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Case Narrative

CASE NARRATIVE
for
MWH LABORATORIES
MWH PROJECT: 99-22088/169215
CDM/ASHTABULA SITE
SDG: 158048

April 12, 2006

Laboratory Identification:

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on March 10, 2006 for analysis. Shipping container temperatures were checked, documented, and within specifications. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029

Case Narrative

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

This data package, to the best of my knowledge, is in compliance with technical and administrative requirements.

Edith M. Kent

Edith Kent

Project Manager

Chain of Custody and Supporting Documentation

MWH Laboratories
A Division of MWH Americas,Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 03/09/06

Submittal Form & Purchase Order 99-22088

REPORTING REQUIREMENTS:** ***Do Not Combine Report with any other samples submitted under different MWH project numbers!
Report & Invoice must have the MWH Project Number **169215** Sub PO# **99-22088** and Job # **Find Out**

Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Edie Kent**
General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29414

(843) 556-8171 X4433 Fax (843) 766-1178

Reports: Julie Lee Sub-contracting Administrator
EMAIL TO: Julie.Lee@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1136 Fax (626) 386-1095
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

CA ELAP OK

EXTRA VOLUME PROVIDED FOR 2603090029. PLEASE SPIKE IF POSSIBLE OR ANALYZE IN DUPLICATE.

MWH Project #	Report Due:	Sub PO#
169215	03/24/06	99-22088

JDL

Use MWH Lab # for ID

158048?

		Client Sample ID for reference only		Analysis Requested	Sample Date & Time	Matrix	Container
1	CUSTSUB	**2603090024**	M120-0.5	RADIUM 226	03/07/06 9:10	soil	8oz. glass jars
2				RADIUM 228			
3				LEAD 210			
4				LEAD212			
5				THORIUM (ISOTOPIC)			
6				URANIUM (ISOTOPIC)			
7				URANIUM (TOTAL)			
8				PRONACTINIUM 231			
9				ACTINIUM 228			
10				BISMUTH 212			
11				GROSS ALPHA (ADJUSTED)			
12				POLONIUM 210			
13	CUSTSUB	**2603090027**	M120-10	RADIUM 226	03/07/06 10:10	soil	8oz. glass jars
14				RADIUM 228			

Relinquished by: Sample Control Date 03/09/06 Time 1536 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Received by: Date 3/10/06 Time 0915 An Acknowledgement of Receipt is requested to attn: Michael Lettona

MWH Project **169215** Sub PO# **99-22088** Montgomery Watson Laboratories page 2

Use MWH LAB#

Row		*Client Sample ID for reference only*		Analysis Requested	Sample Date & Time	Matrix	Container
15				LEAD 210			
16				LEAD212			
17				THORIUM (ISOTOPIC)			
18				URANIUM (ISOTOPIC)			
19				URANIUM (TOTAL)			
20				PRONACTINIUM 231			
21				ACTINIUM 228			
22				BISMUTH 212			
23				GROSS ALPHA (ADJUSTED)			
24				POLONIUM 210			
25	CUSTSUB	**2603090028**	M120-30	RADIUM 226	03/07/06 11:45	soil	8oz. glass jars
26				RADIUM 228			
27				LEAD 210			
28				LEAD212			
29				THORIUM (ISOTOPIC)			
30				URANIUM (ISOTOPIC)			
31				URANIUM (TOTAL)			
32				PRONACTINIUM 231			
33				ACTINIUM 228			
34				BISMUTH 212			
35				GROSS ALPHA (ADJUSTED)			
36				POLONIUM 210			
37	CUSTSUB	**2603090026**	M120-5	RADIUM 226	03/07/06 9:30	soil	8oz. glass jars
38				RADIUM 228			
39				LEAD 210			
40				LEAD212			

Relinquished by: _____ Sample Control Date 03/09/06 Time 1536 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Page 2

Received by: _____ Date 3/10/06 Time 0915 An Acknowledgement of Receipt is requested to attn: Michael Lettona

MWH Project 169215 Sub PO# 99-22088 Montgomery Watson Laboratories page 2

Use MWH LAB#

Row		Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	Container
41			THORIUM (ISOTOPIC)			
42			URANIUM (ISOTOPIC)			
43			URANIUM (TOTAL)			
44	USTSUB	**2603090029** M120-50	RADIUM 226	03/07/06 12:45	soil	8oz. glass jars
45			RADIUM 228			
46			LEAD 210			
47			LEAD212			
48			THORIUM (ISOTOPIC)			
49			URANIUM (ISOTOPIC)			
50			URANIUM (TOTAL)			

Relinquished by: _____ Sample Control Date 03/09/06 Time 1536 MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Received by: _____ Date 3/10/06 Time 0915

An Acknowledgement of Receipt is requested to attn: Michael Lettona

SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: MWH Labs	**SDG/ARCOC/Work Order:** 169215/99-22088
Date Received: 3/10/06	**PM(A) Review (ensure non-conforming items are resolved prior to signing):**
Received By: Bec	Em

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
2	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.		✓		Circle Coolant # ice bags blue ice dry ice none other describe) 17°C
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?			✓	Sample ID's affected: 0024, 0027, 0028 – 1 each 0026, 0029 – 2 each
12	COC form is properly signed in relinquished/received sections?	✓			
14	Air Bill ,Tracking #'s, & Additional Comments	Fed Ex 6912 3665 1440			

	Suspected Hazard Information	Non-Regulated	Regulated	High Level	RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	✓			Maximum Counts Observed*: 20 cpm
B	PCB Regulated?	✓			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: GL Initials 3/10/06 Date:

Subject: More on Tronox Samples Received
From: Edie Kent <emk@gel.com>
Date: Fri, 10 Mar 2006 13:27:58 -0500
To: Linda Geddes <Linda.Geddes@us.mwhglobal.com>
CC: Edie Kent <emk@gel.com>, benjamin Jenkins <ben01079@gel.com>

Linda:
Additionally, the samplers did not sign the chain when they relinquished the samples.

Also, there is a note on the chain that an acknowledgment of receipt is requested to Michael Lettona's attention. Can you provide an e-mail address for him so that we can send that to him?

Will we be receiving samples tomorrow?

Edie

Edie Kent wrote:

> Linda:
> We received the soil samples today. The samples arrived at 17C which would not be an issue with the tests requested. We received 2 containers each for 2603090026 and 2603090029 and one container each for all other samples. The chain only indicates that extra volume is being sent for sample 2603090029.
>
> Edie

--
Edith M. Kent
Project Manager
General Engineering Laboratories, LLC
2040 Savage Road
PO Box 30712
Charleston, SC 29407
Phone: 843-556-8171, ext. 4453
Fax: 843-766-1178
e-mail: emk@gel.com
web-site: www.gel.com

RADIOLOGICAL ANALYSIS

Radiochemistry Case Narrative
MWH Laboratories (MWHL)
Work Order 158048

Method/Analysis Information

Product:	**Alphaspec Po210, solid**
Analytical Method:	DOE EML HASL-300, Po-01-RC Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	515989
Prep Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
1201060425	Method Blank (MB)
1201060426	158048002(2603090027) Sample Duplicate (DUP)
1201060427	158048002(2603090027) Matrix Spike (MS)
1201060428	Laboratory Control Sample (LCS)
1201060429	Qualification Sample (KNOWN)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-016 REV# 8.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048002 (2603090027).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Batch was reprepped due to poor resolution. Sample 1201060428 (LCS) was recounted due to low/high recovery.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The sample and duplicate, 1201060426 (2603090027) and 158048002 (2603090027), do not meet the relative percent difference requirements for Po-210, however they do meet the relative error ratio requirements with a value of 0.515.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Th, Solid**
Analytical Method:	DOE EML HASL-300, Th-01-RC Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	512068
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201051873	Method Blank (MB)
1201051874	158048005(2603090029) Sample Duplicate (DUP)
1201051875	158048005(2603090029) Matrix Spike (MS)
1201051876	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-038 REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The sample 158048005 and duplicate 1201051874 do not meet the relative percent difference requirements for Th-232, however they do meet the relative error ratio requirements with a value of 1.48.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec U, Solid**
Analytical Method:	DOE EML HASL-300, U-02-RC Modified
Prep Method:	Ash Soil Prep

Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	512069
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201051877	Method Blank (MB)
1201051878	158048005(2603090029) Sample Duplicate (DUP)
1201051879	158048005(2603090029) Matrix Spike (MS)
1201051880	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Additional Comments
The sample 158048005 and duplicate 1201051878 do not meet the relative percent difference requirements for U-238, however they do meet the relative error ratio requirements with a value of 1.24.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Gamma, (Ac-228,Bi-212,Pb-212,Ra-226,Ra-228,Pa-231)**
Analytical Method:	EML HASL 300, 4.5.2.3
Prep Method:	Dry Soil Prep
Analytical Batch Number:	513799
Prep Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201055603	Method Blank (MB)
1201055604	158048005(2603090029) Sample Duplicate (DUP)
1201055605	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 10.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Sample 1201055605 (LCS) was recounted due to low/high recovery.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to low abundance.	Lead-212	1201055603

Method/Analysis Information

Product:	**GFPC, Pb210, Solid**
Analytical Method:	DOE RP280 Modified
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517517
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201063764	Method Blank (MB)
1201063765	158048005(2603090029) Sample Duplicate (DUP)

1201063766 158048005(2603090029) Matrix Spike (MS)
1201063767 Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-018 REV# 5.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product: **GFPC, Gross Alpha Solid**
Analytical Method: EPA 900.0 Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 516630
Prep Batch Number: 511798

Sample ID	Client ID
158048001	2603090024
158048002	2603090027
158048003	2603090028
1201061724	Method Blank (MB)
1201061725	158048001(2603090024) Sample Duplicate (DUP)
1201061726	158048001(2603090024) Matrix Spike (MS)
1201061727	Laboratory Control Sample (LCS)
1201061728	158048001(2603090024) Matrix Spike Duplicate (MSD)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-001B REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048001 (2603090024).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Gross Alpha/Beta Preparation Information
High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A nonconformance report (NCR) was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**KPA, Total U, Solid**
Analytical Method:	ASTM D 5174
Prep Method:	Ash Soil Prep
Dry Soil Prep GL-RAD-A-021 Method:	Dry Soil Prep
Analytical Batch Number:	517556
Prep Batch Number:	511800
Dry Soil Prep GL-RAD-A-021 Batch Number:	511798

Sample ID	**Client ID**
158048001	2603090024
158048002	2603090027
158048003	2603090028
158048004	2603090026
158048005	2603090029
1201063863	Method Blank (MB)
1201063864	158048005(2603090029) Sample Duplicate (DUP)
1201063865	158048005(2603090029) Matrix Spike (MS)
1201063866	Laboratory Control Sample (LCS)
1201063867	Laboratory Control Sample Duplicate (LCSD)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-023 REV# 11.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The calibration for Total Uranium is

performed prior to each analysis and is located in the raw data section.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 158048005 (2603090029).

QC Information
Refer to Non-Conformance Report.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
The initial result of the following sample, 158048003 (2603090028), failed lifetime during initial analysis. Sample was reanalyzed and passed. Second result is reported. The initial results for samples 158048001 (2603090024) and 158048004 (2603090026) failed lifetime. Samples were diluted 1:10 and reanalyzed. The diluted samples were reanalyzed a second time to verify the initial diluted results. The initial diluted results are reported. The initial results for samples 158048002 (2603090027) and 158048005 (2603090029) were greater than CRDL. Samples were reanalyzed and passed. The batch was reprepped due to a failed laboratory control sample recovery and a failed relative percent difference.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG:
NCR 306774 was generated due to Failed Recovery for MS/PS. 1.The matrix spike, 1201063865, did not meet the recovery requirement due to matrix interference. The batch was previously prepped with similar results. 1. Reporting results.

Qualifier information
Manual qualifiers were not required.

Certification Statement
Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Review Validation:
GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer/Date: 

COMPANY - WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
10-APR-06	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
Kinetic Phosphorescence Analyzer	ASTM D 5174	Solid	MWHL
Batch ID:	**Sample Numbers:**		
517556	See Below		

Potentially affected work order(s)(SDG): 158048

Application Issues:

Failed Recovery for MS/PS

Specification and Requirements Nonconformance Description:	NRG Disposition:
1.The matrix spike, 1201063865, did not meet the recovery requirement due to matrix interference. The batch was previously prepped with similar results.	1. Reporting results.

Originator's Name:

Salina Pizarro 10-APR-06

Data Validator/Group Leader:

Melanie Aycock 11-APR-06

Quality Review:

Director:

SAMPLE DATA SUMMARY

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

MWHL002 MWH Laboratories (PO 99-22088)

Client SDG: 158048 GEL Work Order: 158048

The Qualifiers in this report are defined as follows:

* Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Results below the MDC or low tracer recovery.
D Sample has been diluted and reanalyzed after initially exceeding inst. calibration range
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value.
P The response between the confirmation and the primary columns is >40% Different.
R Sample results are rejected.
U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
Z Paint Filter qualifier: Particulates passed through the filter. No free liquids were observed.
d The 2:1 depletion requirement was not met for this sample
h Sample preparation or preservation holding time exceeded.
ND The analyte concentration is not detected above the reporting limit.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.
** Indicates the analyte is a surrogate compound.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Edith Kent.

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 − (843) 556−8171 − www.gel.com

Certificate of Analysis

Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090024
Sample ID: 158048001
Matrix: Soil
Collect Date: 07−MAR−06 09:10
Receive Date: 10−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Po210, solid												
Polonium−210		1.76	+/−0.600	0.326	1.00	pCi/g		JXG1	04/05/06	1734	515989	1
Alphaspec Th, Solid												
Thorium−228		2.01	+/−0.617	0.348	1.00	pCi/g		DDR1	04/05/06	0952	512068	2
Thorium−230		1.09	+/−0.419	0.272	1.00	pCi/g						
Thorium−232		1.94	+/−0.592	0.187	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		0.962	+/−0.339	0.227	1.00	pCi/g		DDR1	04/05/06	0819	512069	3
Uranium−235/236	U	−0.00891	+/−0.0748	0.196	1.00	pCi/g						
Uranium−238		0.911	+/−0.335	0.271	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Ac−228,Bi−212,Pb−212,Ra−226,Ra−228,Pa−231)												
Actinium−228		1.87	+/−0.126	0.0854	1.00	pCi/g		MJH1	04/06/06	2345	513799	4
Bismuth−212		1.28	+/−0.238	0.184	1.00	pCi/g						
Lead−212		1.97	+/−0.0566	0.042	10.0	pCi/g						
Protactinium−231	U	0.177	+/−0.626	1.10	0.500	pCi/g						
Radium−226		1.02	+/−0.0667	0.0462	2.00	pCi/g						
Radium−228		1.87	+/−0.126	0.0854	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Solid												
Alpha		19.9	+/−4.41	2.76	5.00	pCi/g		CXO1	04/03/06	1910	516630	5
GFPC, Pb210, Solid												
Lead−210	U	0.462	+/−0.490	1.03	3.00	pCi/g		BXF1	04/09/06	0957	517517	6
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		21.1	+/−1.69	1.08	1.00	ug/g		DRS1	04/07/06	1326	517556	7

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Po−01−RC Modified	

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Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090024 Project: MWHL00106
Sample ID: 158048001 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
2	DOE EML HASL−300, Th−01−RC Modified											
3	DOE EML HASL−300, U−02−RC Modified											
4	EML HASL 300, 4.5.2.3											
5	EPA 900.0 Modified											
6	DOE RP280 Modified											
7	ASTM D 5174											

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Polonium−209	Alphaspec Po210, solid			57	(25%−125%)
Actinium−227	Alphaspec Th, Solid			108	
Actinium−227	Alphaspec Th, Solid			108	
Actinium−227	Alphaspec Th, Solid			108	
Uranium−232	Alphaspec U, Solid			90	(25%−125%)
Uranium−232	Alphaspec U, Solid			90	(25%−125%)
Uranium−232	Alphaspec U, Solid			90	(25%−125%)
Lead−210	GFPC, Pb210, Solid			50	(25%−125%)

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Company : MWH Laboratories
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Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090027
Sample ID: 158048002
Matrix: Soil
Collect Date: 07−MAR−06 10:10
Receive Date: 10−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Po210, solid												
Polonium−210		0.648	+/−0.383	0.177	1.00	pCi/g		JXG1	04/05/06	1734	515989	1
Alphaspec Th, Solid												
Thorium−228		1.44	+/−0.499	0.364	1.00	pCi/g		DDR1	04/05/06	0952	512068	2
Thorium−230		1.13	+/−0.426	0.310	1.00	pCi/g						
Thorium−232		1.98	+/−0.597	0.252	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		1.24	+/−0.396	0.240	1.00	pCi/g		DDR1	04/05/06	0819	512069	3
Uranium−235/236		0.197	+/−0.172	0.118	1.00	pCi/g						
Uranium−238		0.812	+/−0.319	0.198	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Ac−228,Bi−212,Pb−212,Ra−226,Ra−228,Pa−231)												
Actinium−228		1.87	+/−0.250	0.084	1.00	pCi/g		MJH1	04/06/06	2345	513799	4
Bismuth−212		1.18	+/−0.233	0.183	1.00	pCi/g						
Lead−212		1.86	+/−0.152	0.0383	10.0	pCi/g						
Protactinium−231	U	−0.753	+/−0.572	0.981	0.500	pCi/g						
Radium−226		1.06	+/−0.122	0.0429	2.00	pCi/g						
Radium−228		1.87	+/−0.250	0.084	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Solid												
Alpha		20.1	+/−4.10	2.35	5.00	pCi/g		CXO1	04/03/06	1901	516630	5
GFPC, Pb210, Solid												
Lead−210	U	−0.0593	+/−0.322	0.842	3.00	pCi/g		BXF1	04/09/06	0957	517517	6
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		2.73	+/−0.134	0.106	1.00	ug/g		DRS1	04/07/06	1328	517556	7

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Po−01−RC Modified	

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Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090027 Project: MWHL00106
Sample ID: 158048002 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
2	DOE EML HASL−300, Th−01−RC Modified											
3	DOE EML HASL−300, U−02−RC Modified											
4	EML HASL 300, 4.5.2.3											
5	EPA 900.0 Modified											
6	DOE RP280 Modified											
7	ASTM D 5174											

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Polonium−209	Alphaspec Po210, solid			45	(25%−125%)
Actinium−227	Alphaspec Th, Solid			106	
Actinium−227	Alphaspec Th, Solid			106	
Actinium−227	Alphaspec Th, Solid			106	
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Uranium−232	Alphaspec U, Solid			91	(25%−125%)
Lead−210	GFPC, Pb210, Solid			66	(25%−125%)

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Company : MWH Laboratories
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Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090028
Sample ID: 158048003
Matrix: Soil
Collect Date: 07−MAR−06 11:45
Receive Date: 10−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Po210, solid												
Polonium−210		0.623	+/−0.499	0.594	1.00	pCi/g		JXG1	04/05/06	1734	515989	1
Alphaspec Th, Solid												
Thorium−228		2.06	+/−0.567	0.281	1.00	pCi/g		DDR1	04/05/06	0952	512068	2
Thorium−230		1.77	+/−0.504	0.128	1.00	pCi/g						
Thorium−232		1.74	+/−0.499	0.151	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		2.00	+/−0.493	0.216	1.00	pCi/g		DDR1	04/05/06	0819	512069	3
Uranium−235/236		0.280	+/−0.216	0.267	1.00	pCi/g						
Uranium−238		1.39	+/−0.416	0.267	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Ac−228,Bi−212,Pb−212,Ra−226,Ra−228,Pa−231)												
Actinium−228		2.24	+/−0.208	0.155	1.00	pCi/g		MJH1	04/06/06	2346	513799	4
Bismuth−212		1.33	+/−0.348	0.344	1.00	pCi/g						
Lead−212		2.26	+/−0.0797	0.0652	10.0	pCi/g						
Protactinium−231	U	0.00123	+/−1.01	1.81	0.500	pCi/g						
Radium−226		1.73	+/−0.114	0.0835	2.00	pCi/g						
Radium−228		2.24	+/−0.208	0.155	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Solid												
Alpha		18.9	+/−3.98	2.14	5.00	pCi/g		CXO1	04/03/06	1901	516630	5
GFPC, Pb210, Solid												
Lead−210	U	0.0294	+/−0.329	0.810	3.00	pCi/g		BXF1	04/09/06	0957	517517	6
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		3.45	+/−0.128	0.107	1.00	ug/g		DRS1	04/07/06	1410	517556	7

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Po−01−RC Modified	

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Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090028 Project: MWHL00106
Sample ID: 158048003 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
2	DOE EML HASL−300, Th−01−RC Modified											
3	DOE EML HASL−300, U−02−RC Modified											
4	EML HASL 300, 4.5.2.3											
5	EPA 900.0 Modified											
6	DOE RP280 Modified											
7	ASTM D 5174											

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Polonium−209	Alphaspec Po210, solid			28	(25%−125%)
Actinium−227	Alphaspec Th, Solid			119	
Actinium−227	Alphaspec Th, Solid			119	
Actinium−227	Alphaspec Th, Solid			119	
Uranium−232	Alphaspec U, Solid			104	(25%−125%)
Uranium−232	Alphaspec U, Solid			104	(25%−125%)
Uranium−232	Alphaspec U, Solid			104	(25%−125%)
Lead−210	GFPC, Pb210, Solid			66	(25%−125%)

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Company : MWH Laboratories
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Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090026
Sample ID: 158048004
Matrix: Soil
Collect Date: 07−MAR−06 09:30
Receive Date: 10−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		1.88	+/−0.537	0.377	1.00	pCi/g		DDR1	04/05/06	0952	512068	1
Thorium−230		1.26	+/−0.409	0.263	1.00	pCi/g						
Thorium−232		1.99	+/−0.542	0.230	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		1.18	+/−0.350	0.268	1.00	pCi/g		DDR1	04/05/06	0952	512069	2
Uranium−235/236	U	0.0953	+/−0.126	0.237	1.00	pCi/g						
Uranium−238		1.16	+/−0.342	0.205	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.79	+/−0.0815	0.0766	10.0	pCi/g		MJH1	04/06/06	2346	513799	3
Radium−226		0.907	+/−0.114	0.0884	2.00	pCi/g						
Radium−228		1.86	+/−0.227	0.167	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	0.0735	+/−0.414	1.01	3.00	pCi/g		BXF1	04/09/06	0957	517517	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		26.2	+/−1.58	1.08	1.00	ug/g		DRS1	04/07/06	1332	517556	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090026 Project: MWHL00106
Sample ID: 158048004 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			118	
Actinium−227	Alphaspec Th, Solid			118	
Actinium−227	Alphaspec Th, Solid			118	
Uranium−232	Alphaspec U, Solid			105	(25%−125%)
Uranium−232	Alphaspec U, Solid			105	(25%−125%)
Uranium−232	Alphaspec U, Solid			105	(25%−125%)
Lead−210	GFPC, Pb210, Solid			51	(25%−125%)

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Company : MWH Laboratories
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Monrovia, California 91016

Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090029
Sample ID: 158048005
Matrix: Soil
Collect Date: 07−MAR−06 12:45
Receive Date: 10−MAR−06
Collector: Client

Project: MWHL00106
Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec Th, Solid												
Thorium−228		1.80	+/−0.534	0.355	1.00	pCi/g		DDR1	04/05/06	0952	512068	1
Thorium−230		1.55	+/−0.475	0.232	1.00	pCi/g						
Thorium−232		1.28	+/−0.414	0.0738	1.00	pCi/g						
Alphaspec U, Solid												
Uranium−233/234		2.36	+/−0.512	0.243	1.00	pCi/g		DDR1	04/05/06	0952	512069	2
Uranium−235/236	U	0.0797	+/−0.122	0.243	1.00	pCi/g						
Uranium−238		1.97	+/−0.464	0.176	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gamma, (Pb−212,Ra−226,Ra−228)												
Lead−212		1.50	+/−0.135	0.0539	10.0	pCi/g		MJH1	04/06/06	2346	513799	3
Radium−226		1.34	+/−0.155	0.065	2.00	pCi/g						
Radium−228		1.45	+/−0.251	0.128	1.00	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Pb210, Solid												
Lead−210	U	0.533	+/−0.462	0.935	3.00	pCi/g		BXF1	04/09/06	0957	517517	4
Rad Total Uranium												
KPA, Total U, Solid												
Total Uranium		4.10	+/−0.202	0.0981	1.00	ug/g		DRS1	04/07/06	1334	517556	5

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Ash Soil Prep	Ash Soil Prep, GL−RAD−A−021B	MXP2	03/16/06	0900	511800
Dry Soil Prep	Dry Soil Prep GL−RAD−A−021	JMB1	03/15/06	1043	511798

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	DOE EML HASL−300, Th−01−RC Modified	
2	DOE EML HASL−300, U−02−RC Modified	
3	EML HASL 300, 4.5.2.3	
4	DOE RP280 Modified	
5	ASTM D 5174	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Company : MWH Laboratories
Address : 750 Royal Oaks Drive, Suite 100
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Report Date: April 12, 2006

Contact: Ms. Julie Lee
Project: **Tronox Henderson**

Client Sample ID: 2603090029 Project: MWHL00106
Sample ID: 158048005 Client ID: MWHL002

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Actinium−227	Alphaspec Th, Solid			101	
Actinium−227	Alphaspec Th, Solid			101	
Actinium−227	Alphaspec Th, Solid			101	
Uranium−232	Alphaspec U, Solid			90	(25%−125%)
Uranium−232	Alphaspec U, Solid			90	(25%−125%)
Uranium−232	Alphaspec U, Solid			90	(25%−125%)
Lead−210	GFPC, Pb210, Solid			57	(25%−125%)

