1		20667-1		20684-1		20691-2	
Laboratory Sample # for Major Analyses:		940510-102		940513-018		940513-025		940513-043		940513-060		940517-010		940517-013	
PARAMETER:	U/M														
Radiochemical:			(+/-)		(+/-)		(+/-)		(+/-)		(+/-)		(+/-)		(+/-)
U (Fluor)	ug/g	1761		3019		1679		1866		988		1869		3406	
U (Fluor): Duplicate	ug/g	2864		2456		774		1649		2836		1546		2554	
U-235	Wt %	0.49	0.2	0.64	0.02	0.6	0.02	0.64	0.02	0.58	0.02	0.47	0.1	0.45	0.02
U-235 (Duplicate)	Wt %	0.48	0.02	0.57	0.02	0.65	0.02	0.54	0.02	0.60	0.04	0.46	0.01		U
AA:															
As	ug/g	< 0.46		1.5		8.8		< 0.58		0.76		< 0.51		< 0.53	
Se	ug/g	< 0.46		< 0.46		< 3.5		< 0.58		< 0.46		< 0.51		< 0.53	
Tl	ug/g	< 0.92		< 0.93		< 7		< 1.2		< 0.93		< 1.1		< 1	
Hg	ug/g	< 0.1		< 0.18		< 0.92		0.084		< 0.068		< 0.088		< 0.059	
ICP:															
Sb	ug/g	< 200	d	< 130	d	< 240	d	< 230	d	< 100	d	< 180	d	< 120	d
Be	ug/g	17		16		6.6		23		3.8		16		13	
Cd	ug/g	< 12	d	8		< 14	d	< 14	d	< 6	d	< 11	d	< 7.1	d
Cu	ug/g	98		130		33		66		15		230		62	
Pb	ug/g	< 200	d	< 130	d	< 240	d	< 230	d	< 100	d	660		120	
Ni	ug/g	2700		1500		73		800		34		1200		220	
Ag	ug/g	< 23	d	< 16	d	< 29	d	< 27	d	< 12	d	< 21	d	< 14	d
Anions:															
NO3- (IC)	ug/g	< 20		< 20		< 20		< 20		< 20		< 20		< 20	
o-PO4-3 (IC)	ug/g	23		47		36		26		40		33		37	
Cl- (IC)	ug/g	< 20		40		41		< 20		26		< 20		< 20	
SO4-2 (IC)	ug/g	98		213		133		32		110		62		< 20	
F-	ug/g	10		< 10		10		< 10		< 10		< 10		< 10	
Reactive Cyanide	mg/Kg	NR		NR		NR		NR		NR		NR		NR	
Reactive Sulfide	mg/Kg	NR		NR		NR		NR		NR		NR		NR	
Physical:															
pH		8.7		8.7		8.3		8.6		8.3		8.2		7.8	
Density	g/mL	1.47		1.76		1.86		1.6		1.81		1.73		1.68	
Moisture	%	7.1		< 1		23.8		3.5		47.1		14.5		2.4	
Flash Point	oF	> 145		> 145		> 145		> 145		> 145		> 145		> 145	
Paint Filter	mL	NR		NR		NR		NR		NR		NR		NR	
Organics:															
Oil/Grease	%	< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1	
TOC	ug/g	140		1897		788		60		328		74		231	
VOA:															
Acetone	ug/Kg														
2-Butanone	ug/Kg							10	J					8	J
Methylene chloride	ug/Kg	2	J												
BNA:															
Diethyl phthalate	ug/Kg	51	JB												
Di-n-butylphthalate	ug/Kg	260	JB	260	JB	1600	JB	320	JB	1600	JB	390	JB	250	JB

Martin Marietta Energy Systems, Inc.

