Allen, Pam, NMENV

From: Maestas, Ricardo, NMENV
Sent: Thursday, June 26, 2014 1:54 PM
To: Allen, Pam, NMENV
Subject: FW: CEMRC station A analysis following Feb 5 underground fire event
Attachments: Americium analysis report (Feb 5, 2014) Underground Fire Event.pdf; Plutonium analysis report (Feb 5 filter) Underground Fire Event.pdf

Email and att. for March

From: Kliphuis, Trais, NMENV
Sent: Monday, March 24, 2014 9:20 AM
To: Smith, Coleman, NMENV; Holmes, Steve, NMENV; Maestas, Ricardo, NMENV
Subject: FW: CEMRC station A analysis following Feb 5 underground fire event

Trais Kliphuis
WIPP Staff Manager
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive E, Building 1
Santa Fe, New Mexico 87505

Office: 505-476-6051
Front Desk: 505-476-6000

From: Russell Hardy [mailto:rhardy@cemrc.org]
Sent: Thursday, March 20, 2014 2:21 PM
To: Oba Vincent; Kliphuis, Trais, NMENV; 'peake.tom@epa.gov'; 'Edwards, Jonathan'; 'Walsh, Jonathan'; 'Perrin, Alan'; 'Bob.Kehrman@wipp.ws'; 'Rick.Chavez@wipp.ws'; 'Stone.Nick@epa.gov'; Smith, Coleman, NMENV; 'brozowski.george@epa.gov'; 'Fraass, Ron'
Cc: George Basabilvazo - WIPPNet; 'Reynolds, Tammy - NWP (Tammy.Reynolds@wipp.ws)'; 'Pace, Berry (Berry.Pace@wipp.ws)'; 'Alton.Harris@em.doe.gov'; Susan McCauslin; 'Joe Harvill (jharvill@portageinc.com)'; 'Kennedy, Scott - NWP (Scott.Kennedy@wipp.ws)'; 'Jones, Stewart - RES'; 'Berta Oates'; 'schultheisz.daniel@epa.gov'; Philip Theisen - ORISE; 'Dale Bignell'
Subject: CEMRC station A analysis following Feb 5 underground fire event

Attached are the results from CEMRC's analysis of the station A filters following the Feb 5 underground fire event.

Let me know if you have any questions or need any additional information.

Thanks,
Russell Hardy

CEMRC has conducted emergency analysis of Station A filter collected on Feb. 5, 2014. Analysis of air filter samples showed no detection of plutonium and americium. The analysis reports are attached here in case you are interested in viewing the spectra.
The results are for about 24 hours counting time. The CEMRC will perform usual five days counting on these filters and will notify you all in case of any detections.

Best regards,
Punam

AlphaVision v5 **Alpha-Spectroscopy Analysis Report**

ORTEC
Oak Ridge, TN 37830

Analyst: ORTEC Results ID: 24,750 7:42:37AM 2/11/2014

Sample

Sample: 30243-Am Type: Sample
Interim Spectrum #1 Analysis #1
Batch: 1835
Sample Collection Date:
Comment: Feb 5, 2014 filter Sample

Sample Volume : 1.00 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 1835-Am

Client Name: WIPP-EM
Client Contact:

Description: Analysis related to fire

Tracer

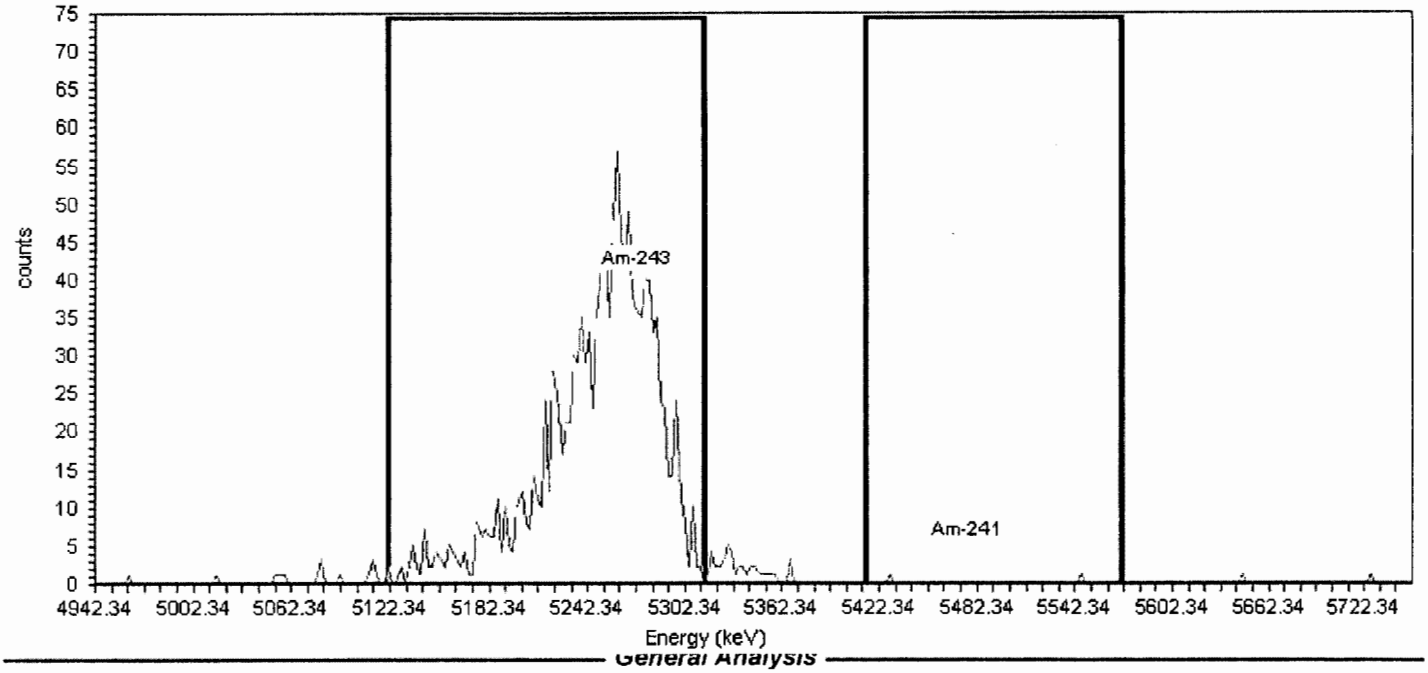
Tracer Name: 409-Am-243-7
Tracer Activity: 21.78 DPM/mL x (Vol.)0.25 mL = 5.38 DPM
Tracer Ref. Date: 5/10/2006 12:00:12PM

Tracer Nuclide: Am-243
Tracer Recovery: 90.86%

Acquisition

Detector: Unit 2 Det 5 SN: 29555
Acquisition Start Date: 2/11/2014 7:41:54AM
Live Time: 1,344.72 min.
Real Time: 1,344.72 min.
Background Date: 12/19/2013 3:16:41PM
Bkgd Info: Sample: 2-5; Det: Unit 2 Det 5; Spectrum #1; Dec-19-2013 15:16

Energy Calibration: 2009.07.01 008
Efficiency Calibration:2011.06.23 014
Calibration Date: 6/23/2011 3:07:35PM
Energy Cal: Gain = 2.4470 keV / Ch
Offset = -2.98 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 19.98% +/- 0.23% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:2/9/2014 9:10:24AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Am Library
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM	1.00Sigma TPU DPM	Critical Level DPM	MDA DPM
Am-243	5271.995	5120.968	5314.279	59.334	99.6	1,309.00	1.1206	1,308	4.892E+000	1.382E-001	7.809E-003	2.676E-002
Am-241	5474.996	5414.604	5571.210	20.214	98.5	2.00	0.5603	1	4.690E-003	6.654E-003	5.577E-003	2.241E-002