QUALITY CONTROL DATA

QC Summary

Report Date: April 12, 2006

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, California

Contact: **Ms. Julie Lee**

Workorder: **158048**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec												
Batch 512068												
QC1201051874 158048005 DUP												
Thorium-228			1.80 +/-0.534		1.69 +/-0.586	pCi/g	6		(0%-20%)	DDR1	04/05/06	09:52
Thorium-230			1.55 +/-0.475		1.59 +/-0.549	pCi/g	3		(0%-20%)			
Thorium-232			1.28 +/-0.414		1.83 +/-0.600	pCi/g	35*		(0%-20%)			
QC1201051876 LCS												
Thorium-228				U	0.0767 +/-0.166	pCi/g			(75%-125%)			
Thorium-230					39.4 +/-6.74	pCi/g			(75%-125%)			
Thorium-232	45.3			U	0.0899 +/-0.105	pCi/g		88	(75%-125%)			
QC1201051873 MB												
Thorium-228				U	0.172 +/-0.163	pCi/g						
Thorium-230				U	-0.0102 +/-0.054	pCi/g						
Thorium-232				U	-0.00558 +/-0.0112	pCi/g						
QC1201051875 158048005 MS												
Thorium-228			1.80 +/-0.534		1.66 +/-0.494	pCi/g			(75%-125%)			
Thorium-230			1.55 +/-0.475		41.2 +/-6.64	pCi/g			(75%-125%)			
Thorium-232	45.3		1.28 +/-0.414		1.86 +/-0.503	pCi/g		88	(75%-125%)			
Batch 512069												
QC1201051878 158048005 DUP												
Uranium-233/234			2.36 +/-0.512		2.22 +/-0.513	pCi/g	6		(0%-20%)	DDR1	04/05/06	09:52
Uranium-235/236		U	0.0797 +/-0.122	U	0.176 +/-0.163	pCi/g	75*		(0%-20%)			
Uranium-238			1.97 +/-0.464		1.52 +/-0.424	pCi/g	26*		(0%-20%)			
QC1201051880 LCS												
Uranium-233/234					10.1 +/-1.31	pCi/g			(75%-125%)			
Uranium-235/236					0.488 +/-0.319	pCi/g			(75%-125%)			
Uranium-238	11.0				11.0 +/-1.36	pCi/g		100	(75%-125%)			
QC1201051877 MB												

QC Summary

Workorder: **158048**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 512069										
Uranium-233/234			U	0.106 +/-0.117	pCi/g					
Uranium-235/236			U	0.0168 +/-0.067	pCi/g				DDR1	04/05/06 09:52
Uranium-238			U	-0.0377 +/-0.0302	pCi/g					
QC1201051879 158048005 MS										
Uranium-233/234		2.36 +/-0.512		9.55 +/-1.10	pCi/g			(75%-125%)		
Uranium-235/236		U 0.0797 +/-0.122		1.57 +/-0.496	pCi/g			(75%-125%)		
Uranium-238	11.0	1.97 +/-0.464		12.4 +/-1.25	pCi/g		95	(75%-125%)		
Batch 515989										
QC1201060426 158048002 DUP										
Polonium-210		0.648 +/-0.383		0.802 +/-0.406	pCi/g	21*		(0%-20%)	JXG1	04/05/06 17:34
QC1201060429 KNOWN										
Polonium-210	7.70			7.41 +/-0.958	pCi/g		96			
QC1201060428 LCS										
Polonium-210	7.70			6.08 +/-1.19	pCi/g		79	(75%-125%)		04/06/06 13:23
QC1201060425 MB										
Polonium-210			U	-0.0227 +/-0.0315	pCi/g					04/05/06 17:34
QC1201060427 158048002 MS										
Polonium-210	8.90	0.648 +/-0.383		10.6 +/-1.52	pCi/g		112	(75%-125%)		
Rad Gamma Spec										
Batch 513799										
QC1201055604 158048005 DUP										
Actinium-228		1.45 +/-0.251		1.47 +/-0.262	pCi/g	2			MJH1	04/10/06 15:42
Bismuth-212		0.979 +/-0.325		0.908 +/-0.261	pCi/g	8				
Lead-212		1.50 +/-0.135		1.60 +/-0.167	pCi/g	6				
Protactinium-231		U -0.347 +/-0.825	U	-0.378 +/-0.855	pCi/g	9				
Radium-226		1.34 +/-0.155		1.49 +/-0.158	pCi/g	11		(0%-20%)		
Radium-228		1.45 +/-0.251		1.47 +/-0.262	pCi/g	2		(0%-20%)		
QC1201055605 LCS										
Actinium-228			U	0.401 +/-0.573	pCi/g					04/12/06 12:22
Americium-241	24.4			24.3	pCi/g		100	(75%-125%)		

QC Summary

Workorder: **158048**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 513799											
				+/-1.38							
Bismuth-212			U	-0.248 +/-0.930	pCi/g				MJH1	04/12/06	12:22
Cesium-137	9.29			9.78 +/-0.441	pCi/g		105	(75%-125%)			
Cobalt-60	13.4			13.9 +/-0.616	pCi/g		104	(75%-125%)			
Lead-212			U	0.00864 +/-0.155	pCi/g						
Protactinium-231			U	-2.99 +/-4.49	pCi/g						
Radium-226			U	0.0932 +/-0.211	pCi/g			(75%-125%)			
Radium-228			U	0.401 +/-0.573	pCi/g			(75%-125%)			
QC1201055603 MB											
Actinium-228			U	0.000515 +/-0.0619	pCi/g					04/10/06	11:17
Bismuth-212			U	-0.00629 +/-0.0918	pCi/g						
Lead-212			UUI	0.00 +/-0.0338	pCi/g						
Protactinium-231			U	-0.332 +/-0.506	pCi/g						
Radium-226			U	0.0138 +/-0.0214	pCi/g						
Radium-228			U	0.000515 +/-0.0619	pCi/g						
Rad Gas Flow											
Batch 516630											
QC1201061725 158048001 DUP											
Alpha		19.9 +/-4.41		22.1 +/-4.81	pCi/g	10		(0%-20%)	CXO1	04/03/06	19:01
QC1201061727 LCS											
Alpha	108			102 +/-7.72	pCi/g		94	(75%-125%)			
QC1201061724 MB											
Alpha			U	0.514 +/-0.742	pCi/g						
QC1201061726 158048001 MS											
Alpha	102	19.9 +/-4.41		112 +/-10.1	pCi/g		90	(75%-125%)			
QC1201061728 158048001 MSD											
Alpha	102	19.9 +/-4.41		103 +/-9.30	pCi/g	8	82				
Batch 517517											
QC1201063765 158048005 DUP											

QC Summary

Workorder: **158048**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch 517517											
Lead-210		U 0.533 +/-0.462	U	0.0696 +/-0.366	pCi/g	0		(0%-20%)	BXF1	04/09/06	09:57
QC1201063767 LCS											
Lead-210	7.02			5.38 +/-0.793	pCi/g		77	(75%-125%)			
QC1201063764 MB											
Lead-210			U	0.0926 +/-0.347	pCi/g						
QC1201063766 158048005 MS											
Lead-210	7.67	U 0.533 +/-0.462		6.53 +/-1.01	pCi/g		85	(75%-125%)			
Rad Total U											
Batch 517556											
QC1201063864 158048005 DUP											
Total Uranium		4.10 +/-0.202		4.20 +/-0.155	ug/g	3		(0%-20%)	DRS1	04/07/06	13:14
QC1201063866 LCS											
Total Uranium	9.52			7.26 +/-0.779	ug/g		76	(75%-125%)		04/07/06	13:24
QC1201063867 LCSD											
Total Uranium	0.952			0.898 +/-0.0199	ug/g	156	94			04/07/06	13:19
QC1201063863 MB											
Total Uranium			U	0.0814 +/-0.00273	ug/g					04/07/06	13:10
QC1201063865 158048005 MS											
Total Uranium	8.77	4.10 +/-0.202		9.94 +/-0.739	ug/g		67*	(75%-125%)		04/07/06	13:18

Notes:
The Qualifiers in this report are defined as follows:

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- U Target analyte was analyzed for but not detected above the MDL or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- d The 2:1 depletion requirement was not met for this sample
- h Sample preparation or preservation holding time exceeded.

QC Summary

Workorder: **158048**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

RAW DATA

Radiochemistry Batch Checklist, Rev 4

Batch# S120628 Product: Th Date: 4/8/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			NA
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	~		
Instrument source check is within limits. Instument bkg check is within limits.	~		
Method RDL has been met.	~		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	~		CASE narrative
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	~		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	~		
Sample was run within hold time. Special requirements page checked	~		
Sample was correctly preserved if required.	~		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	~		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	~		
QC data entered into QC database. Batch entered into Case Narrative.	~		
Batch non-conformances completed If applicable.			NA

General Engineering Laboratories

2/22/2005

Primary Review Performed By: 4/8/06

Secondary Review Performed By: Kimberly Holley 04/10/06

4/6 - 4/13

MWHL

Thorium-228 Que Sheet

15-MAR-06

Batch #: 512068 Analyst: DDR1 Minimum DueDate: 06-APR-06

Tracer Isotope: Ac-227 Tracer Code: 0387-B-102 Expiration Date: 7/11/06 Vol: 0.1ml Ac-227 Separation Date/Time: 4/4/06 0610

LCS Isotope: Th-230 LCS Code: 0159-0 Expiration Date: 6/23/06 Vol: 0.1ml

Spike Isotope: Th-230 Spike Code: 0159-0 Expiration Date: 6/23/06 Vol: 0.1ml

Prep Date: 3/31/06 Initials: DR Pipet ID: 1828854 Balance ID: 504/0272 Witness: CMO 3/31/06

Sample I	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Label #	Aliquot (g/l/f)	Th Det #	Ash Weight (g)
158048001	2603090024	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	401	0.207	1	0.202
158048002	2603090027	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	402	0.210	3	0.205
158048003	2603090028	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	403	0.209	4	0.204
158048004	2603090026	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	404	0.215	5	0.211
158048005	2603090029	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	405	0.225	9	0.200
1201051873	MB for batch 512068	MB		1 pCi/g	SOIL	QC ACCOUNT		406	0.238	10	NA
1201051874	2603090029(158048005DUP)	DUP		1 pCi/g	SOIL	QC ACCOUNT	07-MAR-06	407	0.224	11	0.199
1201051875	2603090029(158048005MS)	MS		1 pCi/g	SOIL	QC ACCOUNT	07-MAR-06	408	0.238	26	0.211
1201051876	LCS for batch 512068	LCS		1 pCi/g	SOIL	QC ACCOUNT		409	0.238	27	NA

Solid Sample Dissolution by: LEACH or DIGESTION
Circle One

Data Reviewed By: 4/5/06

General Engineering Laboratories, Radiochemistry Division

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

(•) Dry Weight ( ) Wet Weight

Submit

Batch ID: 512068

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 512068

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158048001	0.202	SAMPLE	NA	.0220	0.20656497
158048002	0.205	SAMPLE	NA	.0248	0.21021923
158048003	0.204	SAMPLE	NA	.0246	0.20915269
158048004	0.211	SAMPLE	NA	.0189	0.21506804
158048005	0.200	SAMPLE	NA	.1118	0.22517623
1201051873		MB	NA	NA	
1201051874	0.199	DUP	158048005	.1118	0.22405035
1201051875	0.211	MS	158048005	.1118	0.23756092
1201051876		LCS	NA	NA	

General Engineering Laboratories, LLC

4/5/06

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S0158048001_TH SAMPLE QTY: 0.207 G
DETECTOR NUMBER :33088 AVERAGE %EFFICIENCY :27.8191 % YIELD : 108.232	COUNT DATE: 5-APR-2006 09:52:02 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

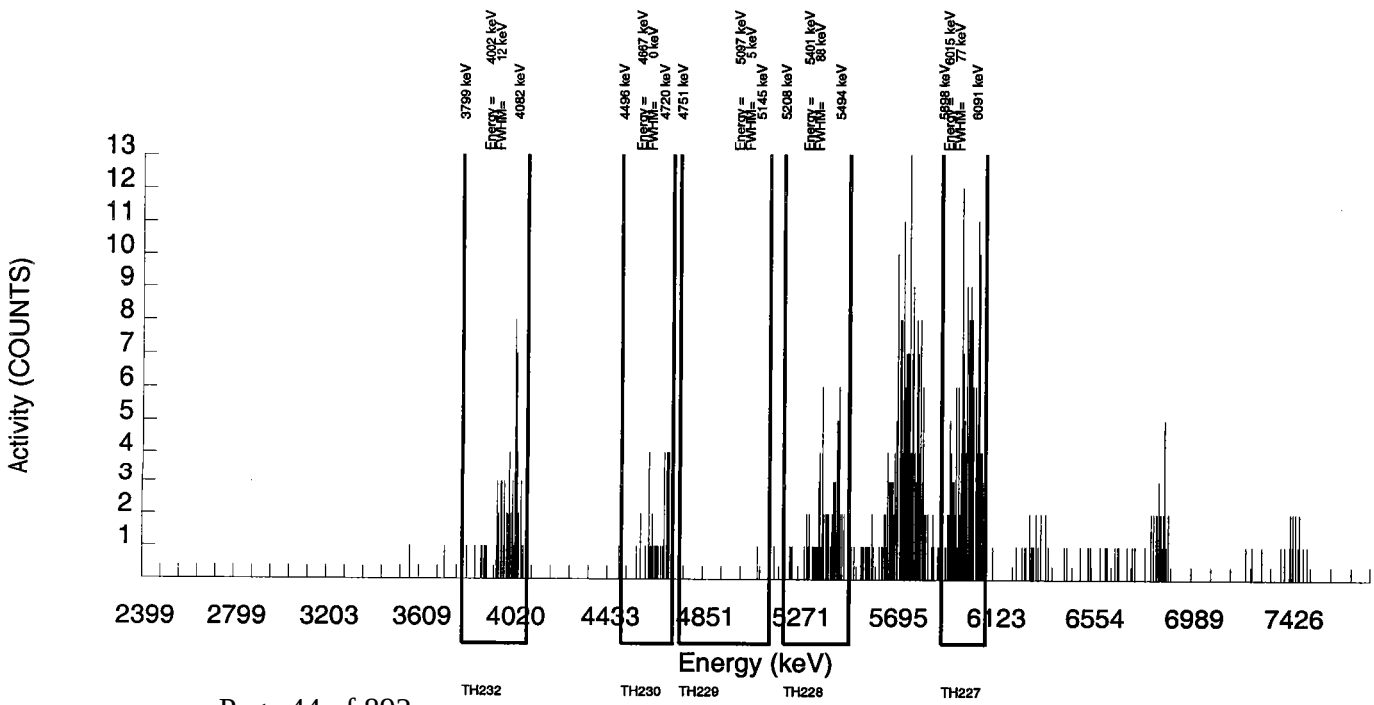
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B001.CNF;687 BKG DATE: 2-APR-2006	MS PCI/G : 52.10526 MSD PCI/G : 52.10526 LCS PCI/G : 52.10526 TRACER DPM : 4.3594 EFF FILE : W001.CNF;233 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	164.760	0.240	54.75400	9.49E+00	2.22E+00	3.04E-01
TH-228	5363.000	66.640	3.360	99.94000	2.01E+00	6.17E-01	3.48E-01
TH229	4900.000	-1.160	2.160	99.52000	-3.51E-02	7.48E-02	2.98E-01
TH-230	4625.000	36.320	1.680	100.0000	1.09E+00	4.19E-01	2.72E-01
TH-232	3972.000	64.520	0.480	100.0000	1.94E+00	5.92E-01	1.87E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S0158048002_TH SAMPLE QTY: 0.210 G
DETECTOR NUMBER :20659 AVERAGE %EFFICIENCY :28.8062 % YIELD : 105.792	COUNT DATE: 5-APR-2006 09:52:02 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

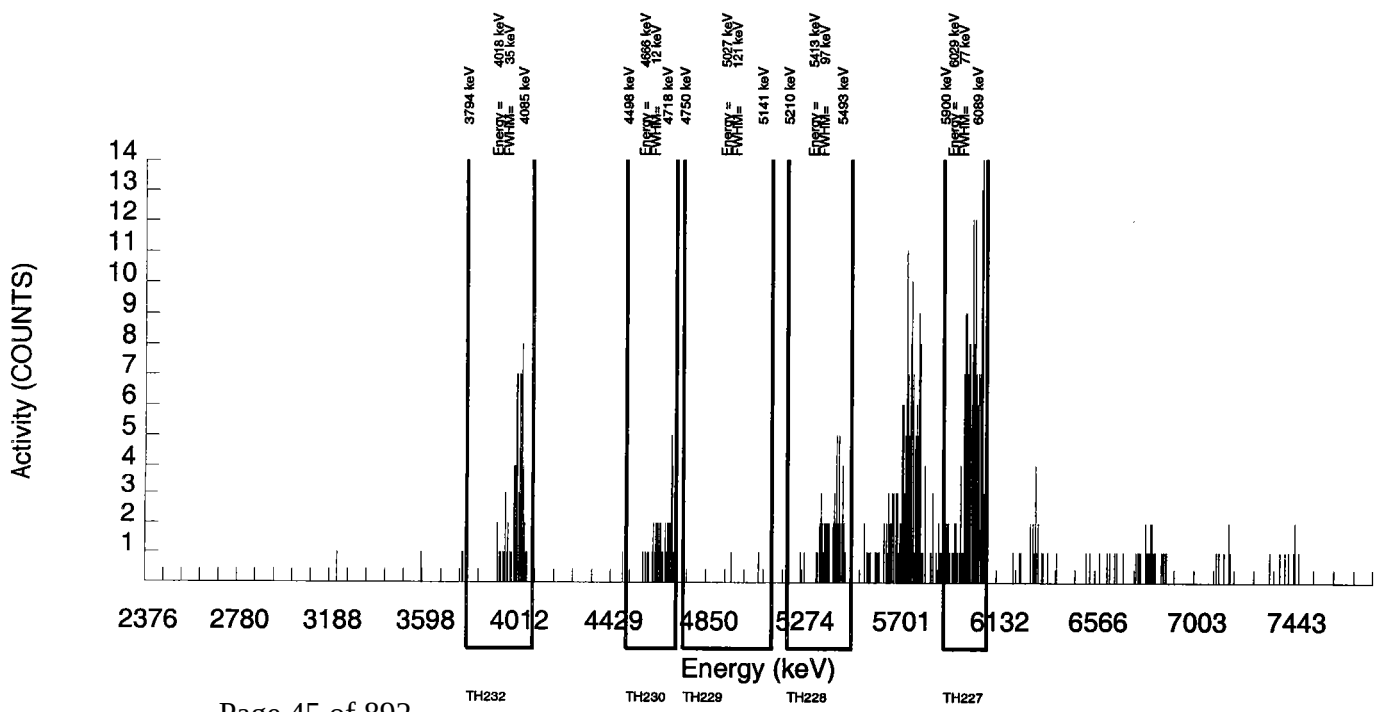
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B003.CNF;676 BKG DATE: 2-APR-2006	MS PCI/G : 51.36090 MSD PCI/G : 51.36090 LCS PCI/G : 51.36090 TRACER DPM : 4.3594 EFF FILE : W003.CNF;192 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	166.760	0.240	54.75400	9.35E+00	2.18E+00	2.96E-01
TH-228	5363.000	48.920	4.080	99.94000	1.44E+00	4.99E-01	3.64E-01
TH229	4900.000	-0.880	2.880	99.52000	-2.59E-02	9.68E-02	3.21E-01
TH-230	4625.000	38.360	2.640	100.0000	1.13E+00	4.26E-01	3.10E-01
TH-232	3972.000	67.560	1.440	100.0000	1.98E+00	5.97E-01	2.52E-01

REVIEWED BY: DATE :

GD 4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S0158048003_TH SAMPLE QTY: 0.209 G
DETECTOR NUMBER :33077 AVERAGE %EFFICIENCY :30.9867 % YIELD : 119.155	COUNT DATE: 5-APR-2006 09:52:02 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

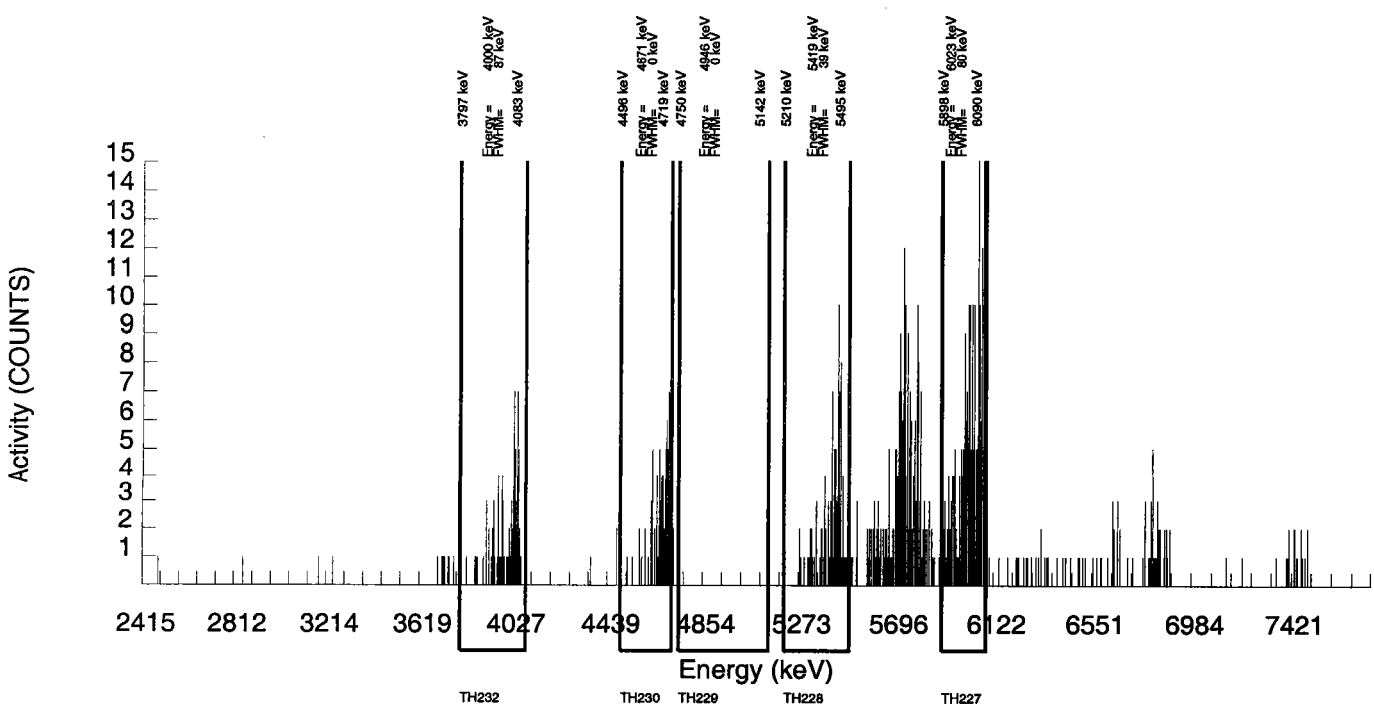
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B004.CNF;685 BKG DATE: 2-APR-2006	MS PCI/G : 51.60664 MSD PCI/G : 51.60664 LCS PCI/G : 51.60664 TRACER DPM : 4.3594 EFF FILE : W004.CNF;184 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	202.040	0.960	54.75400	9.40E+00	2.01E+00	3.51E-01
TH-228	5363.000	84.640	3.360	99.94000	2.06E+00	5.67E-01	2.81E-01
TH229	4900.000	-2.400	2.400	99.52000	-5.87E-02	3.83E-02	2.49E-01
TH-230	4625.000	72.760	0.240	100.0000	1.77E+00	5.04E-01	1.28E-01
TH-232	3972.000	71.520	0.480	100.0000	1.74E+00	4.99E-01	1.51E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S0158048004_TH SAMPLE QTY: 0.215 G
DETECTOR NUMBER :28642 AVERAGE %EFFICIENCY :31.5810 % YIELD : 118.070	COUNT DATE: 5-APR-2006 09:52:02 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

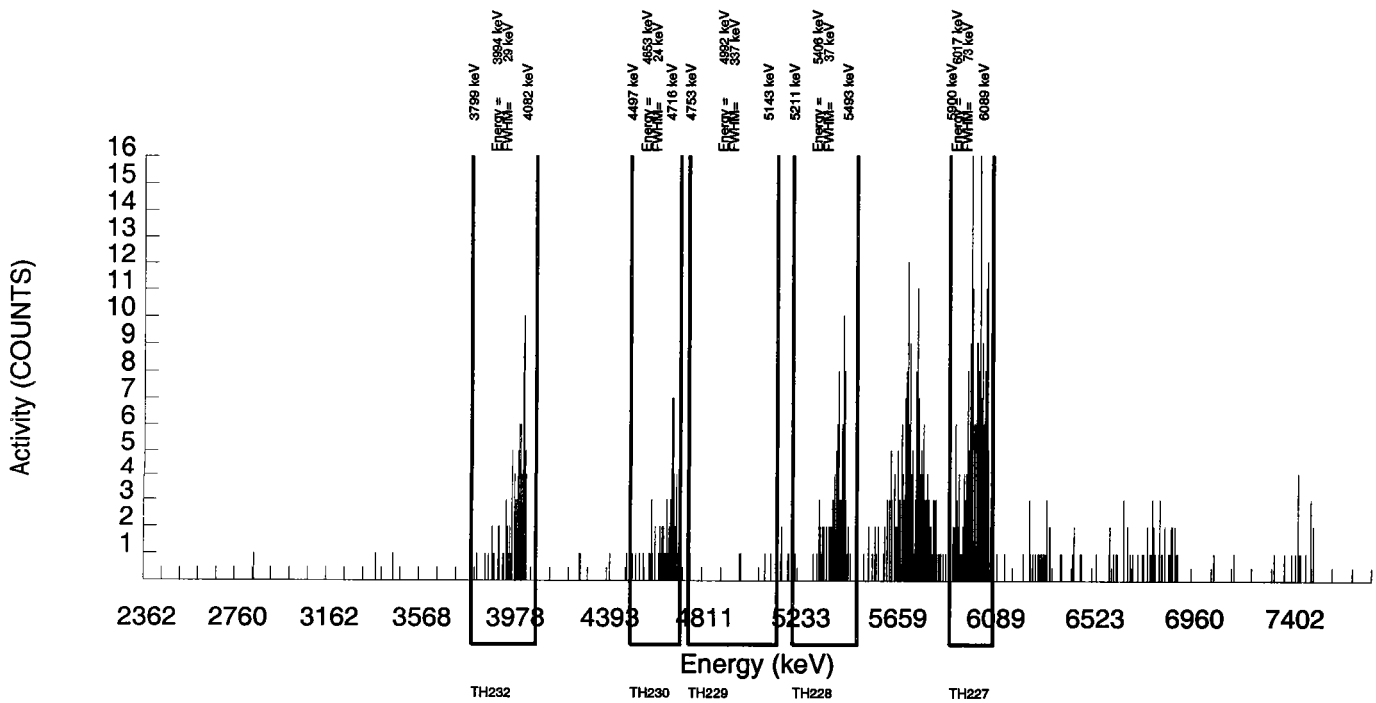
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B005.CNF;673 BKG DATE: 2-APR-2006	MS PCI/G : 50.16645 MSD PCI/G : 50.16645 LCS PCI/G : 50.16645 TRACER DPM : 4.3594 EFF FILE : W005.CNF;190 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	204.040	0.960	54.75400	9.13E+00	1.95E+00	3.38E-01
TH-228	5363.000	80.080	7.920	99.94000	1.88E+00	5.37E-01	3.77E-01
TH229	4900.000	2.840	2.160	99.52000	6.68E-02	1.11E-01	2.31E-01
TH-230	4625.000	53.880	3.120	100.0000	1.26E+00	4.09E-01	2.63E-01
TH-232	3972.000	84.840	2.160	100.0000	1.99E+00	5.42E-01	2.30E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S0158048005_TH SAMPLE QTY: 0.225 G
DETECTOR NUMBER :13285 AVERAGE %EFFICIENCY :33.4193 % YIELD : 101.448	COUNT DATE: 5-APR-2006 09:52:07 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