Summary of Analytical Results for TSCA Liquid Burn Ash Generated Between October 29, 1991 and December 14, 1993

Customer Sample Number:		TSCA-9257		TSCA-9258		TSCA-9254		TSCA-9260		TSCA-9250		TSCA-9252		TSCA-9253	
Drum Number:		40819-1		20680-1		20667-2		20691-1		20667-1		20684-1		20691-2	
Laboratory Sample # for Major Analyses:		940510-102		940513-018		940513-025		940513-043		940513-060		940517-010		940517-013	
PARAMETER:	U/M														
BNA:															
bis(2-Ethylhexyl) phthalate	ug/Kg	150	JB	570	JB	750	JB	150	JB	320	JB	96	JB	54	JB
Dimethyl phthalate	ug/Kg					130	J								
Di-n-octylphthalate	ug/Kg														
Butylbenzyl phthalate	ug/Kg														
Total Organic Halides (TOX):	ug/g														

Martin Marietta Energy Systems, Inc.

Summary of Analytical Results for TSCA Liquid Burn Ash Generated Between October 29, 1991 and December 14, 1993

Customer Sample Number:		TSCA-9255			TSCA-9259			TSCA-9251			TSCA-9256			TSCA-9261			TSCA-9262			TSCA-10870		
Drum Number:		20682-1			20682-2			20680-2			20684-2			44158-1			44160-1			Composite		
Laboratory Sample # for Major Analyses:		940517-016			940517-019			940518-009			940518-012			940518-015			940518-018			46124 (SWRI)		
PARAMETER:	U/M																					
PCB:																						
Aroclor-1254	ug/kg	ND			ND			26		J	38		J	51		J	32		J	ND		
Homolog	ug/g	0.002		J	0.001		J	0.019		J	0.035		J	0.13			0.11			NR		
Dioxins/Furans:		NR			NR			NR			NR			NR			NR			ND		
TCLP (Metals:)																						
As	mg/L	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.25		
Ba	mg/L	< 1		d	< 1		d	< 1		d	< 1		d	< 1		d	< 1		d	< 0.358		B
Cd	mg/L	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d	< 0.03		d	< 0.05		
Cr	mg/L	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d	< 0.1		d	< 0.05		
Pb	mg/L	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.125		
Ni	mg/L	0.42			0.48			0.84			3.8			0.48			0.26			NR		
Se	mg/L	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.5		d	< 0.01		
Ag	mg/L	< 0.07		d	< 0.07		d	< 0.07		d	< 0.07		d	< 0.07		d	< 0.07		d	< 0.05		
