

<b>WASTE STREAM</b>	<b>9D931</b>	<b>Sellafield ILW skip</b>
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**SITE** Hinkley Point A  
**SITE OWNER** Nuclear Decommissioning Authority  
**WASTE CUSTODIAN** Magnox Limited  
**WASTE TYPE** ILW  
 Is the waste subject to Scottish Policy: No

**WASTE VOLUMES**

		Reported
Stocks:	At 1.4.2022.....	0.2 m <sup>3</sup>
Total future arisings:		0 m <sup>3</sup>
Total waste volume:		0.2 m <sup>3</sup>
Comment on volumes:	Base and two long sides of ILW skip received from Sellafield	
Uncertainty factors on volumes:	Stock (upper):	x 1.2
	Stock (lower):	x 0.8
	Arisings (upper):	x
	Arisings (lower):	x

**WASTE SOURCE** 1 ILW skip received from Sellafield

**PHYSICAL CHARACTERISTICS**

General description: Pond skip  
 Physical components (%vol): 100% steel  
 Sealed sources: The waste does not contain sealed sources.  
 Bulk density (t/m<sup>3</sup>): 1.5  
 Comment on density: Indicative density based on assumed packing efficiency of skip pieces in their extant coffins

**CHEMICAL COMPOSITION**

General description and components (%wt): -  
 Chemical state: -  
 Chemical form of radionuclides: -  
 Metals and alloys (%wt): -

	(%wt)	Type(s) / Grade(s) with proportions	% of total C14 activity
Stainless steel.....			
Other ferrous metals.....	100.0		
Iron.....			
Aluminium.....			
Beryllium.....			
Cobalt.....			
Copper.....			
Lead.....			
Magnox/Magnesium.....			
Nickel.....			
Titanium.....			
Uranium.....			
Zinc.....			
Zircaloy/Zirconium.....			

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Other metals.....

Organics (%wt):

	(%wt)	Type(s) and comment	% of total C14 activity
Total cellulosics.....	0		
Paper, cotton.....			
Wood.....			
Halogenated plastics .....			
Total non-halogenated plastics.....	0		
Condensation polymers.....			
Others.....			
Organic ion exchange materials....			
Total rubber.....	0		
Halogenated rubber .....			
Non-halogenated rubber.....			
Hydrocarbons.....			
Oil or grease .....			
Fuel.....			
Asphalt/Tarmac (cont.coal tar)...			
Asphalt/Tarmac (no coal tar)....			
Bitumen.....			
Others.....			
Other organics.....			

Other materials (%wt):

	(%wt)	Type(s) and comment	% of total C14 activity
Inorganic ion exchange materials..			
Inorganic sludges and flocs.....			
Soil.....			
Brick/Stone/Rubble.....			
Cementitious material.....			
Sand.....			
Glass/Ceramics.....			
Graphite.....			
Desiccants/Catalysts.....			
Asbestos.....	0		
Non/low friable.....			
Moderately friable.....			
Highly friable.....			
Free aqueous liquids.....			
Free non-aqueous liquids.....			
Powder/Ash.....			

Inorganic anions (%wt):

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(%wt) Type(s) and comment

Fluoride.....  
 Chloride.....  
 Iodide.....  
 Cyanide.....  
 Carbonate.....  
 Nitrate.....  
 Nitrite.....  
 Phosphate.....  
 Sulphate.....  
 Sulphide.....

Materials of interest for waste acceptance criteria: -

(%wt) Type(s) and comment

Combustible metals.....  
 Low flash point liquids.....  
 Explosive materials.....  
 Phosphorus.....  
 Hydrides.....  
 Biological etc. materials.....  
 Biodegradable materials..... 0  
     Putrescible wastes.....  
     Non-putrescible wastes.....  
 Corrosive materials.....  
 Pyrophoric materials.....  
 Generating toxic gases.....  
 Reacting with water.....  
 Higher activity particles.....  
 Soluble solids as bulk chemical compounds.....

Hazardous substances / non hazardous pollutants: -

(%wt) Type(s) and comment

Acrylamide.....  
 Benzene.....  
 Chlorinated solvents.....  
 Formaldehyde.....  
 Organometallics.....  
 Phenol.....  
 Styrene.....  
 Tri-butyl phosphate.....  
 Other organophosphates.....

Vinyl chloride.....  
 Arsenic.....  
 Barium.....  
 Boron..... 0  
     Boron (in Boral).....  
     Boron (non-Boral).....  
 Cadmium.....  
 Caesium.....  
 Selenium.....  
 Chromium.....  
 Molybdenum.....  
 Thallium.....  
 Tin.....  
 Vanadium.....  
 Mercury compounds.....  
 Others.....  
 Electronic Electrical Equipment (EEE)  
     EEE Type 1.....  
     EEE Type 2.....  
     EEE Type 3.....  
     EEE Type 4.....  
     EEE Type 5.....

Complexing agents (%wt):

(%wt)      Type(s) and comment

EDTA.....  
 DPTA.....  
 NTA.....  
 Polycarboxylic acids.....  
 Other organic complexants.....  
 Total complexing agents.....