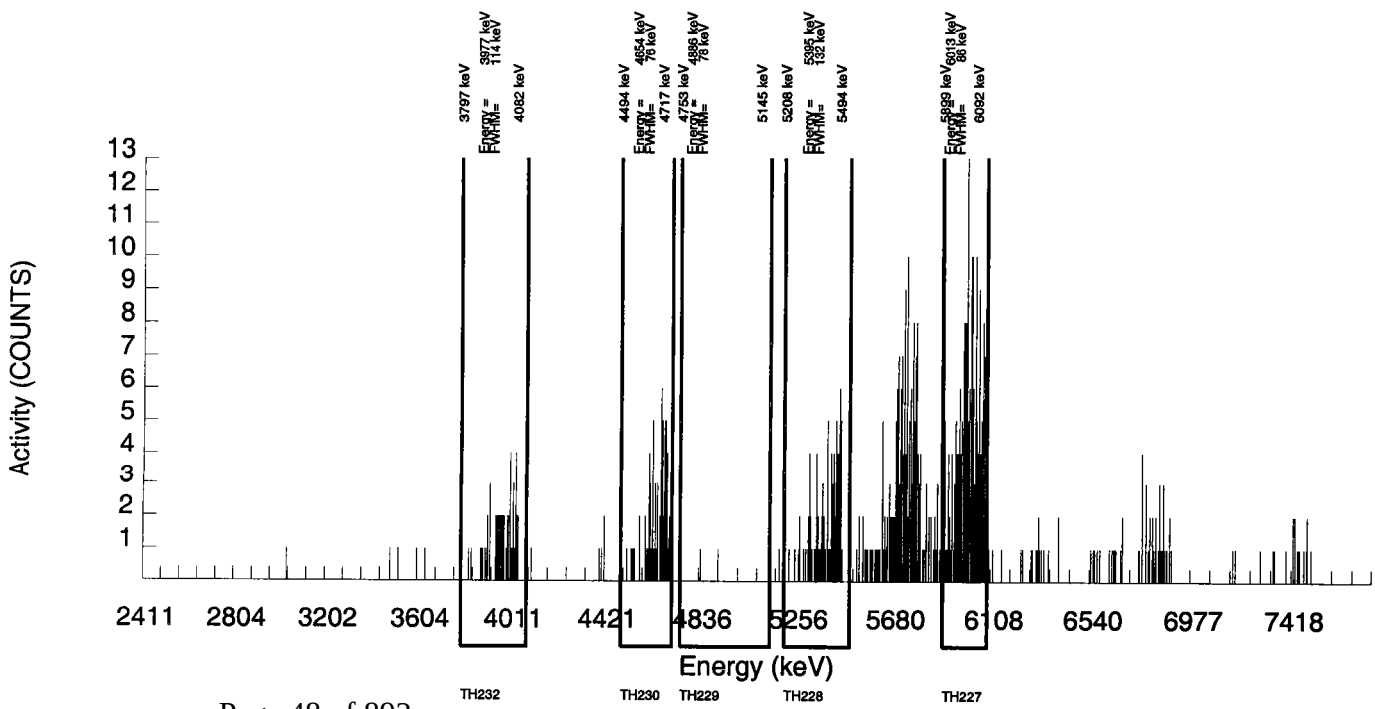
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B009.CNF;683 BKG DATE: 2-APR-2006	MS PCI/G : 47.93684 MSD PCI/G : 47.93684 LCS PCI/G : 47.93684 TRACER DPM : 4.3594 EFF FILE : W009.CNF;198 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	185.520	0.480	54.75400	8.73E+00	1.94E+00	2.93E-01
TH-228	5363.000	73.000	6.000	99.94000	1.80E+00	5.34E-01	3.55E-01
TH229	4900.000	0.320	1.680	99.52000	7.91E-03	7.67E-02	2.23E-01
TH-230	4625.000	63.080	1.920	100.0000	1.55E+00	4.75E-01	2.32E-01
TH-232	3972.000	52.000	0.000	100.0000	1.28E+00	4.14E-01	7.38E-02

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S1201051873_TH SAMPLE QTY: 0.238 G
DETECTOR NUMBER :33083 AVERAGE %EFFICIENCY :33.4044 % YIELD : 101.515	COUNT DATE: 5-APR-2006 09:52:07 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

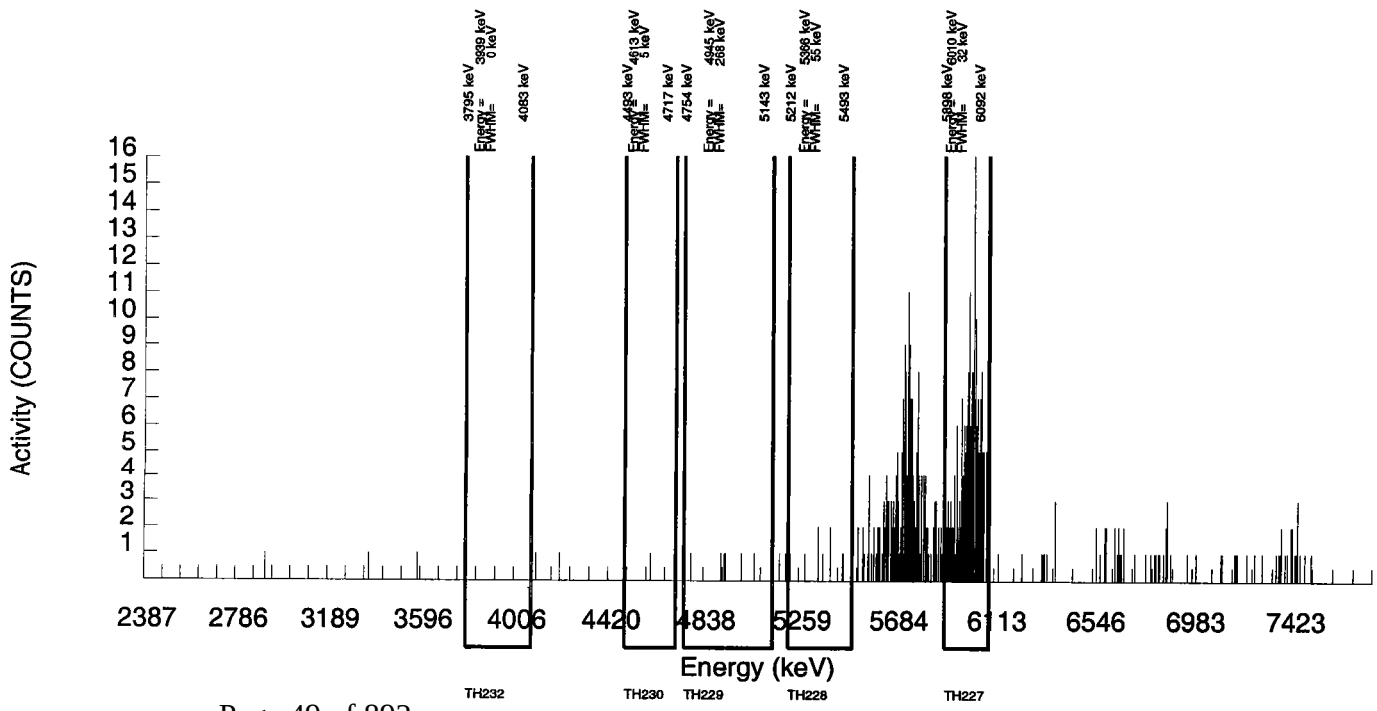
MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B010.CNF;694 BKG DATE: 2-APR-2006	MS PCI/G : 45.31844 MSD PCI/G : 45.31844 LCS PCI/G : 45.31844 TRACER DPM : 4.3594 EFF FILE : W010.CNF;207 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	185.560	1.440	54.75400	8.25E+00	1.84E+00	3.82E-01
TH-228	5363.000	7.400	3.600	99.94000	1.72E-01	1.63E-01	2.75E-01
TH229	4900.000	2.640	3.360	99.52000	6.17E-02	1.22E-01	2.69E-01
TH-230	4625.000	-0.440	1.440	100.0000	-1.02E-02	5.40E-02	2.00E-01
TH-232	3972.000	-0.240	0.240	100.0000	-5.58E-03	1.12E-02	1.23E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S1201051874_TH SAMPLE QTY: 0.224 G
DETECTOR NUMBER :9537 AVERAGE %EFFICIENCY :31.0572 % YIELD : 81.202	COUNT DATE: 5-APR-2006 09:52:07 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B011.CNF;692 BKG DATE: 2-APR-2006	MS PCI/G : 48.15084 MSD PCI/G : 48.15084 LCS PCI/G : 48.15084 TRACER DPM : 4.3594 EFF FILE : W011.CNF;198 CAL DATE: 3-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

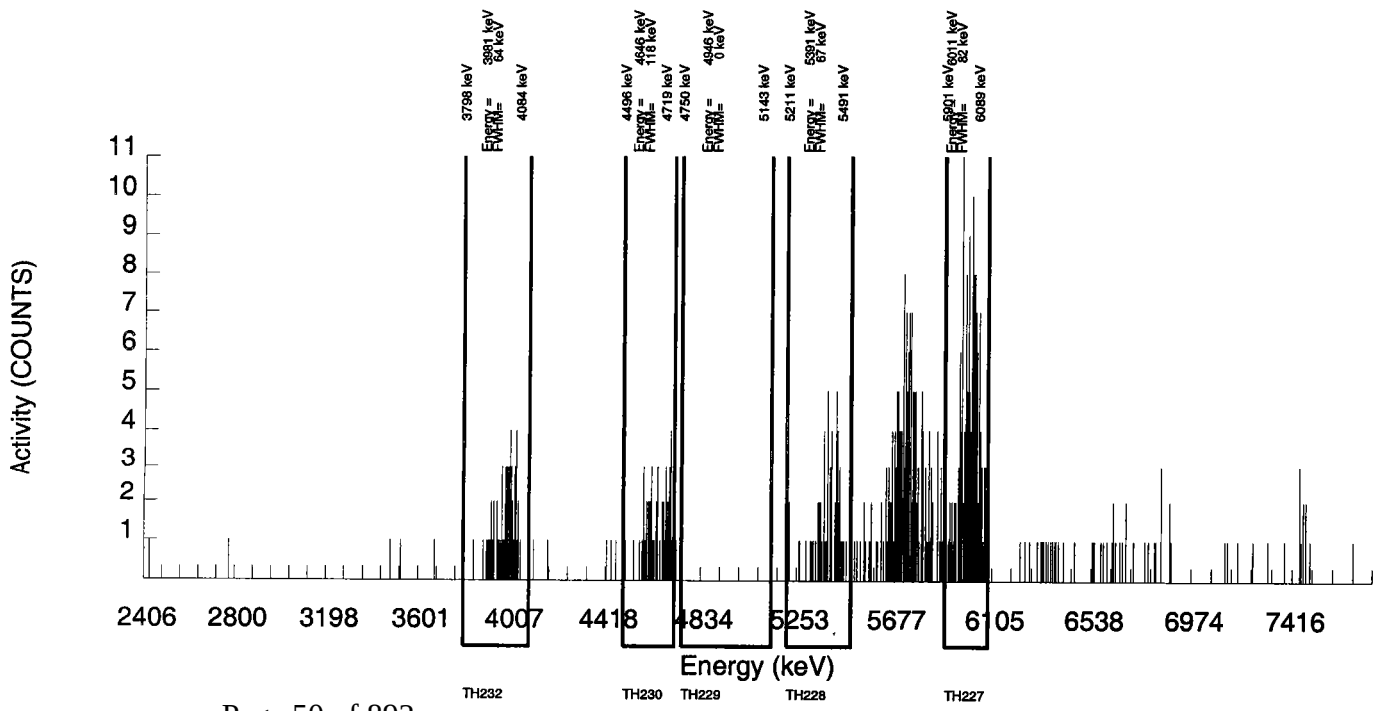
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	138.000	0.000	54.75400	8.77E+00	2.22E+00	1.91E-01
TH-228	5363.000	50.880	3.120	99.94000	1.69E+00	5.86E-01	3.73E-01
TH229	4900.000	-3.360	3.360	99.52000	-1.12E-01	6.35E-02	3.85E-01
TH-230	4625.000	48.000	0.000	100.0000	1.59E+00	5.49E-01	9.97E-02
TH-232	3972.000	55.000	0.000	100.0000	1.83E+00	6.00E-01	9.97E-02

REVIEWED BY: DATE :

4/8/06

Th-228 = 6.30 %
Th-230 = 2.53 % RER = 1.48
Th-232 = 35.4 ~~ACTSX~~ DDR 4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S1201051875_TH SAMPLE QTY: 0.238 G
DETECTOR NUMBER :34427 AVERAGE %EFFICIENCY :31.1163 % YIELD : 113.373	COUNT DATE: 5-APR-2006 09:52:09 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B026.CNF;688 BKG DATE: 2-APR-2006	MS PCI/G : 45.31844 MSD PCI/G : 45.31844 LCS PCI/G : 45.31844 TRACER DPM : 4.3594 EFF FILE : W026.CNF;193 CAL DATE: 4-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

NUCLIDE ACTIVITY SUMMARY

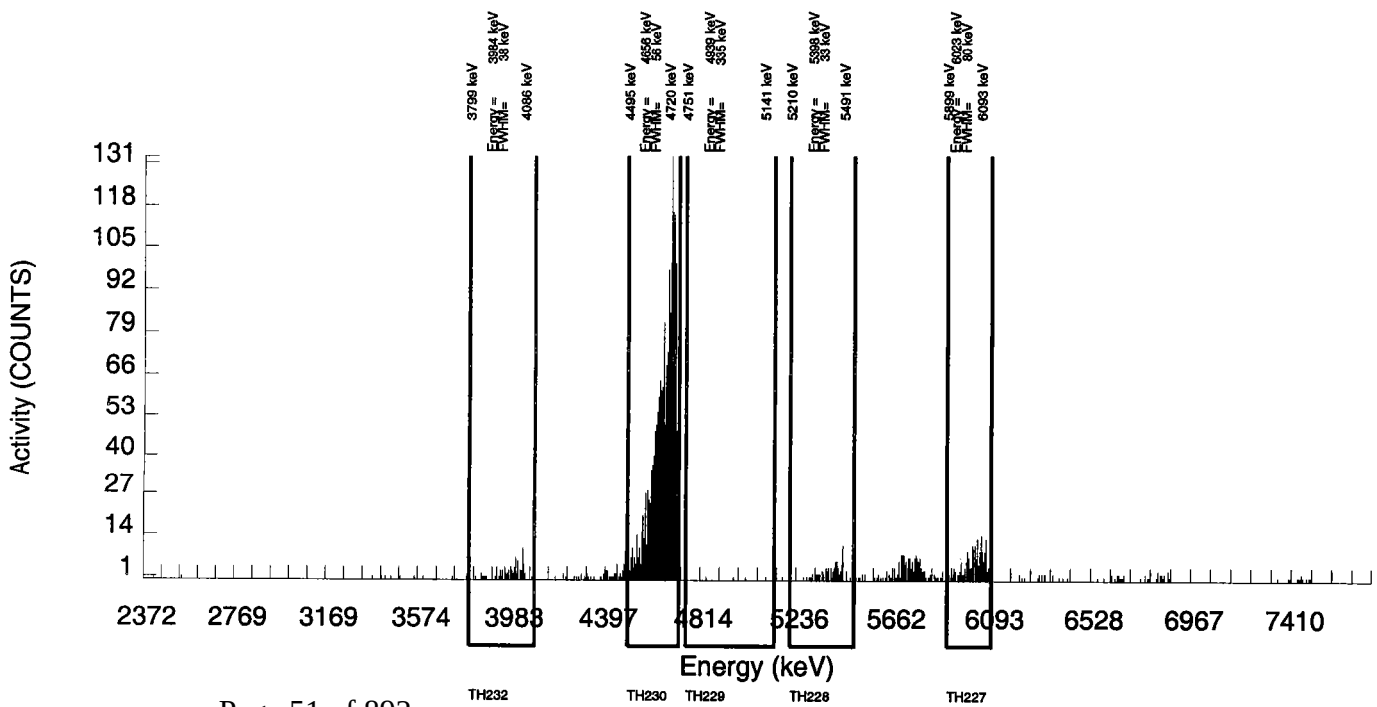
NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	193.040	0.960	54.75400	8.25E+00	1.74E+00	3.23E-01
TH-228	5363.000	74.000	12.000	99.94000	1.66E+00	4.94E-01	4.28E-01
TH229	4900.000	0.920	4.080	99.52000	2.07E-02	1.10E-01	2.78E-01
TH-230	4625.000	1843.280	0.720	100.0000	4.12E+01	6.64E+00	1.55E-01
TH-232	3972.000	83.320	1.680	100.0000	1.86E+00	5.03E-01	2.02E-01

REVIEWED BY: DATE :

4/5/06

~~1.84 ± 1.28~~ 4/5/06

$MS = \frac{41.2 - 1.85}{45.3} = 87.5\%$



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512068 SAMPLE DATE : 4-APR-2006 06:10:00.	SAMPLE ID : S1201051876_TH SAMPLE QTY: 0.238 G
DETECTOR NUMBER :31436 AVERAGE %EFFICIENCY :28.5131 % YIELD : 108.316	COUNT DATE: 5-APR-2006 09:52:09 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

MS : 0159-O MSD : 0159-O LCS : 0159-O TRACER : 0387-B-102 BKG FILE: B027.CNF;689 BKG DATE: 2-APR-2006	MS PCI/G : 45.31844 MSD PCI/G : 45.31844 LCS PCI/G : 45.31844 TRACER DPM : 4.3594 EFF FILE : W027.CNF;220 CAL DATE: 4-APR-2006	MS ISOTOPE : TH-230 MSD ISOTOPE: TH-230 LCS ISOTOPE: TH-230 TRACER ISOTOPE: AC227 LIB FILE : ENV_ALPHA_TH.N

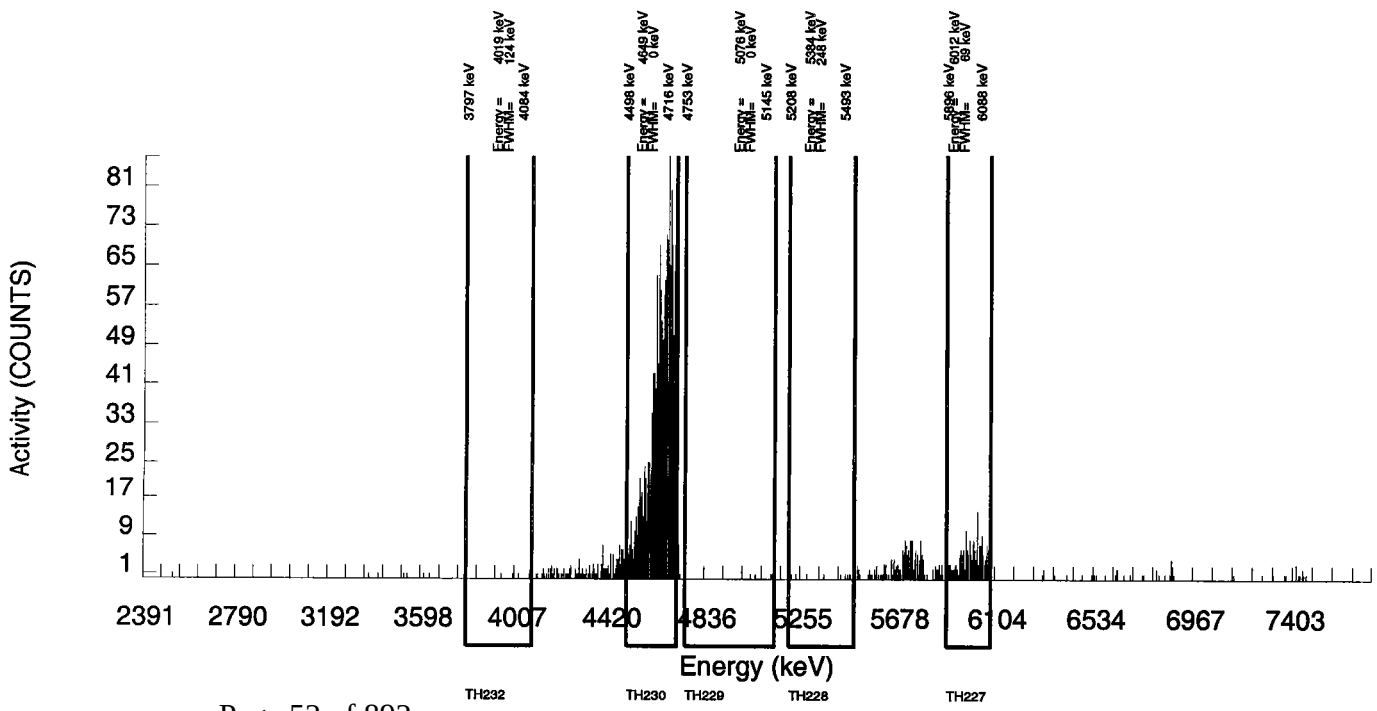
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	ERROR 2-SIGMA	MDA pCi/G
AC-227	5978.000	169.000	0.000	54.75400	8.25E+00	1.85E+00	1.46E-01
TH-228	5363.000	3.000	6.000	99.94000	7.67E-02	1.66E-01	3.68E-01
TH229	4900.000	5.040	0.960	99.52000	1.29E-01	1.30E-01	1.94E-01
TH-230	4625.000	1543.520	0.480	100.0000	3.94E+01	6.74E+00	1.59E-01
TH-232	3972.000	3.520	0.480	100.0000	8.99E-02	1.05E-01	1.59E-01

REVIEWED BY: DATE :

4/5/06

$LCS = \frac{39.4}{45.3} = 87.0\%$



Radiochemistry Batch Checklist, Rev 4

Batch# S12069 Product: U Date: 4/5/04

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			NA
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		Case Narrative
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			NA

General Engineering Laboratories

2/22/2005

Primary Review Performed By: 4/5/04

Secondary Review Performed By: Timothy Holley 04/06/04

4/6-4/13

MWHL

Uranium Que Sheet

15-MAR-06

Batch #: 512069 **Analyst:** DDR1 **Minimum DueDate:** 06-APR-06

Tracer Isotope: U-232/U-236 Tracer Code: 0688-H Expiration Date: 1/12/07 Vol: 0.1ml

LCS Isotope: U-238 LCS Code: 0858-B Expiration Date: 11/21/06 Vol: 0.1ml

Spike Isotope: U-238 Spike Code: 0858-B Expiration Date: 11/21/06 Vol: 0.1ml

Prep Date: 3/31/06 Initials: DR Pipet ID: 1828854 Balance ID: 50410272 Witness: CMD 3/31/06

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Label #	Aliquot (g/l/f)	U Det #	Ash Weight (g)
										QC 4/18/06	
158048001	2603090024	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	401	0.207	19 20	0.202
158048002	2603090027	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	402	0.210	20 21	0.205
158048003	2603090028	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	403	0.209	22 23	0.204
158048004	2603090026	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	404	0.215	76 77 QC 4/19/06	0.211
158048005	2603090029	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	405	0.225	78	0.200
1201051877	MB for batch 512069	MB		1 pCi/g	SOIL	QC ACCOUNT		406	0.238	79	NA
1201051878	2603090029(158048005DUP)	DUP		1 pCi/g	SOIL	QC ACCOUNT	07-MAR-06	407	0.224	80	0.199
1201051879	2603090029(158048005MS)	MS		1 pCi/g	SOIL	QC ACCOUNT	07-MAR-06	408	0.238	28	0.211
1201051880	LCS for batch 512069	LCS		1 pCi/g	SOIL	QC ACCOUNT		409	0.238	29	NA

Solid Sample Dissolution by: LEACH or DIGESTION (Circle One)

Data Reviewed By: 4/5/06

Choose SOP used: GL-RAD-A-011 GL-RAD-A-038

General Engineering Laboratories, Radiochemistry Division

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

(•) Dry Weight ( ) Wet Weight

Submit

Batch ID: 512069

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 512069

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158048001	0.202	SAMPLE	NA	.0220	0.20656497
158048002	0.205	SAMPLE	NA	.0248	0.21021923
158048003	0.204	SAMPLE	NA	.0246	0.20915269
158048004	0.211	SAMPLE	NA	.0189	0.21506804
158048005	0.200	SAMPLE	NA	.1118	0.22517623
1201051877		MB	NA	NA	
1201051878	0.199	DUP	158048005	.1118	0.22405035
1201051879	0.211	MS	158048005	.1118	0.23756092
1201051880		LCS	NA	NA	

