Technical Description and Characterization Summary
LOT # 1

Lot 1 {Low Enriched Metal}								
Note: Actual analytical data on enriched Billets at Portsmouth is given in Billet_Data.								
	Uranium Products & Services Catalog				Data from Billet Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum	822			ug/g U	**ppm**	822.46	681	931
Antimony								
Arsenic								
Barium				ug/g U	**ppm**	19	19	19
Beryllium					**ppm**	1	1	1
Bismuth				ug/g U				
Equiv. Boron Content				ug/g U	**ppm**	0.14	0.14	0.2
Bromine								
Carbon				ug/g U	**ppm**	501.35	345	723
Cadmium				ug/g U	**ppm**	0.19	0.19	0.19
Calcium & Mg				ug/g U				
Calcium				ug/g U				
Cesium								
Chloride				ug/g U				
Chromium				ug/g U	**ppm**	17.08	9	28
Cobalt				ug/g U				
Copper				ug/g U	**ppm**	20.45	11	64
Fluoride				ug/g U				
Hydrogen				ug/g U	**ppm**	0.12	0.02	0.2
Iron	352			ug/g U	**ppm**	351.83	315	426
Fe + Al				ug/g U	**ppm**	1212.96	1045.14	1310.14
Lead				ug/g U				
Lithium				mg/kg				
Magnesium				mg/kg U	**ppm**	3	3	3
Manganese				ug/g U	**ppm**	5.48	2	9
Mercury				ug/g U				
Molybdenum				ug/g U				
Neptunium-237				ug/Kg U				
Nickel				ug/g U	**ppm**	53.85	26	95
Niobium								
Nitrogen				ug/g U	**ppm**	10.6	5	26
Phosphorous				ug/g U				
Plutonium (Total)				ug/Kg U				
Plutonium-238				pCi/g U				
Plutonium-239/240				pCi/g U				
Plutonium-241				pCi/g				

Lot 1 {Low Enriched Metal}								
Note: Actual analytical data on enriched Billets at Portsmouth is given in Billet_Data.								
	Uranium Products & Services Catalog				Data from Billet Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Plutonium-242				pCi/g U				
Plutonium-244				pCi/g U				
Potassium				mg/kg U				
Ruthenium				pCi/g U				
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon				ug/g U	**ppm**	91.88	60	132
Silver								
Sodium				ug/g U				
Strontium				ug/g U				
Sulfate								
Tantalum				ug/g U				
Technetium-99	Reported			pCi/g U				
Thorium				ug/g U				
Thorium-228				pCi/g U				
Thorium-230				pCi/g U				
Thorium-232				pCi/g U				
Tin				ug/g U				
Titanium				ug/g U				
Tungsten				ug/g U				
TOC				ug/g U				
Total Uranium				ug/g U				
Total Uranium Alpha								
Uranium-232				pCi/g U				
Uranium-233/234				pCi/g U				
Uranium-233				ug/kg				
Uranium-234				mg/kg				
Uranium-235				mg/kg	**wt %/g**	1.25	1.24	1.26
Uranium-235				pCi/g U				
Uranium-236	460	400	480	pCi/g U	**wt %/g**	0.05	0.04	0.05
Uranium-238				mg/kg				
Vanadium				ug/g U				
Zinc				ug/g U				
Zirconium				ug/g U	**ppm**	19	19	19

Lot 1 {Low Enriched Metal}

Note: Actual analytical data on enriched Billets at Portsmouth is given in Billet_Data.

	Uranium Products & Services Catalog				Data from Billet Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture				% bt wt.				
ZrNb95				uCi/ug U				
Gamma								
Trans Alpha								
Americium-241				pCi/g U				

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog October 2002

Data from LPP-0051 Analytical Data Drafts and working Papers 3/23/06

Converdyn Data Needed for UF6 processing

Lot 2 {Low Enriched UO3}

Note: Actual analytical data on enriched UO3 oxide at Portsmouth is given in LLP-0051. The data is from multiple sources.

	Uranium Products & Services Catalog				Billet_Data				Bechtel_Jacobs_Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum									**ppm**	54.18	2.7	133
Antimony									**ppm**	U	U	U
Arsenic									**ppm**	U	U	U
Barium									**ppm**	1.02	0.09	2.4
Beryllium									**ppm**	U	U	U
Bismuth									**ppm**	U	U	U
Equiv. Boron Content					**ppm**	0.09	0.02	0.35	**ppm**	3.25	3.2	3.3
Bromine												
Carbon												
Cadmium					**ppm**	0.26	0.04	0.37	**ppm**	U	U	U
Calcium & Mg												
Calcium									**ppm**	175.42	7.1	429
Cesium									**ppm**	U	U	U
Chloride									**ppm**	6.53	5.5	8.3
Chromium					**ppm**	15.53	5.09	40.13	**ppm**	87.98	34.2	171
Cobalt									**ppm**	0.78	0.78	0.78
Copper									**ppm**	4.05	3.9	4.2
Fluoride									**ppm**	4.1	4.1	4.1
Hydrogen												
Iron					**ppm**	90.13	20.47	239.8	**ppm**	468	140	979
Fe + Al												
Lead									**ppm**	4.15	4.1	4.2
Lead 212									**pCi/g U**	508	440	610
Lithium									**ppm**	0.26	0.26	0.26
Magnesium									**ppm**	69.35	68.8	69.9
Manganese									**ppm**	9.04	3	18.4
Mercury									**ppm**	U	U	U
Molybdenum									**ppm**	0.69	0.3	1.3
Neptunium-237												
Nickel					**ppm**	9.43	3.29	22.59	**ppm**	47.02	18.1	90
Niobium									**ppm**	U	U	U
Nitrogen									**ppm**	0.19	0.19	0.19
Phosphorous									**ppm**	183	155	206
Plutonium (Total)												

Lot 2 {Low Enriched UO3}

Note: Actual analytical data on enriched UO3 oxide at Portsmouth is given in LLP-0051. The data is from multiple sources.

	Uranium Products & Services Catalog				Billet_Data				Bechtel_Jacobs_Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Plutonium-238												
Plutonium-239/240												
Plutonium-241												
Plutonium-242												
Plutonium-244												
Potassium									**ppm**	639.47	41.4	946
Ruthenium					**uCi/lb U**	0.56	0.53	0.57	**ppm**	U	U	U
Radium 224									**pCi/g U**	1,233.3	1,100	1,300
Radium 226									**pCi/g U**	296,000	290,000	310,000
Samarium									**ppm**	U	U	U
Selenium									**ppm**	U	U	U
Silicon					**ppm**				**ppm**	17.12	13.9	22.2
Silver									**ppm**	U	U	U
Sodium					**ppm**	32.39	10.26	104.9	**ppm**	223.84	70	463
Strontium												
Sulfate									**ppm**	15.03	6.8	22.2
Tantalum									**ppm**	U	U	U
Technetium-99									**pCi/g U**	168,000	150,000	180,000
Thallium 208									**pCi/g U**	198	160	230
Thorium	22.3			ug/g U	**ppm**	22.31	20.54	28.81	**ppm**	5.45	5.4	5.5
Thorium-228												
Thorium-230												
Thorium-232												
Thorium 234 Gamma									**pCi/g U**	230,000	220,000	240,000
Tin												
Titanium									**ppm**	3.0	1.0	4.2
Tungsten									**ppm**	U	U	U
TOC									**ppm**	12.42	5.9	25.8
Total Uranium									**ug/g U**	750,000	720,000	790,000
Total Uranium Alpha									**pCi/g U**	748,000	730,000	780,000
Uranium TIMS									**ug/g U**	822,164	818,420	825,510
Uranium-232									**pCi/g U**	0.00044	0.00004	0.0006

Lot 2 {Low Enriched UO3}

Note: Actual analytical data on enriched UO3 oxide at Portsmouth is given in LLP-0051. The data is from multiple sources.

	Uranium Products & Services Catalog				Billet_Data				Bechtel_Jacobs_Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Uranium-233/234									**pCi/g U**	350,000	330,000	360,000
Uranium-233												
Uranium-233 TIMS									**w %**	U	U	U
Uranium-234	80	50	110	mg/kg	**wt %/g**	0.01	0.01	0.01				
Uranium 234 Alpha									**pCi/g U**	404,000	400,000	410,000
Uranium 234 Gamma									**pCi/g U**	468,000	410,000	540,000
Uranium-234 TIMS									**w %**	0.0072	0.006	0.008
Uranium 235 Alpha									**pCi/g U**	33,600	30,000	43,000
Uranium 235 Gamma									**pCi/g U**	17,800	17,000	19,000
Uranium-235									**wt %/g**	3.6	3.6	3.7
Uranium-235					**wt %/g**	0.89	0.85	0.95	**pCi/g U**	1,750	840	4,300
Uranium-235 TIMS									**w %**	0.9294	0.921	0.941
Uranium 236 Aplha	690	650	730	pCi/g U					**pCi/g U**	28,600	25,000	32,000
Uranium-236					**wt %/g**	0.07	0.07	0.07	**pCi/g U**	58,000	56,000	60,000
Uranium-236 TIMS									**w %**	0.0718	0.071	0.075
Uranium 238 Alpha									**pCi/g U**	282,000	270,000	300,000
Uranium 238 Gamma									**pCi/g U**	230,000	220,000	240,000
Uranium-238					**wt %/g**	99.04	98.98	99.08				
Uranium-238 TIMS									**w %**	98.991	98.977	99.001
Vanadium									**ppm**	0.59	0.58	0.6
Zinc									**ppm**	20.5	19.6	21.4
Zirconium									**ppm**	U	U	U
Total Impurities												
Plutonium (ppbU)					**ppm**	0.00	0.00	0.01	**ug/kg U**	2.37	1.04	4.8
Neptunium (ppbU)					**ppm**	1.5	1.22	2.13	**ug/kg U**	1890	1160	2750
Pu + Np (Bq/g)												
Alpha Activity												
Moisture									%	0.02	0.01	0.03
ZrNb95					**uCi/lb U**	1.77	1.68	1.86				
Protactinium 234m									**pCi/g U**	320,000	290,000	340,000
Gamma %					**% ANU***	112.00	109.00	115.00				
Trans Alpha					**wt %/g**	0.18	0.12	0.27				
Americium-241												

Lot 2 {Low Enriched UO3}

Note: Actual analytical data on enriched UO3 oxide at Portsmouth is given in LLP-0051. The data is from multiple sources.

	Uranium Products & Services Catalog				Billet_Data				Bechtel_Jacobs_Data			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High	Units	Average	Low	High

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog October 2002

Data from LPP-0051 Analytical Data Drafts and working Papers 3/23/06

Converdyn Data Needed for UF6 processing

Data from Table 1 Haselwood Independent Sample Analysis Report 11-03

Bechtel Jacobs data 2003

Bechtel Jacobs Y-12 TIMS data 2003

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 3A {Normal UO2} Virgin material.

Note: Virgin material. No transuranics. No analytical data available.

	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chloride								
Chromium								
Cobalt								
Copper								
Fluoride								
Hydrogen								
Iron								
Fe + Al								
Lead								
Lead 212								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium-237								
Nickel								

Lot 3A {Normal UO2} Virgin material.								
Note: Virgin material. No transuranics. No analytical data available.								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)								
Plutonium-238								
Plutonium-239/240								
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfate								
Tantalum								
Technetium-99								
Thallium 208								
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Thorium 234 Gamma								
Tin								
Titanium								

Lot 3A {Normal UO2} Virgin material.								
Note: Virgin material. No transuranics. No analytical data available.								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Tungsten								
TOC								
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-233 TIMS								
Uranium-234								
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235								
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236								
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium								
Zinc								
Zirconium								
Total Impurities								
Plutonium (ppbU)								

Lot 3A {Normal UO2} Virgin material.

