SITE Dounreav

SITE OWNER **Nuclear Decommissioning Authority**

Dounreay Site Restoration Limited WASTE CUSTODIAN

LLW **WASTE TYPE**

Is the waste subject to Scottish Policy:

Nο

WASTE VOLUMES

Reported

At 1.4.2022..... Stocks: 235.0 m³

Total future arisings: $0 \, \text{m}^3$

Total waste volume: 235.0 m³

Comment on volumes: No more arisings of this waste as the facility which generated this waste is no longer

> operational. The waste is stored in 1175 x 200 litre drums which are currently stored in 29 HHISO containers. There is only a small uncertainty factor, as the waste has already been

packaged into LLW drums.

Uncertainty factors on

Stock (upper): volumes: Stock (lower): x 0.98 Arisings (upper)

Arisings (lower)

WASTE SOURCE

Between 1989 and 2003 pipeline tubulars and platform components originating from North Sea offshore operations have been cleaned in a dedicated facility on the Dounreay Site. The cleaning operation is required to remove the Low Specific Activity (LSA) scale which is deposited on the pipeline and associated equipment while it is in service. Work is ongoing

to dispose of this waste at Low Active Landfill.

x 1.02

PHYSICAL CHARACTERISTICS

General description: The waste consists of LSA scale cemented into 200 litre drums. The LSA Scale is

composed of precipitated barium sulphate and radium sulphate. The fragments of scale range from particles >100mm in size down to particulate material in the micron range.

LSA Scale (precipitated barium sulphate and radium sulphate) (85.5%), mild steel drums Physical components (%wt):

(5%), cement (9.5%).

Sealed sources: The waste does not contain sealed sources.

Bulk density (t/m3): 1.91

Comment on density: The density is estimated from the consignor's records of drum weights.

CHEMICAL COMPOSITION

General description and components (%wt):

LSA Scale (precipitated barium sulphate and radium sulphate) (85.5%), mild steel drums

(5%), cement (9.5%).

Chemical state: Neutral

Chemical form of radionuclides:

H-3: Not known to be present. C-14: Not known to be present.

CI-36: Not known to be present. Se-79: Not known to be present. Tc-99: Not known to be present. I-129: Not known to be present. Ra: Present as LSA scale. Th: Present as LSA scale. U: Not known to be present. Np: Not known to be present. Pu: Not known to be present.

Metals and alloys (%wt):

Mild steel drums (5%).

	(%wt)	Type(s) / Grade(s) with proportions	% of total C14 activity
Stainless steel	0		,
Other ferrous metals	5.0	Mild steel	
Iron			
Aluminium			
Beryllium	0		
Cobalt	0		
Copper			
Lead	0		
Magnox/Magnesium	0		
Nickel			
Titanium			
Uranium	0		
Zinc	0		
Zircaloy/Zirconium	0		
Other metals	0		
Organics (%wt):			
	(%wt)	Type(s) and comment	% of total C14
Total cellulosics	0		activity
Paper, cotton	0		
Wood	0		
Halogenated plastics	0		
Total non-halogenated plastics	0		
Condensation polymers	0		
Others	0		
Organic ion exchange materials	0		
Total rubber	0		
Halogenated rubber	0		
Non-halogenated rubber	0		
Hydrocarbons			
Oil or grease			
Fuel			
Asphalt/Tarmac (cont.coal tar)			
Asphalt/Tarmac (no coal tar)			
Bitumen			
Others			
Other organics	0		
Other materials (%wt):			