General Engineering Laboratories, LLC

4/5/06

Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S0158048001_UU SAMPLE QTY: 0.207 G
DETECTOR NUMBER :33093 AVERAGE %EFFICIENCY :33.7467 % YIELD : 89.468	COUNT DATE: 5-APR-2006 08:19:45 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

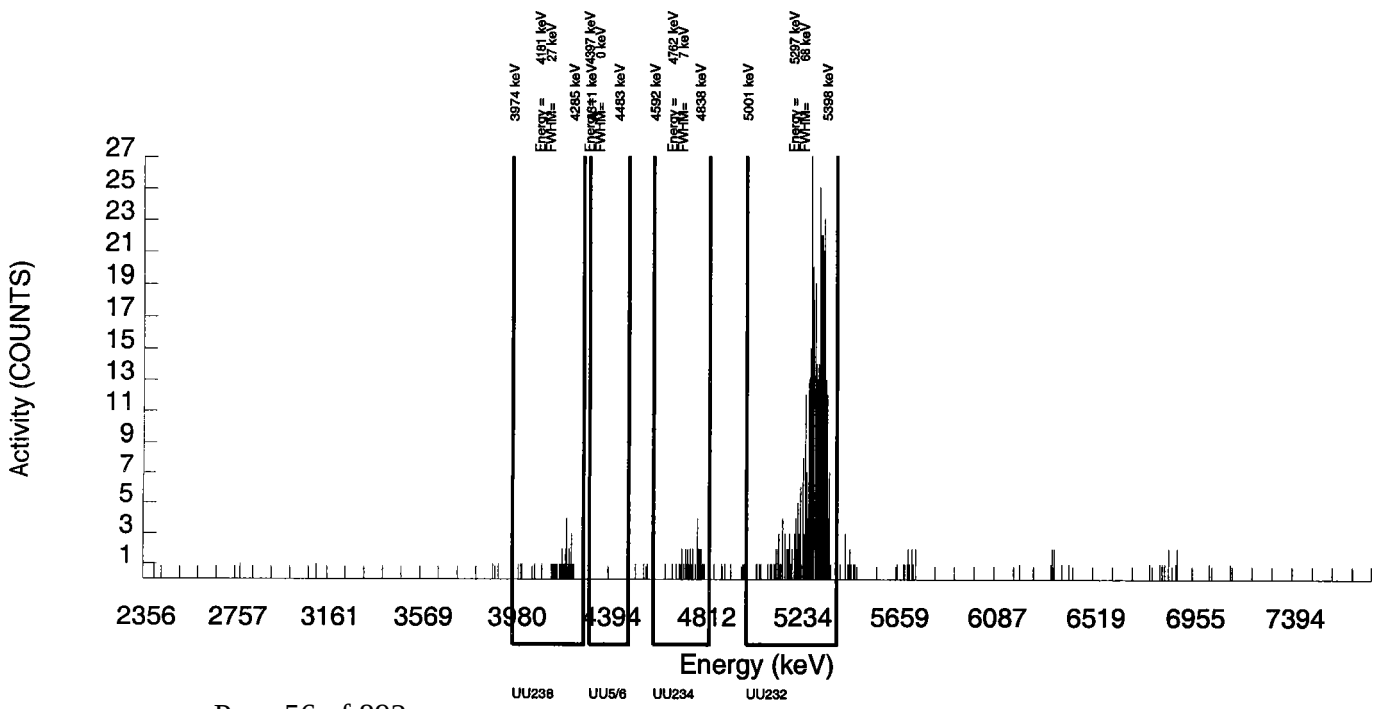
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B020.CNF;673 BKG DATE: 2-APR-2006	MS PCI/G : 12.70216 MSD PCI/G : 12.70216 LCS PCI/G : 12.70216 TRACER DPM : 5.4129 EFF FILE : W020.CNF;179 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	32.040	0.960	100.0000	9.62E-01	3.67E-01	2.27E-01	3.39E-01
U232	5302.100	391.920	4.080	100.0000	1.18E+01	2.07E+00	3.72E-01	1.17E+00
U-235	4391.000	-0.240	0.240	80.90000	-8.91E-03	7.49E-02	1.96E-01	7.48E-02
U-238	4184.730	30.320	1.680	100.0000	9.11E-01	3.60E-01	2.71E-01	3.35E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S0158048002_UU SAMPLE QTY: 0.210 G
DETECTOR NUMBER :33893 AVERAGE %EFFICIENCY :30.9792 % YIELD : 90.676	COUNT DATE: 5-APR-2006 08:19:45 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

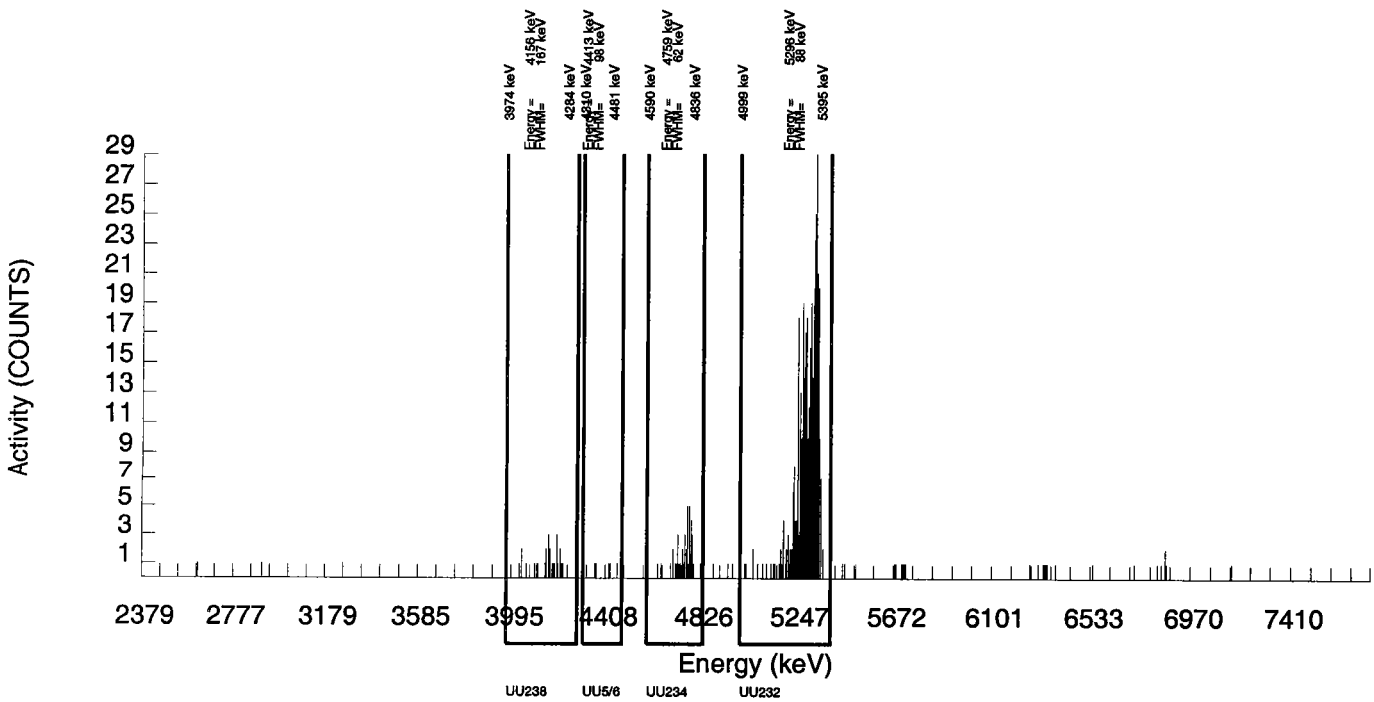
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B021.CNF;677 BKG DATE: 2-APR-2006	MS PCI/G : 12.52070 MSD PCI/G : 12.52070 LCS PCI/G : 12.52070 TRACER DPM : 5.4129 EFF FILE : W021.CNF;201 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	39.040	0.960	100.0000	1.24E+00	4.36E-01	2.40E-01	3.96E-01
U232	5302.100	364.640	3.360	100.0000	1.16E+01	2.08E+00	3.67E-01	1.20E+00
U-235	4391.000	5.000	0.000	80.90000	1.97E-01	1.75E-01	1.18E-01	1.72E-01
U-238	4184.730	25.520	0.480	100.0000	8.12E-01	3.40E-01	1.98E-01	3.19E-01

REVIEWED BY: DATE :

DD 4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S0158048003_UU SAMPLE QTY: 0.209 G
DETECTOR NUMBER :22873 AVERAGE %EFFICIENCY :27.6563 % YIELD : 104.234	COUNT DATE: 5-APR-2006 08:19:45 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

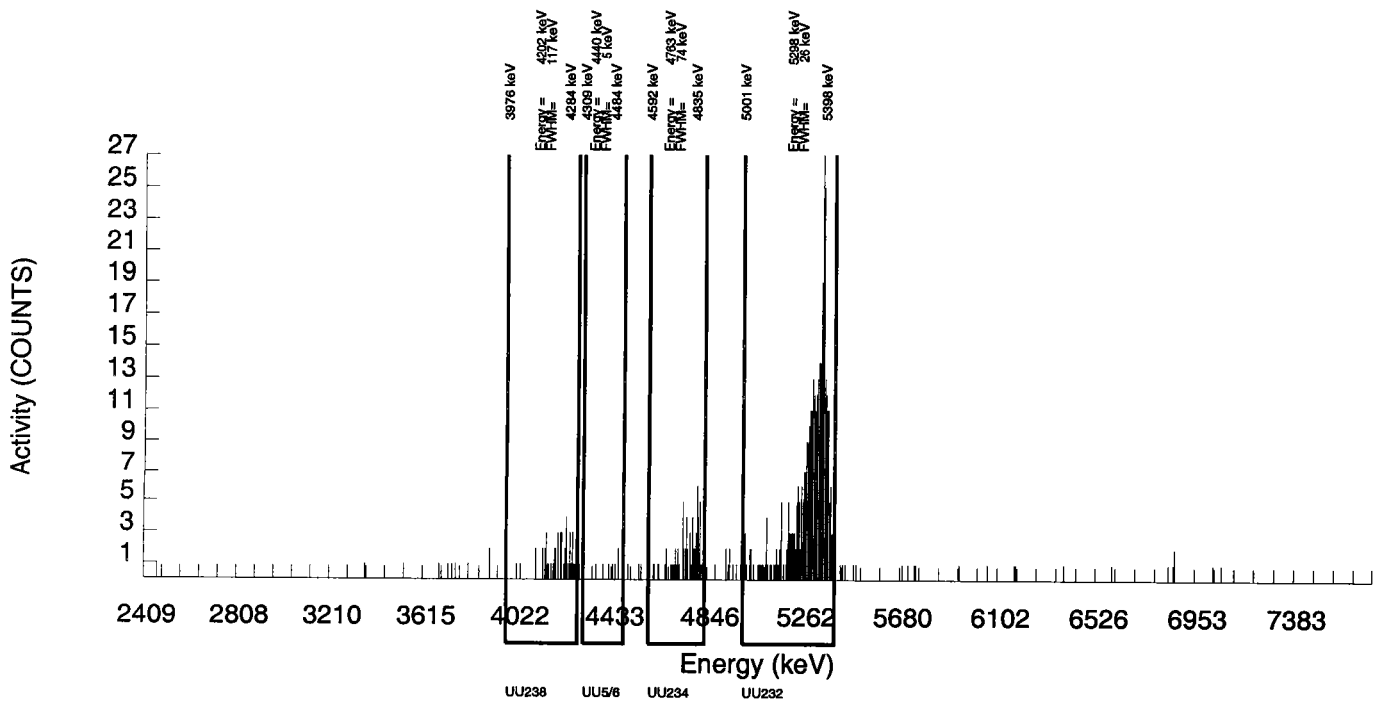
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B023.CNF;681 BKG DATE: 2-APR-2006	MS PCI/G : 12.58061 MSD PCI/G : 12.58061 LCS PCI/G : 12.58061 TRACER DPM : 5.4129 EFF FILE : W023.CNF;181 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	64.280	0.720	100.0000	2.00E+00	5.73E-01	2.16E-01	4.93E-01
U232	5302.100	374.200	4.800	100.0000	1.17E+01	2.08E+00	4.11E-01	1.19E+00
U-235	4391.000	7.280	0.720	80.90000	2.80E-01	2.20E-01	2.67E-01	2.16E-01
U-238	4184.730	44.560	1.440	100.0000	1.39E+00	4.63E-01	2.67E-01	4.16E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S0158048004_UU SAMPLE QTY: 0.215 G
DETECTOR NUMBER :28239 AVERAGE %EFFICIENCY :32.8288 % YIELD : 104.876	COUNT DATE: 5-APR-2006 09:52:15 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :DDR1

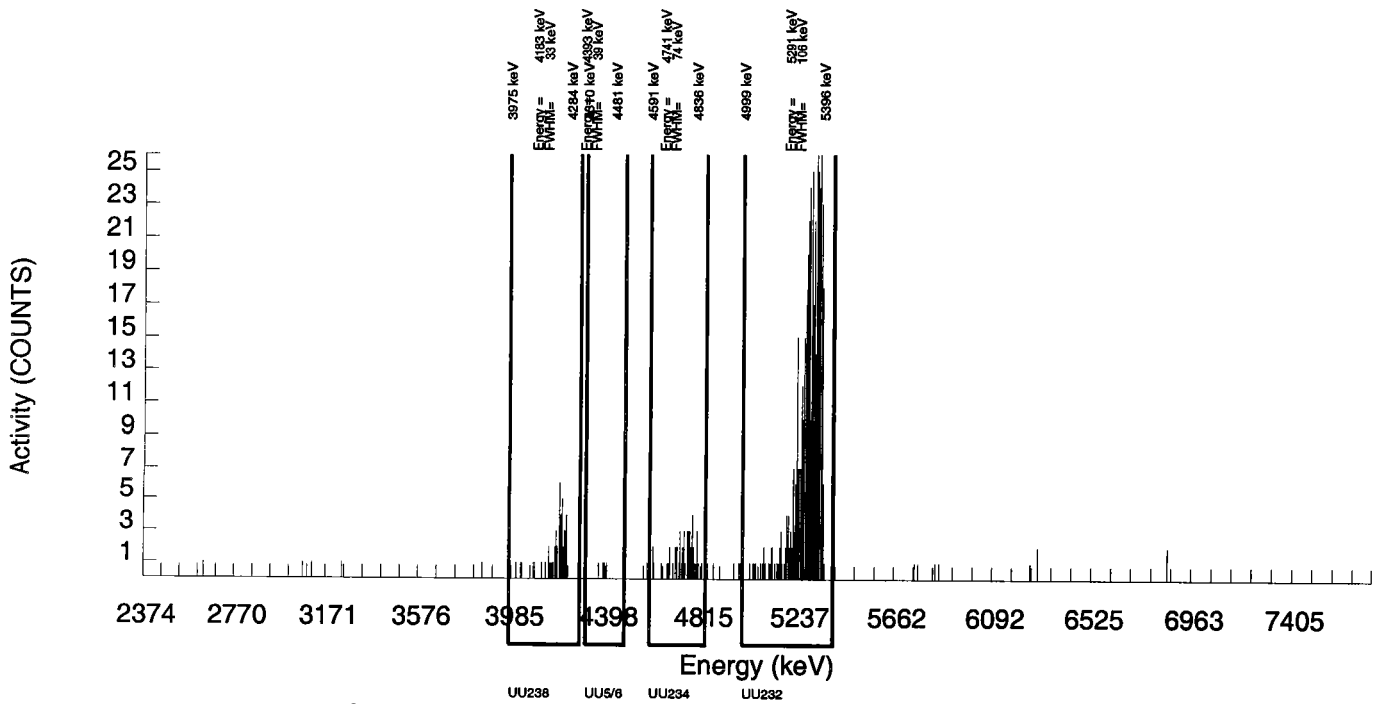
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B077.CNF;598 BKG DATE: 2-APR-2006	MS PCI/G : 12.22952 MSD PCI/G : 12.22952 LCS PCI/G : 12.22952 TRACER DPM : 5.4129 EFF FILE : W077.CNF;164 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	46.360	2.640	100.0000	1.18E+00	3.81E-01	2.68E-01	3.50E-01
U232	5302.100	446.920	4.080	100.0000	1.13E+01	1.80E+00	3.14E-01	1.06E+00
U-235	4391.000	3.040	0.960	80.90000	9.53E-02	1.27E-01	2.37E-01	1.26E-01
U-238	4184.730	45.800	1.200	100.0000	1.16E+00	3.73E-01	2.05E-01	3.42E-01

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069
SAMPLE DATE : 7-MAR-2006 00:00:00.

SAMPLE ID : S0158048005_UU
SAMPLE QTY: 0.225 G

DETECTOR NUMBER :34425
AVERAGE %EFFICIENCY :32.6623
% YIELD : 90.297

COUNT DATE: 5-APR-2006 09:52:15
ELAPSED LIVE TIME(SEC): 14399.99
ANALYST :DDR1

MS : 0858-B
MSD : 0858-B
LCS : 0858-B
TRACER : 0688-H
BKG FILE: B078.CNF;598
BKG DATE: 2-APR-2006

MS PCI/G : 11.68599
MSD PCI/G : 11.68599
LCS PCI/G : 11.68599
TRACER DPM : 5.4129
EFF FILE : W078.CNF;154
CAL DATE: 3-APR-2006

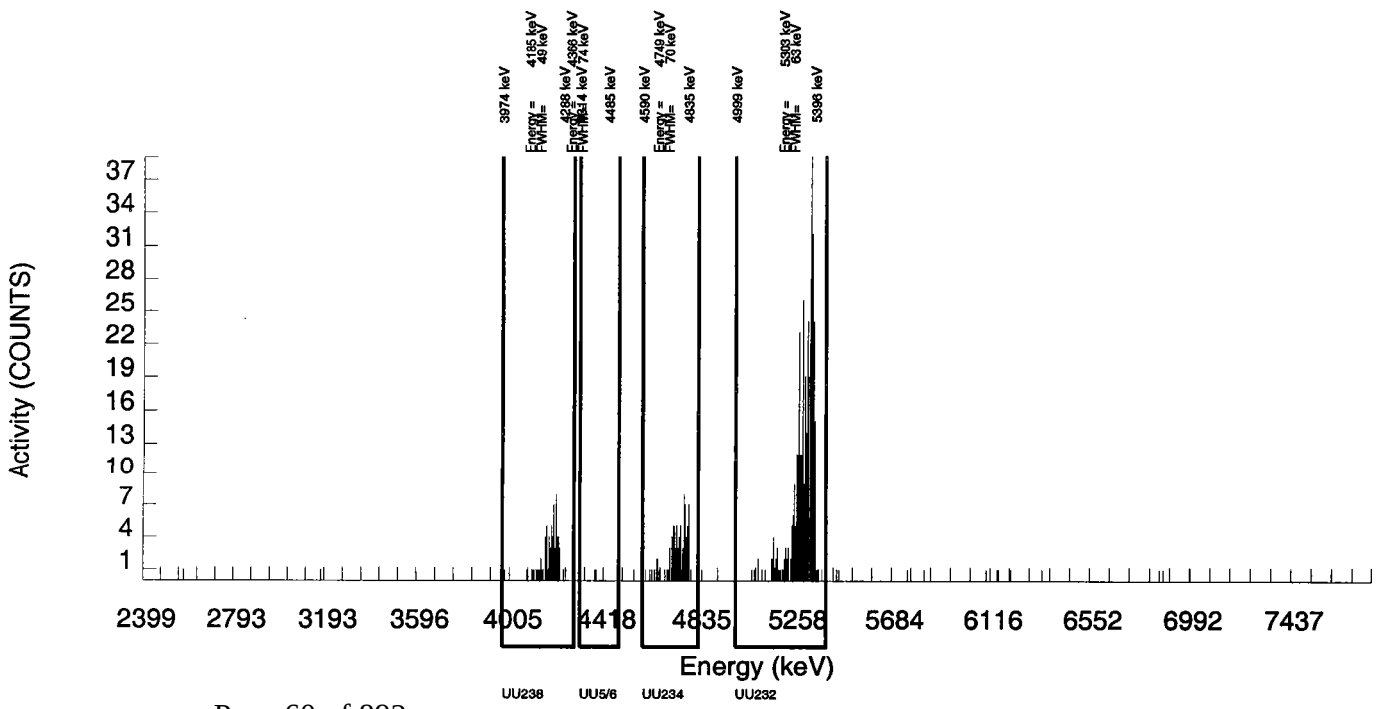
MS ISOTOPE : U-238
MSD ISOTOPE: U-238
LCS ISOTOPE: U-238
TRACER ISOTOPE: U232
LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	83.560	1.440	100.0000	2.36E+00	6.02E-01	2.43E-01	5.12E-01
U232	5302.100	382.840	2.160	100.0000	1.08E+01	1.81E+00	2.78E-01	1.09E+00
U-235	4391.000	2.280	0.720	80.90000	7.97E-02	1.23E-01	2.43E-01	1.22E-01
U-238	4184.730	69.520	0.480	100.0000	1.97E+00	5.34E-01	1.76E-01	4.64E-01

REVIEWED BY: DATE :

DDH 4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069 SAMPLE DATE : 31-MAR-2006 00:00:00	SAMPLE ID : S1201051877_UU SAMPLE QTY: 0.238 G
DETECTOR NUMBER :28408 AVERAGE %EFFICIENCY :33.8151 % YIELD : 89.105	COUNT DATE: 5-APR-2006 09:52:15 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :DDR1

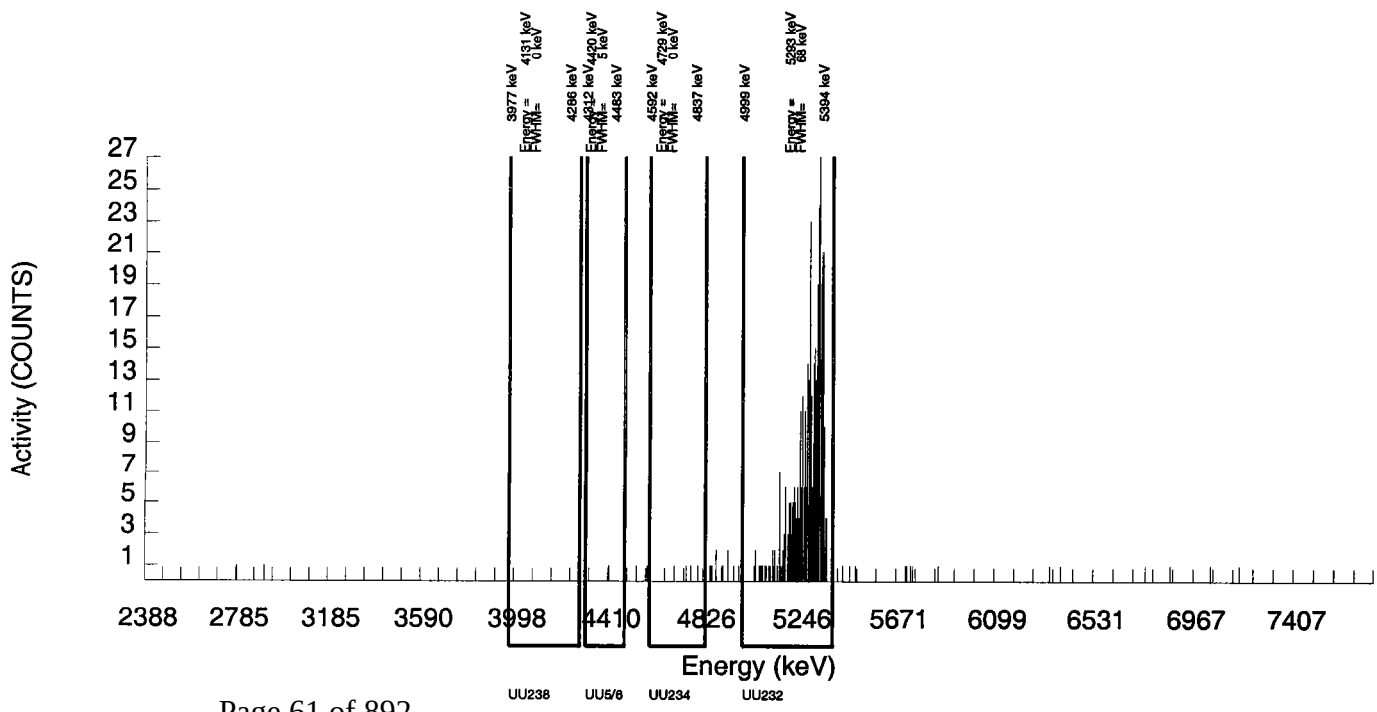
MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B079.CNF;596 BKG DATE: 2-APR-2006	MS PCI/G : 11.04768 MSD PCI/G : 11.04768 LCS PCI/G : 11.04768 TRACER DPM : 5.4094 EFF FILE : W079.CNF;154 CAL DATE: 3-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	4.040	0.960	100.0000	1.06E-01	1.18E-01	1.98E-01	1.17E-01
U232	5302.100	391.120	2.880	100.0000	1.02E+01	1.70E+00	2.85E-01	1.02E+00
U-235	4391.000	0.520	0.480	80.90000	1.68E-02	6.70E-02	2.01E-01	6.70E-02
U-238	4184.730	-1.440	1.440	100.0000	-3.77E-02	3.06E-02	2.25E-01	3.02E-02

REVIEWED BY: DATE :

4/5/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069
SAMPLE DATE : 7-MAR-2006 00:00:00.