Note: Virgin material. No transuranics. No analytical data available.

	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Protactinium 234m								
Gamma %								
Trans Alpha								
Americium-241								

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

No analytical data available.

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Technical Description and Characterization Summary
LOT # 3B

Lot 3B {Normal UO2}								
Note: Virgin material. Transuranics detected for U236 only. No analytical data available.								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chloride								
Chromium								
Cobalt								
Copper								
Fluoride								
Hydrogen								
Iron								
Fe + Al								
Lead								
Lead 212								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium-237								
Nickel								

Lot 3B {Normal UO2}								
Note: Virgin material. Transuranics detected for U236 only. No analytical data available.								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)								
Plutonium-238								
Plutonium-239/240								
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfate								
Tantalum								
Technetium-99								
Thallium 208								
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Thorium 234 Gamma								
Tin								
Titanium								

Lot 3B {Normal UO2}								
Note: Virgin material. Transuranics detected for U236 only. No analytical data available.								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Tungsten								
TOC								
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-233 TIMS								
Uranium-234								
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235								
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236								
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium								
Zinc								
Zirconium								
Total Impurities								
Plutonium (ppbU)								

Lot 3B {Normal UO2}								
Note: Virgin material. Transuranics detected for U236 only. No analytical data available.								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Protactinium 234m								
Gamma %								
Trans Alpha								
Americium-241								

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002

No analytical data available.

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 3C {Low Enriched UO2}								
Note: Available information indicates that material is not expected to contain transuranics. Analytical data limited by sample size (between 9-26 samples / analyte).								
	Uranium Products & Services Catalog				Billet_Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	57.68	10	144
Antimony								
Arsenic								
Barium					**ppm**	1.79	0.1	10
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon					**ppm**	58.63	10	134
Cadmium					**ppm**	1.53	0.5	2
Calcium & Mg								
Calcium								
Cesium								
Chloride					**ppm**	10	10	10
Chromium					**ppm**	22.41	5	70
Cobalt					**ppm**	0.87	0.03	6
Copper					**ppm**	15.55	1	40
Fluoride					**ppm**	5.63	5	10
Hydrogen								
Iron					**ppm**	187.69	5	1000
Fe + Al								
Lead					**ppm**	9.18	1	10
Lead 212								
Lithium								
Magnesium								
Manganese					**ppm**	10.27	3	20
Mercury								
Molybdenum					**ppm**	28.7	2	180
Neptunium-237								
Nickel					**ppm**	50.22	50	52
Niobium								
Nitrogen					**ppm**	21.29	10	84
Phosphorous					**ppm**	33.09	2	100
Plutonium (Total)								

Lot 3C {Low Enriched UO2}								
Note: Available information indicates that material is not expected to contain transuranics. Analytical data limited by sample size (between 9-26 samples / analyte).								
	Uranium Products & Services Catalog				Billet_Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Plutonium-238								
Plutonium-239/240								
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	105.56	10	200
Silver								
Sodium					**ppm**	92	20	100
Strontium								
Sulfate								
Tantalum					**ppm**	4.68	0.5	40
Technetium-99								
Thallium 208								
Thorium	23.14			**ug/g U**	**ppm**	23.14	0.3	100
Thorium-228								
Thorium-230								
Thorium-232								
Thorium 234 Gamma								
Tin								
Titanium								
Tungsten					**ppm**	3.97	0.16	10
TOC								
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232								

Lot 3C {Low Enriched UO2}								
Note: Available information indicates that material is not expected to contain transuranics. Analytical data limited by sample size (between 9-26 samples / analyte).								
	Uranium Products & Services Catalog				Billet_Data			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Uranium-233/234								
Uranium-233								
Uranium-233 TIMS								
Uranium-234	340	80	74	**ppm**	**wt %/g**	0.035	0.008	0.074
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235								
Uranium-235					**wt %/g**	4.997	1.755	9.97
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	310	10	820	**ppm**	**wt %/g**	0.031	0.001	0.082
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238					**wt %/g**	94.94	89.87	98.22
Uranium-238 TIMS								
Vanadium								
Zinc					**ppm**	23.33	20	50
Zirconium								
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Protactinium 234m								
Gamma %								
Trans Alpha								
Americium-241								

Lot 3C {Low Enriched UO2}								
Note: Available information indicates that material is not expected to contain transuranics. Analytical data limited by sample size (between 9-26 samples / analyte).								
	Uranium Products & Services Catalog				Billet_Data			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog October 2002

Data from LPP-0051 Analytical Data Drafts and working Papers 3/23/06

Converdyn Data Needed for UF6 processing

Data from Table 1 Haselwood Independent Sample Analysis Report 11-03

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Technical Description and Characterization Summary
LOT # 4

Lot 4 {Depleted UF4}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #4.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7		
Antimony								
Arsenic					**ppm**	0.1		
Barium					**ppm**	0.1		
Beryllium					**ppm**	1		
Bismuth								
Equiv. Boron Content					**ppm**	0.1		
Bromine								
Carbon								
Cadmium					**ppm**	0.19		
Calcium & Mg								
Calcium					**ppm**	0.6		
Cesium								
Chloride								
Chromium					**ppm**	1		
Cobalt								
Copper								
Fluoride					**ppm**	137		
Hydrogen								
Iron					**ppm**	164		
Fe + Al								
Lead					**ppm**	0.1		
Lead 212								
Lithium								
Magnesium					**ppm**	3		
Manganese					**ppm**	7		
Mercury								
Molybdenum					**ppm**	1		
Neptunium-237					**ppm**	6.3E-03		
Nickel					**ppm**	62.6		
Niobium								
Nitrogen								

Lot 4 {Depleted UF4}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #4.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Phosphorous					**ppm**	8.6		
Plutonium (Total)								
Plutonium-238					**ppm**	1.4E-07		
Plutonium-239/240					**ppm**	6.0E-05		
Plutonium-241					**ppm**	2.1E-07		
Plutonium-242								
Plutonium-244								
Potassium					**ppm**	0.1		
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	168		
Silver					**ppm**	0.1		
Sodium					**ppm**	0.1		
Strontium								
Sulfate								
Tantalum								
Technetium-99	9	4	30	**ug/g U**	**ppb**	4		
Thallium 208								
Thorium					**ppm**	0.1		
Thorium-228								
Thorium-230								
Thorium-231					**ppm**	8.2E-09		
Thorium-232					**ppm**	0.00		
Thorium-234					**ppm**	1.5E-05		
Thorium 234 Gamma								
Tin								
Titanium					**ppm**	3		
Tungsten								
TOC								

Lot 4 {Depleted UF4}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #4.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232					**ppm**	0		
Uranium-233/234					**ppm**	0		
Uranium-233								
Uranium-233 TIMS								
Uranium-234	7.87	0.057	26.2	**ppm**	**ppm**	30		
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235					**ppm**	1,960		
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	24.14	4.36	64.4	**ppm**	**ppm**	127		
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium					**ppm**	1		
Zinc								
Zirconium					**ppm**	19		
Total Impurities								
Halides (Cl+Br+I)					**ppm**	11.1		
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)					**Bq/kg U**	1.20E+03		
Alpha Activity								

Lot 4 {Depleted UF4}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #4.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Moisture								
ZrNb95								
Protactinium 234m								
Gamma Fission Product					**Mev Bq/kg U**	3.70E+03		
Gamma %								
Trans Alpha								
Americium-241					**ppm**	6.3E-06		

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1) Report: "Y-12 Lab Analysis of 1.25% Derbies and Oxide"

Converdyn Data Needed for UF6 processing

Denotes an estimated value in USM OreTM

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 5 {Depleted UF4 in T-Hoppers}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #5.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7		
Antimony								
Arsenic					**ppm**	0.1		
Barium					**ppm**	0.1		
Beryllium					**ppm**	1		
Bismuth								
Equiv. Boron Content					**ppm**	0.1		
Bromine								
Carbon								
Cadmium					**ppm**	0.19		
Calcium & Mg								
Calcium					**ppm**	0.6		
Cesium								
Chloride								
Chromium					**ppm**	1		
Cobalt								
Copper								
Fluoride					**ppm**	137		
Hydrogen								
Iron					**ppm**	164		
Fe + Al								
Lead					**ppm**	0.1		
Lead 212								
Lithium								
Magnesium					**ppm**	3		
Manganese					**ppm**	7		
Mercury								
Molybdenum					**ppm**	1		
Neptunium-237					**ppm**	6.3E-3		
Nickel					**ppm**	62.6		
Niobium								
Nitrogen								

Lot 5 {Depleted UF4 in T-Hoppers}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #5.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Phosphorous					**ppm**	8.6		
Plutonium (Total)								
Plutonium-238					**ppm**	1.4E-07		
Plutonium-239/240					**ppm**	6.0E-05		
Plutonium-241					**ppm**	2.1E-07		
Plutonium-242								
Plutonium-244								
Potassium					**ppm**	0.1		
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	168		
Silver					**ppm**	0.1		
Sodium					**ppm**	0.1		
Strontium								
Sulfate								
Tantalum								
Technetium-99	9	4	30	**ug/g U**	**ppb**	4		
Thallium 208								
Thorium					**ppm**	0.1		
Thorium-228								
Thorium-230								
Thorium-231					**ppm**	8.2E-09		
Thorium-232					**ppm**	0.00		
Thorium-234					**ppm**	1.5E-05		
Thorium 234 Gamma								
Tin								
Titanium					**ppm**	3		
Tungsten								
TOC								

Lot 5 {Depleted UF4 in T-Hoppers}

Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.

Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #5.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232					**ppm**	0		
Uranium-233/234					**ppm**	0		
Uranium-233								
Uranium-233 TIMS								
Uranium-234	7.87	0.057	26.2	**ppm**	**ppm**	30		
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235					**ppm**	1,960		
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	24.14	4.36	64.4	**ppm**	**ppm**	127		
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium					**ppm**	1		
Zinc								
Zirconium					**ppm**	19		
Total Impurities								
Halides (Cl+Br+I)					**ppm**	11.1		
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)					**Bq/kg U**	1.2E+03		
Alpha Activity								

Lot 5 {Depleted UF4 in T-Hoppers}

Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4. No actual data on the depleted UF4 at Portsmouth.

Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #5.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Moisture								
ZrNb95								
Protactinium 234m								
Gamma Fission Product					**Mev Bq/kg U**	3.7E+03		
Gamma %								
Trans Alpha								
Americium-241					**ppm**	6.3E-06		

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1) **Report: "Y-12 Lab Analysis of 1.25% Derbies and Oxide"**

Converdyn Data Needed for UF6 processing

Denotes an estimated value in USM OreTM

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 6 {Depleted Metal Cores}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #6.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7		
Antimony								
Arsenic					**ppm**	0.1		
Barium					**ppm**	0.1		
Beryllium					**ppm**	1		
Bismuth								
Equiv. Boron Content					**ppm**	0.1		
Bromine								
Carbon								
Cadmium					**ppm**	0.19		
Calcium & Mg								
Calcium					**ppm**	0.6		
Cesium								
Chloride								
Chromium					**ppm**	1		
Cobalt								
Copper								
Fluoride					**ppm**	137		
Hydrogen								
Iron					**ppm**	164		
Fe + Al								
Lead					**ppm**	0.1		
Lead 212								
Lithium								
Magnesium					**ppm**	3		
Manganese					**ppm**	7		
Mercury								
Molybdenum					**ppm**	1		
Neptunium-237					**ppm**	6.3E-3		
Nickel					**ppm**	62.6		
Niobium								
Nitrogen								

Lot 6 {Depleted Metal Cores}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #6.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Phosphorous					**ppm**	8.6		
Plutonium (Total)								
Plutonium-238					**ppm**	1.4E-07		
Plutonium-239/240					**ppm**	6.0E-05		
Plutonium-241					**ppm**	2.1E-07		
Plutonium-242								
Plutonium-244								
Potassium					**ppm**	0.1		
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	168		
Silver					**ppm**	0.1		
Sodium					**ppm**	0.1		
Strontium								
Sulfate								
Tantalum								
Technetium-99	9	4	30	**ug/g U**	**ppb**	4		
Thallium 208								
Thorium					**ppm**	0.1		
Thorium-228								
Thorium-230								
Thorium-231					**ppm**	8.2E-09		
Thorium-232					**ppm**	0.00		
Thorium-234					**ppm**	1.5E-05		
Thorium 234 Gamma								
Tin								
Titanium					**ppm**	3		
Tungsten								
TOC								

Lot 6 {Depleted Metal Cores}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #6.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232					**ppm**	0		
Uranium-233/234					**ppm**	0		
Uranium-233								
Uranium-233 TIMS								
Uranium-234	7.87	0.057	26.2	**ppm**	**ppm**	30		
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235					**ppm**	1,960		
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	24.14	4.36	64.4	**ppm**	**ppm**	127		
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium					**ppm**	1		
Zinc								
Zirconium					**ppm**	19		
Total Impurities								
Halides (Cl+Br+I)					**ppm**	11.1		
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)					**Bq/kg U**	1.2E+03		
Alpha Activity								

Lot 6 {Depleted Metal Cores}

Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.

Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #6.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Moisture								
ZrNb95								
Protactinium 234m								
Gamma Fission Product					**Mev Bq/kg U**	3.7E+03		
Gamma %								
Trans Alpha								
Americium-241					**ppm**	6.3E-06		

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1)
Report: "Y-12 Lab Analysis of 1.25% Derbies and Oxide"

Converdyn Data Needed for UF6 processing

Denotes an estimated value in USM OreTM

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Technical Description and Characterization Summary
LOT # 7

Lot 7 {Depleted Metal Ingots}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #7.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7		
Antimony								
Arsenic					**ppm**	0.1		
Barium					**ppm**	0.1		
Beryllium					**ppm**	1		
Bismuth								
Equiv. Boron Content					**ppm**	0.1		
Bromine								
Carbon								
Cadmium					**ppm**	0.19		
Calcium & Mg								
Calcium					**ppm**	0.6		
Cesium								
Chloride								
Chromium					**ppm**	1		
Cobalt								
Copper								
Fluoride					**ppm**	137		
Hydrogen								
Iron					**ppm**	164		
Fe + Al								
Lead					**ppm**	0.1		
Lead 212								
Lithium								
Magnesium					**ppm**	3		
Manganese					**ppm**	7		
Mercury								
Molybdenum					**ppm**	1		
Neptunium-237					**ppm**	6.3E-3		
Nickel					**ppm**	62.6		
Niobium								
Nitrogen								

Lot 7 {Depleted Metal Ingots}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #7.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Phosphorous					**ppm**	8.6		
Plutonium (Total)								
Plutonium-238					**ppm**	1.4E-07		
Plutonium-239/240					**ppm**	6.0E-05		
Plutonium-241					**ppm**	2.1E-07		
Plutonium-242								
Plutonium-244								
Potassium					**ppm**	0.1		
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	168		
Silver					**ppm**	0.1		
Sodium					**ppm**	0.1		
Strontium								
Sulfate								
Tantalum								
Technetium-99	9	4	30	**ug/g U**	**ppb**	4		
Thallium 208								
Thorium					**ppm**	0.1		
Thorium-228								
Thorium-230								
Thorium-231					**ppm**	8.2E-09		
Thorium-232					**ppm**	0.00		
Thorium-234					**ppm**	1.5E-05		
Thorium 234 Gamma								
Tin								
Titanium					**ppm**	3		
Tungsten								

Lot 7 {Depleted Metal Ingots}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #7.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
TOC								
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232					**ppm**	0		
Uranium-233/234					**ppm**	0		
Uranium-233								
Uranium-233 TIMS								
Uranium-234	7.87	0.057	26.2	**ppm**	**ppm**	30		
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235					**ppm**	1,960		
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	24.14	4.36	64.4	**ppm**	**ppm**	127		
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium					**ppm**	1		
Zinc								
Zirconium					**ppm**	19		
Total Impurities								
Halides (Cl+Br+I)					**ppm**	11.1		
Plutonium (ppbU)								
Neptunium (ppbU)								

Lot 7 {Depleted Metal Ingots}

Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.

Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #7.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Pu + Np (Bq/g)					**Bq/kg U**	1.2E+03		
Alpha Activity								
Moisture								
ZrNb95								
Protactinium 234m								
Gamma Fission Product					**Mev Bq/kg U**	3.7E+03		
Gamma %								
Trans Alpha								
Americium-241					**ppm**	6.3E-06		

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1)
Report: "Y-12 Lab Analysis of 1.25% Derbies and Oxide"

Converdyn Data Needed for UF6 processing

Denotes an estimated value in USM OreTM

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 8 {Depleted Recycle Metal}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #8.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7		
Antimony								
Arsenic					**ppm**	0.1		
Barium					**ppm**	0.1		
Beryllium					**ppm**	1		
Bismuth								
Equiv. Boron Content					**ppm**	0.1		
Bromine								
Carbon								
Cadmium					**ppm**	0.19		
Calcium & Mg								
Calcium					**ppm**	0.6		
Cesium								
Chloride								
Chromium					**ppm**	1		
Cobalt								
Copper								
Fluoride					**ppm**	137		
Hydrogen								
Iron					**ppm**	164		
Fe + Al								
Lead					**ppm**	0.1		
Lead 212								
Lithium								
Magnesium					**ppm**	3		
Manganese					**ppm**	7		
Mercury								
Molybdenum					**ppm**	1		
Neptunium-237					**ppm**	6.3E-3		
Nickel					**ppm**	62.6		
Niobium								
Nitrogen								

Lot 8 {Depleted Recycle Metal}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #8.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Phosphorous					**ppm**	8.6		
Plutonium (Total)								
Plutonium-238					**ppm**	1.4E-07		
Plutonium-239/240					**ppm**	6.0E-05		
Plutonium-241					**ppm**	2.1E-07		
Plutonium-242								
Plutonium-244								
Potassium					**ppm**	0.1		
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	168		
Silver					**ppm**	0.1		
Sodium					**ppm**	0.1		
Strontium								
Sulfate								
Tantalum								
Technetium-99	9	4	30	**ug/g U**	**ppb**	4		
Thallium 208								
Thorium					**ppm**	0.1		
Thorium-228								
Thorium-230								
Thorium-231					**ppm**	8.2E-09		
Thorium-232					**ppm**	0.00		
Thorium-234					**ppm**	1.5E-05		
Thorium 234 Gamma								
Tin								
Titanium					**ppm**	3		
Tungsten								
TOC								

Lot 8 {Depleted Recycle Metal}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #8.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232					**ppm**	0		
Uranium-233/234					**ppm**	0		
Uranium-233								
Uranium-233 TIMS								
Uranium-234	7.87	0.057	26.2	**ppm**	**ppm**	30		
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235					**ppm**	1,960		
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	24.14	4.36	64.4	**ppm**	**ppm**	127		
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium					**ppm**	1		
Zinc								
Zirconium					**ppm**	19		
Total Impurities								
Halides (Cl+Br+I)					**ppm**	11.1		
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)					**Bq/kg U**	1.2E+03		
Alpha Activity								

Lot 8 {Depleted Recycle Metal}								
Reusable Uranium Products & Services Catalog (October 2002) stated that the depleted metals were created utilizing similar DUF4.								
Note: Data obtained from Nuclear Fuels Services Report on Depleted Metal. Data is limited but representative of Lot #8.								
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Moisture								
ZrNb95								
Protactinium 234m								
Gamma Fission Product					**Mev Bq/kg U**	3.7E+03		
Gamma %								
Trans Alpha								
Americium-241					**ppm**	6.3E-06		

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1) Report: "Y-12 Lab Analysis of 1.25% Derbies and Oxide"

Converdyn Data Needed for UF6 processing

Denotes an estimated value in USM OreTM

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 9 UF4

Note: Paradox Table By Lot ID contains analytical data from actual UF4 at Portsmouth, however it is limited to 2 samples which is too few to provide any reliable statistical evaluation.

Note: NonUF4.xls can only be considered representative of Lot 9 Normal UF4, and contains only 4 data points.

	Uranium Products & Services Catalog				Data from paradox Table By Lot ID				Data from NorUF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum												
Antimony												
Arsenic												
Barium												
Beryllium												
Bismuth												
Equiv. Boron Content												
Bromine												
Carbon												
Cadmium												
Calcium & Mg												
Calcium												
Cesium												
Chloride												
Chromium					**ppm**	16.1	14.6	16.4	**ppm**	12.65	9.6	16.4
Cobalt												
Copper					**ppm**	779	746	785	**ppm**	805	528	1160
Fluoride												
Hydrogen												
Iron					**ppm**	158	90	170	**ppm**	8765	90	21900
Fe + Al												
Lead												
Lead 212												
Lithium												
Magnesium												
Manganese												
Mercury												
Molybdenum												
Neptunium-237												
Nickel					**ppm**	48	48	48	**ppm**	385	48	1240
Niobium												
Nitrogen												
Phosphorous												

Lot 9 UF4

Note: Paradox Table By Lot ID contains analytical data from actual UF4 at Portsmouth, however it is limited to 2 samples which is too few to provide any reliable statistical evaluation.

Note: NonUF4.xls can only be considered representative of Lot 9 Normal UF4, and contains only 4 data points.

	Uranium Products & Services Catalog				Data from paradox Table By Lot ID				Data from NorUF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Plutonium (Total)									**g/g U 235**	9.8E-10	3.8E-10	2.0E-09
Plutonium-238									**pCi/g U**	0.118	0.064	0.170
Plutonium-239/240									**pCi/g U**	0.1025	0.043	0.24
Plutonium-241												
Plutonium-242												
Plutonium-244												
Potassium												
Ruthenium												
Radium 224												
Radium 226												
Samarium												
Selenium												
Silicon												
Silver												
Sodium												
Strontium												
Sulfate												
Tantalum												
Technetium-99												
Thallium 208												
Thorium												
Thorium-228												
Thorium-230												
Thorium-231												
Thorium-232												
Thorium-234												
Thorium 234 Gamma												
Tin												
Titanium												
Tungsten												
TOC												
Total Uranium												
Total Uranium Alpha												

Lot 9 UF4

Note: Paradox Table By Lot ID contains analytical data from actual UF4 at Portsmouth, however it is limited to 2 samples which is too few to provide any reliable statistical evaluation.

Note: NonUF4.xls can only be considered representative of Lot 9 Normal UF4, and contains only 4 data points.