	(%wt)	Type(s) and comment	% of total C14 activity
Inorganic ion exchange materials	0		
Inorganic sludges and flocs	0		
Soil	0		
Brick/Stone/Rubble	0		
Cementitious material	95.0		
Sand	0		
Glass/Ceramics			
Graphite	0		
Desiccants/Catalysts	0		
Asbestos	0		
Non/low friable			
Moderately friable			
Highly friable			
Free aqueous liquids	0		
Free non-aqueous liquids	0		
Powder/Ash	0		
Inorganic anions (%wt):			
	(%wt)	Type(s) and comment	
Fluoride	0		
Chloride	0		
lodide	0		
Cyanide	0		
Carbonate	0		
Nitrate	0		
Nitrite	0		
Phosphate	0		
Sulphate	<85.0	Barium and radium sulphate	
Sulphide	0		
Materials of interest for - waste acceptance criteria:			
	(%wt)	Type(s) and comment	
Combustible metals	0		
Low flash point liquids	0		
Explosive materials	0		
Phosphorus	0		
Hydrides	0		
Biological etc. materials	0		
Biodegradable materials	0		
Putrescible wastes	0		
Non-putrescible wastes	0		

	Corrosive materials	0	
	Pyrophoric materials	0	
	Generating toxic gases	0	
	Reacting with water	0	
	Higher activity particles	NE	
	Soluble solids as bulk chemical compounds	0	
Hazardous su			
		(0/ 14/4)	Tuna(a) and assemble
	A am domida	(%wt)	Type(s) and comment
	Acrylamide	NIE	
	Benzene	NE	
	Chlorinated solvents		
	Formaldehyde		
	Organometallics		
	Phenol	NE	
	Styrene		
	Tri-butyl phosphate	NE	
	Other organophosphates		
	Vinyl chloride	NE	
	Arsenic	NE	
	Barium		
	Boron	NE	
	Boron (in Boral)		
	Boron (non-Boral)		
	Cadmium	NE	
	Caesium		
	Selenium	NE	
	Chromium	NE	
	Molybdenum	NE	
	Thallium		
	Tin	NE	
	Vanadium	NE	
	Mercury compounds		
	Others	NE	
	Electronic Electrical Equipment (EEE)		
	EEE Type 1		
	EEE Type 2		
	EEE Type 3		
	EEE Type 4		
	EEE Type 5		

EEE Type 5.....

Comr	lexina	agents	(%wt	١:
COLLIP	,,oaning	agonio	(/ 0 * * *	٠.

(%wt) Type(s) and comment

EDTA.....

DPTA.....

NTA.....

Polycarboxylic acids.....

Other organic complexants.....

Total complexing agents...... 0

Potential for the waste to contain discrete items:

No.

TREATMENT, PACKAGING AND DISPOSAL

Planned on-site / off-site treatment(s):

Treatment	On-site / Off site	Stream volume %
Low force compaction		
Supercompaction (HFC)		
Incineration		
Solidification		
Decontamination		
Metal treatment		
Size reduction		
Decay storage		
Recyling / reuse		
Other / various		
None		
	1	

Comment on planned treatments:

Disposal off-site.

Disposal Routes:

Disposal Route	Stream volume %	Disposal density t/m3
Expected to be consigned to the LLW Repository Expected to be consigned to a Landfill Facility Expected to be consigned to an On-Site Disposal Facility Expected to be consigned to an Incineration Facility Expected to be consigned to a Metal Treatment Facility Expected to be consigned as Out of Scope Expected to be recycled / reused Disposal route not known	100.0	1.9
Disposal foute flot known		

Classification codes for waste expected to be consigned to a landfill facility:

19 12 11

Upcoming (2022/23-2024/25) Waste Routing (if expected to change from above):

Disposal Route	Stream volume %			
Disposal Roule	2022/23	2023/24	2024/25	
Expected to be consigned to the LLW Repository Expected to be consigned to a Landfill Facility Expected to be consigned to an On-Site Disposal Facility Expected to be consigned to an Incineration Facility Expected to be consigned to a Metal Treatment Facility Expected to be consigned as Out of Scope Expected to be recycled / reused Disposal route not known	100.0			

Opportunities for alternative disposal routing: Yes

Baseline Management Route	Opportunity Management Route	Stream volume (%)	Estimated Date that Opportunity will be realised	Opportunity Confidence	Comment
Disposal at a Near Surface / Near Site Disposal Facility	Authorised landfill	100.0	31/12/2022	High	Site are currently in negotiations with Authorised Landfill operator to dispose of this waste