SAMPLE ID : S1201051878_UU
SAMPLE QTY: 0.224 G

DETECTOR NUMBER :29269
AVERAGE %EFFICIENCY :34.1362
% YIELD : 82.002

COUNT DATE: 5-APR-2006 09:52:15
ELAPSED LIVE TIME(SEC): 14399.99
ANALYST :DDR1

MS : 0858-B
MSD : 0858-B
LCS : 0858-B
TRACER : 0688-H
BKG FILE: B080.CNF;599
BKG DATE: 2-APR-2006

MS PCI/G : 11.73816
MSD PCI/G : 11.73816
LCS PCI/G : 11.73816
TRACER DPM : 5.4129
EFF FILE : W080.CNF;153
CAL DATE: 3-APR-2006

MS ISOTOPE : U-238
MSD ISOTOPE: U-238
LCS ISOTOPE: U-238
TRACER ISOTOPE: U232
LIB FILE : ENV_ALPHA_UU.N

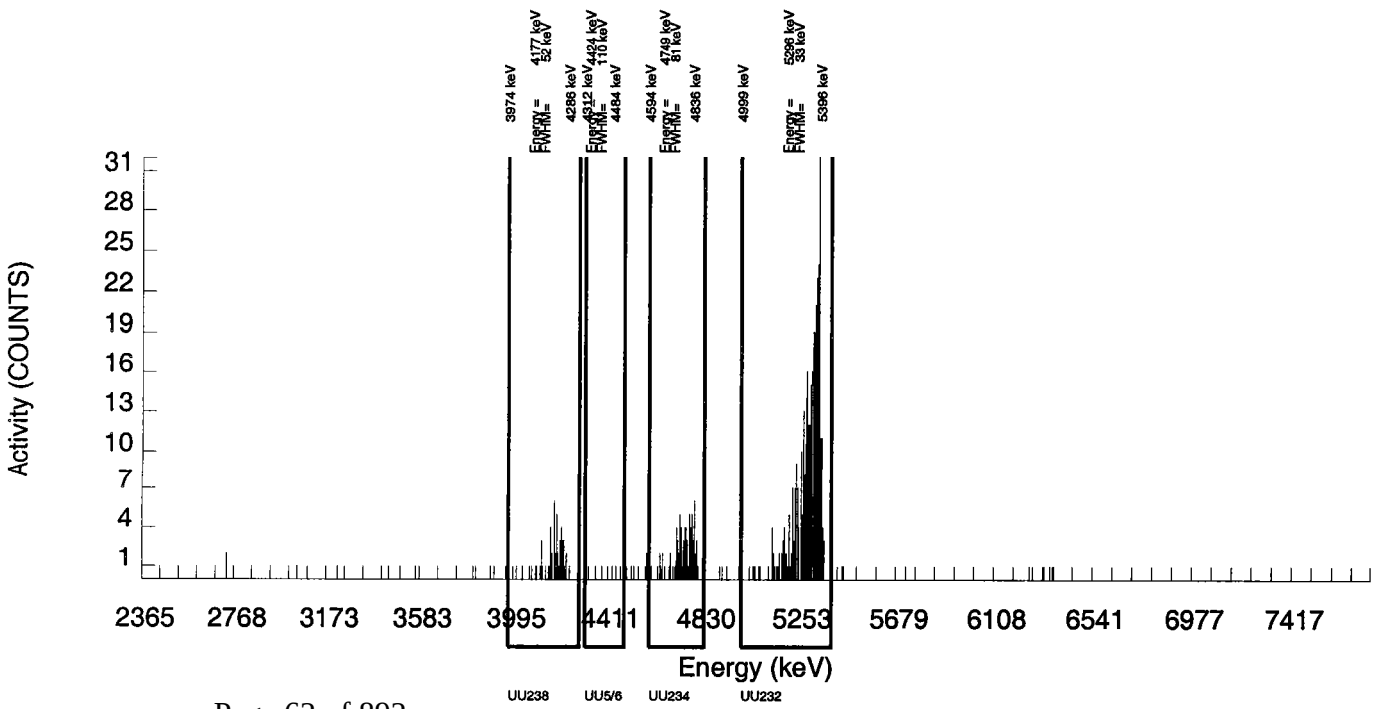
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	74.320	1.680	100.0000	2.22E+00	5.95E-01	2.70E-01	5.13E-01
U232	5302.100	363.360	2.640	100.0000	1.09E+01	1.86E+00	3.16E-01	1.12E+00
U-235	4391.000	4.760	0.240	80.90000	1.76E-01	1.65E-01	1.95E-01	1.63E-01
U-238	4184.730	50.800	1.200	100.0000	1.52E+00	4.72E-01	2.42E-01	4.24E-01

REVIEWED BY: DATE :

JDD 4/5/06

U3/4 = 6.11
U-235 = 75.3 ACT<MDA
U-238 = 25.8 RER=1.24



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069
SAMPLE DATE : 7-MAR-2006 00:00:00.

SAMPLE ID : S1201051879_UU
SAMPLE QTY: 0.238 G

DETECTOR NUMBER :21056
AVERAGE %EFFICIENCY :26.8818
% YIELD : 89.573

COUNT DATE: 5-APR-2006 09:52:09
ELAPSED LIVE TIME(SEC): 14400.00
ANALYST :DDR1

MS : 0858-B
MSD : 0858-B
LCS : 0858-B
TRACER : 0688-H
BKG FILE: B028.CNF;696
BKG DATE: 2-APR-2006

MS PCI/G : 11.04768
MSD PCI/G : 11.04768
LCS PCI/G : 11.04768
TRACER DPM : 5.4129
EFF FILE : W028.CNF;214
CAL DATE: 4-APR-2006

MS ISOTOPE : U-238
MSD ISOTOPE: U-238
LCS ISOTOPE: U-238
TRACER ISOTOPE: U232
LIB FILE : ENV_ALPHA_UU.N

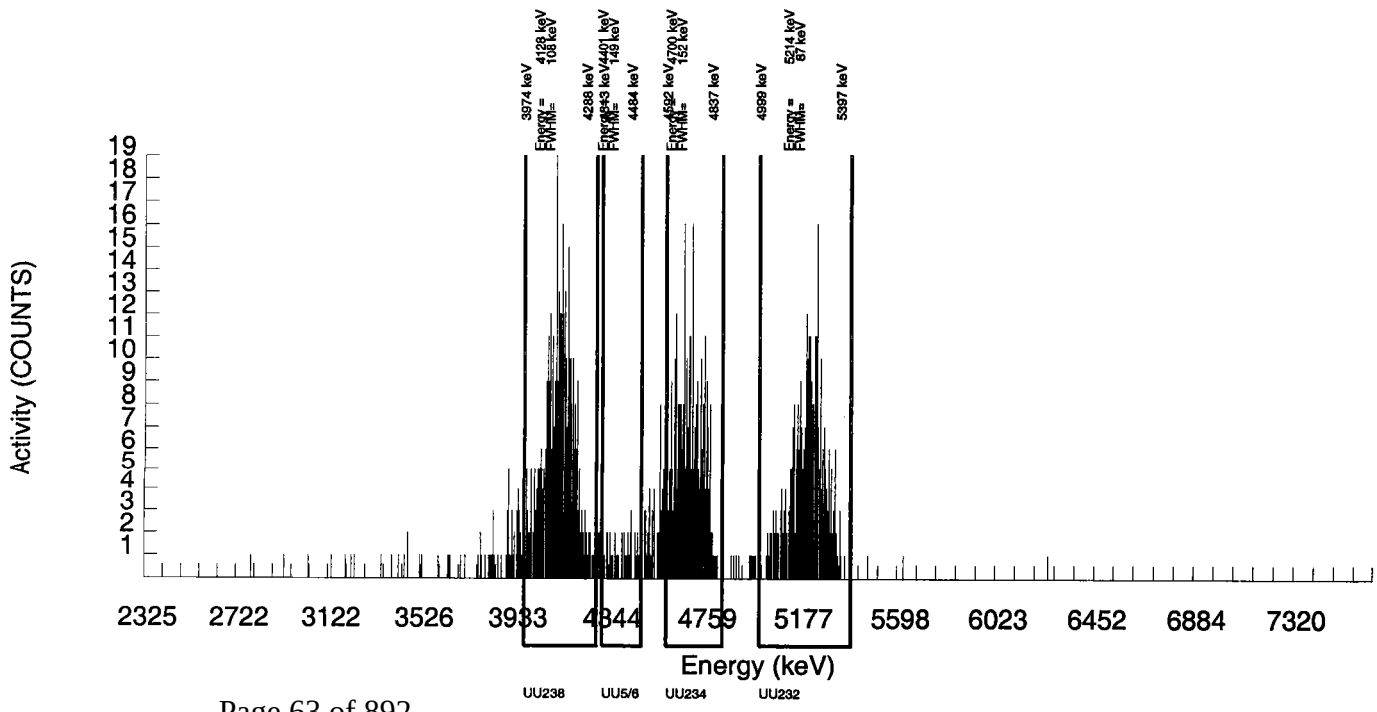
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	291.520	0.480	100.0000	9.55E+00	1.74E+00	2.04E-01	1.10E+00
U232	5302.100	312.560	1.440	100.0000	1.02E+01	1.85E+00	2.81E-01	1.14E+00
U-235	4391.000	38.760	0.240	80.90000	1.57E+00	5.44E-01	2.14E-01	4.96E-01
U-238	4184.730	378.760	0.240	100.0000	1.24E+01	2.16E+00	1.73E-01	1.25E+00

REVIEWED BY: DATE :

QA 4/5/06

$MB = \frac{12.4 - 1.97}{11.0} = 94.8\%$



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 512069 SAMPLE DATE : 31-MAR-2006 00:00:00	SAMPLE ID : S1201051880_UU SAMPLE QTY: 0.238 G
DETECTOR NUMBER :30419 AVERAGE %EFFICIENCY :28.0377 % YIELD : 64.130	COUNT DATE: 5-APR-2006 09:52:09 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :DDR1

MS : 0858-B MSD : 0858-B LCS : 0858-B TRACER : 0688-H BKG FILE: B029.CNF;689 BKG DATE: 2-APR-2006	MS PCI/G : 11.04768 MSD PCI/G : 11.04768 LCS PCI/G : 11.04768 TRACER DPM : 5.4094 EFF FILE : W029.CNF;211 CAL DATE: 4-APR-2006	MS ISOTOPE : U-238 MSD ISOTOPE: U-238 LCS ISOTOPE: U-238 TRACER ISOTOPE: U232 LIB FILE : ENV_ALPHA_UU.N

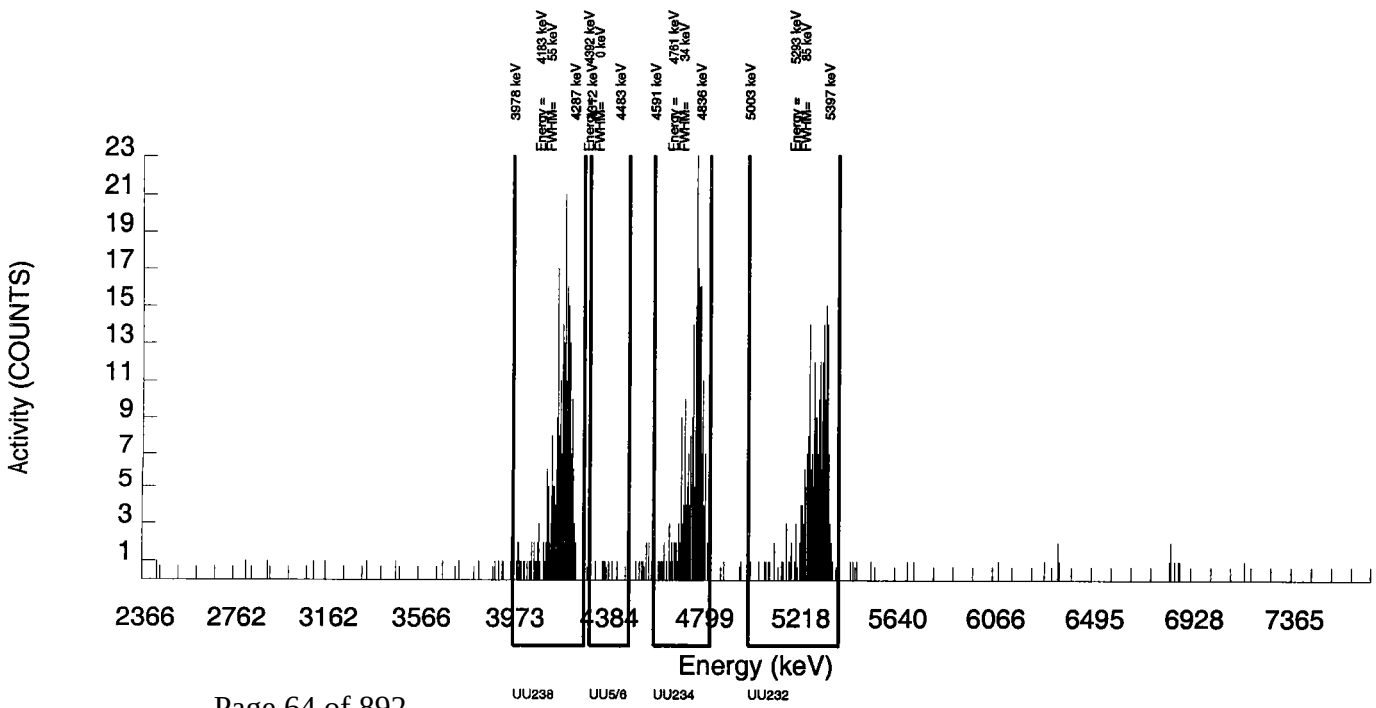
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
U-3/4	4763.020	230.280	0.720	100.0000	1.01E+01	2.05E+00	3.05E-01	1.31E+00
U232	5302.100	233.400	3.600	100.0000	1.02E+01	2.08E+00	5.19E-01	1.33E+00
U-235	4391.000	9.000	0.000	80.90000	4.88E-01	3.28E-01	1.63E-01	3.19E-01
U-238	4184.730	250.520	0.480	100.0000	1.10E+01	2.19E+00	2.73E-01	1.36E+00

REVIEWED BY: DATE :

DDR 4/5/06

LCS = 11.0 / 11.0 = 100%



Radiochemistry Batch Checklist, Rev 4

Batch# 515939 Product: Po Date: 04/7/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			N/A
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			N/A

General Engineering Laboratories

2/22/2005

Primary Review Performed By: [signature] 04/7/06

Secondary Review Performed By: [signature] 4/10/06

04/04-04/13

MWHL

Polonium Que Sheet

30-MAR-06

Batch #: 515989 **Analyst:** JXG1 **Minimum DueDate:** 06-APR-06

Tracer Isotope: Po-209 **Tracer Code:** 0546-D **Expiration Date:** 11-30-06 **Vol:** 0.1
LCS Isotope: Po-210 **LCS Code:** 0685-D **Expiration Date:** 2-22-07 **Vol:** 0.5
Spike Isotope: Po-210 **Spike Code:** 0685-D **Expiration Date:** 2-22-07 **Vol:** 0.5
Prep Date: 4-1-06 **Initials:** JXG **Pipet ID:** 2767543 **Balance ID:** B0410272 **Witness:** CCW 4/1/06

Sample I	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Label #	Aliquot (g/l/f)	Po Det #	Ash Weight (g)
158048001	2603090024	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	201	0.250	89	
158048002	2603090027	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	202	0.250	90	
158048003	2603090028	SAMPLE		1 pCi/g	SOIL	MWHL002	07-MAR-06	203	0.252	91	
1201060425	MB for batch 515989	MB		UCF pCi/g to p	SOIL	QC ACCOUNT		204	0.250	92	
1201060426	2603090027(158048002DUP)	DUP		1 pCi/g	SOIL	QC ACCOUNT	07-MAR-06	205	0.256	93	
1201060427	2603090027(158048002MS)	MS		1 pCi/g	SOIL	QC ACCOUNT	07-MAR-06	206	0.251	94	
1201060429	KNOWN for batch 515989	KNOWN		UCF pCi/g to p	SOIL	QC ACCOUNT	~~07-MAR-06~~ 1-APR-06	207	0.256	98	
1201060428	LCS for batch 515989	LCS		UCF pCi/g to p	SOIL	QC ACCOUNT		208	0.250	~~99~~ 18	

PJH 4/10/06

4/10/06

Solid Sample Dissolution by: **LEACH or DIGESTION** (Circle One)

Data Reviewed By: Pamela Halley 04/7/06

General Engineering Laboratories, Radiochemistry Division

Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S0158048001_PO SAMPLE QTY: 0.250 G
DETECTOR NUMBER :21087 AVERAGE %EFFICIENCY :29.0606 % YIELD : 57.181	COUNT DATE: 5-APR-2006 17:34:51 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :JXG1

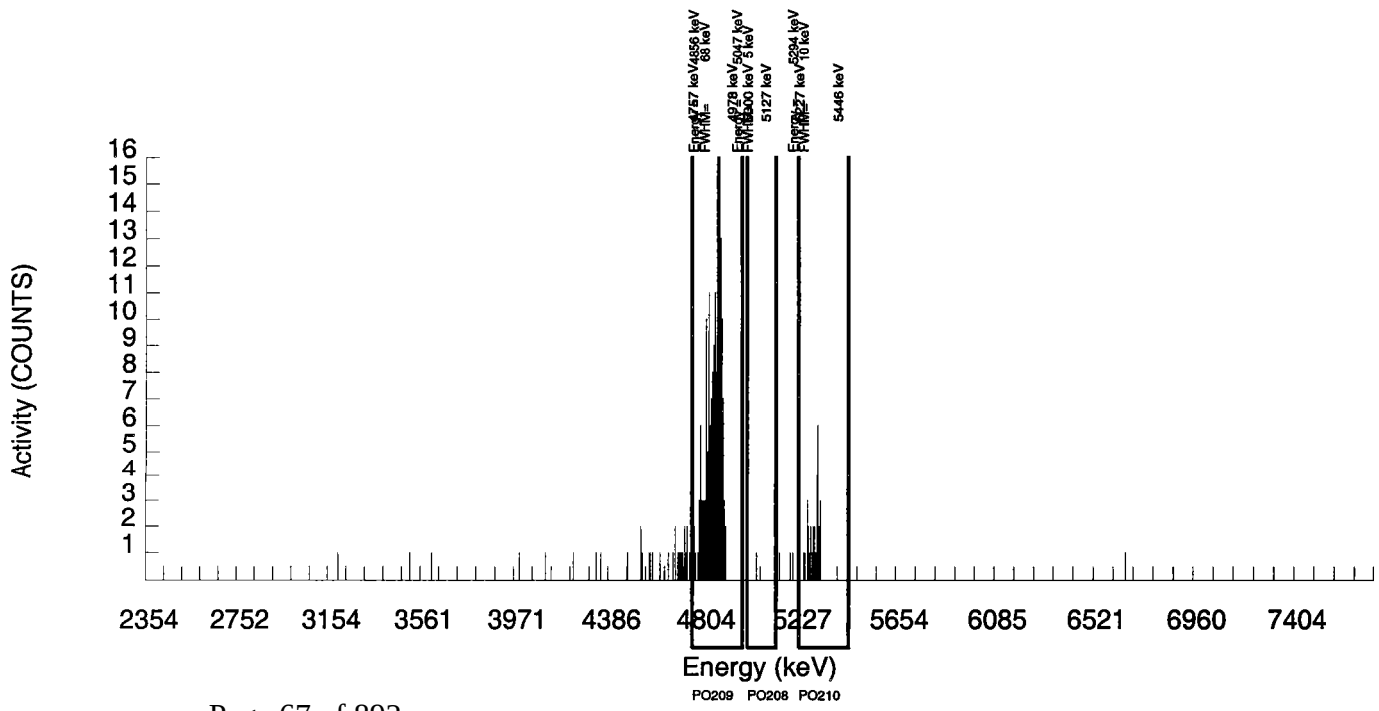
MS : 0685-D MSD : 0685-D LCS : 0685-D TRACER : 0546-D BKG FILE: B089.CNF;289 BKG DATE: 2-APR-2006	MS PCI/G : 8.936331 MSD PCI/G : 8.936331 LCS PCI/G : 8.936331 TRACER DPM : 4.6857 EFF FILE : W089.CNF;84 CAL DATE: 3-APR-2006	MS ISOTOPE : PO-210 MSD ISOTOPE: PO-210 LCS ISOTOPE: PO-210 TRACER ISOTOPE: PO-209 LIB FILE : ENV_ALPHA_PO.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	0.760	0.240	99.99800	3.50E-02	9.30E-02	2.43E-01	9.29E-02
PO-209	4882.000	186.280	0.720	99.74000	8.44E+00	1.86E+00	3.15E-01	1.22E+00
PO-210	5304.380	33.520	0.480	100.0000	1.76E+00	6.69E-01	3.26E-01	6.00E-01

REVIEWED BY: DATE : 04/10/06

04/10/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989
SAMPLE DATE : 7-MAR-2006 00:00:00.

SAMPLE ID : S0158048002_PO
SAMPLE QTY: 0.250 G

DETECTOR NUMBER :38159
AVERAGE %EFFICIENCY :32.6208
% YIELD : 45.329

COUNT DATE: 5-APR-2006 17:34:51
ELAPSED LIVE TIME(SEC): 14399.99
ANALYST :JXG1

MS : 0685-D
MSD : 0685-D
LCS : 0685-D
TRACER : 0546-D
BKG FILE: B090.CNF;299
BKG DATE: 2-APR-2006

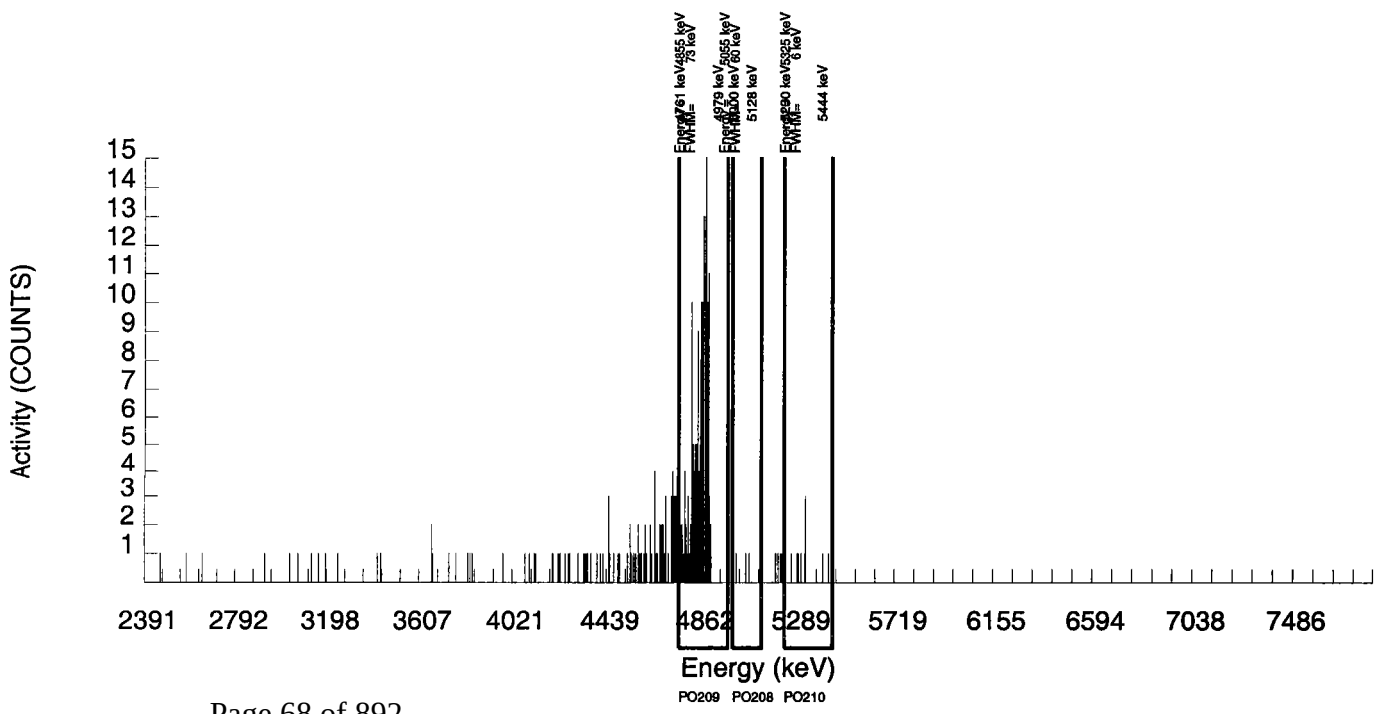
MS PCI/G : 8.936331
MSD PCI/G : 8.936331
LCS PCI/G : 8.936331
TRACER DPM : 4.6857
EFF FILE : W090.CNF;94
CAL DATE: 3-APR-2006

MS ISOTOPE : PO-210
MSD ISOTOPE: PO-210
LCS ISOTOPE: PO-210
TRACER ISOTOPE: PO-209
LIB FILE : ENV_ALPHA_PO.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	2.520	0.480	99.99800	1.30E-01	1.81E-01	3.22E-01	1.79E-01
PO-209	4882.000	165.760	0.240	99.74000	8.44E+00	1.96E+00	2.69E-01	1.29E+00
PO-210	5304.380	11.000	0.000	100.0000	6.48E-01	4.00E-01	1.77E-01	3.83E-01

REVIEWED BY: DATE :



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

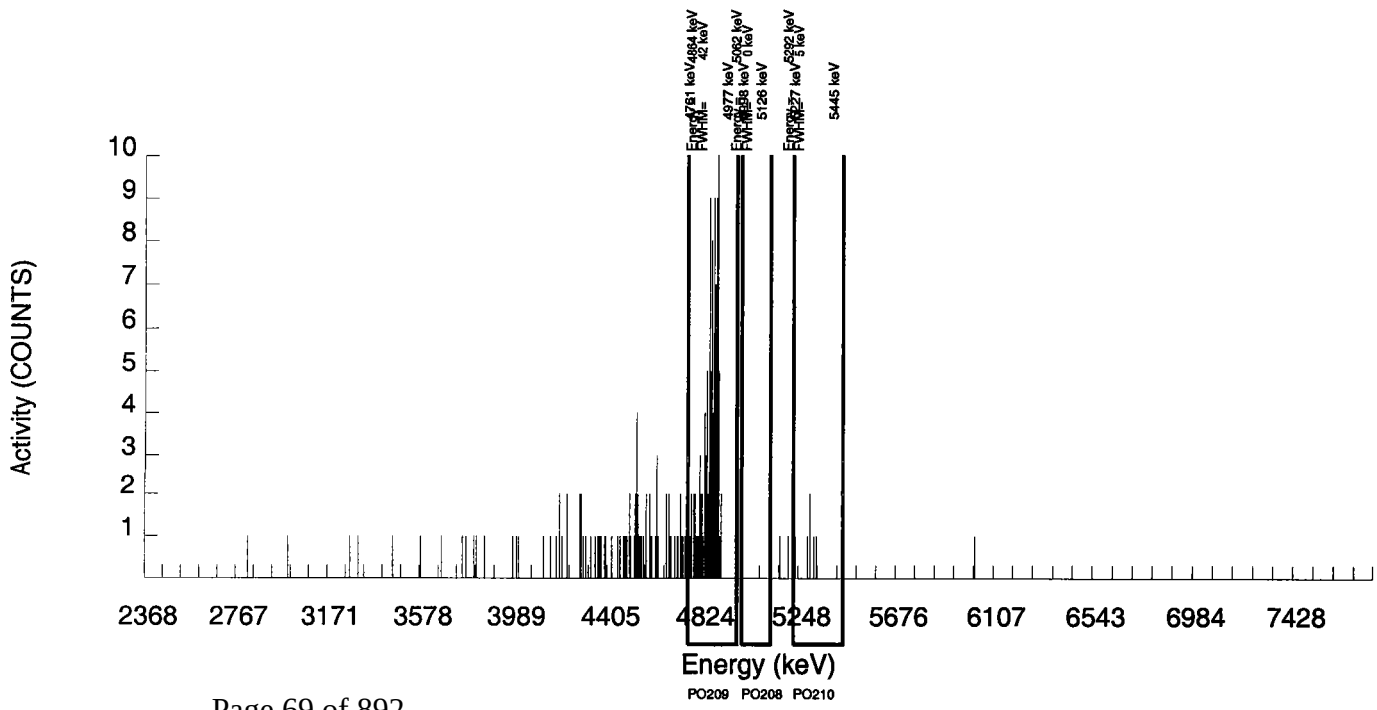
BATCH NUMBER: 515989 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S0158048003_PO SAMPLE QTY: 0.252 G
DETECTOR NUMBER :33205 AVERAGE %EFFICIENCY :32.9514 % YIELD : 27.483	COUNT DATE: 5-APR-2006 17:34:51 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :JXG1

MS : 0685-D MSD : 0685-D LCS : 0685-D TRACER : 0546-D BKG FILE: B091.CNF;293 BKG DATE: 2-APR-2006	MS PCI/G : 8.865408 MSD PCI/G : 8.865408 LCS PCI/G : 8.865408 TRACER DPM : 4.6857 EFF FILE : W091.CNF;81 CAL DATE: 4-APR-2006	MS ISOTOPE : PO-210 MSD ISOTOPE: PO-210 LCS ISOTOPE: PO-210 TRACER ISOTOPE: PO-209 LIB FILE : ENV_ALPHA_PO.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	0.000	0.000	99.99800	0.00E+00	1.64E-01	2.52E-01	1.64E-01
PO-209	4882.000	101.520	0.480	99.74000	8.38E+00	2.42E+00	5.13E-01	1.63E+00
PO-210	5304.380	6.520	0.480	100.0000	6.23E-01	5.17E-01	5.94E-01	4.99E-01

REVIEWED BY: DATE :



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989
SAMPLE DATE : 1-APR-2006 00:00:00.