	Uranium Products & Services Catalog				Data from paradox Table By Lot ID				Data from NorUF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Uranium TIMS												
Uranium-232												
Uranium-233/234												
Uranium-233												
Uranium-233 TIMS												
Uranium-234	43.97	36.1	45.4	**mg/kg**	**ppm**	43.97	36.1	45.4	**ppm**	41.20	31.0	52.3
Uranium 234 Alpha												
Uranium 234 Gamma												
Uranium-234 TIMS												
Uranium 235 Alpha												
Uranium 235 Gamma												
Uranium-235					**ppm**	7,192	7,090	7,210	**ppm**	7,120	7,080	7,210
Uranium-235												
Uranium-235 TIMS												
Uranium 236 Aplha												
Uranium-236	<10			**ug/kg**					**ppm**	61.1	45.9	75.4
Uranium-236 TIMS												
Uranium 238 Alpha												
Uranium 238 Gamma												
Uranium-238												
Uranium-238 TIMS												
Vanadium												
Zinc												
Zirconium												
Total Impurities												
Halides (Cl+Br+I)												
Plutonium (ppbU)												
Neptunium (ppbU)												
Pu + Np (Bq/g)												
Alpha Activity												
Moisture					**% bt wt**	0.1	0.1	0.1	**% bt wt**	14.5	0.1	30
ZrNb95												
Protactinium 234m												

Lot 9 UF4

Note: Paradox Table By Lot ID contains analytical data from actual UF4 at Portsmouth, however it is limited to 2 samples which is too few to provide any reliable statistical evaluation.

Note: NonUF4.xls can only be considered representative of Lot 9 Normal UF4, and contains only 4 data points.

	Uranium Products & Services Catalog				Data from paradox Table By Lot ID				Data from NorUF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Gamma Fission Product												
Gamma %									**mCi/g U**	1.5E-05	1.0E-05	2.1E-05
Trans Alpha												
Americium-241												

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog

Data from LLP-0051 Analytical Data Drafts and working Papers 3/23/06

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 10 {Normal Metal}								
Note: There is no analytical data available on Portsmouth lot 10. Data should be representative of the Lot 10 material, but should be viewed as an "indicator" of the Lot 10 material. Additional data groups listed in LPP-551.								
	Uranium Products & Services Catalog				Data Summary from 96-1223C Normal Metal Disposition			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	530	24.8	1810
Antimony								
Arsenic								
Barium								
Beryllium					**ppm**	0.104	0.06	0.9
Bismuth								
Equiv. Boron Content					**ppm**	10.8	0.09	11
Bromine								
Carbon								
Cadmium					**ppm**	0.244	0.01	0.9
Calcium & Mg								
Calcium								
Cesium								
Chloride								
Chromium					**ppm**	7.26	1.6	48.3
Cobalt								
Copper					**ppm**	21.8	2.6	252
Fluoride								
Hydrogen								
Iron					**ppm**	274	45.3	577
Fe + Al								
Lead								
Lead 212								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium-237								
Nickel								
Niobium								
Nitrogen								

Lot 10 {Normal Metal}								
Note: There is no analytical data available on Portsmouth lot 10. Data should be representative of the Lot 10 material, but should be viewed as an "indicator" of the Lot 10 material. Additional data groups listed in LPP-551.								
	Uranium Products & Services Catalog				Data Summary from 96-1223C Normal Metal Disposition			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Phosphorous								
Plutonium (Total)					**g/g U235**	5.43E-09	-1.80E-10	4.6E-08
Plutonium-238					**pCi/g U**	0.151	-0.11	1.10
Plutonium-239					**pCi/g U**	1.73	0.03	10
Plutonium-239/240					**pCi/g U**	2.23	0.15	19
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Radium 224								
Radium 226								
Samarium								
Selenium								
Silicon					**ppm**	96.3	11	543
Silver								
Sodium								
Strontium								
Sulfate								
Tantalum								
Technetium-99	0.0143	0.0009	0.42	**ug/g U**	**ppm**	0.0143	0.0009	0.40
Thallium 208								
Thorium								
Thorium-228								
Thorium-230								
Thorium-231								
Thorium-232								
Thorium-234								
Thorium 234 Gamma								
Tin								
Titanium								
Tungsten								

Lot 10 {Normal Metal}								
Note: There is no analytical data available on Portsmouth lot 10. Data should be representative of the Lot 10 material, but should be viewed as an "indicator" of the Lot 10 material. Additional data groups listed in LPP-551.								
	Uranium Products & Services Catalog				Data Summary from 96-1223C Normal Metal Disposition			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
TOC								
Total Uranium								
Total Uranium Alpha								
Uranium TIMS								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-233 TIMS								
Uranium-234	51.5	0.006	65	**ug/g U**	**ppm**	51.5	5.8E-03	65.0
Uranium 234 Alpha								
Uranium 234 Gamma								
Uranium-234 TIMS								
Uranium 235 Alpha								
Uranium 235 Gamma								
Uranium-235					**ppm**	7,120	7,050	7,670
Uranium-235								
Uranium-235 TIMS								
Uranium 236 Aplha								
Uranium-236	6.12	0.001	28	**ug/g U**	**ppm**	6.1	1.E-03	28
Uranium-236 TIMS								
Uranium 238 Alpha								
Uranium 238 Gamma								
Uranium-238								
Uranium-238 TIMS								
Vanadium								
Zinc								
Zirconium								
Total Impurities								
Halides (Cl+Br+I)								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								

Lot 10 {Normal Metal}								
Note: There is no analytical data available on Portsmouth lot 10. Data should be representative of the Lot 10 material, but should be viewed as an "indicator" of the Lot 10 material. Additional data groups listed in LPP-551.								
	Uranium Products & Services Catalog				Data Summary from 96-1223C Normal Metal Disposition			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Alpha Activity								
Moisture								
ZrNb95								
Protactinium 234m								
Gamma Fission Product								
Gamma					**mCi/ug U235**	4.51E-05	2.4E-06	1.8E-02
Trans Alpha								
Americium-241								

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog October 2002

Data from LPP-0051 Analytical Data Drafts and Working Papers 03/23/06

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 11A {Low Enriched Metal 1.25%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11A.												
Note: It is not conclusive if analytical data is available for the actual material in Lot 11A. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7.9		12				
Antimony												
Arsenic					**ppm**	0.1		0.1				
Barium					**ppm**	0.1		0.1				
Beryllium					**ppm**	0.1		0.1				
Bismuth												
Equiv. Boron Content					**ppm**	0.1		0.1				
Bromine												
Carbon												
Cadmium					**ppm**	0.1		0.1				
Calcium & Mg												
Calcium					**ppm**	0.6		2				
Cesium												
Chloride												
Chromium					**ppm**	10.1		12	**ppm**	15.99		
Cobalt												
Copper									**ppm**	478		
Dysprosium												
Europium												
Fluoride					**ppm**	137		976				
Gadolinium									**ppb Dry**	114.44		
Hydrogen												
Iron					**ppm**	118		138	**ppm**	4101		
Fe + Al												
Lead					**ppm**	0.1		0.1				
Lead 212												
Lithium												

Lot 11A {Low Enriched Metal 1.25%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11A.												
Note: It is not conclusive if analytical data is available for the actual material in Lot 11A. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Magnesium					**ppm**	75.9		519				
Manganese					**ppm**	7.9		11				
Mercury												
Molybdenum					**ppm**	0.1		0.2				
Neptunium-237					**ppm**	3.3E-01		3.8E-01				
Nickel					**ppm**	62.6		98	**ppm**	59.4		
Niobium												
Nitrogen												
Phosphorous					**ppm**	8.6		16				
Plutonium (Total)												
Plutonium-238					**ppm**	3.4E-07		3.9E-07	**pCi/g Dry**	41.49		
Plutonium-239/240					**ppm**	2.4E-04		2.4E-04	**pCi/g Dry**	577.10		
Plutonium-241					**ppm**	2.9E-05		2.9E-05				
Plutonium-242												
Plutonium-244												
Potassium					**ppm**	0.1		0.50				
Ruthenium												
Radium 224												
Radium 226												
Samarium									**ppb Dry**	89.022		
Selenium												
Silicon					**ppm**	5.6		14				
Silver					**ppm**	0.1		0.1				
Sodium					**ppm**	0.1		0.1				
Strontium												
Sulfate												
Tantalum												

Lot 11A {Low Enriched Metal 1.25%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11A.												
Note: It is not conclusive if analytical data is available for the actual material in Lot 11A. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Technetium-99	8.84	5.90	15.2	**ug/g U**	**ppm**	7.5		11	**ug/g U235**	236.9		
Thallium 208												
Thorium					**ppm**	0.1		0.1				
Thorium-228												
Thorium-230												
Thorium-231					**ppm**	5.1E-08		5.1E-08				
Thorium-232					**ppm**	0.00		0.00				
Thorium-234					**ppm**	1.5E-05		1.5E-05				
Thorium 234 Gamma												
Tin												
Titanium					**ppm**	0.7		4				
Tungsten												
TOC												
Total Uranium									**% bt wt**	67.14		
Total Uranium Alpha												
Uranium TIMS												
Uranium-232					**ppm**	2.9E-05		4.4E-05	**ug/g U235**	1,173.55		
Uranium-233/234					**ppm**							
Uranium-233									**ug/g U235**	1,173.55		
Uranium-233 TIMS												
Uranium-234	70	60	80	**ug/g U**	**ppm**	70		80	**ug/g U235**	7,660		
Uranium 234 Alpha												
Uranium 234 Gamma												
Uranium-234 TIMS												
Uranium 235 Alpha												
Uranium 235 Gamma												
Uranium-235					**ppm**	9,450		9,450	**% of U238**	1.221		

Lot 11A {Low Enriched Metal 1.25%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11A.												
Note: It is not conclusive if analytical data is available for the actual material in Lot 11A. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Uranium-235												
Uranium-235 TIMS												
Uranium 236 Aplha												
Uranium-236	580	530	650	**ug/g U**	**ppm**	480		490	**ug/g U235**	41,171		
Uranium-236 TIMS												
Uranium 238 Alpha												
Uranium 238 Gamma												
Uranium-238												
Uranium-238 TIMS												
Vanadium					**ppm**	0.1		0.1				
Zinc												
Zirconium					**ppm**	0.3		1				
Total Impurities												
Halides (Cl+Br+I)					**ppm**	11.1		17				
Plutonium (ppbU)												
Neptunium (ppbU)												
Total Pu + Np alpha activity					**Bq/kg U**	1.1E+04		1.3E+04				
Alpha Activity												
Moisture									% bt wt.	5.33		
ZrNb95												
Protactinium 234m												
Gamma Fission Product activity					**Mev Bq/kg U**	3.7+03		2.2e+04	**mCi/g U235**	1.336E-05		
Gamma %												
Trans Alpha												
Americium-241					**pCi/g U**	5.2E-05		5.2E-05				

Lot 11A {Low Enriched Metal 1.25%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11A.												
Note: It is not conclusive if analytical data is available for the actual material in Lot 11A. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.												
	Uranium Products & Services Catalog				USM Ore TM Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High	Units	Average	Low	High

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog

USM Ore TM Specification Scoping (Rev. 6.1)
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide"