Hg	mg/L	< 0.0005			< 0.0005			< 0.0005			< 0.0005			< 0.0005			< 0.0005			< 0.0002		
TCLP for VOA:																						
Methyl ethyl ketone	mg/L										0.19		J	0.032		J	0.1		J	ND		
TCLP for BNA:	mg/L																			ND		
TCLP for Hg:	mg/L																			ND		
Radiochemical:			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)	
Tc-99	pCi/g	16.1	2.7		8.09	2.4		106	4.7		11.4	2.7		93.1	4		96.3	4.5		2.41	0.04	
Total Activity	pCi/g	294	22		303	21		967	30		367	23		802	26		935	30		6089	74	
Np-237	pCi/g	0	6.9		0	7.1		0	7.6+		2.33	4.7		0	6.3		4.47	6.3		6.92		
Pu-238	pCi/g	2.24	4.5		0	8		0	8		0	8.7		0	7.1		0	8.4		< 0.015		
Pu-239	pCi/g	0	7.8		0	8		0	8		0	8.7		0	7.1		0	8.4		0.046	0.022	
Th-228	pCi/g	-0.322	1.1		-0.664	1.5		-0.667	1.5		-0.726	1.6		-0.586	1.3		-0.349	1.2		0.027	0.014	
Th-230	pCi/g	-0.322	1.4		3.32	2.7		2	2.3		0	1.8+		3.81	2.6		3.84	2.9		1.68	0.14	
Th-232	pCi/g	0	1.1		0	1.2		0.334	0.67		0	1.3		0.293	0.59		0	1.2		11.4	0.64	
Th-234	pCi/g	69.8	35	H	-39.2	21	HG	-1.75	33	HF	55.9	24	H	132	35	H	197	25	H	95.8	0.08	
U-234	pCi/g	188	10		73.3	6.7		248	12		131	9.9		70.1	6.5		72	7.3		116	15	
U-235	pCi/g	-2.38	6	F	-16.6	3.9	G	3.96	1.4		4.13	3.2		8.01	4.1		15.3	4		88.9	46.4	
U-238	pCi/g	248	12		87.6	7.3		315	13		202	12		102	7.8		88.4	8		188	98	
Cs-137	pCi/g	-1.49	6.3	F	0.477	2.7	E	-1.17	1.5	F	0.133	2.7	E	2.58	5.3	E	-0.847	2.3	F	ND		
Pa-234	pCi/g	25.3	1100	HE	1160	510	H	39.8	190	H	578	430	H	867	890	HE	59.1	440	HE	ND		
Alpha Activity	pCi/g	144	18		137	18		404	30		166	20		308	2.5		348	29				
Beta Activity	pCi/g	135	16		134	16		384	24		182	18		352	22		394	25				
K-40	pCi/g	NR			NR			NR			NR			NR			NR			2.87	0.19	
Ra-226	pCi/g	NR			NR			NR			NR			NR			NR			1.96	0.14	
Nb-95	pCi/g	NR			NR			NR			NR			NR			NR			6.71	0.05	
Cd-109	pCi/g	NR			NR			NR			NR			NR			NR			17.7	0.6	
Am-241	pCi/g	NR			NR			NR			NR			NR			NR			7.34	0.19	
Mo-99	pCi/g	NR			NR			NR			NR			NR			NR			1.91	0.23	
Pb-212	pCi/g	NR			NR			NR			NR			NR			NR			1.76	0.03	
Ac-228	pCi/g	NR			NR			NR			NR			NR			NR			1.1	0.13	