SAMPLE ID : S1201060425_PO
SAMPLE QTY: 0.256 G

DETECTOR NUMBER :33204
AVERAGE %EFFICIENCY :32.3076
% YIELD : 49.081

COUNT DATE: 5-APR-2006 17:34:51
ELAPSED LIVE TIME(SEC): 14399.99
ANALYST :JXG1

MS : 0685-D
MSD : 0685-D
LCS : 0685-D
TRACER : 0546-D
BKG FILE: B092.CNF;292
BKG DATE: 2-APR-2006

MS PCI/G : 7.699709
MSD PCI/G : 7.699709
LCS PCI/G : 7.699709
TRACER DPM : 4.6835
EFF FILE : W092.CNF;89
CAL DATE: 3-APR-2006

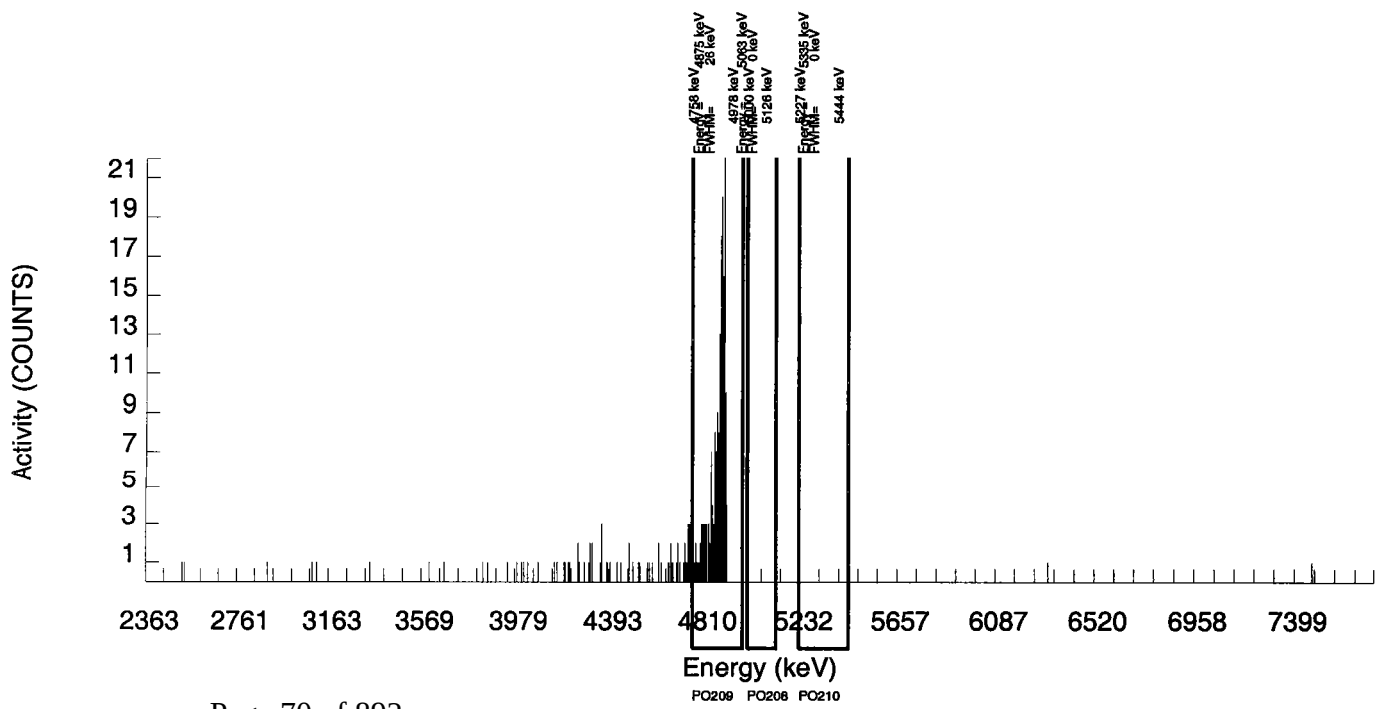
MS ISOTOPE : PO-210
MSD ISOTOPE: PO-210
LCS ISOTOPE: PO-210
TRACER ISOTOPE: PO-209
LIB FILE : ENV_ALPHA_PO.N

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	-0.240	0.240	99.99800	-1.11E-02	2.19E-02	2.45E-01	2.18E-02
PO-209	4882.000	177.760	0.240	99.74000	8.24E+00	1.85E+00	2.45E-01	1.21E+00
PO-210	5304.380	-0.480✓	0.480	100.0000	-2.27E-02	3.17E-02	2.95E-01	3.15E-02

REVIEWED BY: DATE : PJH 04/10/06

4/10/06



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S1201060426_PO SAMPLE QTY: 0.256 G
DETECTOR NUMBER :33206 AVERAGE %EFFICIENCY :32.7823 % YIELD : 48.577	COUNT DATE: 5-APR-2006 17:34:51 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :JXG1

MS : 0685-D MSD : 0685-D LCS : 0685-D TRACER : 0546-D BKG FILE: B093.CNF;289 BKG DATE: 2-APR-2006	MS PCI/G : 8.726886 MSD PCI/G : 8.726886 LCS PCI/G : 8.726886 TRACER DPM : 4.6857 EFF FILE : W093.CNF;84 CAL DATE: 3-APR-2006	MS ISOTOPE : PO-210 MSD ISOTOPE: PO-210 LCS ISOTOPE: PO-210 TRACER ISOTOPE: PO-209 LIB FILE : ENV_ALPHA_PO.N

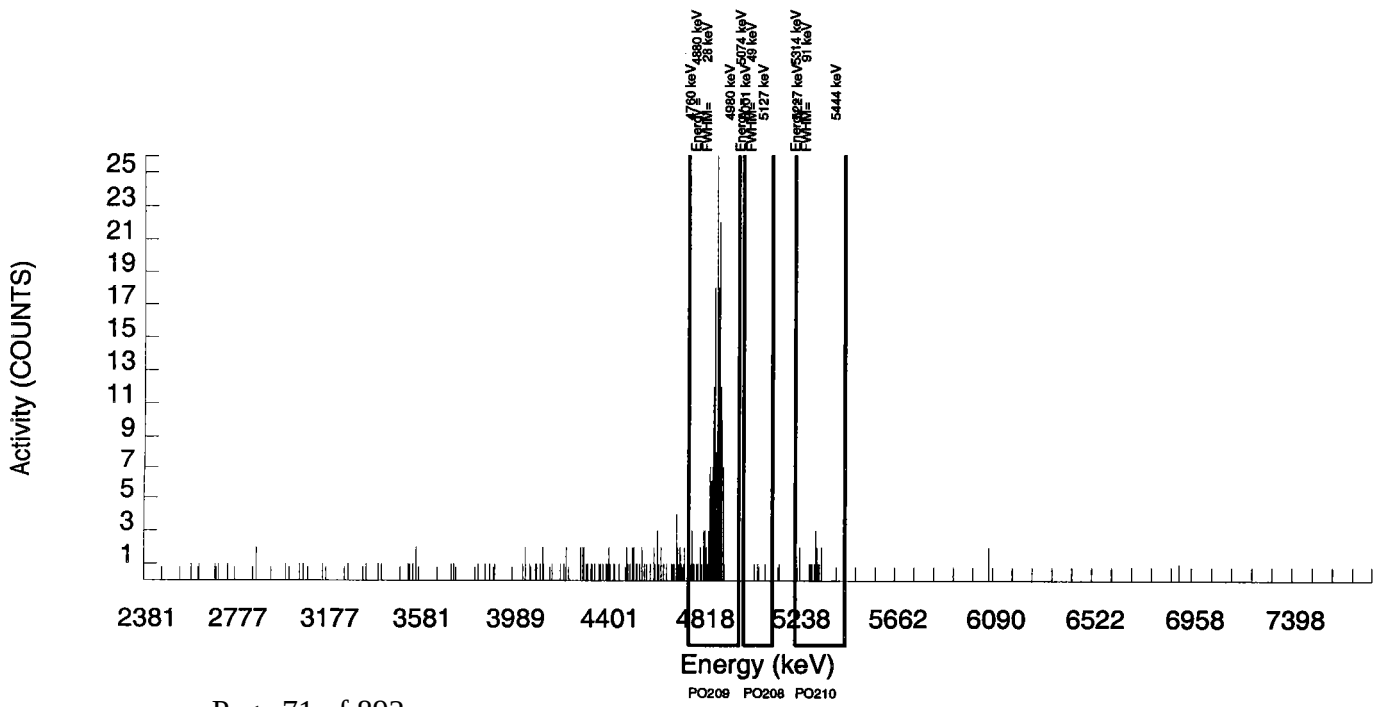
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	2.520	0.480	99.99800	1.18E-01	1.64E-01	2.92E-01	1.62E-01
PO-209	4882.000	178.520	0.480	99.74000	8.24E+00	1.85E+00	2.87E-01	1.21E+00
PO-210	5304.380	15.000	0.000	100.0000	8.02E-01	4.28E-01	1.60E-01	4.06E-01

REVIEWED BY: DATE :

4/10/06

RPD
PO-210 = 21.2% 4/10/06
RER = 2.36
0.51s



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989 SAMPLE DATE : 7-MAR-2006 00:00:00.	SAMPLE ID : S1201060427_PO SAMPLE QTY: 0.251 G
DETECTOR NUMBER :33207 AVERAGE %EFFICIENCY :30.6419 % YIELD : 50.154	COUNT DATE: 5-APR-2006 17:34:51 ELAPSED LIVE TIME(SEC): 14399.99 ANALYST :JXG1

MS : 0685-D MSD : 0685-D LCS : 0685-D TRACER : 0546-D BKG FILE: B094.CNF;289 BKG DATE: 2-APR-2006	MS PCI/G : 8.900728 MSD PCI/G : 8.900728 LCS PCI/G : 8.900728 TRACER DPM : 4.6857 EFF FILE : W094.CNF;79 CAL DATE: 3-APR-2006	MS ISOTOPE : PO-210 MSD ISOTOPE: PO-210 LCS ISOTOPE: PO-210 TRACER ISOTOPE: PO-209 LIB FILE : ENV_ALPHA_PO.N

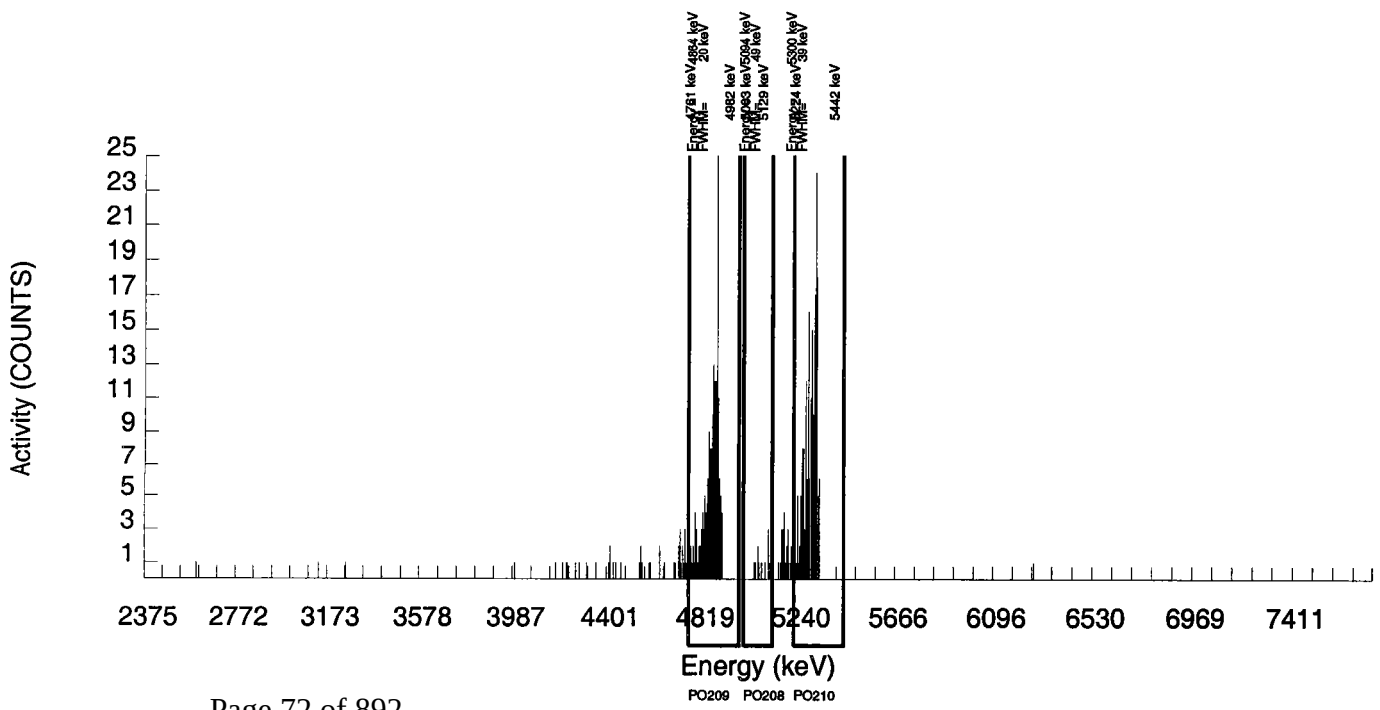
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	12.000	0.000	99.99800	5.95E-01	3.52E-01	1.49E-01	3.37E-01
PO-209	4882.000	172.280	0.720	99.74000	8.41E+00	1.92E+00	3.39E-01	1.26E+00
PO-210	5304.380	187.760	0.240	100.0000	1.06E+01	2.38E+00	2.98E-01	1.52E+00

REVIEWED BY: DATE :

4/10/06

$\%R = \frac{10.6 - .648}{8.90} = 112\%$



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989 SAMPLE DATE : 1-APR-2006 00:00:00.	SAMPLE ID : S1201060428_PO SAMPLE QTY: 0.256 G
DETECTOR NUMBER :21063 AVERAGE %EFFICIENCY :25.5920 % YIELD : 50.821	COUNT DATE: 6-APR-2006 13:23:48 ELAPSED LIVE TIME(SEC): 14400.00 ANALYST :JXG1

MS : 0685-D MSD : 0685-D LCS : 0685-D TRACER : 0546-D BKG FILE: B018.CNF;666 BKG DATE: 2-APR-2006	MS PCI/G : 7.699709 MSD PCI/G : 7.699709 LCS PCI/G : 7.699709 TRACER DPM : 4.6835 EFF FILE : W018.CNF;190 CAL DATE: 3-APR-2006	MS ISOTOPE : PO-210 MSD ISOTOPE: PO-210 LCS ISOTOPE: PO-210 TRACER ISOTOPE: PO-209 LIB FILE : ENV_ALPHA_PO.N

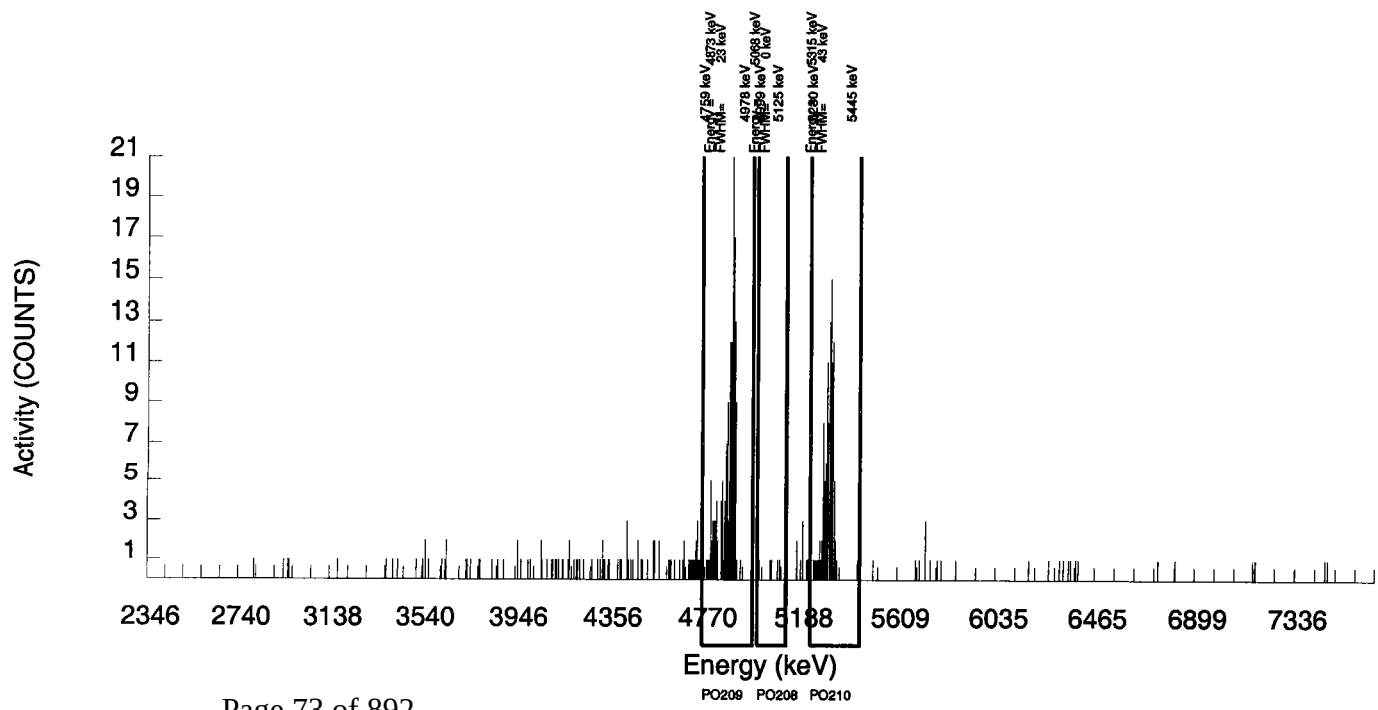
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	6.280	0.720	99.99800	3.55E-01	3.04E-01	3.93E-01	2.97E-01
PO-209	4882.000	145.800	1.200	99.74000	8.24E+00	2.01E+00	4.57E-01	1.34E+00
PO-210	5304.380	104.920	4.080	100.0000	6.08E+00	1.63E+00	7.19E-01	1.19E+00

REVIEWED BY: DATE : PJH 4/7/06

4/10/06

LCS = 6.08 / 7.70 = 78.96 = 79.0%



Alpha Spectroscopy Software Version 2.0
effective date: 09-Mar-1997

GENERAL ENGINEERING LABORATORIES, LLC.
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER: 515989
SAMPLE DATE : 1-APR-2006 00:00:00.