Data from LPP-0051 Analytical Data Drafts and Working Papers 03/23/06

Converdyn Data Needed for UF6 processing

Lot 11B {Low Enriched Metal 0.947%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal from Fernald. Information should be considered representative data, not actual data for Lot 11A.												
Note: ErnMet.xls data may be representative of metal with approximate enrichment of 0.95%. It is divided into 3 groups (Derby, Primary and Product). Derbies appear of higher purity. Primary and Product groups are consistent with level and variation												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from EnrMet.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum					ppm	7.9		12	ppm	892	5	1510
Antimony									ppm	0.108	0.1	0.2
Arsenic					ppm	0.1		0.1	ppm	0.11	0.1	0.3
Barium					ppm	0.1		0.1	ppm	0.1	0.1	0.1
Beryllium					ppm	0.1		0.1	ppm	0.1	0.1	0.1
Bismuth									ppm	0.1	0.1	0.1
Equiv. Boron Content					ppm	0.1		0.1	ppm	0.1	0.1	0.1
Bromine									ppm	6.19	0.1	28
Carbon									ppm	388	10	613
Cadmium					ppm	0.1		0.1	ppm	0.13	0.1	0.3
Calcium & Mg												
Calcium					ppm	0.6		2	ppm	2.23	0.1	19
Cesium												
Chloride									ppm	92.76	3	920
Chromium					ppm	10.1		12	ppm	14.9	8	38
Cobalt									ppm	0.43	0.1	14
Copper									ppm	10.6	4	18
Dysprosium									ppm	0.13	0.1	0.4
Europium									ppm	0.11	0.1	0.3
Fluorine					ppm	137		976	ppm	19.47	8	83
Gadolinium									ppm	0.146	0.1	0.4
Hydrogen												
Iron					ppm	118		138	ppm	293	101	497
Fe + Al												
Lead					ppm	0.1		0.1	ppm	0.141	0.01	1
Lead 212												
Lithium									ppm	0.1	0.1	0.1
Magnesium					ppm	75.9		519	ppm	2.01	0.1	76.00

Lot 11B {Low Enriched Metal 0.947%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal from Fernald. Information should be considered representative data, not actual data for Lot 11A.												
Note: ErnMet.xls data may be representative of metal with approximate enrichment of 0.95%. It is divided into 3 groups (Derby, Primary and Product). Derbies appear of higher purity. Primary and Product groups are consistent with level and variation												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from EnrMet.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Manganese					ppm	7.9		11	ppm	7.56	4	14
Mercury												
Molybdenum					ppm	0.1		0.2	ppm	0.16	0.1	0.4
Neptunium-237					ppm	3.3E-01		3.8E-01	Bq/g U	8.128	6.29	10.3
Nickel					ppm	62.6		98	ppm	58.79	27	99
Niobium									ppm	0.1	0.1	0.1
Nitrogen									ppm	23.4	0	513
Phosphorous					ppm	8.6		16	ppm	11.26	2	20
Plutonium (Total)												
Plutonium-238					ppm	3.4E-07		3.9E-07	Bq/g U	0.205	0.115	0.369
Plutonium-239/240					ppm	2.4E-04		2.4E-04	Bq/g U	1.68	0.77	2.66
Plutonium-241					ppm	2.9E-05		2.9E-05				
Plutonium-242												
Plutonium-244												
Potassium					ppm	0.1		0.50	ppm	0.94	0.1	30
Ruthenium									ppm	0.11	0.10	0.20
Ruthenium - 106									Bq/g U	6.60	0.17	21.70
Radium 224												
Radium 226												
Samarium									ppm	0.182	0.01	3
Selenium												
Silicon					ppm	5.6		14	ppm	175	2	540
Silver					ppm	0.1		0.1	ppm	0.108	0.1	0.3
Sodium					ppm	0.1		0.1	ppm	0.13	0.1	0.9
Strontium									ppm	0.1	0.1	0.1
Sulfate												
Tantalum									ppm	0.8	0.1	26
Technetium-99	8.84	5.90	15.2	ug/g U	ppm	7.5		11	ppm	8.8	5.9	15.2

Lot 11B {Low Enriched Metal 0.947%}												
Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)												
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal from Fernald. Information should be considered representative data, not actual data for Lot 11A.												
Note: ErnMet.xls data may be representative of metal with approximate enrichment of 0.95%. It is divided into 3 groups (Derby, Primary and Product). Derbies appear of higher purity. Primary and Product groups are consistent with level and variation												
	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from EnrMet.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Thallium 208												
Thorium					**ppm**	0.1		0.1	**ppm**	0.219	0.1	11
Thorium-228												
Thorium-230												
Thorium-231					**ppm**	5.1E-08		5.1E-08				
Thorium-232					**ppm**	0.00		0.00				
Thorium-234					**ppm**	1.5E-05		1.5E-05				
Thorium 234 Gamma												
Tin									**ppm**	0.18	0.1	1
Titanium					**ppm**	0.7		4	**ppm**	2.104	0.1	15
Tungsten									**ppm**	0.798	0.1	23
TOC												
Total Uranium									**% bt wt**	99.65	98.65	100
Total Uranium Alpha												
Uranium TIMS												
Uranium-232					**ppm**	2.9E-05		4.4E-05	**ppm**	0.02	0	0.063
Uranium-233/234												
Uranium-233												
Uranium-233 TIMS												
Uranium-234	70	60	80	**ug/g U**	**ppm**	70		80	**ppm**	70	60	70
Uranium 234 Alpha												
Uranium 234 Gamma												
Uranium-234 TIMS												
Uranium 235 Alpha												
Uranium 235 Gamma												
Uranium-235					**ppm**	9,450		9,450	**% bt wt.**	0.948	0.94	0.967
Uranium-235												
Uranium-235 TIMS												

Lot 11B {Low Enriched Metal 0.947%}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal from Fernald. Information should be considered representative data, not actual data for Lot 11A.

Note: ErnMet.xls data may be representative of metal with approximate enrichment of 0.95%. It is divided into 3 groups (Derby, Primary and Product). Derbies appear of higher purity. Primary and Product groups are consistent with level and variation

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from EnrMet.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Uranium 236 Alpha												
Uranium-236	580	530	650	**ug/g U**	**ppm**	480		490	**ppm**	577	530	650
Uranium-236 TIMS												
Uranium 238 Alpha												
Uranium 238 Gamma												
Uranium-238												
Uranium-238 TIMS												
Vanadium					**ppm**	0.1		0.1	**ppm**	0.1	0.1	0.3
Zinc									**ppm**	0.11	0.1	0.2
Zirconium					**ppm**	0.3		1	**ppm**	0.24	0.1	3
Total Impurities												
Halides (Cl+Br+I)					**ppm**	11.1		17				
Plutonium (ppbU)												
Neptunium (ppbU)												
Total Pu + Np alpha activity					**Bq/kg U**	1.1E+04		1.3E+04				
Alpha Activity									**dpm/g U**	616.35	494	801
Moisture												
ZrNb95												
Protactinium 234m												
Gamma Fission Product activity					**Mev Bq/kg U**	3.7+03		2.2e+04	**Bq/g U**	126.94	0.00	333.00
Gamma %												
Trans Alpha												
Americium-241					**pCi/g U**	5.2E-05		5.2E-05				

Units

Lot 11B {Low Enriched Metal 0.947%}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal from Fernald. Information should be considered representative data, not actual data for Lot 11A.

Note: ErnMet.xls data may be representative of metal with approximate enrichment of 0.95%. It is divided into 3 groups (Derby, Primary and Product). Derbies appear of higher purity. Primary and Product groups are consistent with level and variation

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from EnrMet.xls			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High	Units	Average	Low	High
ug/g U	1ugram = 1e-6gram so it is 1 part per million											
pCi/g U												
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million											
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million											
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion											

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October

USM Ore TM Specification Scoping (Rev. 6.1)
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide"

Data from LPP-0051 Analytical Data Drafts and Working Papers 03/23/06

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 11C {Low Enriched Metal}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11C.

Note: It is not conclusive if analytical data is available for the actual material in Lot 11C. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum					**ppm**	7.9		12				
Antimony												
Arsenic					**ppm**	0.1		0.1				
Barium					**ppm**	0.1		0.1				
Beryllium					**ppm**	0.1		0.1				
Bismuth												
Equiv. Boron Content					**ppm**	0.1		0.1				
Bromine												
Carbon												
Cadmium					**ppm**	0.1		0.1				
Calcium & Mg												
Calcium					**ppm**	0.6		2				
Cesium												
Chloride												
Chromium					**ppm**	10.1		12	**ppm**	15.99		
Cobalt												
Copper									**ppm**	478		
Dysprosium												
Europium												
Fluoride					**ppm**	137		976				
Gadolinium									**ppb Dry**	114.44		
Hydrogen												
Iron					**ppm**	118		138	**ppm**	4101		
Fe + Al												
Lead					**ppm**	0.1		0.1				
Lead 212												
Lithium												
Magnesium					**ppm**	75.9		519				
Manganese					**ppm**	7.9		11				
Mercury												
Molybdenum					**ppm**	0.1		0.2				
Neptunium-237					**ppm**	3.3E-01		3.8E-01				

Lot 11C {Low Enriched Metal}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11C.

Note: It is not conclusive if analytical data is available for the actual material in Lot 11C. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Nickel					**ppm**	62.6		98	**ppm**	59.4		
Niobium												
Nitrogen												
Phosphorous					**ppm**	8.6		16				
Plutonium (Total)												
Plutonium-238					**ppm**	3.4E-07		3.9E-07	**pCi/g Dry**	41.49		
Plutonium-239/240					**ppm**	2.4E-04		2.4E-04	**pCi/g Dry**	577.1		
Plutonium-241					**ppm**	2.9E-05		2.9E-05				
Plutonium-242												
Plutonium-244												
Potassium					**ppm**	0.1		0.50				
Ruthenium												
Radium 224												
Radium 226												
Samarium									**ppb Dry**	89.022		
Selenium												
Silicon					**ppm**	5.6		14				
Silver					**ppm**	0.1		0.1				
Sodium					**ppm**	0.1		0.1				
Strontium												
Sulfate												
Tantalum												
Technetium-99	8.84	5.90	15.2	**ug/g U**	**ppm**	7.5		11	**ug/g U235**	236.9		
Thallium 208												
Thorium					**ppm**	0.1		0.1				
Thorium-228												
Thorium-230												
Thorium-231					**ppm**	5.1E-08		5.1E-08				
Thorium-232					**ppm**	0.00		0.00				
Thorium-234					**ppm**	1.5E-05		1.5E-05				
Thorium 234 Gamma												
Tin												

Lot 11C {Low Enriched Metal}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11C.

Note: It is not conclusive if analytical data is available for the actual material in Lot 11C. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Titanium					**ppm**	0.7		4				
Tungsten												
TOC												
Total Uranium									**% bt wt**	67.14		
Total Uranium Alpha												
Uranium TIMS												
Uranium-232					**ppm**	2.9E-05		4.4E-05	**ug/g U235**	1,173.55		
Uranium-233/234					**ppm**							
Uranium-233									**ug/g U235**	1,173.55		
Uranium-233 TIMS												
Uranium-234	70	60	80	**ug/g U**	**ppm**	70		80	**ug/g U235**	7,660		
Uranium 234 Alpha												
Uranium 234 Gamma												
Uranium-234 TIMS												
Uranium 235 Alpha												
Uranium 235 Gamma												
Uranium-235					**ppm**	9,450		9,450	**% of U238**	1.221		
Uranium-235												
Uranium-235 TIMS												
Uranium 236 Aplha												
Uranium-236	580	530	650	**ug/g U**	**ppm**	480		490	**ug/g U235**	41,171		
Uranium-236 TIMS												
Uranium 238 Alpha												
Uranium 238 Gamma												
Uranium-238												
Uranium-238 TIMS												
Vanadium					**ppm**	0.1		0.1				
Zinc												
Zirconium					**ppm**	0.3		1				
Total Impurities												
Halides (Cl+Br+I)					**ppm**	11.1		17				
Plutonium (ppbU)												

Lot 11C {Low Enriched Metal}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide" performed on enriched metal. Information should be considered representative data, not actual data for Lot 11C.