Waste Packaging for Disposal: (Not applicable to this waste stream)

1/3 Height IP-1 ISO	
2/3 Height IP-2 ISO 1/2 Height WAMAC IP-2 ISO 1/2 Height IP-2 Disposal/Re-usable ISO 2m box (no shielding) 4m box (no shielding) Other	

Other information:

Waste Planned for Disposal at the LLW Repository: (Not applicable to this waste stream)

Container voidage: -

Waste Characterisation

Form (WCH):

Waste consigned for disposal to LLWR in year of generation:

Non-Containerised Waste for In-Vault Grouting: (Not applicable to this waste stream)

Stream volume (%):

Waste stream variation: -

Bounding cuboidal volume:

Inaccessible voidage: -

Other information:

RADIOACTIVITY

Source: Between 1989 and 2003, pipeline tubulars and platform components originating from North

Sea offshore operations have been cleaned in a dedicated facility on the Dounreay Site. The cleaning operation is required to remove the Low Specific Activity (LSA) scale which is deposited on the pipeline and associated equipment while it is in service. The scale contains low levels of naturally occurring U and Th daughter products and after removal it

is currently drummed and stored on the Dounreay Site.

Uncertainty: The information is accurate to within a factor of 10.

Definition of total alpha and total beta/gamma:

Where totals are shown on the table of radionuclide activities they are the sums of the listed alpha or beta/gamma emitting radionuclides plus 'other alpha' or 'other beta/gamma'.

Measurement of radioactivities:

The specific activity is based on the consignor's records.

Other information: Stock and arising activity based on consignor's declarations.