SAMPLE ID : S1201060429_PO
SAMPLE QTY: 0.256 G

DETECTOR NUMBER :30431
AVERAGE %EFFICIENCY :34.2386
% YIELD : 68.084

COUNT DATE: 5-APR-2006 17:34:49
ELAPSED LIVE TIME(SEC): 14400.00
ANALYST :JXG1

MS : 0685-D
MSD : 0685-D
LCS : 0685-D
TRACER : 0546-D
BKG FILE: B098.CNF;253
BKG DATE: 2-APR-2006

MS PCI/G : 7.699709
MSD PCI/G : 7.699709
LCS PCI/G : 7.699709
TRACER DPM : 4.6835
EFF FILE : W098.CNF;69
CAL DATE: 3-APR-2006

MS ISOTOPE : PO-210
MSD ISOTOPE: PO-210
LCS ISOTOPE: PO-210
TRACER ISOTOPE: PO-209
LIB FILE : ENV_ALPHA_PO.N

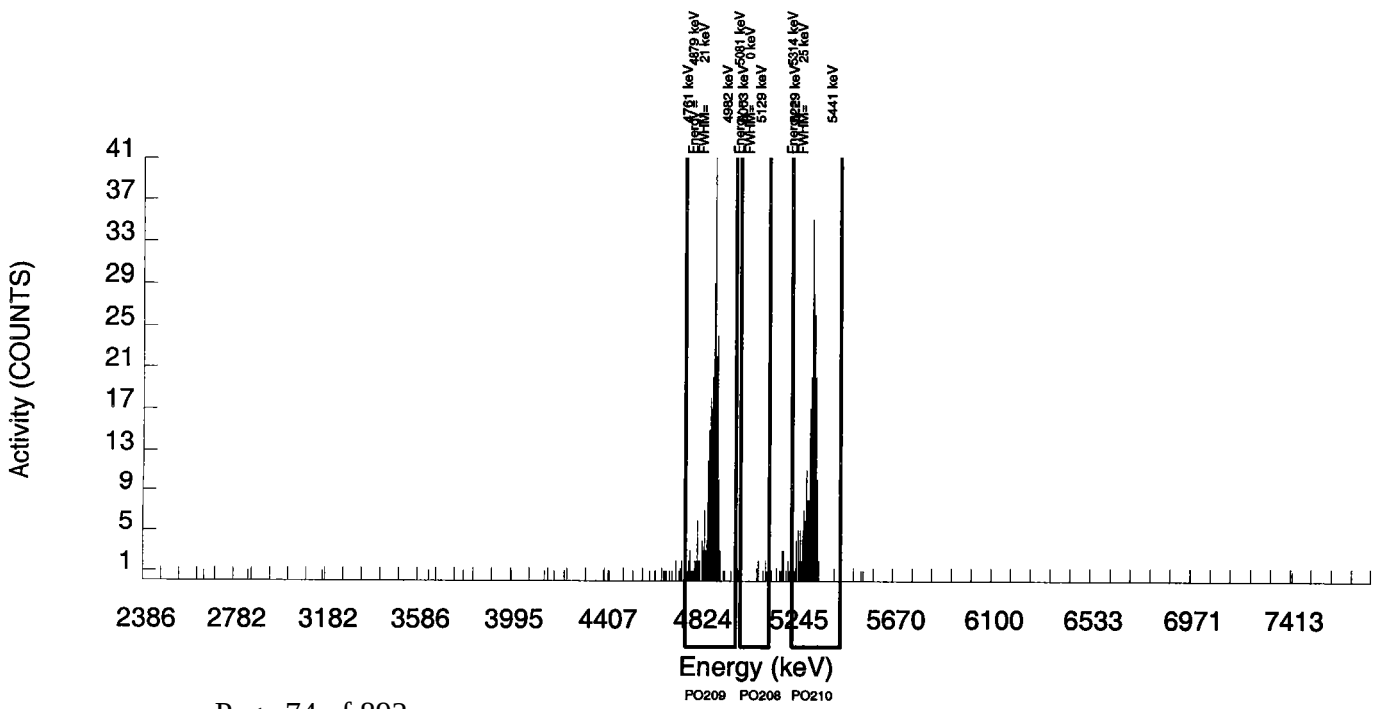
NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG AREA	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	UNC pCi/G
PO-208	5115.000	4.160	3.840	99.99800	1.31E-01	1.86E-01	3.82E-01	1.85E-01
PO-209	4882.000	261.320	1.680	99.74000	8.24E+00	1.58E+00	2.85E-01	1.00E+00
PO-210	5304.380	230.000	0.000	100.0000	7.41E+00	1.46E+00	9.67E-02	9.58E-01

REVIEWED BY: DATE :

4/10/06

LCS = 7.41 / 7.70 = 96.2%
(Known)



Radiochemistry Batch Checklist, Rev 4

Batch# 513799 Product: γS / mwHL Date: 4/12/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.			NA
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.			NA
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			NA

General Engineering Laboratories

2/22/2005

Primary Review Performed By: Jodi Cummings 4/12/06

Secondary Review Performed By: Heather Acra 4/12/06

4/6/06 – 4/13/06

mwHL

Gamma Spec Que Sheet

03/22/2006

Batch #:513799 **Analyst: MJH1** **Minimum DueDate: 04/06/2006**

Gamma Spike Isotope: Mixed Gamma **Spike Code:** NA **Expiration Date:** NA **Vol:** NA **Nominal Concentration:** NA

Gamma LCS Isotope: Mixed Gamma **LCS Code:** 0781-A **Expiration Date:** 4/27/06 **Vol:** 1.0mL **Nominal Concentration:** Cs137=9.288 Co60=3.37 Am241= 24.38

Initials: MJH1 by HGA 4/14/06 **Prep Date:** 3-16-06 **Witness:** M

Sample ID	Client Description / Container ID	Type	Hazard Code	RDL	Client	Matrix	Collect Date	Aliquot (1/g/F)	Detector	Sealing Date/Time (if Applicable)
158048001	2603090024	SAMPLE		.5 pCi/g	MWHL002	SOIL	07-MAR-06 09:10:00	168.57	18	3/16/06
158048002	2603090027	SAMPLE		.5 pCi/g	MWHL002	SOIL	07-MAR-06 10:10:00	148.06	HP	
158048003	2603090028	SAMPLE		.5 pCi/g	MWHL002	SOIL	07-MAR-06 11:45:00	149.63	13	
158048004	2603090026	SAMPLE		1 pCi/g	MWHL002	SOIL	07-MAR-06 09:30:00	169.52	we4	
158048005	2603090029	SAMPLE		1 pCi/g	MWHL002	SOIL	07-MAR-06 12:45:00	127.48	3	
1201055603	MB for batch 513799	MB		.5 pCi/g	QC ACCOUNT	SOIL	3-16-06	169.52	16	
1201055604	2603090029(158048005DUP)	DUP		1 pCi/g	QC ACCOUNT	SOIL	07-MAR-06 12:45:00	127.37	16	
1201055605	LCS for batch 513799	LCS		.5 pCi/g	QC ACCOUNT	SOIL	3-16-06	100.00	~~16~~ 12	3/16/06

Tr 4/12

General Engineering Laboratories, Radiochemistry Division

Data Reviewed By: Jodi Cummings 4/12/06
Heather G Cox 4/12/06

Failed RDL Report

Batch Id	Samp Id	Sample Type	Run Date	Parmname	Result	MDA	RDL
513799	158048001	SAMPLE	06-APR-06	Protactinium-231	0.1774	1.102	0.500
513799	158048002	SAMPLE	06-APR-06	Protactinium-231	-0.7528	0.9812	0.500
513799	158048003	SAMPLE	06-APR-06	Protactinium-231	0.00123	1.809	0.500
513799	158048004	SAMPLE	06-APR-06				
513799	158048005	SAMPLE	06-APR-06				
513799	1201055603	MB	10-APR-06	Protactinium-231	-0.3315	0.7573	0.500
513799	1201055604	DUP	10-APR-06	Americium-241	0.02364	0.245	0.200
513799	1201055605	LCS	12-APR-06	Bismuth-212	-0.2481	1.585	1.00
				Protactinium-231	-2.987	7.298	0.500

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertanty	Units	MDA	RDL
513799	158048001	SAMPLE	06-APR-06	Actinium-228 ✓	1.872	0.1264	pCi/g	0.08536	1.00
				Bismuth-212 ✓	1.279	0.2376	pCi/g	0.1835	1.00
				Cadmium-115	284.6	515.1	pCi/g	0	N
				Cerium-143	2.683E+06	2.461E+05	pCi/g	0	N
				Gross Gamma	10.81	1.719	pCi/g	3.45	N
				Iodine-132	1.000E+41	1.054E+41	pCi/g	0	N
				Iodine-133	6.307E+06	5.883E+08	pCi/g	0	N
				Iodine-135	1.021E+32	2.226E+32	pCi/g	0	N
				Krypton-85	6.431	2.982	pCi/g	5.079	N
				Lead-212 ✓	1.969	0.05663	pCi/g	0.042	10.0
				Manganese-56	1.000E+41	2.000E+41	pCi/g	0	N
				Molybdenum-99	18.91	28.38	pCi/g	0	N
				Niobium-95m	8.209	18.04	pCi/g	0	N
				Potassium-40 ✓	31.45	0.7815	pCi/g	0.2107	N
				Radium-226 ✓	1.015	0.06672	pCi/g	0.04615	2.00
				Radium-228 ✓	1.872	0.1264	pCi/g	0.08536	1.00
				Technetium-99m	6.569E+34	9.857E+34	pCi/g	0	N
513799	158048002	SAMPLE	06-APR-06	Actinium-228 ✓	1.87	0.2502	pCi/g	0.08401	1.00
				Bismuth-212 ✓	1.183	0.2326	pCi/g	0.1834	1.00
				Cerium-143	9.744E+05	3.069E+05	pCi/g	0	N
				Gross Gamma	10.4	1.901	pCi/g	4.355	N
				Iodine-132	1.000E+41	6.564E+41	pCi/g	0	N
				Iodine-133	3.358E+08	5.626E+08	pCi/g	0	N
				Iodine-135	1.622E+32	1.840E+32	pCi/g	0	N
				Krypton-85	11.22	3.116	pCi/g	5.289	N
				Lead-212 ✓	1.855	0.1518	pCi/g	0.03833	10.0
				Manganese-56	1.000E+41	1.567E+41	pCi/g	0	N
				Molybdenum-99	12.41	31.74	pCi/g	0	N
				Niobium-95m	23.9	17.46	pCi/g	0	N
				Potassium-40 ✓	26.69	1.728	pCi/g	0.1961	N
				Praseodymium-144	1.000E+41	1.978E+42	pCi/g	0	N
				Promethium-149	1275	4418	pCi/g	0	N
				Radium-224	5.228	0.7364	pCi/g	0.4355	N
				Radium-226 ✓	1.059	0.1215	pCi/g	0.04288	2.00
				Radium-228 ✓	1.87	0.2502	pCi/g	0.08401	1.00
				Sodium-24	4.908E+12	7.328E+12	pCi/g	0	N
				Technetium-99m	3.883E+34	1.017E+35	pCi/g	0	N

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	MDA	RDL
513799	158048003	SAMPLE	06-APR-06	Actinium-228 ✓	2.237	0.2077	pCi/g	0.1545	1.00
				Bismuth-211 NT/NR	5.232	0.3463	pCi/g	0.235	N
				Bismuth-212 ✓	1.328	0.3482	pCi/g	0.3444	1.00
				Cerium-143	4.356E+06	3.854E+05	pCi/g	0	N
				Gross Gamma	13.47	2.94	pCi/g	7.091	N
				Iodine-132	1.000E+41	2.000E+41	pCi/g	0	N
				Iodine-133	2.827E+08	9.692E+08	pCi/g	0	N
				Iodine-135	1.049E+32	3.050E+32	pCi/g	0	N
				Lead-212 ✓	2.262	0.07967	pCi/g	0.06522	10.0
				Manganese-56	1.000E+41	2.000E+41	pCi/g	0	N
				Niobium-95m	49.36	27.85	pCi/g	0	N
				Potassium-40 ✓	30.53	1.114	pCi/g	0.3569	N
				Praseodymium-144	1.000E+41	2.000E+41	pCi/g	0	N
				Promethium-149	5031	7711	pCi/g	0	N
				Radium-224 NT/NR	7.256	0.9936	pCi/g	0.7422	N
				Radium-226 ✓	1.731	0.1138	pCi/g	0.08354	2.00
				Radium-228 ✓	2.237	0.2077	pCi/g	0.1545	1.00
				Tin-115 HE/NR	10.51	5.676	pCi/g	6.47	N
513799	158048004	SAMPLE	06-APR-06	Cerium-143	8.445E+05	2.721E+05	pCi/g	0	N
				Gross Gamma	9.95	2.02	pCi/g	8.646	N
				Iodine-132	1.000E+41	1.261E+41	pCi/g	0	N
				Iodine-135	6.123E+31	4.240E+32	pCi/g	0	N
				Krypton-85 HE/NR	11.64	5.856	pCi/g	9.874	N
				Lead-212 ✓	1.794	0.08151	pCi/g	0.07655	10.0
				Manganese-56	1.000E+41	1.375E+41	pCi/g	0	N
				Niobium-95m	19.33	29.07	pCi/g	0	N
				Potassium-40 ✓	25.18	1.224	pCi/g	0.4984	N
				Praseodymium-144	1.000E+41	2.000E+41	pCi/g	0	N
				Radium-226 ✓	0.9065	0.1137	pCi/g	0.08835	2.00
				Radium-228 ✓	1.86	0.227	pCi/g	0.1673	1.00
513799	158048005	SAMPLE	06-APR-06	Cerium-143	3.495E+06	1.005E+06	pCi/g	0	N
				Gross Gamma	9.147	4.545	pCi/g	5.305	N
				Iodine-135	1.962E+31	2.624E+32	pCi/g	0	N
				Krypton-85 HE/NR	9.881	4.56	pCi/g	7.436	N
				Lead-212 ✓	1.503	0.1352	pCi/g	0.05388	10.0
				Manganese-56	1.000E+41	9.494E+40	pCi/g	0	N
				Molybdenum-99	5.058	36.4	pCi/g	0	N

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertainty	Units	MDA	RDL
513799	158048005	SAMPLE	06-APR-06	Niobium-95m	35.65	23.18	pCi/g	0	N
				Potassium-40 ✓	21.63	1.628	pCi/g	0.3116	N
				Promethium-149	343	6316	pCi/g	0	N
				Radium-226 ✓	1.34	0.1551	pCi/g	0.065	2.00
				Radium-228 ✓	1.445	0.2505	pCi/g	0.1279	1.00
				Technetium-99m	1.209E+34	8.730E+34	pCi/g	0	N
				Tin-115 HC	7.249	4.285	pCi/g	4.961	N
513799	1201055603	MB	10-APR-06	Cadmium-115	6.515	70.87	pCi/g	0	N
				Cerium-143	1514	6799	pCi/g	0	N
				Iodine-132	1.000E+41	1.031E+42	pCi/g	0	N
				Iodine-135	1.348E+26	2.566E+26	pCi/g	0	N
				Lead-212 UA	~~0.03942~~ 0	0.03381	pCi/g	0.0354	10.0 U1
				Manganese-56	1.000E+41	1.932E+41	pCi/g	0	N
				Praseodymium-144	1.000E+41	2.641E+41	pCi/g	0	N
				Promethium-149	993	877.7	pCi/g	0	N
				Sodium-24	1.017E+09	2.255E+10	pCi/g	0	N
				Technetium-99m	2.806E+28	3.492E+28	pCi/g	0	N
513799	1201055604	DUP	10-APR-06	Actinium-228 ✓	1.473	0.2615	pCi/g	0.1268	Y
				Bismuth-212 ✓	0.9076	0.2613	pCi/g	0.27	Y
				Cadmium-115	190.7	2112	pCi/g	0	N
				Cerium-143	2.358E+07	7.276E+06	pCi/g	0	N
				Gross Gamma	9.402	1.847	pCi/g	5.267	N
				Iodine-133	1.566E+09	1.337E+10	pCi/g	0	N
				Lead-212 ✓	1.597	0.1668	pCi/g	0.0543	10.0
				Manganese-56	1.000E+41	2.267E+41	pCi/g	0	N
				Niobium-95m	27.56	47.63	pCi/g	0	N
				Potassium-40 ✓	21.17	1.704	pCi/g	0.3064	N
				Praseodymium-144	1.000E+41	2.193E+41	pCi/g	0	N
				Radium-224 INF/INC	5.142	0.912	pCi/g	0.6177	N
				Radium-226 ✓	1.488	0.1579	pCi/g	0.05803	2.00
				Radium-228 ✓	1.473	0.2615	pCi/g	0.1268	1.00
				Sodium-24	1.284E+14	5.642E+14	pCi/g	0	N
513799	1201055605	LCS	10-APR-06	Americium-241	31.19	1.522	pCi/g	0.789	N
				Barium-137m	10.93	0.3639	pCi/g	0.1402	N
				Cadmium-109	220.7	6.689	pCi/g	3.811	N
				Cadmium-115	198.6	706.2	pCi/g	0	N
				Cerium-143	~~19240~~	57230	pCi/g	0	N

DH 4/12/06

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertanty	Units	MDA	RDL
513799	158048005	SAMPLE	06-APR-06	Niobium-95m	35.65	23.18	pCi/g	0	N
				Potassium-40	21.63	1.628	pCi/g	0.3116	N
				Promethium-149	343	6316	pCi/g	0	N
				Radium-226	1.34	0.1551	pCi/g	0.065	2.00
				Radium-228	1.445	0.2505	pCi/g	0.1279	1.00
				Technetium-99m	1.209E+34	8.730E+34	pCi/g	0	N
				Tin-115	7.249	4.285	pCi/g	4.961	N
513799	1201055603	MB	10-APR-06	Cadmium-115	6.515	70.87	pCi/g	0	N
				Cerium-143	1514	6799	pCi/g	0	N
				Iodine-132	1.000E+41	1.031E+42	pCi/g	0	N
				Iodine-135	1.348E+26	2.566E+26	pCi/g	0	N
				Manganese-56	1.000E+41	1.932E+41	pCi/g	0	N
				Praseodymium-144	1.000E+41	2.641E+41	pCi/g	0	N
				Promethium-149	993	877.7	pCi/g	0	N
				Sodium-24	1.017E+09	2.255E+10	pCi/g	0	N
				Technetium-99m	2.806E+28	3.492E+28	pCi/g	0	N
513799	1201055604	DUP	10-APR-06	Actinium-228	1.473	0.2615	pCi/g	0.1268	Y
				Bismuth-212	0.9076	0.2613	pCi/g	0.27	Y
				Cadmium-115	190.7	2112	pCi/g	0	N
				Cerium-143	2.358E+07	7.276E+06	pCi/g	0	N
				Gross Gamma	9.402	1.847	pCi/g	5.267	N
				Iodine-133	1.566E+09	1.387E+10	pCi/g	0	N
				Lead-212	1.597	0.1668	pCi/g	0.0543	10.0
				Manganese-56	1.000E+41	2.267E+41	pCi/g	0	N
				Niobium-95m	27.56	47.63	pCi/g	0	N
				Potassium-40	21.17	1.704	pCi/g	0.3064	N
				Praseodymium-144	1.000E+41	2.193E+41	pCi/g	0	N
				Radium-224	5.142	0.912	pCi/g	0.6177	N
				Radium-226	1.488	0.1579	pCi/g	0.05803	2.00
				Radium-228	1.473	0.2615	pCi/g	0.1268	1.00
				Sodium-24	1.284E+14	5.642E+14	pCi/g	0	N
513799	1201055605	LCS	12-APR-06	Americium-241	24.31	1.384	pCi/g	0.9206	N
				Barium-137m	9.254	0.417	pCi/g	0.2022	N
				Cadmium-109	197.2	7.071	pCi/g	4.022	N
				Cerium-143	57020	1.742E+05	pCi/g	0	N
				Cesium-137	9.782	0.4408	pCi/g	0.2138	N
				Cobalt-60	13.93	0.6157	pCi/g	0.1721	N

JHC 4/12/06

Result Greater Than MDA

Batch Id	Sample Id	Sample Type	Run Date	Parmname	Result	Uncertanty	Units	MDA	RDL
513799	1201055605	LCS	12-APR-06	Gross Gamma	64.68	8.726	pCi/g	20.22	N
				Iodine-133	9.670E+06	3.784E+08	pCi/g	0	N
				Manganese-56	1.000E+41	1.217E+41	pCi/g	0	N
				Molybdenum-99	18.98	74.58	pCi/g	0	N
				Neptunium-237	56.91	2.041	pCi/g	1.18	N
				Promethium-147	6.301E+06	3.890E+05	pCi/g	6.690E+05	N
				Promethium-149	5018	12760	pCi/g	0	N
				Technetium-99m	2.162E+31	8.493E+31	pCi/g	0	N
				Tin-126	19.38	0.6952	pCi/g	0.3972	N

GEL QUALS

Batch ID: 513799

Report run on: April 12, 2006 9:33 AM

Samp Id	Parmname	Cofa	Edd	Qual	Comments	Auto	Result	MDA	Uncert	SQL
1201055603-1 MB 10-APR-2006 11:17	Lead-212	UI	UI	UI	Data rejected due to low abundance.		0			

