

The logo for NYSERDA, featuring the word "NYSERDA" in a bold, black, sans-serif font. To the right of the text is a stylized orange and yellow swoosh that curves upwards and then downwards, resembling a comet or a dynamic motion line.

M E M O R A N D U M

To: West Valley Citizen Task Force Members

From: Paul L. Piciulo, Ph.D.

Subject: Plutonium in the State-Licensed Disposal Area (SDA)

Date: September 27, 2006

At the last West Valley Citizen Task Force Meeting, an observer asked how many pounds of plutonium were disposed in the State-Licensed Disposal Area (SDA) trenches. Upon researching this question, NYSERDA staff have calculated that approximately 11.1 pounds of plutonium was disposed at the SDA. The data used in this calculation was extracted from the *SDA Radiological Characterization Report* prepared by Ralph E. Wild of the URS Corporation, dated September 20, 2002. This data is considered the most up-to-date and accurate. Some of the more experienced CTF members may recall Ralph's presentation on the radioactive source term in the SDA at the July 16, 2003 CTF meeting.

I have attached a spreadsheet showing the calculation and summation of total plutonium for each trench at the SDA. If you have any question about this information, please let me know.

Summary of Plutonium in the State-Licensed Disposal Area

Activity (C)	Trench 1	Trench 2	Trench 3	Trench 4	Trench 5	Trench 7	Trench 8	Trench 9	Trench 10	Trench 11	Trench 12	Trench 13	Trench 14	Total
Pu-238	4.43E-01	9.18E-01	2.28E+00	3.18E+01	1.71E+02	1.91E-01	4.16E+03	4.34E+03	1.23E+04	5.49E+03	2.08E+01	4.20E+00	4.30E-01	2.65E+04
Pu-239	4.02E-01	1.84E+00	1.09E+01	3.11E+01	2.01E+01	1.73E-01	2.07E+01	5.81E+01	2.84E+00	4.80E-01	2.71E+01	1.06E+01	3.49E-01	1.84E+02
Pu-240	6.60E-04	1.65E-03	9.28E-01	9.32E+00	5.54E+00	2.65E-04	1.82E+01	5.48E+01	5.59E-02	5.42E-02	1.71E+01	3.39E+00	4.05E-03	1.09E+02
Pu-241	3.20E+00	6.01E+00	3.23E+01	3.98E+02	1.79E+02	1.51E+00	5.84E+02	1.89E+03	3.32E+00	8.18E+00	6.45E+02	1.28E+02	4.92E+00	3.89E+03
Pu-242	8.90E-04	1.58E-03	3.98E-03	4.88E-02	1.14E-02	3.89E-04	2.56E-02	8.02E-02	2.89E-04	1.94E-03	2.39E-02	4.95E-03	9.70E-04	2.05E-01
<b>Total by Trench (C)</b>	<b>4.05E+00</b>	<b>8.77E+00</b>	<b>4.58E+01</b>	<b>4.70E+02</b>	<b>3.76E+02</b>	<b>1.87E+00</b>	<b>4.78E+03</b>	<b>6.34E+03</b>	<b>1.23E+04</b>	<b>5.50E+03</b>	<b>7.10E+02</b>	<b>1.47E+02</b>	<b>5.70E+00</b>	<b>3.07E+04</b>
<b>Grams/Trench</b>														
Pu-238	2.56E-02	5.31E-02	1.32E-01	1.84E+00	9.88E+00	1.10E-02	2.40E+02	2.51E+02	7.11E+02	3.17E+02	1.19E+00	2.43E-01	2.49E-02	1.53E+03
Pu-239	6.38E+00	2.92E+01	1.63E+02	4.94E+02	3.19E+02	2.75E+00	3.29E+02	9.22E+02	4.51E+01	7.62E+00	4.30E+02	1.68E+02	5.54E+00	2.92E+03
Pu-240	2.87E-03	7.17E-03	4.03E+00	4.05E+01	2.41E+01	1.15E-03	7.91E+01	2.38E+02	2.43E-01	2.36E-01	7.43E+01	1.47E+01	1.78E-02	4.76E+02
Pu-241	3.08E-02	5.78E-02	3.11E-01	3.83E+00	1.72E+00	1.45E-02	5.62E+00	1.82E+01	3.19E-02	7.87E-02	6.20E+00	1.24E+00	4.73E-02	3.74E+01
Pu-242	2.23E-01	3.95E-01	9.95E-01	1.22E+01	2.85E+00	9.58E-02	6.40E+00	2.01E+01	7.23E-02	4.85E-01	5.98E+00	1.24E+00	2.43E-01	5.12E+01
<b>Pounds of Pu</b>														
Pu-238	5.65E-05	1.17E-04	2.91E-04	4.05E-03	2.18E-02	2.43E-05	5.30E-01	5.53E-01	1.57E+00	7.00E-01	2.63E-03	5.35E-04	5.48E-05	3.38E+00
Pu-239	1.41E-02	6.44E-02	3.60E-01	1.09E+00	7.03E-01	6.05E-03	7.24E-01	2.03E+00	9.94E-02	1.68E-02	9.48E-01	3.71E-01	1.22E-02	6.44E+00
Pu-240	6.33E-06	1.58E-05	8.90E-03	8.93E-02	5.31E-02	2.54E-06	1.74E-01	5.25E-01	5.36E-04	5.20E-04	1.64E-01	3.25E-02	3.88E-05	1.05E+00
Pu-241	6.78E-05	1.27E-04	6.85E-04	8.44E-03	3.79E-03	3.20E-05	1.24E-02	4.01E-02	7.04E-05	1.73E-04	1.37E-02	2.73E-03	1.04E-04	8.23E+02
Pu-242	4.91E-04	8.71E-04	2.19E-03	2.69E-02	6.28E-03	2.11E-04	1.41E-02	4.42E-02	1.59E-04	1.07E-03	1.32E-02	2.73E-03	5.35E-04	1.13E-01
<b>Total Pu Pounds</b>	<b>1.47E-02</b>	<b>6.55E-02</b>	<b>3.73E-01</b>	<b>1.22E+00</b>	<b>7.88E-01</b>	<b>6.32E-03</b>	<b>1.46E+00</b>	<b>3.20E+00</b>	<b>1.67E+00</b>	<b>7.18E-01</b>	<b>1.14E+00</b>	<b>4.09E-01</b>	<b>1.29E-02</b>	<b>1.11E+01</b>

Footnote:

Pu-236, Pu-237, Pu-243, Pu-244 and Pu-246 are noncontributors to the total curies of Pu in the SDA