Note: It is not conclusive if analytical data is available for the actual material in Lot 11C. The data in Paradox Table By Prod. Order is believed to be representative of metal with approximate enrichment of 1.22%.

	Uranium Products & Services Catalog				USM Ore™ Specification Scoping (Rev. 6.1)				Data from Paradox Table By Prod. Order			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Neptunium (ppbU)												
Total Pu + Np alpha activity					**Bq/kg U**	1.1E+04		1.3E+04				
Alpha Activity												
Moisture									% bt wt.	5.33		
ZrNb95												
Protactinium 234m												
Gamma Fission Product activity					**Mev Bq/kg U**	3.7+03		2.2E+04	**mCi/g U235**	1.336E-05		
Gamma %												
Trans Alpha												
Americium-241					**pCi/g U**	5.2E-05		5.2E-05				

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1)
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide"

Data from LPP-0051 Analytical Data Drafts and Working Papers 03/23/06

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)

* = Aged Natural Uranium

Lot 12 {Low Enriched U3O8}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: LEU Source 1.25% Enriched UO3". Information should be considered representative data, not actual data for Lot 12.

Note: Analytical data for enriched U3O8 at Portsmouth is given in Paradox Table by Lot ID. The units are in question due to only U235 being assigned units in the spreadsheet. All other results are assumed to be in ppm or ppb, and are highlighted in green.

Note: It is unknown whether analytical data in spreadsheet U3O8LT1 is representative of enriched U3O8 at Portsmouth.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from LPP 0051 Paradox Table By Lot ID				Data from LPP 0051 U3O8LT1			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum					ppm	1										
Antimony																
Arsenic					ppm	10										
Barium					ppm	2										
Beryllium					ppm	0.1										
Bismuth																
Equiv. Boron Content					ppm	0.1										
Bromine																
Carbon									ppm	0.95	0.43	1.35				
Cadmium					ppm	0.1										
Calcium & Mg																
Calcium					ppm	10										
Cesium																
Chloride																
Chromium					ppm	10			ppm	0.13	0.13	0.13				
Cobalt																
Copper																
Dysprosium																
Europium																
Fluorine					ppm	2										
Gadolinium																
Hydrogen																
Iron					ppm	55										
Fe + Al																
Lead					ppm	1										
Lead 212																
Lithium																
Magnesium					ppm	50										
Manganese					ppm	2										
Mercury					ppm	2										
Molybdenum					ppm	10										
Neptunium	678.1	102.2	2,171.1	ug/Kg U	ppm	5.6E-01		5.9E-01					ppb	678	102	2,171

Lot 12 {Low Enriched U3O8}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: LEU Source 1.25% Enriched UO3". Information should be considered representative data, not actual data for Lot 12.

Note: Analytical data for enriched U3O8 at Portsmouth is given in Paradox Table by Lot ID. The units are in question due to only U235 being assigned units in the spreadsheet. All other results are assumed to be in ppm or ppb, and are highlighted in green.

Note: It is unknown whether analytical data in spreadsheet U3O8LT1 is representative of enriched U3O8 at Portsmouth.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from LPP 0051 Paradox Table By Lot ID				Data from LPP 0051 U3O8LT1			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Nickel					**ppm**	2										
Niobium																
Nitrogen																
Phosphorous					**ppm**	100										
Plutonium (Total)	15.2	1.5	149	ug/Kg U					**ppb**	551	210	1,500	**ppb**	15.23	1.5	149
Plutonium-238					**ppm**	8.2E-06		9.8E-06	**ppb**	59.3	29	170				
Plutonium-239/240					**ppm**	3.7E-02		5.2E-02	**ppb**	491.3	180	1,300				
Plutonium-241																
Plutonium-242																
Plutonium-244																
Potassium					**ppm**	15										
Ruthenium																
Radium 224																
Radium 226																
Samarium																
Selenium					**ppm**	0.4										
Silicon					**ppm**	15										
Silver					**ppm**	0.5										
Sodium					**ppm**	29										
Strontium																
Sulfate																
Tantalum																
Technetium-99	77,638	4,400	210,000	**dpm/ug U**	**ppm**	1.4							**dpm/g U**	77,637	4,400	210,000
Thallium 208																
Thorium					**ppm**	64										
Thorium-228																
Thorium-230																
Thorium-231																
Thorium-232																
Thorium-234																
Thorium 234 Gamma																
Tin																

Lot 12 {Low Enriched U3O8}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: LEU Source 1.25% Enriched UO3". Information should be considered representative data, not actual data for Lot 12.

Note: Analytical data for enriched U3O8 at Portsmouth is given in Paradox Table by Lot ID. The units are in question due to only U235 being assigned units in the spreadsheet. All other results are assumed to be in ppm or ppb, and are highlighted in green.

Note: It is unknown whether analytical data in spreadsheet U3O8LT1 is representative of enriched U3O8 at Portsmouth.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from LPP 0051 Paradox Table By Lot ID				Data from LPP 0051 U3O8LT1			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Titanium					**ppm**	6										
Tungsten																
TOC																
Total Uranium					**ppm**	814,000		821,000					**% bt wt**	69	10	87
Total Uranium Alpha																
Uranium TIMS																
Uranium-232					**ppb**	0.0E+00		0.0E+00								
Uranium-233/234																
Uranium-233																
Uranium-233 TIMS																
Uranium-234					**ppm**	8.0E+01		9.0E+01								
Uranium 234 Alpha																
Uranium 234 Gamma																
Uranium-234 TIMS																
Uranium 235 Alpha																
Uranium 235 Gamma																
Uranium-235					**ppm**	1.3E+04		1.3E+04	**% bt wt**	0.936	0.75	1	**% bt wt**	0.927	0.74	1
Uranium-235																
Uranium-235 TIMS																
Uranium 236 Aplha																
Uranium-236					**ppm**	5.2E+02		5.2E+02								
Uranium-236 TIMS																
Uranium 238 Alpha																
Uranium 238 Gamma																
Uranium-238																
Uranium-238 TIMS																
Vanadium					**ppm**	0.5										
Zinc																
Zirconium					**ppm**	29.0										
Total Impurities																
Halides (Cl+Br+I)					**ppm**	18										
Plutonium (ppbU)																

Lot 12 {Low Enriched U3O8}

Note: Data is from Nuclear Fuels Services Report USM Ore TM Specification Scoping (Rev. 6.1)

Report: LEU Source 1.25% Enriched UO3". Information should be considered representative data, not actual data for Lot 12.

Note: Analytical data for enriched U3O8 at Portsmouth is given in Paradox Table by Lot ID. The units are in question due to only U235 being assigned units in the spreadsheet. All other results are assumed to be in ppm or ppb, and are highlighted in green.

Note: It is unknown whether analytical data in spreadsheet U3O8LT1 is representative of enriched U3O8 at Portsmouth.

	Uranium Products & Services Catalog				USM Ore ™ Specification Scoping (Rev. 6.1)				Data from LPP 0051 Paradox Table By Lot ID				Data from LPP 0051 U3O8LT1			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Neptunium (ppbU)																
Total Pu + Np alpha activity					**Bq/kg U**	1.1E+05		1.4E+05								
Alpha Activity																
Moisture																
ZrNb95																
Protactinium 234m																
Gamma Fission Product activity					**MeV** **Bq/kg U**	3.3E+04		Estimated '4.1E+04	**?**	187.65	85	550				
Gamma %																
Trans Alpha																
Americium-241					**ppm**	5.2E-05		5.2E-05								

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002
Additional analytical data available per Uranium Products & Services Catalog October 2002

USM Ore TM Specification Scoping (Rev. 6.1)
Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide"

Data from LPP-0051 Analytical Data Drafts and Working Papers 03/23/06

Converdyn Data Needed for UF6 processing

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 13 {Low Enriched UF4}

Note: Analytical data for enriched UF4 at Portsmouth is listed in Paradox Table by Lot ID. Data included in Tables GTIUF4xls and ALLUF4xls was not generated from Portsmouth UF4, but are considered representative of the material.

	Uranium Products & Services Catalog				Data Paradox Table By Lot ID				Data GTIUF4xls				Data ALLUF4xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum													**ppm**	15.6	13	19
Antimony													**ppm**	0.6	0.5	0.7
Arsenic													**ppm**	3	2.6	3.7
Barium													**ppm**	3	2.6	4
Beryllium													**ppm**	0.6	0.5	0.7
Bismuth													**ppm**	0.6	0.5	0.7
Equiv. Boron Content													**ppm**	0.5	0.5	0.5
Bromine													**ppm**	69.7	35	70
Carbon																
Cadmium													**ppm**	0.9	0.8	1.5
Calcium & Mg																
Calcium													**ppm**	59.80	14.0	3,000
Cesium																
Chloride													**ppm**	35.4	35	70
Chromium					**ppm**	5.27	5	9	**ppm**	6	5	19.5	**ppm**	8	1.5	49
Cobalt																
Copper					**ppm**	18.67	5	43	**pm**	107	5	859	**ppm**	10.4	1.7	104
Dysprosium																
Europium																
Fluorine																
Gadolinium									**ppb**	50		50				
Hydrogen																
Iron					**ppm**	23.29	10	80	**ppm**	31.4	10	122	**ppm**	62.5	52	111
Fe + Al																
Lead													**ppm**	4.7	3.1	19.3
Lead 212																
Lithium													**ppm**	0.6	0.5	0.7
Magnesium													**ppm**	16.3	13.0	29.7
Manganese													**ppm**	1.2	0.6	4.8
Mercury																
Molybdenum																
Neptunium													**Bq/g U**	10.4	5.3	14.8
Nickel					**ppm**	24.23	5	100	**ppm**	23.8	5	100	**ppm**	42.9	13.5	324
Niobium													**ppm**	0.9	0.5	1.1
Nitrogen																
Phosphorous													**ppm**	22.7	13.2	103.3
Plutonium (Total)																
Plutonium-238									**pCi/g**	1.4	0	16				

Lot 13 {Low Enriched UF4}

Note: Analytical data for enriched UF4 at Portsmouth is listed in Paradox Table by Lot ID. Data included in Tables GTIUF4xls and ALLUF4xls was not generated from Portsmouth UF4, but are considered representative of the material.

	Uranium Products & Services Catalog				Data Paradox Table By Lot ID				Data GTIUF4xls				Data ALLUF4xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Plutonium-239									**pCi/g**	13.5	0	140				
Plutonium-239/240																
Plutonium-241																
Plutonium-242																
Plutonium-244																
Potassium													**ppm**	15.6	13.0	19
Ruthenium													**ppm**	15	12.8	18.4
Ruthenium 106													**Bq/g U**	4.9	0.0	56.6
Radium 224																
Radium 226																
Samarium									**ppb**	50		50				
Selenium																
Silicon													**ppm**	20.3	20	50
Silver													**ppm**	0.6	0.5	1.3
Sodium													**ppm**	30.7	26	37
Strontium													**ppm**	30	25.7	36.7
Sulfate																
Tantalum													**ppm**	1.2	0.6	1.9
Technetium-99	11.4	0.10	110	**ug/g U**					**ppm**	11.4	0	110	**ug/g U**	9.8	1.8	22.7
Thallium 208																
Thorium													**ppm**	9.9	0.5	150
Thorium-228																
Thorium-230																
Thorium-231																
Thorium-232																
Thorium-234																
Thorium 234 Gamma																
Tin									**ppm**	50	50	50	**ppm**	5.1	0.6	11.1
Titanium													**ppm**	1.2	1	2.2
Tungsten													**ppm**	0.7	0.5	3.9
TOC																
Total Uranium													**% bt wt**	75.8	75.8	76.1
Total Uranium Alpha																
Uranium TIMS																
Uranium-232									**ug/g U235**	1,229	261	2,170	**ppb**	0	0	0.1
Uranium-233/234																
Uranium-233									**ug/g U235**	1,257	261	2,220				
Uranium-233 TIMS																

Lot 13 {Low Enriched UF4}

Note: Analytical data for enriched UF4 at Portsmouth is listed in Paradox Table by Lot ID. Data included in Tables GTIUF4xls and ALLUF4xls was not generated from Portsmouth UF4, but are considered representative of the material.