Potential for the waste to contain discrete items:      Yes. Large Metal Items (LMIs)/"substantial" thickness items considered "durable" assumed DIs; Stainless items assumed DIs

**PACKAGING AND CONDITIONING**

Conditioning method:      The skips will be size reduced and packaged into 6m3 boxes  
 Plant Name:      -  
 Location:      Hinkley Point A  
 Plant startup date:      -  
 Total capacity (m³/y incoming waste):      -  
 Target start date for packaging this stream:      -  
 Throughput for this stream (m³/y incoming waste):      -  
 Other information:      Assumed co-disposal with 9D930, container allocated to this stream.

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Likely container type:	Container	Waste packaged (%vol)	Waste loading (m <sup>3</sup> )	Payload (m <sup>3</sup> )	Number of packages
	6m <sup>3</sup> concrete box (SD)	100.0	2.1	5.8	< 1

- Likely container type comment: -
- Range in container waste volume: -
- Other information on containers: -
- Likely conditioning matrix: -
- Other information: -
- Conditioned density (t/m<sup>3</sup>): -
- Conditioned density comment: -
- Other information on conditioning: -
- Opportunities for alternative disposal routing: -

Baseline Management Route	Opportunity Management Route	Stream volume (%)	Estimated Date that Opportunity will be realised	Opportunity Confidence	Comment
-	-	-	-	-	-

**RADIOACTIVITY**

- Source: -
- Uncertainty: The values quoted represent an indicative Total Activity derived from Waste Consignment Information and mapping to 9D930 fingerprint.
- 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: This update provides data transposed from Table 4 of the desktop review in project report HPA/PROG/SILW/0123. Individual values for Pu-239, Pu-240, Cm-243 and Cm-244 derived from values provided for the Pu-239+240 and Cm-243+244 nuclide pairs assuming same split as that applied to similar update for wastestream 9D930.
- Other information: -

**WASTE STREAM 9D931 Sellafield ILW skip**

Nuclide	Mean radioactivity, TBq/m <sup>3</sup>		Future arisings	Bands and Code	Nuclide	Mean radioactivity, TBq/m <sup>3</sup>		Future arisings	Bands and Code
	Waste at 1.4.2022	Bands and Code				Waste at 1.4.2022	Bands and Code		
H 3	1.34E-04	CC 2			Gd 153				
Be 10					Ho 163				
C 14	5.46E-06	CC 2			Ho 166m				
Na 22					Tm 170				
Al 26					Tm 171				
Cl 36					Lu 174				
Ar 39					Lu 176				
Ar 42					Hf 178n				
K 40					Hf 182				
Ca 41					Pt 193				
Mn 53					Tl 204				
Mn 54					Pb 205				
Fe 55	1.34E-04	CC 2			Pb 210		8		
Co 60	2.59E-03	CC 2			Bi 208				
Ni 59					Bi 210m				
Ni 63	3.15E-03	CC 2			Po 210		8		
Zn 65					Ra 223		8		
Se 79					Ra 225		8		
Kr 81					Ra 226		8		
Kr 85					Ra 228		8		
Rb 87					Ac 227		8		
Sr 90	2.06E-01	CC 2			Th 227		8		
Zr 93					Th 228		8		
Nb 91					Th 229		8		
Nb 92					Th 230		8		
Nb 93m					Th 232		8		
Nb 94					Th 234	1.62E-06	CC 2		
Mo 93					Pa 231		8		
Tc 97					Pa 233	5.49E-09	CC 2		
Tc 99					U 232				
Ru 106					U 233		8		
Pd 107					U 234	1.97E-06	CC 2		
Ag 108m					U 235	3.9E-08	CC 2		
Ag 110m					U 236	1.67E-07	CC 2		
Cd 109					U 238	1.62E-06	CC 2		
Cd 113m					Np 237	5.69E-09	CC 2		
Sn 119m					Pu 236				
Sn 121m					Pu 238	1.20E-03	CC 2		
Sn 123					Pu 239	1.34E-03	CC 2		
Sn 126					Pu 240	1.58E-03	CC 2		
Sb 125					Pu 241	3.72E-02	CC 2		
Sb 126					Pu 242				
Te 125m					Am 241	5.94E-03	CC 2		
Te 127m					Am 242m				
I 129					Am 243		8		
Cs 134	8.47E-06	CC 2			Cm 242		8		
Cs 135					Cm 243	6.77E-06	CC 2		
Cs 137	4.56E-02	CC 2			Cm 244	9.07E-05	CC 2		
Ba 133					Cm 245				
La 137					Cm 246				
La 138					Cm 248				
Ce 144					Cf 249				
Pm 145					Cf 250				
Pm 147	1.02E-04	CC 2			Cf 251				
Sm 147		8			Cf 252				
Sm 151	8.19E-04	CC 2			Other a				
Eu 152					Other b/g				
Eu 154	2.34E-04	CC 2			<b>Total a</b>	<b>1.02E-02</b>	<b>CC 2</b>	<b>0</b>	
Eu 155	5.24E-05	CC 2			<b>Total b/g</b>	<b>2.95E-01</b>	<b>CC 2</b>	<b>0</b>	

**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.

**Code**

- 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