		Mean radioactivity, TBq/m³			Mean radioactivity, TBq/m³			
H 3		Waste at Bands ar	Future Bands and		Waste at	Bands and	Future	Bands and
Be 10 C C14	Nuclide	1.4.2022 Code	arisings Code	Nuclide	1.4.2022	Code	arisings	Code
C 14	H 3			Gd 153				
Na 22	Be 10			Ho 163				
Al 28	C 14			Ho 166m				
C136	Na 22			Tm 170				
Ar 39	AI 26			Tm 171				
Ar 39								
A+42								
K-40								
Ca 41								
Mn 53								
Mn 54 Fe 56 Ph 205 Ph 205 CC 2								
Fe 55								
Dec					2 37F-05	CC 2		
Ni 59					2.57 L-05	00 2		
Ni 63								
Zn 65 Se 79 Ra 225 Ra 225 Ra 226 Ra 226 Ra 226 Ra 226 Ra 227 Ra 227 Ra 228 Ra					0.005.05	00.0		
Se 79 Kr 81 Ra 225 Ra 226 Ra 226 Ra 228 Ra 238 Ra 233 Ra 234 Ra					2.29E-05	CC 2		
Kr 81 Ra 226 Ra 228 Ra 228 Ra 57 R			1					
Ra 228			1		7.4-5.5	0.0		
Rb 87 Sr 90 Th 227 Th 227 Th 228 Th 228 Th 229 Th 230 Th 230 Th 230 Th 232 Th 234 Th 235 Th 237 Th 237 Th 238 Th 237 Th 238 Th 248 Th			1		7.17E-05	CC 2		
Sr 90 Th 227 Th 228 Nb 91 Th 228 Nb 91 Th 229 Nb 92 Th 230 Th 230 Nb 93m Nb 93 Th 234 Nb 94 Th 234 Nb 94 Th 234 Nb 94 Th 234 Nb 94 Th 234 Nb 93 Th 230 Th 230 Th 230 Th 231 Tc 97 Pa 233 Tc 97 Pa 233 U 232 U 233 Pd 107 U 234 U 235 U 236 U								
Th 228								
Nb 91								
Nb 92 Nb 93m Nb 94 Mo 93 To 97 To 99 Ru 106 Pd 107 Ag 108m Ag 110m Cd 109 Cd 113m Sn 121m Sn 121m Sn 123 Sn 126 Sb 125 Sb 126 Te 125m Te 127m								
Nb 93m Nb 94 Th 232 Th 234 Th 235 Tc 97 Tc 99 Tc 99 Tc 90								
Nb 94 Mo 93								
Mo 93 Fa 231 Fa 232 Fa 233 Tc 97 Fa 233 U 232 U 233 U 234 U 234 U 235 U 236								
Tc 97 Tc 99 Ru 106 Pd 107 Ag 108m Ag 110m Cd 109 Cd 113m Sn 12m Sn 121m Sn 123 Sn 126 Sb 125 Sb 126 Te 125m Ag 241 Ag 241 Ag 247 I 129 Cs 134 Cs 135 Cs 137 Ba 133 La 137 La 138 Ce 144 Pm 145 Pm 147 Sm 147 Sm 147 Sm 147 Sm 147 Sm 151 Eu 152 Eu 152 Eu 154 Pu 232 Pa 233 U 232 U 234 U 234 U 235 U 236 U 238 Pu 236 Sh 223 Pu 239 Pu 239 Pu 240 Sb 126 Pu 241 Am 242 Am 241 Am 242 Am 241 Am 242 Cm 243 Cm 244 Cm 243 Cm 244 Cm 243 Cm 244 Cm 245 Cm 246 Cm 248 Cf 249 Cm 248 Cf 249 Cm 248 Cf 249 Cm 248 Cf 250 Cm 248 Cf 250 Cm 248 Cf 250 Cf 251 Cf 252 Cother a 4.67E-04 CC 2 Cother b/g 3.96E-04 CC 2 COthe								
Tc 99 Ru 106 Pd 107 Ag 108m Ag 110m Cd 109 Cd 113m Sn 121m Sn 121m Pu 238 Sn 126 Sb 125 Sb 126 Te 125m Te 127m I 129 Am 241 Cs 134 Cc 134 Cc 134 Cc 137 Ba 133 La 137 La 138 Cc 144 Pm 145 Pm 147 Sm 151 Eu 152 Eu 154 U 233 U 234 U 236 U 238 Cu 234 Cu 238 Cu 238 Cu 238 Cu 238 Cu 249 Cm 244 Cc 2 Cd 249 Cf 250 Cf 251 Cf 252 Cd 249 Cf 250 Cf 251 Cf 252 Cd 248 Cf 249 Cf 250 Cf 251 Cf 252 Cd 252 Cd 252 Cd 253 Cd 262 Cd 262 Cd 263 Cd 263 Cd 263 Cd 263 Cd 264 Cd 27 Cd 265 Cd	Mo 93			Pa 231				