Martin Marietta Energy Systems, Inc.

Summary of Analytical Results for TSCA Liquid Burn Ash Generated Between October 29, 1991 and December 14, 1993

Customer Sample Number:		TSCA-9255		TSCA-9259		TSCA-9251		TSCA-9256		TSCA-9261		TSCA-9262		TSCA-10870	
Drum Number:		20682-1		20682-2		20680-2		20684-2		44158-1		44160-1		Composite	
Laboratory Sample # for Major Analyses:		940517-016		940517-019		940518-009		940518-012		940518-015		940518-018		46124 (SWRI)	
PARAMETER:	U/M														
Radiochemical:		(+/-)		(+/-)		(+/-)		(+/-)		(+/-)		(+/-)			
U (Fluor)	ug/g	1856		1799		1188		3097		1020		1977		532	
U (Fluor): Duplicate	ug/g	1786		1461		2587		3732		1002		758			
U-235	Wt %	0.56 0.02		0.59 0.02		0.58 0.04		0.46 0.02		0.58 0.02		0.53 0.04			
U-235 (Duplicate)	Wt %	0.55 0.02		0.57 0.02		0.59 0.04		0.46 0.02		0.54 0.02		0.55 0.02			
As	ug/g	< 0.54		< 0.53		< 0.59		< 0.56		0.73		< 0.58		0.29	
Se	ug/g	< 0.54		< 0.53		< 0.59		< 0.56		< 0.62		< 0.58		0.8	U
Tl	ug/g	< 1.1		< 1.1		< 1.2		< 1.1		< 1.2		< 1.2		0.2	U
Hg	ug/g	< 0.13		< 0.098		< 0.11		< 0.1		< 0.12		< 0.12		0.09	U
ICP:															
Sb	ug/g	< 270	d	< 200	d	< 230	d	< 210	d	< 250	d	< 230	d	5.3	U
Be	ug/g	8.8		2.1		5.1		9.2		7.7		3.2		2.8	
Cd	ug/g	< 16	d	< 12	d	< 14	d	< 12	d	< 15	d	< 14	d	0.85	U
Cu	ug/g	190		37		77		100		190		130		40	
Pb	ug/g	< 270	d	< 200	d	< 230	d	< 210	d	< 250	d	< 230	d	21.7	
Ni	ug/g	2400		630		1100		1300		790		6800		381	
Ag	ug/g	< 32	d	< 23	d	< 27	d	< 25	d	< 30	d	< 28	d	1.3	U
Anions:															
NO3- (IC)	ug/g	< 20		< 20		< 20		< 20		< 20		< 20			
o-PO4-3 (IC)	ug/g	< 0.1		< 0.1		< 0.1		26		36		47			
Cl- (IC)	ug/g	< 20		< 20		< 20		< 20		< 20		< 20			
SO4-2 (IC)	ug/g	93		63		361		65		1178		801			
F-	ug/g	< 10		< 10		< 10		< 10		< 10		< 10			
Reactive Cyanide	mg/Kg	NR		NR		NR		NR		NR		NR		< 0.05	
Reactive Sulfide	mg/Kg	NR		NR		NR		NR		NR		NR		< 10	
Physical:															
pH		8.5		8.3		9.3		8.1		8.3		8.4		8.26	
Density	g/mL	1.87		1.53		2.34		1.65		2.15		1.56			
Moisture	%	17.3		19.2		39		5		44.8		27.1			
Flash Point	oF	> 145		> 145		> 145		> 145		> 145		> 145		> 212	
Paint Filter	mL	NR		NR		NR		NR		NR		NR		0	
Organics:															
Oil/Grease	%	< 0.1		< 0.1		< 0.1		< 0.1		< 0.1		< 0.1			
TOC	ug/g	139		241		142		117		741		137			
VOA:															
Acetone	ug/Kg									25	J	35	J		
2-Butanone	ug/Kg														
Methylene chloride	ug/Kg					25	J								
BNA:															
Diethyl phthalate	ug/Kg	180	JB					140	JB						
Di-n-butylphthalate	ug/Kg	640	JB	260	JB	1100	JB	520	JB	870	JB	1900	B		