	Uranium Products & Services Catalog				Data Paradox Table By Lot ID				Data GTIUF4xls				Data ALLUF4xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Uranium-234	8,140	6,900	8,860	**ug/g U**					**ug/g U235**	8,137	6,900	8,860	**% bt wt**	0	0	0
Uranium 234 Alpha																
Uranium 234 Gamma																
Uranium-234 TIMS																
Uranium 235 Alpha																
Uranium 235 Gamma																
Uranium-235					**ppm**	13,329	10,900	19,510	**ppm**	16,000	12,000	20,000				
Uranium-235																
Uranium-235 TIMS																
Uranium 236 Aplha																
Uranium-236	3,070	270	25,400	**ug/g U**					**ug/g U235**	3,072	272	25,400	**ppm**	1,000	1,000	1,000
Uranium-236 TIMS																
Uranium 238 Alpha																
Uranium 238 Gamma																
Uranium-238					**ppm**	758,300	752,000.0	759,800	**ppm**	755,000	747,000	763,000				
Uranium-238 TIMS																
Vanadium													**ppm**	0.6	0.5	0.9
Zinc																
Zirconium													**ppm**	10.3	1	194
Total Impurities																
Halides (Cl+Br+I)																
Plutonium (ppbU)																
Neptunium (ppbU)																
Total Pu + Np													?/g U	974.9	700	2170
Alpha Activity																
Moisture					% bt wt	0.026	0.010	0.070	% bt wt	0.1	0.1	0.1	% bt wt	0.2	0.0	0.7
ZrNb95																
Protactinium 234m																
Gamma Fission Product activity																
Gamma									**mCi/g U235**	1.8E-06	4.0E-07	2.56E-06	**Bq/g U**	10.50	0	150
Trans Alpha																
Americium-241																

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	

U= Not Detected Above Method Detection Limit (MDL)
* = Aged Natural Uranium

Lot 13 {Low Enriched UF4}

Note: Analytical data for enriched UF4 at Portsmouth is listed in Paradox Table by Lot ID. Data included in Tables GTIUF4xls and ALLUF4xls was not generated from Portsmouth UF4, but are considered representative of the material.

	Uranium Products & Services Catalog				Data Paradox Table By Lot ID				Data GTIUF4xls				Data ALLUF4xls			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High	Units	Average	Low	High	Units	Average	Low	High
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million															
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million															
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion															

Data from Reusable Uranium Products & Services Catalog October 2002

Additional analytical data available per Uranium Products & Services Catalog October 2002

Data from LPP-0051

Converdyn Data Needed for UF6 processing

Lot 14 {Low Enriched UO3}

Note: No analytical data available for Lot 14 at Portsmouth. Data should be viewed as representative of UO3 material identified in Lot 14. Because of correlation of measurements within ALLUO3.xls, this data is viewed with a high degree of skepticism.

Note: No analytical data available on Lot 14 at Portsmouth. Data for Nuclear Fuels Services sampling of uranium oxides in 2001 is included in this summary for comparison.

Note: No analytical data available on Lot 14 at Portsmouth. Data for Nuclear Fuels Services report USM OreTM Specification Scoping (Rev 6.1) for the Fernald uranium oxides in 2001 is included in this summary for comparison.

	Uranium Products & Services Catalog				Data 1995UO3 & HistUO3Pu				Data AllUO3.xls				Product Final Report 2-6 {53G-01-0001} Table				USM Ore™ Specification Scoping (Rev 6.1)			
Chemical Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Aluminum									ug/g U	14.39	12	19	ppm	6.24	3.7	7.4	ppm	1		
Antimony									ug/g U	0.55	0.525	0.584	ppm	1.2	1.2	1.2				
Arsenic									ug/g U	2.77	2.64	2.92	ppm	1.2	1.2	1.2	ppm	10		
Barium									ug/g U	2.77	2.62	2.92	ppm	1.34	1.2	2.5	ppm	2		
Beryllium									ug/g U	0.55	0.525	0.584	ppm	3.12	1.2	4.9	ppm	0.1		
Bismuth									ug/g U	0.55	0.525	0.584	ppm	1.2	1.2	1.2				
Equiv. Boron Content									ug/g U	0.5	0.5	0.5	ppm	2.71	1.2	6.1	ppm	0.1		
Bromine									ug/g U	1.3	1.3	1.3	ppm	12.24	12.1	12.4				
Carbon													ppm	104.13	74.1	155.7				
Cadmium									ug/g U	0.832	0.787	0.876	ppm	1.2	1.2	1.2	ppm	0.1		
Calcium & Mg																				
Calcium									ug/g U	18.14	13	109	ppm	22.29	17.4	24.6	ppm	10		
Cesium													ppm	1.2	1.2	1.2				
Chlorine									ug/g U	5.41	1.2	100	ppm	12.24	12.1	12.4				
Chromium					ppm	13.8	4	70.5	ug/g U	5.94	1.4	12.3	ppm	7.73	6.2	9.8	ppm	10		
Cobalt													ppm	1.2	1.2	1.2				
Copper									ug/g U	2.16	1.57	11.2	ppm	8.16	5	11.1				
Dysprosium													ppm	1.20	1.2	1.2				
Europium													ppm	1.20	1.2	1.2				
Fluorine																	ppm	2		
Gadolinium													ppm	1.20	1.20	1.20				
Hafnium													ppm	1.20	1.20	1.20				
Iron					ppm	45.6	25	91	ug/g U	56.22	47	73	ppm	26.92	21.9	37.1	ppm	55		
Lead									ug/g U	3.336	3.15	3.92	ppm	1.2	1.2	1.2	ppm	1		
Lithium									ug/g U	0.559	0.525	0.711	ppm	1.48	1.2	2.5				
Magnesium									ug/g U	14.55	13	22.8	ppm	29.19	21.9	46	ppm	50		
Manganese									ug/g U	0.83	0.525	8.42	ppm	1.2	1.2	1.2	ppm	2		
Mercury													ppm	1.2	1.2	1.2	ppm	2		
Molybdenum									ug/g U	1.386	1.31	1.46	ppm	1.2	1.2	1.2	ppm	10		
Neptunium					ppm	599	543	702	Bq/g U	8.92	1.43	16.8					ppm	5.6E-01		5.9E-01
Nickel									ug/g U	13.86	13.1	14.6	ppm	4.62	3.6	6.2	ppm	2		
Niobium									ug/g U	0.838	0.787	1.27	ppm	1.2	1.2	1.2				
Nitrogen									ug/g U	5205	1554	6275	ppm	3.09	1.2	4.9				
Phosphorous									ug/g U	32.29	11.8	121.7	ppm	17.66	14.6	18.6	ppm	100		
Plutonium (Total)	2.25	0.17	4.8	ug/g U235	ppm	32.3	20.6	45.5												
Plutonium (Total)					pCi/g U	2.3	0.2	4.8	pCi/g U											
Plutonium-238					pCi/g U	80.1	0.7	140.0	pCi/g U								ppm	8.2E-06		9.8E-06
Plutonium-239/240																	ppm	3.7E-02		5.2E-02
Plutonium-241																				
Plutonium-242																				
Plutonium-244																				
Potassium									ug/g U	14.39	12.00	19.00	ppm	6.8	3.7	9.8	ppm	15		
Ruthenium-106									Bq/g U	2.83	0.00	42.80								
Ruthenium									ug/g U	13.86	13.10	14.60	ppm	1.2	1.2	1.2				
Samarium					ppb	50	50	50	ug/g U				ppm	1.2	1.2	1.2				
Selenium													ppm	1.2	1.2	1.2	ppm	0.4		
Silicon									ug/g U	20.4	20	46	ppm	11	9.7	12.4	ppm	15		
Silver									ug/g U	0.55	0.525	0.584	ppm	2.29	1.2	4.8	ppm	0.5		
Sodium					ppm	6.2	4	12	ug/g U	28.25	24	37	ppm	1.89	1.2	2.5	ppm	29		
Strontium									ug/g U	27.717	26.2	29.2	ppm	1.2	1.2	1.2				

Lot 14 {Low Enriched UO3}

Note: No analytical data available for Lot 14 at Portsmouth. Data should be viewed as representative of UO3 material identified in Lot 14. Because of correlation of measurements within ALLUO3.xls, this data is viewed with a high degree of skepticism.

Note: No analytical data available on Lot 14 at Portsmouth. Data for Nuclear Fuels Services sampling of uranium oxides in 2001 is included in this summary for comparison.

Note: No analytical data available on Lot 14 at Portsmouth. Data for Nuclear Fuels Services report USM OreTM Specification Scoping (Rev 6.1) for the Fernald uranium oxides in 2001 is included in this summary for comparison.

	Uranium Products & Services Catalog				Data 1995UO3 & HistUO3Pu				Data AllUO3.xls				Product Final Report 2-6 {53G-01-0001} Table				USM Ore™ Specification Scoping (Rev 6.1)			
Chemical Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**	**Units**	**Average**	**Low**	**High**
Sulfur									ug/g U	1291.65	857	1689	ppm	219.21	44.7	764				
Tantalum									ug/g U	1.136	1.05	2.24	ppm	1.2	1.2	1.2				
Technetium-99	88	0.10	160	ug/g U235	ug/g U235	88	0.1	160	ug/g U	9.688	2.07	19.1					ppm U	1.4		1.7
Thorium					ppm	40.2	10	69	ug/g U	5.847	0.525	119	ppm	79.43	54.7	126.5	ppm	64		
Tin									ug/g U	0.555	0.525	0.584	ppm	1.2	1.2	1.2				
Titanium									ug/g U	1.1	1.05	1.17	ppm	1.2	1.2	1.2	ppm	6		
Tungsten									ug/g U	0.557	0.525	0.724	ppm	1.2	1.2	1.2				
Total Uranium	0.82			gU/gram					ppm	824,867	816,200	831,200	% bt wt.	81.74%	80.62%	82.69%	ppm	814,000		821,000
Uranium-232					ug/g U235	833	340	1,700	ppb	0.0264	0.0068	0.047					ppb	0.0E+00		0.0E+00
Uranium-233/234																				
Uranium-233					ug/g U235	832	340	1,700	ug/g U235											
Uranium-234	7,370	6,680	7,620	ug/g U235	ug/g U235	7,365	6,680	7,620	ppm	100	100	100	ppm	0.01	0.009	0.01	ppm	8.0E+01		9.0E+01
Uranium-235					ppm	12,000	11,000	13,000	ppm	8,700	7,500	9,900					ppm	1.3E+04		1.3E+04
Uranium-235													% bt wt.	1.25	1.245	1.258				
Uranium-236	41,900	40,000	45,500	ug/g U235	ppm	41,900	40,000	45,500	ppm	700	500	800	% bt wt.	0.05	0.049	0.053	ppm	5.2E+02		5.2E+02
Uranium-238													% bt wt.	98.69	98.682	98.695				
Vanadium									ug/g U	0.554	0.525	0.584	ppm	1.48	1.2	2.5	ppm	0.5		
Zinc					ppm	45.4	20	87	ug/g U	14.97	14.2	15.8	ppm	1.34	1.2	2.5				
Zirconium									ug/g U	3.768	1.05	76.2	ppm	42.23	17	72.6	ppm	29.0		
Halides(Cl+Br+I)																	ppm	18.0		
Total Impurities													ppm	575.22	405.9	1192.4				
Plutonium (ppbU)													ppb	10.78	7	15				
Neptunium (ppbU)													ppb	275.56	68	365				
Pu + Np (Bq/g)													Bq/ug U	33.67	23	44	Bq/kgU	1.1E+05		1.4E+05
Alpha Activity									dpm/g U	935	486	1990	Bq/ug U	33.67	23	44				
Moisture					% bt wt.	1.2	0.1	19.7	% bt wt.	0.463	0.16	1.42	% bt wt.	0.47%	0.01%	1.21%				
ZrNb95																				
Gamma					mCi/ug U	2.3E-06	1.5E-06	2.8E-06	Bq/ug U	13	0	109					MeV Bq/kgU	3.3E+04		Estimated 4.1E+04
Trans Alpha																				
Americium-241																	ppm	5.2E-05		5.2E-05