Ru 106 Pd 107 Ag 108m Ag 110m Cd 109 Cd 113m Sn 119m Sn 121m Sn 123 Sn 126 Sb 126 Fe 125m Te 125m Te 127m I 1129 Cs 134 Cs 135 Cs 137 Ba 133 La 137 La 138 Ce 144 Pm 145 Pm 145 Pm 147 Sm 147 Sm 147 Sm 147 Sm 147 Sm 151 Eu 152 Eu 152 I 238 U 233 U 234 U 235 U 238 U 238 Cu 234 U 238 Vu 239 Pu 239 Pu 240 Pu 241 Pu 242 Am 241 Am 242m Am 242m Am 242m Am 243 Cm 244 Cm 244 Cm 244 Cm 244 Cm 245 Cm 246 Cm 246 Cm 246 Cm 246 Cm 246 Cm 247 Cm 248 Cf 250 Cf 251 Cm 248 Cf 250 Cf 251 Cf 252 Cher a	Tc 97			Pa 233				
Pd 107 Ag 108m Ag 110m Cd 109 Cd 113m Sn 119m Pu 236 Sn 12tm Sn 12tm Sn 12c Sb 126 Sb 126 Te 125m Te 127m I 129 Am 241 Cs 134 Cs 135 Cs 137 Ba 133 La 137 La 138 Ce 144 Pm 145 Pm 145 Pm 147 Sm 147 Sm 147 Sm 151 Eu 152 Eu 152 U 234 U 235 U 236 U 238 Np 237 Pu 236 Pu 239 Pu 240 Pu 240 Pu 241 Am 241 Am 242 Am 241 Am 241 Am 242m Am 243 Cc 250 Cm 244 Cc 26 Cm 248 Cc 126 Cm 248 Cc 125 Cm 248 Cc 125 Cm 248 Cc 125 Cm 248 Cc 125 Cm 248 Cc 2 Cd 25 Cd 25 Cd 25 Cd 25 Cd 26 Cd 26 Cd 27 Cd 27 Cd 27 Cd 28 Cd 26 Cd 27 Cd 27 Cd 28 Cd 27 Cd 28 Cd 28 Cd 29 Cd 29 Cd 26 Cd 27 Cd 26 Cd 27 Cd 27 Cd 28 Cd 28 Cd 29 Cd 26 Cd 27 Cd 26 Cd 27 Cd 26 Cd 27 Cd 27 Cd 27 Cd 28 Cd 28 Cd 28 Cd 29 Cd 26 Cd 27 Cd 26 Cd 27 Cd 27 Cd 27 Cd 27 Cd 28 Cd 28 Cd 28 Cd 29 Cd 26 Cd 27 Cd 2	Tc 99			U 232				
Ag 108m Ag 110m U 235 U 236 U 236 U 238 U 239 U 238 U 239 U 238 U 248 U 241 U 242 U 242 U 242 U 242 U 243 U 243 U 243 U 244 U 244 U 244 U 244 U 248 U 249 U 248 U 249	Ru 106			U 233				
Ag 110m U 236 Cd 109 U 238 Cd 113m Np 237 Sn 119m Pu 236 Sn 121m Pu 238 Sn 123 Pu 239 Sn 126 Pu 240 Sb 125 Pu 241 Sb 126 Pu 242 Te 125m Am 241 Te 127m Am 242m I 129 Am 243 Cs 134 Cm 242 Cs 135 Cm 242 Cs 136 Cm 243 Cs 137 Cm 244 Ba 133 Cm 245 La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 250 Pm 145 Cf 250 Pm 147 Cf 250 Sm 147 Cf 252 Sm 151 Cm 26 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2	Pd 107			U 234				
Cd 109 U 238 Cd 113m Np 237 Sn 119m Pu 238 Sn 121m Pu 238 Sn 123 Pu 239 Sn 126 Pu 240 Sb 125 Pu 241 Sb 126 Pu 242 Te 125m Am 241 Te 127m Am 243 I 129 Am 243 Cs 134 Cm 242 Cs 135 Cm 242 Cs 137 Cm 244 Ba 133 Cm 245 La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 250 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2	Ag 108m			U 235				
Cd 113m Np 237 Sn 119m Pu 236 Sn 121m Pu 238 Sn 123 Pu 240 Sh 126 Pu 241 Sb 125 Pu 241 Sb 126 Pu 242 Te 125m Am 241 Te 127m Am 242m 1 1129 Am 243 Cs 134 Cm 242 Cs 135 Cm 243 Cs 137 Cm 244 Ba 133 Cm 245 La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 249 Pm 147 Cf 250 Pm 147 Cf 250 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2	Ag 110m			U 236				
Sn 119m Sn 121m Pu 236 Pu 238 Sn 126 Sn 126 Sh 125 Pu 241 Sh 125 Sh 126 Pu 241 Pu 242 Te 125m Am 242m I 129 Am 243 Cs 134 Cs 135 Cm 244 Cs 135 Cm 244 Cm 245 Cm 245 Cm 248	Cd 109			U 238				
Sn 121m	Cd 113m			Np 237				
Sn 123	Sn 119m			Pu 236				
Sn 126	Sn 121m			Pu 238				
Sn 126	Sn 123			Pu 239				