AlphaVision v5 **Alpha-Spectroscopy Analysis Report**

ORTEC
Oak Ridge, TN 37830

Analyst: ORTEC Results ID: 24,756 7:45:34AM 2/11/2014

Sample

Sample: 1835_TB-Am Type: Blank
Interim Spectrum #1 Analysis #1
Batch: 1835
Sample Collection Date:
Comment: Blank

Sample Volume : 1.00 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 1835-Am

Client Name: WIPP-EM
Client Contact:

Description: Analysis related to fire

Tracer

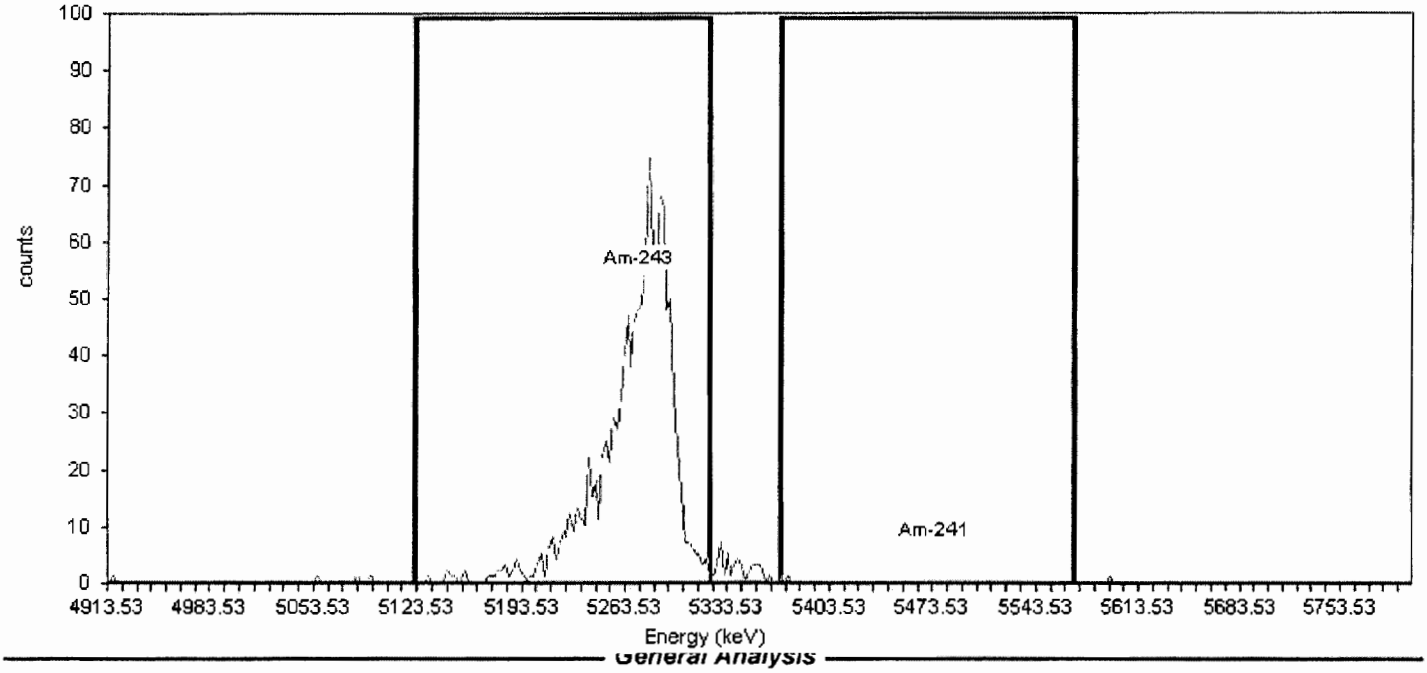
Tracer Name: 409-Am-243-7
Tracer Activity: 21.78 DPM/mL x (Vol.)0.25 mL = 5.41 DPM
Tracer Ref. Date: 5/10/2006 12:00:12PM

Tracer Nuclide: Am-243
Tracer Recovery: 88.19%

Acquisition

Detector: Unit 3 Det 7 SN: 29569
Acquisition Start Date: 2/11/2014 7:44:22AM
Live Time: 1,347.50 min.
Real Time: 1,347.50 min.
Background Date: 12/19/2013 3:16:43PM
Bkgd Info: Sample: 3-7; Det: Unit 3 Det 7; Spectrum #1; Dec-19-2013 15:16