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002

Chemical analytical data available per Uranium Products & Services Catalog October 2002

Processing Evaluation to Enhance Acceptance of Low-Enriched Uranium Oxides Product Final Report Table 2-6 {53G-01-0001} {SAL-04-45} January 2001 Prepared by Nuclear Fuel Services

Sample analysis was limited to nine samples which is does not provide an accurate representation of the material. The data is included in the report because it is actual sample results of Fernald UO3 material and may be similar if not the same material stored at Portsmouth UMC.

Lot 14 {Low Enriched UO3}

Note: No analytical data available for Lot 14 at Portsmouth. Data should be viewed as representative of UO3 material identified in Lot 14. Because of correlation of measurements within ALLUO3.xls, this data is viewed with a high degree of skepticism.

Note: No analytical data available on Lot 14 at Portsmouth. Data for Nuclear Fuels Services sampling of uranium oxides in 2001 is included in this summary for comparison.

Note: No analytical data available on Lot 14 at Portsmouth. Data for Nuclear Fuels Services report USM OreTM Specification Scoping (Rev 6.1) for the Fernald uranium oxides in 2001 is included in this summary for comparison.

	Uranium Products & Services Catalog				Data 1995UO3 & HistUO3Pu				Data AllUO3.xls				Product Final Report 2-6 {53G-01-0001} Table				USM Ore™ Specification Scoping (Rev 6.1)			
Chemical Name	Average	Low	High	Units	Units	Average	Low	High	Units	Average	Low	High	Units	Average	Low	High	Units	Average	Low	High
USM OreTM Specification Scoping (Rev 6.1) Report: "Y-12 Lab Analysis of Fernald 1.25% Derbies and Oxide"																				

Converdyn Data Needed for UF6 processing

Technical Description and Characterization Summary
LOT # 15A

Lot 15A {Normal Metal }								
Note: <0.1 nCi/g Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chlorine								
Chromium								
Cobalt								
Copper								
Fluorine								
Hydrogen								
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium								
Nickel								
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)								
Plutonium-238								
Plutonium-239/240								

Lot 15A {Normal Metal }								
Note: <0.1 nCi/g Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Tantalum								
Technetium-99								
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Tin								
Titanium								
Tungsten								
TOC								
Total Uranium								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-234								
Uranium-235								
Uranium-235								
Uranium-236								
Uranium-238								
Vanadium								
Zinc								
Zirconium								

Technical Description and Characterization Summary
LOT # 15A

Lot 15A {Normal Metal }								
Note: <0.1 nCi/g Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Gamma								
Trans Alpha								
Americium-241								

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002

Data from LPP-0051

Converdyn Data Needed for UF6 processing

Technical Description and Characterization Summary
LOT # 15B

Lot 15B {Normal Metal}								
Note: No Data Available Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chlorine								
Chromium								
Cobalt								
Copper								
Fluorine								
Hydrogen								
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium								
Nickel								
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)								
Plutonium-238								
Plutonium-239/240								

Lot 15B {Normal Metal}								
Note: No Data Available Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Tantalum								
Technetium-99								
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Tin								
Titanium								
Tungsten								
TOC								
Total Uranium								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-234								
Uranium-235								
Uranium-235								
Uranium-236								
Uranium-238								
Vanadium								
Zinc								
Zirconium								

Technical Description and Characterization Summary
LOT # 15B

Lot 15B {Normal Metal}								
Note: No Data Available Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog				Data from LPP-0051			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Gamma								
Trans Alpha								
Americium-241								

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

Data from LPP-0051

Converdyn Data Needed for UF6 processing

Technical Description and Characterization Summary
LOT # 15C

Lot 15C {Low Enriched UO2}								
Note: <42 nCi/g Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog					Data from LPP-0051		
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chlorine								
Chromium								
Cobalt								
Copper								
Fluorine								
Hydrogen								
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium								
Nickel								
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)								
Plutonium-238								
Plutonium-239/240								

Lot 15C {Low Enriched UO2}								
Note: <42 nCi/g Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog					Data from LPP-0051		
Chemical_Name	Average	Low	High	Units	Units	Average	Low	High
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Tantalum								
Technetium-99								
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Tin								
Titanium								
Tungsten								
TOC								
Total Uranium								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-234								
Uranium-235								
Uranium-235								
Uranium-236								
Uranium-238								
Vanadium								
Zinc								
Zirconium								

Technical Description and Characterization Summary
LOT # 15C

Lot 15C {Low Enriched UO2}								
Note: <42 nCi/g Transuranic and Fission Product Activity								
{No analytical data available}								
	Uranium Products & Services Catalog					Data from LPP-0051		
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Gamma								
Trans Alpha								
Americium-241								

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002

Data from LPP-0051

Converdyn Data Needed for UF6 processing

Lot 15D {Low Enriched Metal, Seattle University}								
Note: <0.1 nCi/g Transuranic and Fission Product Activity								
{No analytical data available} May be similar to billets in Lot #1								
	Uranium Products & Services Catalog					Data from LPP-0051		
Chemical Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chlorine								
Chromium								
Cobalt								
Copper								
Fluorine								
Hydrogen								
Iron								
Lead								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium								
Nickel								
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)								
Plutonium-238								
Plutonium-239/240								

Lot 15D {Low Enriched Metal, Seattle University}								
Note: <0.1 nCi/g Transuranic and Fission Product Activity								
{No analytical data available} May be similar to billets in Lot #1								
	Uranium Products & Services Catalog					Data from LPP-0051		
Chemical Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Tantalum								
Technetium-99								
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Tin								
Titanium								
Tungsten								
TOC								
Total Uranium								
Uranium-232								
Uranium-233/234								
Uranium-233								
Uranium-234								
Uranium-235								
Uranium-235								
Uranium-236								
Uranium-238								
Vanadium								
Zinc								
Zirconium								

Technical Description and Characterization Summary
LOT # 15D

Lot 15D {Low Enriched Metal, Seattle University}								
Note: <0.1 nCi/g Transuranic and Fission Product Activity								
{No analytical data available} May be similar to billets in Lot #1								
	Uranium Products & Services Catalog					Data from LPP-0051		
Chemical Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture								
ZrNb95								
Gamma								
Trans Alpha								
Americium-241								

Units	
ug/g U	1ugram = 1e-6gram so it is 1 part per million
pCi/g U	
mg/kg U	1mgram = 1e-6 kilogram so it is 1 part per million
mg/kg	1mgram = 1e-6 kilogram so it is 1 part per million
ug/kg	1ugram = 1e-9 kilogram so it is 1 part per billion

Data from Reusable Uranium Products & Services Catalog October 2002

Data from LPP-0051
{No analytical data available} May be similar to billets in Lot #1

Converdyn Data Needed for UF6 processing

Lot 16 {Low Enriched <1% Miscellaneous Compounds}								
Note: No actual analytical data available on Lot 14 at Portsmouth. Data should be viewed as representative of UO3 material identified in Lot 16.								
	Uranium Products & Services Catalog				LPP 551 GT1UF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Bismuth								
Equiv. Boron Content								
Bromine								
Carbon								
Cadmium								
Calcium & Mg								
Calcium								
Cesium								
Chlorine								
Chromium					**ppmU**	6	5	19.6
Cobalt								
Copper					**ppmU**	107	5	859
Fluorine								
Hydrogen								
Iron					**ppmU**	31.4	10	122
Lead								
Lithium								
Magnesium								
Manganese								
Mercury								
Molybdenum								
Neptunium								
Nickel					**ppmU**	23.8	5	100
Niobium								
Nitrogen								
Phosphorous								
Plutonium (Total)					**ug/g U235**	0	0	0.7
Plutonium-238					**pCi/g U**	1.4	0	16

Lot 16 {Low Enriched <1% Miscellaneous Compounds}								
Note: No actual analytical data available on Lot 14 at Portsmouth. Data should be viewed as representative of UO3 material identified in Lot 16.								
	Uranium Products & Services Catalog				LPP 551 GT1UF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Plutonium-239/240					**pCi/g U**	13.5	0	140
Plutonium-241								
Plutonium-242								
Plutonium-244								
Potassium								
Ruthenium								
Samarium								
Selenium								
Silicon								
Silver								
Sodium								
Strontium								
Sulfur								
Tantalum								
Technetium-99					**ug/g U235**	11	0.1	110
Thorium								
Thorium-228								
Thorium-230								
Thorium-232								
Tin								
Titanium								
Tungsten								
TOC								
Total Uranium								
Uranium-232					**ug/g U235**	1,228.7	261	2,170
Uranium-233/234								
Uranium-233					**ug/g U235**	1,256.8	261	2,220
Uranium-234					**ug/g U235**	8,136.7	6,900	8,860
Uranium-235								
Uranium-235					**g/100g U**	1.6	1.2	2
Uranium-236	660	480	800	ug/g U	**ug/g U235**	3,072	272	25,400
Uranium-238								
Vanadium								

Lot 16 {Low Enriched <1% Miscellaneous Compounds}								
Note: No actual analytical data available on Lot 14 at Portsmouth. Data should be viewed as representative of UO3 material identified in Lot 16.								
	Uranium Products & Services Catalog				LPP 551 GT1UF4.xls			
Chemical_Name	**Average**	**Low**	**High**	**Units**	**Units**	**Average**	**Low**	**High**
Zinc								
Zirconium								
Total Impurities								
Plutonium (ppbU)								
Neptunium (ppbU)								
Pu + Np (Bq/g)								
Alpha Activity								
Moisture					% bt wt.	0.1	0.1	0.1
ZrNb95								
Gamma					**mCi/ug U235**	1.80E-06	4.E-07	2.56E-06
Trans Alpha								
Americium-241								

Units	
ug/g U	**1ugram = 1e-6gram so it is 1 part per million**
pCi/g U	
mg/kg U	**1mgram = 1e-6 kilogram so it is 1 part per million**
mg/kg	**1mgram = 1e-6 kilogram so it is 1 part per million**
ug/kg	**1ugram = 1e-9 kilogram so it is 1 part per billion**

Data from Reusable Uranium Products & Services Catalog October 2002

Data from LPP-0051 Analytical Data Drafts and working Papers 3/23/06

Converdyn Data Needed for UF6 processing