Sb 125								
Sb 126 Te 125m Am 241 Am 242m Am 243 Cs 134 Cs 135 Cm 242 Cs 137 Ba 133 Cm 245 Cm 248 Ce 144 Cf 249 Cf 250 Pm 147 Sm 147 Sm 147 Sm 151 Eu 152 Eu 154 Eu 154 Cm 245 Cm 246 Cc 2 O								
Te 125m Te 127m Te 127m I 129 Cs 134 Cs 135 Cs 137 Ba 133 La 137 La 138 Ce 144 Pm 145 Pm 145 Pm 147 Sm 147 Sm 151 Eu 152 Eu 154 Am 241 Am 242m Am 243 Cm 242 Cm 243 Cm 244 Cm 245 Cm 246 Cm 248 Cf 249 Cf 250 Cf 251 Cf 251 Cf 252 Other b/g 3.96E-04 CC 2 Total a Am 241 Am 242m Am 243 Cm 243 Cm 242 Cm 243 Cm 244 Cm 245 Cm 246 Cm 248 Cf 249 Cf 250 Cf 251 Cf 250 Cf 251 Cf 252 Other b/g 3.96E-04 CC 2 0								
Te 127m I 129 Cs 134 Cs 135 Cs 137 Ba 133 La 137 La 138 Ce 144 Pm 145 Pm 147 Sm 147 Sm 147 Sm 151 Eu 152 Eu 154 Am 242m Am 243 Cm 242 Cm 242 Cm 243 Cm 244 Cm 245 Cm 246 Cm 248 Cf 249 Cf 250 Cf 251 Cf 252 Other b/g 3.96E-04 CC 2 Other b/g 3.96E-04 CC 2 Other b/g 3.96E-04 CC 2 Other b/g 5.62E-04 CC 2								
1 129								
Cs 134 Cm 242 Cs 135 Cm 243 Cs 137 Cm 244 Ba 133 Cm 245 La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Cs 135 Cm 243 Cs 137 Cm 244 Ba 133 Cm 245 La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Cs 137 Ba 133 Cm 244 La 137 Cm 246 Cm 248 La 138 Cm 248 Cm 249 Ce 144 Cf 249 Cm 248 Pm 145 Cf 250 Cm 249 Pm 147 Cf 251 Cf 251 Sm 147 Cf 252 Other a 4.67E-04 C C 2 Sm 151 Other b/g 3.96E-04 C C 2 Eu 152 Total a 5.62E-04 C C 2 0								
Ba 133 Cm 245 La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
La 137 Cm 246 La 138 Cm 248 Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
La 138 Cm 248 Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Ce 144 Cf 249 Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Pm 145 Cf 250 Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Pm 147 Cf 251 Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Sm 147 Cf 252 Sm 151 Other a 4.67E-04 CC 2 Eu 152 Other b/g 3.96E-04 CC 2 Eu 154 Total a 5.62E-04 CC 2 0								
Sm 151 Other a 4.67E-04 C C 2 Eu 152 Other b/g 3.96E-04 C C 2 Eu 154 Total a 5.62E-04 C C 2 0			1					
Eu 152 Other b/g 3.96E-04 C C 2 Eu 154 Total a 5.62E-04 C C 2 0					4675.04	00 3		
Eu 154 Total a 5.62E-04 CC 2 0								
							_	
EU 100 Total b/g 4.20E-04 CC 2 0								
production of the control of the con	Eu 155		1	l otal b/g	4.20E-04	CC 2	0	

Bands (Upper and Lower)

A a factor of 1.5
B a factor of 3
C a factor of 10
D a factor of 100
E a factor of 1000

Note: Bands quantify uncertainty in mean radioactivity.

- 1 Measured activity
 2 Derived activity (best estimate)
 3 Derived activity (upper limit)
 4 Not present
 5 Present but not significant
 6 Likely to be present but not assessed
 7 Present in significant quantities but not determined
 8 Not expected to be present in significant quantity 8 Not expected to be present in significant quantity