

## Site (Data) : Richard

Stock of waste as at December 2010

Country: CZECH REPUBLIC

Reporting Year: 2010

**Site Name:** Richard

Full Name: URAO Richard

Inventory Reporting Date: December 2010

Waste Matrix Used: cz-eu

Comment # 380: Information

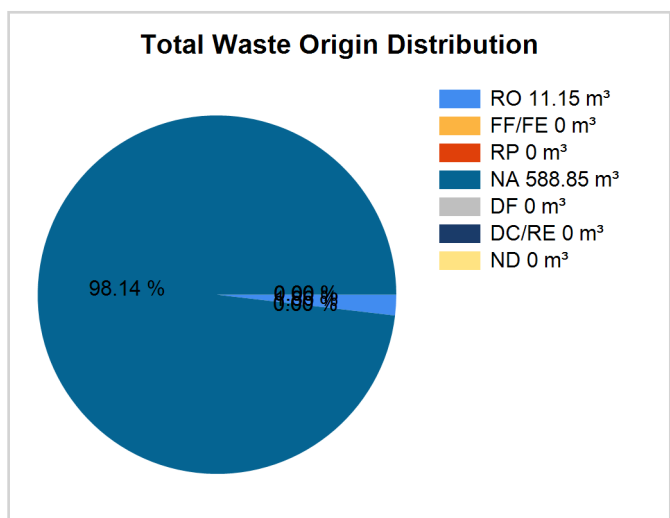
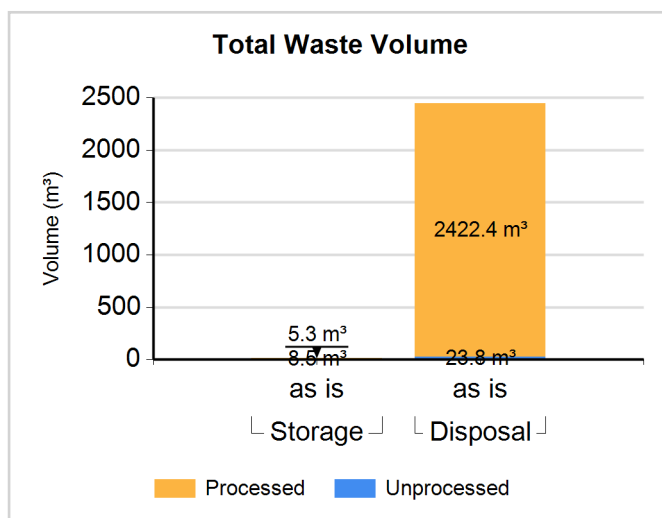
Abandoned mine Richard ( 60 km N of Prague) serves as repository for radioactive waste from research, industry and medicine.

Comment # 14555: Site Richard

In 2006 and 2007 disposal chambers 8/2, 9 a 12 were upgraded (hydraulic cage) and filled with waste. New concrete floor was laid down in chambers 13 and 22 and these chambers will be used for the disposal of waste.

**Waste Inventory**

Est=distribution is an estimate, Proc.=Is the waste processed (Yes/No)? RO=Reactor Operations, FF/FE=Fuel Fabrication/Fuel Enrichment, RP=Reprocessing, NA=Nuclear Applications,DF=Defence, DC/RE=Decommissioning/Remediation, ND=Not Determined



Note: where volume "as dispo" is provided, volume "as is" is used in the graph instead.

**Waste Class: LILW-SL**

Waste Class Name	Location / Facility	Proc	Est.	Volume "as is" (m³)	Volume "as dispo" (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LILW-SL	Storage	N	N	4.600	4.600	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL	Storage	Y	N	1.200	1.200	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL	Disposal	N	N	23.800	23.800	0.00	0.00	0.00	100.00	0.00	0.00	0.00
LILW-SL	Disposal	Y	N	2422.400	2422.400	0.00	0.00	0.00	100.00	0.00	0.00	0.00

**Waste Class: LILW-LL**

Waste Class Name	Location / Facility	Proc	Est.	Volume "as is" (m³)	Volume "as dispo" (m³)	RO %	FF/FE %	RP %	NA %	DF %	DC/RE %	ND %
LILW-LL	Storage	N	N	3.900	3.900	11.15	0.00	0.00	88.85	0.00	0.00	0.00
LILW-LL	Storage	Y	N	4.100	4.100	0.00	0.00	0.00	100.00	0.00	0.00	0.00

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**Spent Sources <=30 years in Storage**