Martin Marietta Energy Systems, Inc.

Summary of Analytical Results for TSCA Liquid Burn Ash Generated Between October 29, 1991 and December 14, 1993

Customer Sample Number:		TSCA-9255		TSCA-9259		TSCA-9251		TSCA-9256		TSCA-9261		TSCA-9262		TSCA-10870	
Drum Number:		20682-1		20682-2		20680-2		20684-2		44158-1		44160-1		Composite	
Laboratory Sample # for Major Analyses:		940517-016		940517-019		940518-009		940518-012		940518-015		940518-018		46124 (SWRI)	
PARAMETER:	U/M														
BNA:															
bis(2-Ethylhexyl) phthalate	ug/Kg	1700	JB	100	JB	190	JB	210	JB	130	JB	350	JB		
Dimethyl phthalate	ug/Kg														
Di-n-octylphthalate	ug/Kg	33	JB												
Butylbenzyl phthalate	ug/Kg							52	JB						
Total Organic Halides (TOX):	ug/g									80				< 25	

Martin Marietta Energy Systems, Inc.

Comparison of Radiochemical Analysis of TSCA Liquid Burn Ash to Envirocare of Utah, INC. NRC License Limits

Customer Sample Number:		TSCA-9257			TSCA-9258			TSCA-9254			TSCA-9260			TSCA-9250			TSCA-9252			TSCA-9253				
Drum Number:		40819-1			20680-1			20667-2			20691-1			20667-1			20684-1			20691-2				
Laboratory Sample # for Major Analyses:		940510-102			940513-018			940513-025			940513-043			940513-060			940517-010			940517-013				
PARAMETER:	U/M		(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)		NRC Limits	U/M
Tc-99	pCi/g	11.1	2.9		50.3	6.3		47.7	6.1		10.8	4.9		75	6.8		14.9	2.7		9.92	2.6		1.90E+05	pCi/g
Np-237	pCi/g	0	8.1		13.8	16		0	16		0	16		8.7	12		0.96	3.9		4.23	6		2.00E+03	pCi/g
Pu-238	pCi/g	-2.22	2.5		-4.44	5		-3.2	3.9		-3.25	4		-2.47	4.4		0	8		0	8.5+		1.00E+04	pCi/g
Pu-239	pCi/g	-2.22	2.5		-2.66	4.2		-2.4	4.2		-3.25	4		-1.65	2.7		0	8		0	8.5		9.90E+03	pCi/g
Th-230	pCi/g	4.99	3.0		3.07	3.8		8.97	5.3		2.11	3.1		3.56	3.8		0.995	2		0.706	2		1.50E+04	pCi/g
Th-232	pCi/g	0	1.3		0	2.7		0.69	1.4		0	2.4		2.84	2.8		0.663	0.94		0.706	1		6.80E+02	pCi/g
U-234	pCi/g	235	13		789	56	J	611	34		55.8	9.1		699	35		74.6	6.6		240	14		3.70E+04	pCi/g
U-235	pCi/g	8.61	0.92		35.6	8.4		22.4	4.3		6.24	7.2	E	25.8	2		2.84	6.1	E	5.09	3.3		7.70E+02	pCi/g
U-238	pCi/g	402	17	*	1080	65	J	870	40		87	11		772	37		113	8.1		319	16		2.80E+04	pCi/g
Cs-137	pCi/g	0.363	0.84	E	-0.177	4.5	F	3.57	3.2		-2.91	4.4	F	0.52	1.7	E	2.68	5.8	E	0.824	2.9	E	5.60E+02	pCi/g
K-40	pCi/g	NR			NR			NR			NR			NR			NR			NR			1.00E+04	pCi/g
Ra-226	pCi/g	NR			NR			NR			NR			NR			NR			NR			2.00E+04	pCi/g
Cd-109	pCi/g	NR			NR			NR			NR			NR			NR			NR			4.60E+04	pCi/g
Am-241	pCi/g	NR			NR			NR			NR			NR			NR			NR			2.30E+02	pCi/g
Th-234	pCi/g	265	21	H	841	60	H	575	80	H	51.7	41	H	696	160		93.4	36	H	119	26	H		
Mo-99	pCi/g	NR			NR			NR			NR			NR			NR			NR				
Pb-212	pCi/g	NR			NR			NR			NR			NR			NR			NR				
Ac-228	pCi/g	NR			NR			NR			NR			NR			NR			NR				
Nb-95	pCi/g	NR			NR			NR			NR			NR			NR			NR				
Th-228	pCi/g	2.3	2.2		0	2.7		0.69	24		0	2		0	2		-0.332	1.1		0	1.4			

Martin Marietta Energy Systems, Inc.

Comparison of Radiochemical Analysis of TSCA Liquid Burn Ash to Envirocare of Utah, INC. NRC License Limits