Energy Calibration: 2010.08.26 009
Efficiency Calibration:2013.12.06 002
Calibration Date: 12/6/2013 1:29:47PM
Energy Cal: Gain = 2.4421 keV / Ch
Offset = -21.90 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 18.94% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:2/9/2014 9:10:24AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Am Library
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM	1.00Sigma TPU DPM	Critical Level DPM	MDA DPM
Am-243	5271.978	5121.106	5321.356	38.500	99.7	1,214.00	1.1229	1,213	4.769E+000	1.427E-001	8.469E-003	2.900E-002
Am-241	5474.987	5370.000	5570.000	8.633	99.9	1.92	0.7486	1	3.917E-003	7.262E-003	6.894E-003	2.582E-002

AlphaVision v5 **Alpha-Spectroscopy Analysis Report**

ORTEC
Oak Ridge, TN 37830
7:43:11AM 2/11/2014

Analyst: ORTEC Results ID: 24,751

Sample

Sample: 30243-Pu Type: Sample
Interim Spectrum #1 Analysis #1
Batch: 1835
Sample Collection Date:
Comment: Sample

Sample Volume : 1.00 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 1835-Pu-redo

Client Name: WIPP-EM
Client Contact:

Description: emergency fire filter

Tracer

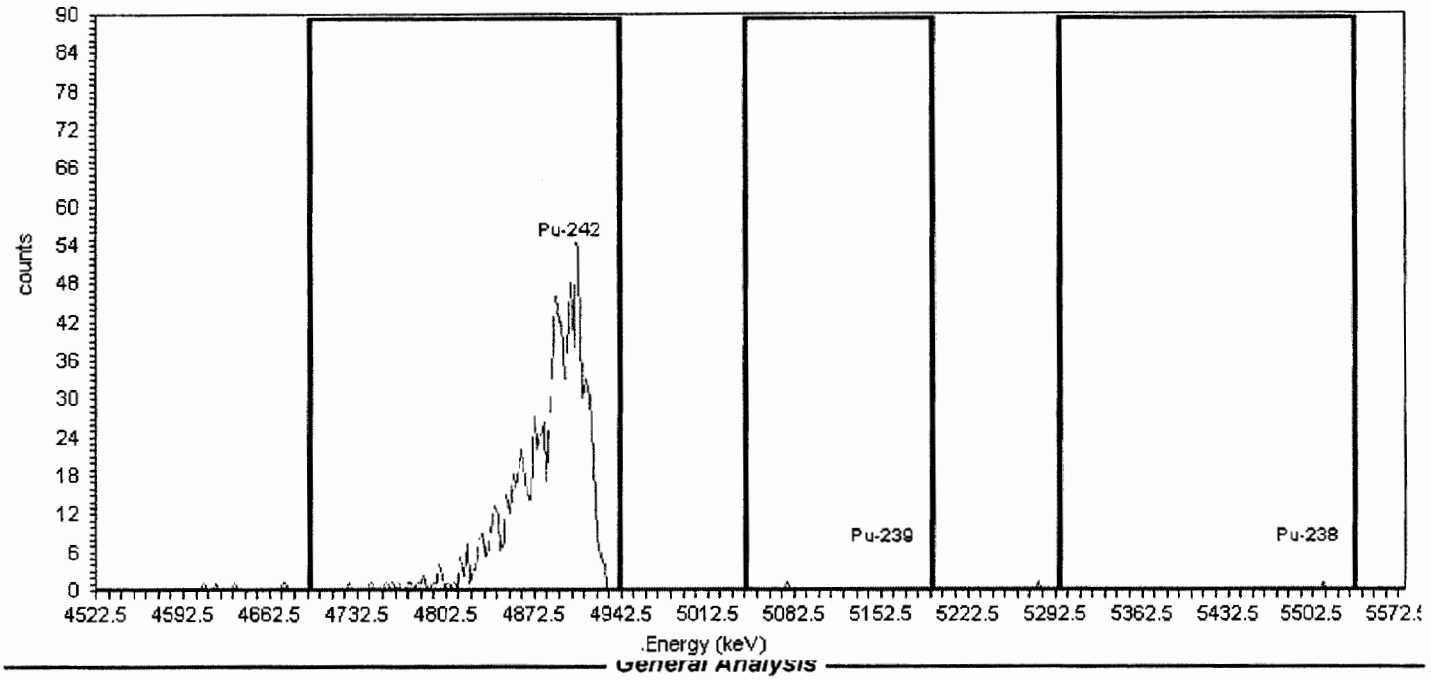
Tracer Name: 274-Pu-242-6
Tracer Activity: 17.73 DPM/mL x (Vol.)0.24 mL = 4.31 DPM
Tracer Ref. Date: 6/7/1994 12:00:40PM