Nuclide	Number of Sources/Total Activity of Sources (GBq)			c o n d	u n c o n d	c a t	Total Activity for all Groups (GBq)	Decay Date
	Group I less than or equal 4GBq	Group II more than 4GBq but less than or equal 4E+4GBq	Group III more than 4E+4GBq					
	num/activity	num/activity	num/activity					
Cf-252	7			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Co-60	939	53		Y	N	Y	1.692E+005	2010.12
	7.516E+000	1.692E+005						
Cs-137	33	15	3	Y	N	Y	4.407E+005	2010.12
	1.340E+001	2.401E+005	2.006E+005					
Eu-152			1	Y	N	Y	4.516E+004	2010.12
			4.516E+004					
Na-22	1			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Pm-147	1			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Sr-90	3828			Y	N	Y	2.852E+002	2010.12
	2.852E+002							

**Spent Sources <=30 years in Disposition**

Nuclide	Number of Sources/Total Activity of Sources (GBq)			c o n d	u n c o n d	c a t	Total Activity for all Groups (GBq)	Decay Date
	Group I less than or equal 4GBq	Group II more than 4GBq but less than or equal 4E+4GBq	Group III more than 4E+4GBq					
	num/activity	num/activity	num/activity					
Ba-133	7			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Cd-109	18			Y	N	Y	4.700E-001	2010.12
	4.700E-001							
Ce-144	2			Y	N	Y	0.000E+000	2010.12
	0.000E+000							

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Cf-252	21			Y	N	Y	3.100E+000	2010.12
	3.100E+000							
Co-57	22			Y	N	Y	2.200E-002	2010.12
	2.200E-002							
Co-60	1381	206		Y	N	Y	2.233E+005	2010.12
	1.931E+002	2.231E+005						
Cs-134	1			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Cs-137	552	189		Y	N	Y	3.156E+005	2010.12
	2.806E+002	3.153E+005						
Eu-152	36	6		Y	N	Y	1.693E+002	2010.12
	1.260E+001	1.567E+002						
Fe-55	43	6		Y	N	Y	7.164E+001	2010.12
	5.787E+000	6.585E+001						
H-3	3	7		Y	N	Y	3.128E+003	2010.12
	7.000E-001	3.127E+003						
Kr-85	79	34		Y	N	Y	1.063E+003	2010.12
	9.666E+001	9.666E+002						
Mn-54	1			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Na-22	2			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Pb-210	1			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Pm-147	35			Y	N	Y	3.538E+001	2010.12
	3.538E+001							
Ru-106	4			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Se-75	16			Y	N	Y	0.000E+000	2010.12
	0.000E+000							

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Sr-90	305	31		Y	N	Y	2.444E+003	2010.12
	1.565E+002	2.287E+003						
TI-204	4			Y	N	Y	0.000E+000	2010.12
	0.000E+000							
Zn-65	1			Y	N	Y	0.000E+000	2010.12
	0.000E+000							

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**Spent Sources > 30 years in Storage**

Nuclide	Number of Sources/Total Activity of Sources (GBq)		c o n d	u n c o n d	c a t	Total Activity for all Groups (GBq)	Decay Date
	Group I less than or equal 2 GBq	Group II more than 2GBq					
	num/activity	num/activity					
Am-241	12011	122	Y	N	Y	6.026E+003	2009.12
	1.349E+002	5.891E+003					
Pu-238	9	2	Y	N	Y	1.145E+002	2009.12
	5.400E+000	1.091E+002					
Pu-239	1	71	Y	N	Y	6.801E+003	2009.12
	1.100E+000	6.800E+003					
Ra-226	1		Y	N	Y	3.700E-001	2009.12
	3.700E-001						

**Spent Sources > 30 years in Disposition**

Nuclide	Number of Sources/Total Activity of Sources (GBq)		c o n d	u n c o n d	c a t	Total Activity for all Groups (GBq)	Decay Date
	Group I less than or equal 2 GBq	Group II more than 2GBq					
	num/activity	num/activity					
Am-241	2899	66	Y	N	Y	7.444E+003	2010.12
	6.790E+001	7.376E+003					
C-14	13	2	Y	N	Y	1.420E+001	2010.12
	3.300E+000	1.090E+001					
K-40	2		Y	N	Y	0.000E+000	2010.12
	0.000E+000						
Ni-63	2		Y	N	Y	7.800E-001	2010.12
	7.800E-001						
Pu-239	17	25	Y	N	Y	1.206E+003	2010.12
	6.200E+000	1.200E+003					

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**RadioNuclide Inventory in Disposal**

Total Alpha Activity (GBq):	15400
Total Beta/Gamma Activity (GBq):	0

RadioNuclide	Activity (GBq)
Carbon ( C-14)	8200
Cesium ( Cs-137)	473000
Chlorine ( Cl-36)	8.9
Hydrogen ( H-3)	39100
Iodine ( I-129)	0.00505
Strontium ( Sr-90)	24200
Technetium ( Tc-99)	0.104