Customer Sample #:		TSCA-9255			TSCA-9259			TSCA-9251			TSCA-9256			TSCA-9261			TSCA-9262			TSCA-10870				
Drum #:		20682-1			20682-2			20680-2			20684-2			44158-1			44160-1			Composite				
Laboratory Sample # for Major Analyses:		940517-016			940517-019			940518-009			940518-012			940518-015			940518-018			46124 (SWRI)				
PARAMETER:	U/M		(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)			(+/-)		NRC Limits	U/M
Tc-99	pCi/g	16.1	2.7		8.09	2.4		106	4.7		11.4	2.7		93.1	4		96.3	4.5		13.8			1.90E+05	pCi/g
Np-237	pCi/g	0	6.9		0	7.1		0	7.6+		2.33	4.7		0	6.3		4.47	6.3		6.92			2.00E+03	pCi/g
Pu-238	pCi/g	2.24	4.5		0	8		0	8		0	8.7		0	7.1		0	8.4		< 0.015			1.00E+04	pCi/g
Pu-239	pCi/g	0	7.8		0	8		0	8		0	8.7		0	7.1		0	8.4		0.046			9.90E+03	pCi/g
Th-230	pCi/g	0.322	1.4		3.32	2.7		2	2.3		0	1.8+		3.81	2.6		3.84	2.9		1.68	0.1		1.50E+04	pCi/g
Th-232	pCi/g	0	1.1		0	1.2		0.334	0.67		0	1.3		0.293	0.59		0	1.2		11.4	0.6		6.80E+02	pCi/g
U-234	pCi/g	188	10		73.3	6.7		248	12		131	9.9		70.1	6.5		6.5	7.3		116	15		3.70E+04	pCi/g
U-235	pCi/g	2.38	6	F	16.6	3.9	G	3.96	1.4		4.13	3.2		8.01	4.1		15.3	4		88.9	46		7.70E+02	pCi/g
U-238	pCi/g	248	12		87.6	7.3		315	13		202	12		102	7.8		88.4	8		188	98		2.80E+04	pCi/g
Cs-137	pCi/g	-1.49	6.3	F	0.477	2.7	E	-1.17	1.5	F	0.133	2.7	E	2.58	5.3	E	-0.847	2.3	F	ND			5.60E+02	pCi/g
K-40	pCi/g	NR			NR			NR			NR			NR			NR			2.87	0.19		1.00E+04	pCi/g
Ra-226	pCi/g	NR			NR			NR			NR			NR			NR			1.96	0.14		2.00E+04	pCi/g
Cd-109	pCi/g	NR			NR			NR			NR			NR			NR			17.7	0.6		4.60E+04	pCi/g
Am-241	pCi/g	NR			NR			NR			NR			NR			NR			7.34	0.19		2.30E+02	pCi/g
Th-234	pCi/g	69.8	35	H	-39.2	21	HG	-1.75	33	HF	55.9	24	H	132	35	H	197	25	H	95.8	0.08			
Mo-99	pCi/g	NR			NR			NR			NR			NR			NR			1.91	0.23			
Pb-212	pCi/g	NR			NR			NR			NR			NR			NR			1.76	0.03			
Ac-228	pCi/g	NR			NR			NR			NR			NR			NR			1.1	0.13			
Nb-95	pCi/g	NR			NR			NR			NR			NR			NR			6.71	0.05			
Th-228	pCi/g	-0.322	1.1		-0.664	1.5		-0.667	1.5		-0.726	1.6		-0.586	1.3		-0.349	1.2		0.027	0.014			

hazardous or radiological constituents not included in Tables A and B are introduced during FY 1996, we will notify you. Additional characterization data for residuals resulting from coburning of solids with the liquid wastes is expected to be available in the summer of 1996 and will be provided to you when available.

Table C contains estimated amounts of liquid waste to be received from PGDP and the corresponding estimated prorated share of TSCA Incinerator residuals which would be returned to PGDP if Oak Ridge's current method of direct disposal were to become unavailable. The quantity estimates for residuals generation and prorating of residuals are based on historical TSCA Incinerator operational information for "liquids only" burns. A detailed explanation of the prorating calculation is included in Table C. Although the information provided is based on the FY 1996 TSCA Incinerator Burn Plan, the same method would be used to prorate residues from treatment of PGDP liquids in future years.

The information provided in this letter applies only to the residuals generated from treatment of PGDP's liquid wastes in the TSCA Incinerator and does not apply to any residues that might be generated from the treatment of PGDP solids wastes in the future. The prorating assumptions for solids must be developed in the future based on operational experience gained through processing ORR solids. Quantity estimates and additional waste characterization information will be provided to address prorating of residues from processing solid waste as that information becomes available. This information can be included in a future version of the PGDP residuals management contingency plan.

Based on this information, please verify whether the residuals from treatment of the PGDP liquid waste scheduled for FY 1996 could be returned to the PGDP site for storage, if required as a contingency, under the terms of PGDP's RCRA storage permit and modifications discussed above. As discussed in the teleconference of January 3, 1996, return of the residuals would not take place until FY 1997. In particular, please verify whether the 1.6 drums of residuals resulting from the waste to be received and burned in January 1996 could be returned sometime in FY 1997, if necessary, under the terms of the storage permit and modifications discussed above.

If you have questions or need additional information, please call Joy Sager of my staff at (423) 576-0850.

Sincerely,

Larry L. Radcliffe, Director
Waste Management and Technology
Development Division

Enclosures

(cc's on page 3)