Tracer Nuclide: Pu-242
Tracer Recovery: 83.65%

Acquisition

Detector: Unit 2 Det 6 SN: 47647
Acquisition Start Date: 2/11/2014 7:42:53AM
Live Time: 1,346.34 min.
Real Time: 1,346.35 min.
Background Date: 12/19/2013 3:16:41PM
Bkgd Info: Sample: 2-6; Det: Unit 2 Det 6; Spectrum #1; Dec-19-2013 15:16

Energy Calibration: 2009.06.03 038
Efficiency Calibration:2008.06.09 001 D2_6
Calibration Date: 6/3/2009 1:47:47PM
Energy Cal: Gain = 2.4432 keV / Ch
Offset = -9.55 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 20.02% +/- 0.20% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = Pu
Decay Correction:2/10/2014 9:13:50AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Pu Library
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM	1.00Sigma TPU DPM	Critical Level DPM	MDA DPM
Pu-242	4901.000	4693.000	4941.000	40.796	100.4	977.00	0.5610	976	3.609E+000	1.170E-001	5.930E-003	2.382E-002
Pu-239	5155.000	5044.000	5195.000	14.567	99.9	1.00	0.5610	0	1.949E-003	5.547E-003	5.960E-003	2.393E-002
Pu-238	5499.000	5298.000	5539.000	14.567	99.9	1.00	1.1219	0	-5.414E-004	6.467E-003	8.428E-003	2.887E-002

AlphaVision v5

Alpha-Spectroscopy Analysis Report

ORTEC
Oak Ridge, TN 37830

Analyst: ORTEC

Results ID: 24,753

7:44:02AM 2/11/2014

Sample

Sample: 1835_TB-Pu Type: Blank
Interim Spectrum #1 Analysis #1
Batch: 1835
Sample Collection Date:
Comment: Blank

Sample Volume : 1.00 Sample Units: mL
First Stage Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A
Dilution 2: N/A
Lab Preparation:

Batch

Batch Name: 1835-Pu-redo

Description: emergency fire filter

Client Name: WIPP-EM
Client Contact:

Tracer

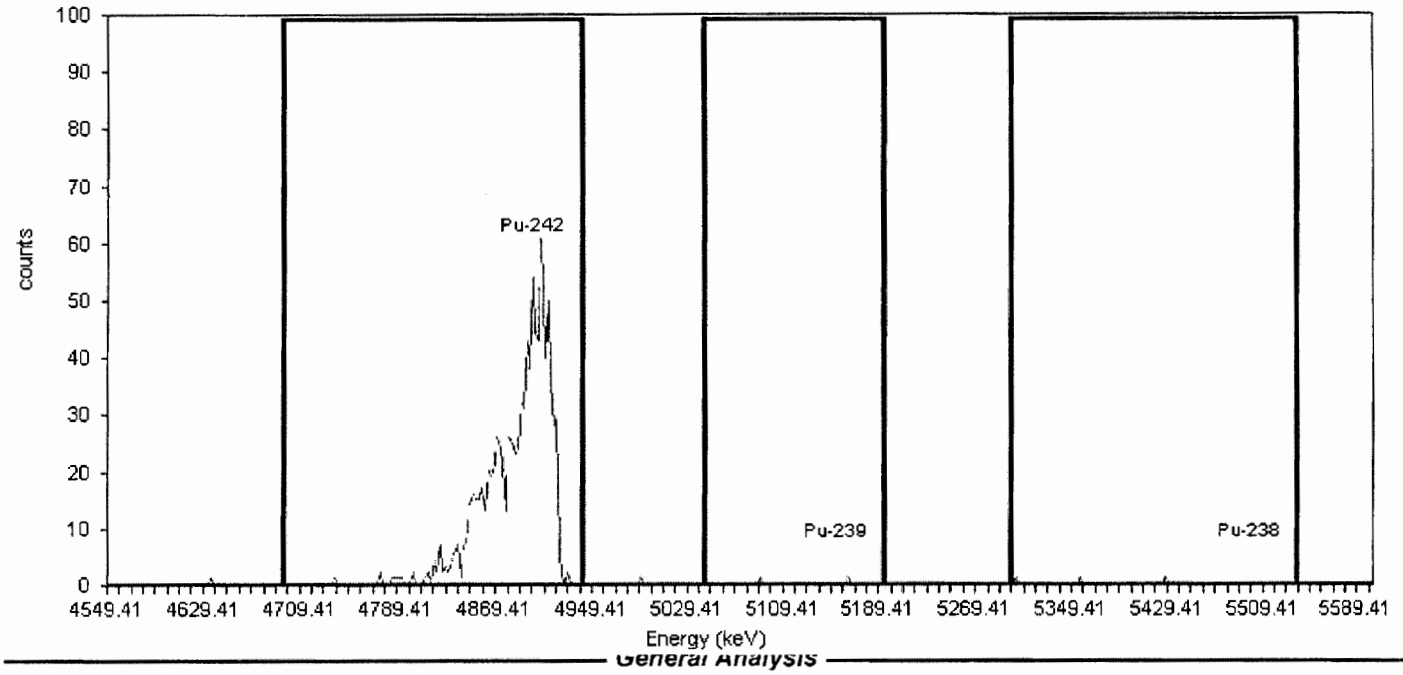
Tracer Name: 274-Pu-242-6
Tracer Activity: 17.73 DPM/mL x (Vol.)0.24 mL = 4.33 DPM
Tracer Ref. Date: 6/7/1994 12:00:40PM

Tracer Nuclide: Pu-242
Tracer Recovery: 75.44%

Acquisition

Detector: Unit 3 Det 8 SN: 41135
Acquisition Start Date: 2/11/2014 7:43:43AM
Live Time: 1,347.45 min.
Real Time: 1,347.45 min.
Background Date: 12/19/2013 3:16:43PM
Bkgd Info: Sample: 3-8; Det: Unit 3 Det 8; Spectrum #1; Dec-19-2013 15:16

Energy Calibration: 2010.08.26 007
Efficiency Calibration:2010.08.26 008
Calibration Date: 8/26/2010 10:41:08AM
Energy Cal: Gain = 2.4503 keV / Ch
Offset = -27.72 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 21.17% +/- 0.40% TPU(2 sigma)



General Analysis

Analysis Method: ROI Analysis, Set Name = Pu
Decay Correction:2/10/2014 9:13:50AM
MDA Constants: Kα = 1.65 , Kβ = 1.65

Nuclide Library: Pu Library
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity DPM	1.00Sigma TPU DPM	Critical Level DPM	MDA DPM
Pu-242	4901.000	4693.000	4941.000	31.701	100.4	935.00	0.5961	934	3.263E+000	1.111E-001	6.407E-003	2.534E-002
Pu-239	5155.000	5044.000	5195.000	14.610	99.9	2.00	1.0616	1	4.366E-003	8.143E-003	8.592E-003	2.978E-002
Pu-238	5499.000	5298.000	5539.000	9.364	99.9	3.00	0.3743	3	1.222E-002	8.558E-003	5.102E-003	2.280E-002