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:47:32.02

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048001.CNF;1
Sample date      : 7-MAR-2006 09:10:00. Acquisition date : 6-APR-2006 23:45:29.
Sample ID        : G158048001           Sample quantity  : 1.68570E+02 GRAM
Detector name    : GAMMA18              Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:16.40  0.1%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 30-TP30546-A
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.12*	73	1168	1.54	91.42	89	7	3.36E-03	85.2	
2	0	63.39*	115	1727	0.89	125.96	122	8	5.31E-03	66.2	
3	2	74.80*	1393	1501	0.93	148.77	143	14	6.45E-02	5.3	1.56E+00
4	2	77.10*	2315	1187	0.91	153.38	143	14	1.07E-01	3.2	
5	4	84.33*	473	1888	1.44	167.84	164	27	2.19E-02	17.6	1.66E+00
6	4	87.20	1173	1438	1.18	173.59	164	27	5.43E-02	6.1	
7	4	89.88	675	1406	1.16	178.95	164	27	3.12E-02	10.2	
8	4	92.88*	971	1753	1.44	184.94	164	27	4.50E-02	9.1	
9	0	99.23*	108	1366	0.79	197.65	195	7	4.98E-03	60.2	
10	0	105.36	136	1357	0.97	209.91	207	7	6.31E-03	45.6	
11	0	128.92	360	1681	1.25	257.02	253	9	1.67E-02	21.2	
12	0	143.17*	47	1454	0.60	285.53	283	8	2.18E-03	147.7	
13	0	153.73	101	1386	0.97	306.65	304	8	4.67E-03	64.6	
14	0	185.85*	715	1218	1.31	370.90	368	8	3.31E-02	10.0	
15	0	190.05	99	1070	0.93	379.30	376	7	4.61E-03	55.4	
16	0	204.17*	65	1167	1.60	407.54	404	8	3.00E-03	99.1	
17	0	209.18*	508	1596	1.07	417.56	413	11	2.35E-02	16.2	
18	5	238.53*	6883	878	1.12	476.27	472	15	3.19E-01	1.4	2.70E+00
19	5	241.43*	1422	923	1.80	482.07	472	15	6.58E-02	5.3	
20	0	255.41	70	462	1.27	510.03	508	5	3.23E-03	47.8	
21	0	269.96	510	1082	1.51	539.14	534	11	2.36E-02	13.2	
22	0	277.28*	272	920	1.14	553.79	550	10	1.26E-02	22.3	
23	0	295.08*	1521	888	1.21	589.40	585	10	7.04E-02	4.6	
24	0	300.21*	505	1016	1.29	599.66	595	12	2.34E-02	13.7	
25	0	327.48*	235	937	1.13	654.21	649	11	1.09E-02	27.5	
26	0	332.59	73	584	1.09	664.43	661	7	3.40E-03	55.9	
27	0	338.14*	1338	657	1.24	675.53	672	8	6.19E-02	4.5	
28	0	351.72*	2704	802	1.27	702.69	698	11	1.25E-01	2.9	
29	0	388.45	62	422	1.45	776.17	774	7	2.88E-03	56.1	
30	0	409.08*	300	593	1.28	817.46	812	11	1.39E-02	17.2	
31	0	418.22*	30	294	1.32	835.73	833	6	1.38E-03	105.1	
32	0	462.80*	358	639	1.45	924.93	920	12	1.66E-02	15.4	
33	0	510.63*	694	927	1.90	1020.62	1012	19	3.21E-02	12.7	
34	0	561.53	77	430	1.31	1122.47	1119	11	3.58E-03	52.9	
35	0	582.75*	2313	716	1.54	1164.93	1157	17	1.07E-01	3.5	
36	0	608.85*	2180	560	1.54	1217.15	1210	14	1.01E-01	3.3	
37	0	616.43	51	176	1.30	1232.31	1230	5	2.36E-03	41.7	
38	0	631.67*	7	223	0.92	1262.81	1262	6	3.08E-04	398.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	665.76	78	406	2.09	1331.03	1324	12	3.63E-03	52.7	
40	0	726.74*	596	481	1.48	1453.05	1446	15	2.76E-02	9.3	
41	0	754.56*	116	314	1.99	1508.72	1503	12	5.37E-03	33.9	
42	2	767.81	234	399	2.19	1535.24	1529	19	1.08E-02	18.9	1.67E+00
43	2	771.71	72	288	1.76	1543.05	1529	19	3.35E-03	43.3	
44	4	781.89*	51	99	1.33	1563.41	1561	14	2.35E-03	35.3	1.94E+00
45	4	785.15*	166	262	1.68	1569.93	1561	14	7.67E-03	20.3	
46	0	793.89*	399	372	1.74	1587.43	1581	16	1.85E-02	12.1	
47	0	830.35	67	212	2.05	1660.40	1656	9	3.08E-03	41.3	
48	0	834.71*	96	317	2.32	1669.12	1665	10	4.45E-03	36.9	
49	0	840.59	114	476	3.62	1680.89	1676	16	5.28E-03	44.2	
50	0	860.09*	291	314	1.61	1719.91	1714	14	1.35E-02	15.3	
51	0	904.34	51	335	0.63	1808.48	1801	12	2.38E-03	72.5	
52	0	910.48*	1742	324	1.71	1820.76	1814	15	8.07E-02	3.4	
53	0	933.56*	98	259	2.13	1866.96	1862	11	4.54E-03	34.0	
54	4	963.94	389	333	2.87	1927.77	1920	26	1.80E-02	11.5	7.54E-01
55	4	968.31*	985	224	1.82	1936.51	1920	26	4.56E-02	4.6	
56	5	1094.64	68	244	3.00	2189.38	2184	15	3.15E-03	43.2	3.70E+00
57	5	1098.09*	15	108	1.49	2196.30	2184	15	6.74E-04	120.6	
58	0	1119.46*	556	423	1.78	2239.07	2230	18	2.58E-02	9.8	
59	0	1238.10*	140	570	2.15	2476.57	2463	19	6.48E-03	42.4	
60	0	1279.81*	25	194	1.47	2560.08	2556	10	1.14E-03	113.1	
61	0	1282.82	23	90	1.80	2566.11	2565	5	1.06E-03	66.9	
62	0	1376.70*	187	197	1.99	2754.06	2745	20	8.68E-03	20.2	
63	0	1407.27	68	139	3.71	2815.26	2808	14	3.14E-03	38.9	
64	0	1436.35	43	55	1.45	2873.50	2870	9	2.01E-03	35.3	
65	0	1459.62*	7803	239	2.21	2920.10	2909	21	3.61E-01	1.2	
66	0	1494.27	86	97	2.65	2989.48	2981	17	3.99E-03	28.4	
67	3	1508.51	92	70	2.50	3017.99	3010	20	4.25E-03	23.2	1.42E+00
68	3	1511.42	56	47	2.95	3023.81	3010	20	2.58E-03	31.4	
69	0	1524.69*	57	185	10.89	3050.40	3041	32	2.66E-03	72.7	
70	4	1587.18	137	116	2.26	3175.53	3169	21	6.34E-03	18.6	1.44E+00
71	4	1591.86	28	58	2.45	3184.90	3169	21	1.31E-03	56.0	
72	0	1619.88*	47	81	1.31	3241.01	3235	12	2.17E-03	44.5	
73	0	1628.97	86	104	3.04	3259.22	3249	21	3.96E-03	31.8	
74	0	1703.76	33	64	1.92	3408.99	3399	18	1.54E-03	60.3	
75	0	1728.34	101	74	2.50	3458.22	3452	16	4.68E-03	21.3	
76	0	1763.17*	449	61	2.59	3527.97	3517	19	2.08E-02	6.6	
77	0	1847.11	104	63	2.89	3696.10	3684	25	4.83E-03	23.4	
78	0	1855.64	12	19	1.74	3713.20	3710	9	5.76E-04	68.0	
79	0	1890.19	15	57	0.66	3782.40	3777	15	7.13E-04	109.3	
80	0	1900.03*	4	47	0.56	3802.10	3791	14	1.73E-04	470.5	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048001    *
* Acquisition date :  6-APR-2006 23:45:29 Detector SN#    : 30-TP30546  *
* Detector ID      : GAMMA18              Sensitivity     : 3.000       *
* Geometry         : CAN                  Energy tolerance: 2.000       *
* Elapsed live time:    0 06:00:00.00     Abundance limit : 75.000      *
* Elapsed real time:    0 06:00:16.40     Half life ratio :  8.000      *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      :  7-MAR-2006 09:10:00 Nuclide Library : FERMC       *
* Sample ID        : G158048001           Analyst initials: MJH1        *
* Batch Number     : 513799               Sample Quantity : 1.6857E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME : 14-AUG-2005 18:48:42 MS Isotope      : TOPLOADER   *
* MSD DPM          :    5.440            MSD Isotope     : TOPLOADER   *
* LCS DPM          :    0.000            LCS Isotope     : TOPLOADER   *
* LCSD DPM         :    0.000            LCSD Isotope    : TOPLOADER   *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.145E+01	7.815E-01	2.107E-01	0.000E+00
MN-54	2.825E-02	2.082E-02	2.897E-02	0.000E+00
CD-109	4.147E+00	5.061E-01	6.083E-01	0.000E+00
I-126	2.331E-01	2.456E-01	2.592E-01	0.000E+00
SN-126	4.058E-01	4.951E-02	5.990E-02	0.000E+00
CS-135	4.213E-01	1.116E-01	1.066E-01	0.000E+00
EU-155	6.924E-02	6.320E-02	8.447E-02	0.000E+00
HG-203	7.444E-02	3.317E-02	3.486E-02	0.000E+00
TL-208	5.922E-01	4.088E-02	2.319E-02	0.000E+00
BI-210	2.342E+00	3.990E+00	4.654E+00	0.000E+00
PB-210	2.342E+00	3.990E+00	4.654E+00	0.000E+00
BI-211	3.193E+00	1.850E-01	1.449E-01	0.000E+00
BI-212	1.279E+00	2.376E-01	1.835E-01	0.000E+00
PB-212	1.969E+00	5.663E-02	4.200E-02	0.000E+00
BI-214	1.015E+00	6.672E-02	4.615E-02	0.000E+00
PB-214	1.111E+00	6.434E-02	4.785E-02	0.000E+00
RA-223	-8.861E-02	2.979E-01	4.499E-01	0.000E+00
RA-224	4.621E+00	4.896E-01	4.771E-01	0.000E+00
RA-226	1.015E+00	6.672E-02	4.615E-02	0.000E+00
AC-228	1.872E+00	1.264E-01	8.536E-02	0.000E+00
RA-228	1.872E+00	1.264E-01	8.536E-02	0.000E+00
TH-228	1.969E+00	5.663E-02	4.200E-02	0.000E+00
TH-229	-3.781E-02	2.164E-01	3.886E-01	0.000E+00
TH-230	1.015E+00	6.671E-02	4.615E-02	0.000E+00
TH-232	1.910E+00	5.492E-02	4.073E-02	0.000E+00
TH-234	7.988E-01	1.058E+00	1.185E+00	0.000E+00
U-234	1.098E+00	1.007E-01	9.209E-02	0.000E+00
U-235	4.562E-02	1.347E-01	1.684E-01	0.000E+00
NP-237	1.191E+00	1.454E-01	1.787E-01	0.000E+00
U-238	7.988E-01	1.058E+00	1.185E+00	0.000E+00
AM-242	1.403E+00	1.281E+00	1.737E+00	0.000E+00
CF-249	1.525E-02	1.710E-02	2.696E-02	0.000E+00
ANH-511	1.329E-01	3.372E-02	1.900E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)		
BE-7	-5.319E-02	1.485E-01	2.623E-01	0.000E+00	NOT IDENT.
NA-22	-8.861E-03	1.732E-02	2.876E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	8.013E+12	0.000E+00	0.000E+00	SHORT HLIF
AL-26	2.641E-03	9.543E-03	1.743E-02	0.000E+00	FAIL ABUN
SC-46	-1.295E-02	1.643E-02	2.820E-02	0.000E+00	FAIL ABUN
V-48	-3.377E-02	5.043E-02	8.599E-02	0.000E+00	NOT IDENT.
CR-51	8.317E-02	2.180E-01	3.809E-01	0.000E+00	NOT IDENT.
CO-56	1.348E-03	1.852E-02	2.888E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	9.535E-03	1.117E-02	2.132E-02	0.000E+00	NOT IDENT.
CO-58	-4.483E-03	1.597E-02	2.833E-02	0.000E+00	NOT IDENT.
FE-59	1.433E-02	3.459E-02	7.570E-02	0.000E+00	FAIL ABUN
CO-60	1.116E-02	1.524E-02	2.702E-02	0.000E+00	NOT IDENT.
ZN-65	7.192E-03	4.282E-02	6.442E-02	0.000E+00	NOT IDENT.
SE-75	7.984E-03	1.923E-02	3.419E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	2.982E+00	5.079E+00	0.000E+00	NOT IDENT.
SR-85	0.000E+00	1.801E-02	3.067E-02	0.000E+00	NOT IDENT.
Y-88	9.477E-04	1.288E-02	2.287E-02	0.000E+00	NOT IDENT.
Y-91	1.081E-02	1.772E-02	2.830E-02	0.000E+00	NOT IDENT.
NB-94	7.937E-03	1.336E-02	2.342E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	2.887E-02	4.888E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.804E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	2.248E-02	3.531E-02	5.732E-02	0.000E+00	NOT IDENT.
MO-99	0.000E+00	2.838E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	9.857E+34	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.720E-04	1.973E-02	3.519E-02	0.000E+00	FAIL ABUN
RH-106	-5.802E-02	1.231E-01	2.105E-01	0.000E+00	FAIL ABUN
RU-106	-5.560E-02	1.237E-01	2.116E-01	0.000E+00	NOT IDENT.
AG-108M	-1.555E-03	1.216E-02	2.187E-02	0.000E+00	NOT IDENT.
AG-110M	-3.128E-03	1.378E-02	2.363E-02	0.000E+00	NOT IDENT.
SN-113	1.457E-03	2.054E-02	3.308E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	5.151E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-115	0.000E+00	2.429E+00	3.271E+00	0.000E+00	FAIL ABUN
SN-117M	-3.845E-02	5.098E-02	9.205E-02	0.000E+00	NOT IDENT.
TE-123M	6.259E-04	1.295E-02	2.379E-02	0.000E+00	NOT IDENT.
SB-124	-1.712E-02	2.988E-02	5.058E-02	0.000E+00	NOT IDENT.
SB-125	1.282E-02	3.388E-02	6.202E-02	0.000E+00	FAIL ABUN
TE-125M	1.546E+00	4.813E+00	9.164E+00	0.000E+00	NOT IDENT.
SB-126	1.197E-01	1.284E-01	2.286E-01	0.000E+00	FAIL ABUN
SB-127	1.394E+01	8.464E+00	1.556E+01	0.000E+00	FAIL ABUN
I-131	2.959E-02	1.643E-01	3.030E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	1.054E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	8.190E+00	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-8.513E-03	1.798E-02	2.861E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.883E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	3.050E-02	3.552E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	2.226E+32	0.000E+00	0.000E+00	SHORT HLIF
CS-136	5.881E-03	9.256E-02	1.618E-01	0.000E+00	FAIL ABUN
BA-137M	3.208E-04	1.558E-02	2.355E-02	0.000E+00	NOT IDENT.
CS-137	7.795E-04	1.644E-02	2.489E-02	0.000E+00	NOT IDENT.
CE-139	9.622E-03	1.355E-02	2.515E-02	0.000E+00	NOT IDENT.
BA-140	4.127E-02	2.232E-01	3.976E-01	0.000E+00	NOT IDENT.
LA-140	5.907E-02	6.835E-02	1.149E-01	0.000E+00	FAIL ABUN
CE-141	2.098E-02	4.088E-02	6.873E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.461E+05	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.541E-02	9.185E-02	1.715E-01	0.000E+00	NOT IDENT.
PM-144	-1.212E-02	1.411E-02	2.341E-02	0.000E+00	FAIL ABUN
PR-144	0.000E+00	1.164E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	1.424E-02	1.678E-02	3.094E-02	0.000E+00	FAIL ABUN
ND-147	2.188E-01	5.583E-01	1.003E+00	0.000E+00	FAIL ABUN
PM-147	6.361E+03	2.265E+04	4.277E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	5.035E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-3.636E-02	3.720E-02	6.670E-02	0.000E+00	FAIL ABUN
GD-153	4.197E-02	5.052E-02	6.728E-02	0.000E+00	FAIL ABUN
EU-154	-2.416E-02	4.800E-02	7.977E-02	0.000E+00	NOT IDENT.
TB-160	-7.749E-03	5.901E-02	1.044E-01	0.000E+00	FAIL ABUN
TM-171	5.838E+00	1.475E+01	2.640E+01	0.000E+00	NOT IDENT.
HF-181	3.895E-03	2.041E-02	3.673E-02	0.000E+00	FAIL ABUN
TA-182	-5.164E-02	8.555E-02	1.421E-01	0.000E+00	FAIL ABUN
IR-192	-8.819E-03	1.593E-02	2.703E-02	0.000E+00	FAIL ABUN
BI-207	1.747E-02	2.036E-02	3.668E-02	0.000E+00	NOT IDENT.
PB-211	-2.122E-02	3.904E-01	6.230E-01	0.000E+00	FAIL ABUN

RN-219	1.994E-02	1.544E-01	2.816E-01	0.000E+00	FAIL ABUN
AC-227	1.446E-01	1.383E-01	2.820E-01	0.000E+00	FAIL ABUN
TH-227	1.422E-01	1.360E-01	2.772E-01	0.000E+00	FAIL ABUN
PA-231	1.774E-01	6.263E-01	1.102E+00	0.000E+00	FAIL ABUN
TH-231	0.000E+00	1.313E-01	1.672E-01	0.000E+00	FAIL ABUN
PA-233	-9.829E-03	2.632E-02	4.497E-02	0.000E+00	FAIL ABUN
PA-234	1.553E-02	1.115E-01	1.979E-01	0.000E+00	FAIL ABUN
PA-234M	2.373E+00	1.691E+00	3.134E+00	0.000E+00	FAIL ABUN
NP-239	3.483E-02	8.123E-02	1.542E-01	0.000E+00	FAIL ABUN
AM-241	-2.241E-02	8.524E-02	1.517E-01	0.000E+00	NOT IDENT.
CM-247	3.201E-03	1.385E-02	2.533E-02	0.000E+00	FAIL ABUN
CF-251	-1.290E-02	5.496E-02	9.941E-02	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:47:34.09

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048001.CNF;1
Sample date      : 7-MAR-2006 09:10:00. Acquisition date : 6-APR-2006 23:45:29.
Sample ID        : G158048001           Sample quantity  : 1.68570E+02 GRAM
Detector name    : GAMMA18              Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:16.40  0.1%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 30-TP30546-A
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	7803	10.67*	1.726E+00	3.145E+01	3.145E+01	2.49
MN-54	834.83	96	99.83*	2.707E+00	2.639E-02	2.825E-02	73.72
CD-109	88.03	1173	3.79*	5.801E+00	3.961E+00	4.147E+00	12.20
I-126	388.63	62	29.10	4.587E+00	3.458E-02	1.796E-01	112.16
	666.33	78	40.20*	3.228E+00	4.488E-02	2.331E-01	105.36
	753.82	116	5.10	2.934E+00	5.757E-01	2.990E+00	67.88
SN-126	64.28	115	9.60	2.807E+00	3.162E-01	3.162E-01	132.40
	86.94	1173	8.90	5.801E+00	1.687E+00	1.687E+00	12.20
	87.57	1173	37.00*	5.801E+00	4.058E-01	4.058E-01	12.20
CS-135	268.24	510	16.00*	5.621E+00	4.213E-01	4.213E-01	26.49
EU-155	86.54	1173	30.90	5.801E+00	4.859E-01	4.916E-01	12.20
	105.31	136	20.70*	6.910E+00	7.073E-02	7.157E-02	91.13
HG-203	70.83	------	4.75	3.904E+00	------ Line Not Found		------
	72.87	1393	8.00	4.443E+00	2.910E+00	4.596E+00	10.61
	82.60	473	3.55	5.533E+00	1.787E+00	2.822E+00	35.18
	279.20	272	77.30*	5.541E+00	4.713E-02	7.444E-02	44.55
TL-208	75.00	1393	3.43	4.443E+00	6.787E+00	6.997E+00	10.61
	277.35	272	6.80	5.541E+00	5.358E-01	5.524E-01	44.55
	510.84	694	21.60	3.879E+00	6.151E-01	6.342E-01	25.38
	583.14	2313	84.20*	3.550E+00	5.744E-01	5.922E-01	6.90
	763.30	------	1.64	2.908E+00	------ Line Not Found		------
	860.37	291	12.46	2.641E+00	6.560E-01	6.764E-01	30.56
	1093.90	68	0.37	2.158E+00	6.321E+00	6.517E+00	86.45
BI-210	46.50	73	4.05*	5.702E-01	2.336E+00	2.342E+00	170.33
PB-210	46.50	73	4.05*	5.702E-01	2.336E+00	2.342E+00	170.33
BI-211	351.07	2704	12.94*	4.857E+00	3.193E+00	3.193E+00	5.79
BI-212	727.18	596	11.80*	3.021E+00	1.240E+00	1.279E+00	18.58
PB-212	74.80	1393	10.70	4.443E+00	2.176E+00	2.243E+00	10.61
	87.30	1173	8.00	5.801E+00	1.877E+00	1.935E+00	12.20
	115.19	------	0.60	7.182E+00	------ Line Not Found		------
	238.63	6883	44.60*	5.999E+00	1.910E+00	1.969E+00	2.88
	300.09	505	3.41	5.306E+00	2.072E+00	2.137E+00	27.37

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BI-214	609.31	2180	46.30*	3.443E+00	1.015E+00	1.015E+00	6.57
	768.36	234	5.04	2.894E+00	1.191E+00	1.191E+00	37.81
	934.06	98	3.21	2.467E+00	9.184E-01	9.184E-01	67.98
	1120.29	556	15.10	2.118E+00	1.292E+00	1.292E+00	19.59
	1238.11	140	5.94	1.950E+00	8.974E-01	8.974E-01	84.82
	1377.67	187	4.11	1.798E+00	1.882E+00	1.882E+00	40.38
PB-214	74.81	1393	6.21	4.443E+00	3.749E+00	3.749E+00	10.61
	77.11	2315	10.50	4.734E+00	3.457E+00	3.457E+00	6.33
	87.30	1173	4.41	5.801E+00	3.404E+00	3.404E+00	12.20
	241.98	1422	7.50	5.962E+00	2.360E+00	2.360E+00	10.60
	295.21	1521	19.20	5.357E+00	1.098E+00	1.098E+00	9.17
	351.92	2704	37.20*	4.857E+00	1.111E+00	1.111E+00	5.79
RA-223	122.32	------	1.19	7.282E+00	------ Line Not Found		------
	144.24	47	3.24	7.281E+00	1.478E-01	1.478E-01	295.35
	154.21	101	5.58	7.183E+00	1.867E-01	1.867E-01	129.25
	269.46	510	13.60	5.621E+00	4.956E-01	4.956E-01	26.49
	323.87	------	3.88*	5.088E+00	------ Line Not Found		------
	338.28	1338	2.73	4.966E+00	7.325E+00	7.325E+00	8.96
	445.03	------	1.18	4.229E+00	------ Line Not Found		------
RA-226	295.21	1521	19.20	5.357E+00	1.098E+00	1.098E+00	9.17
	351.92	2704	37.20	4.857E+00	1.111E+00	1.111E+00	5.79
	609.31	2180	46.30*	3.443E+00	1.015E+00	1.015E+00	6.57
AC-228	209.25	508	4.40	6.401E+00	1.340E+00	1.354E+00	32.41
	338.32	1338	11.40	4.966E+00	1.754E+00	1.772E+00	8.96
	463.01	358	4.40	4.128E+00	1.465E+00	1.480E+00	30.89
	794.95	399	4.60	2.818E+00	2.282E+00	2.306E+00	24.12
	911.21	1742	27.70*	2.519E+00	1.853E+00	1.872E+00	6.75
	964.77	389	5.20	2.402E+00	2.314E+00	2.338E+00	22.96
	969.11	985	16.60	2.393E+00	1.840E+00	1.859E+00	9.22
RA-228	209.25	508	4.40	6.401E+00	1.340E+00	1.354E+00	32.41
	338.32	1338	11.40	4.966E+00	1.754E+00	1.772E+00	8.96
	463.01	358	4.40	4.128E+00	1.465E+00	1.480E+00	30.89
	794.95	399	4.60	2.818E+00	2.282E+00	2.306E+00	24.12
	911.21	1742	27.70*	2.519E+00	1.853E+00	1.872E+00	6.75
	964.77	389	5.20	2.402E+00	2.314E+00	2.338E+00	22.96
	969.11	985	16.60	2.393E+00	1.840E+00	1.859E+00	9.22
TH-228	84.40	473	1.21	5.533E+00	5.242E+00	5.405E+00	35.18
	238.60	6883	44.60*	5.999E+00	1.910E+00	1.969E+00	2.88
	300.10	505	3.41	5.306E+00	2.072E+00	2.137E+00	27.37
TH-229	85.43	473	16.50	5.533E+00	3.844E-01	3.844E-01	35.18
	88.47	1173	27.10	5.801E+00	5.540E-01	5.540E-01	12.20
	100.00	108	12.40	6.637E+00	9.700E-02	9.700E-02	120.36
	193.63	------	4.59*	6.629E+00	------ Line Not Found		------
	210.97	508	3.26	6.401E+00	1.807E+00	1.807E+00	32.41
TH-230	295.21	1521	19.20	5.357E+00	1.098E+00	1.098E+00	9.17
	351.92	2704	37.20	4.857E+00	1.111E+00	1.111E+00	5.79
	609.31	2180	46.30*	3.443E+00	1.015E+00	1.015E+00	6.57
TH-232	238.59	6883	44.60*	5.999E+00	1.910E+00	1.910E+00	2.88
	911.20	1742	27.70	2.519E+00	1.853E+00	1.853E+00	6.75

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	964.40	389	5.20	2.402E+00	2.314E+00	2.314E+00	22.96
	969.11	985	16.60	2.393E+00	1.840E+00	1.840E+00	9.22
TH-234	63.29	115	3.80*	2.807E+00	7.988E-01	7.988E-01	132.40
	92.38	971	5.41	6.251E+00	2.132E+00	2.132E+00	18.15
	112.81	------	0.24	7.132E+00	------ Line Not Found		------
U-234	67.67	------	0.37	3.448E+00	------ Line Not Found		------
	241.98	1422	7.49	5.962E+00	2.364E+00	2.364E+00	10.60
	295.21	1521	19.20*	5.357E+00	1.098E+00	1.098E+00	9.17
	351.92	2704	37.20	4.857E+00	1.111E+00	1.111E+00	5.79
U-235	89.95	675	2.70	6.026E+00	3.078E+00	3.078E+00	20.47
	93.35	971	4.50	6.251E+00	2.563E+00	2.563E+00	18.15
	105.00	136	2.10	6.910E+00	6.972E-01	6.972E-01	91.13
	143.76	47	10.50*	7.281E+00	4.562E-02	4.562E-02	295.35
	163.33	------	4.70	7.066E+00	------ Line Not Found		------
	185.71	715	54.00	6.745E+00	1.457E-01	1.457E-01	20.07
	205.31	65	5.00	6.473E+00	1.488E-01	1.488E-01	198.11
NP-237	86.48	1173	12.60*	5.801E+00	1.191E+00	1.191E+00	12.20
	95.87	------	2.60	6.447E+00	------ Line Not Found		------
U-238	63.29	115	3.80*	2.807E+00	7.988E-01	7.988E-01	132.40
AM-242	99.55	108	0.63	6.637E+00	1.909E+00	1.910E+00	120.36
	103.70	136	1.01*	6.910E+00	1.450E+00	1.450E+00	91.13
CF-249	252.85	------	2.73	5.820E+00	------ Line Not Found		------
	333.44	73	15.50	5.013E+00	7.015E-02	7.017E-02	111.73
	387.95	62	66.00*	4.587E+00	1.525E-02	1.525E-02	112.16
ANH-511	511.00	694	100.00*	3.879E+00	1.329E-01	1.329E-01	25.38

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	1422	3.95*	5.962E+00	4.482E+00	4.621E+00	10.60

Flag: "*" = Keyline

Sample ID : G158048001 Acquisition date : 6-APR-2006 23:45:29

Total number of lines in spectrum 80
Number of unidentified lines 25
Number of lines tentatively identified by NID 55 68.75%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.145E+01	3.145E+01	0.078E+01	2.49	
MN-54	312.70D	1.07	2.639E-02	2.825E-02	2.082E-02	73.72	
CD-109	464.00D	1.05	3.961E+00	4.147E+00	0.506E+00	12.20	
I-126	12.93D	5.19	4.488E-02	2.331E-01	2.456E-01	105.36	
SN-126	1.00E+05Y	1.00	4.058E-01	4.058E-01	0.495E-01	12.20	
CS-135	2.30E+06Y	1.00	4.213E-01	4.213E-01	1.116E-01	26.49	
EU-155	4.96Y	1.01	7.073E-02	7.157E-02	6.522E-02	91.13	
HG-203	46.61D	1.58	4.713E-02	7.444E-02	3.317E-02	44.55	
TL-208	1.91Y	1.03	5.744E-01	5.922E-01	0.409E-01	6.90	
BI-210	22.26Y	1.00	2.336E+00	2.342E+00	3.990E+00	170.33	
PB-210	22.26Y	1.00	2.336E+00	2.342E+00	3.990E+00	170.33	
BI-211	7.04E+08Y	1.00	3.193E+00	3.193E+00	0.185E+00	5.79	
BI-212	1.91Y	1.03	1.240E+00	1.279E+00	0.238E+00	18.58	
PB-212	1.91Y	1.03	1.910E+00	1.969E+00	0.057E+00	2.88	
BI-214	1600.00Y	1.00	1.015E+00	1.015E+00	0.067E+00	6.57	
PB-214	1600.00Y	1.00	1.111E+00	1.111E+00	0.064E+00	5.79	
RA-223	7.04E+08Y	1.00	4.956E-01	4.956E-01	1.313E-01	26.49	K
RA-226	1600.00Y	1.00	1.015E+00	1.015E+00	0.067E+00	6.57	
AC-228	5.75Y	1.01	1.853E+00	1.872E+00	0.126E+00	6.75	
RA-228	5.75Y	1.01	1.853E+00	1.872E+00	0.126E+00	6.75	
TH-228	1.91Y	1.03	1.910E+00	1.969E+00	0.057E+00	2.88	
TH-229	7340.00Y	1.00	5.540E-01	5.540E-01	0.676E-01	12.20	K
TH-230	7.70E+04Y	1.00	1.015E+00	1.015E+00	0.067E+00	6.57	
TH-232	1.41E+10Y	1.00	1.910E+00	1.910E+00	0.055E+00	2.88	
TH-234	4.47E+09Y	1.00	7.988E-01	7.988E-01	10.58E-01	132.40	
U-234	2.45E+05Y	1.00	1.098E+00	1.098E+00	0.101E+00	9.17	
U-235	7.04E+08Y	1.00	4.562E-02	4.562E-02	13.47E-02	295.35	
NP-237	2.14E+06Y	1.00	1.191E+00	1.191E+00	0.145E+00	12.20	
U-238	4.47E+09Y	1.00	7.988E-01	7.988E-01	10.58E-01	132.40	
AM-242	152.00Y	1.00	1.450E+00	1.450E+00	1.322E+00	91.13	
CF-249	350.60Y	1.00	1.525E-02	1.525E-02	1.710E-02	112.16	
ANH-511	1.00E+09Y	1.00	1.329E-01	1.329E-01	0.337E-01	25.38	
Total Activity :			6.628E+01	6.691E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.482E+00	4.621E+00	0.490E+00	10.60	
Total Activity :			4.482E+00	4.621E+00			

Grand Total Activity : 7.076E+01 7.153E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : G158048001 Acquisition date : 6-APR-2006 23:45:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.92	360	1681	1.25	257.02	253	9	1.67E-02	42.4	7.32E+00	
0	190.05	99	1070	0.93	379.30	376	7	4.61E-03	****	6.68E+00	
0	255.41	70	462	1.27	510.03	508	5	3.23E-03	95.7	5.79E+00	T
0	327.48	235	937	1.13	654.21	649	11	1.09E-02	54.9	5.06E+00	T
0	409.08	300	593	1.28	817.46	812	11	1.39E-02	34.3	4.45E+00	
0	418.22	30	294	1.32	835.73	833	6	1.38E-03	****	4.39E+00	T
0	561.53	77	430	1.31	1122.47	1119	11	3.58E-03	****	3.64E+00	T
0	616.43	51	176	1.30	1232.31	1230	5	2.36E-03	83.4	3.41E+00	T
0	631.67	7	223	0.92	1262.81	1262	6	3.08E-04	****	3.35E+00	T
2	771.71	72	288	1.76	1543.05	1529	19	3.35E-03	86.6	2.88E+00	T
4	781.89	51	99	1.33	1563.41	1561	14	2.35E-03	70.7	2.85E+00	
4	785.15	166	262	1.68	1569.93	1561	14	7.67E-03	40.6	2.84E+00	T
0	830.35	67	212	2.05	1660.40	1656	9	3.08E-03	82.6	2.72E+00	T
0	840.59	114	476	3.62	1680.89	1676	16	5.28E-03	88.5	2.69E+00	
0	904.34	51	335	0.63	1808.48	1801	12	2.38E-03	****	2.53E+00	
5	1098.09	15	108	1.49	2196.30	2184	15	6.74E-04	****	2.15E+00	T
0	1279.81	25	194	1.47	2560.08	2556	10	1.14E-03	****	1.90E+00	
0	1282.82	23	90	1.80	2566.11	2565	5	1.06E-03	****	1.90E+00	
0	1407.27	68	139	3.71	2815.26	2808	14	3.14E-03	77.8	1.77E+00	
0	1436.35	43	55	1.45	2873.50	2870	9	2.01E-03	70.6	1.75E+00	
0	1494.27	86	97	2.65	2989.48	2981	17	3.99E-03	56.8	1.70E+00	
3	1508.51	92	70	2.50	3017.99	3010	20	4.25E-03	46.5	1.69E+00	
3	1511.42	56	47	2.95	3023.81	3010	20	2.58E-03	62.8	1.69E+00	
0	1524.69	57	185	10.89	3050.40	3041	32	2.66E-03	****	1.68E+00	
4	1587.18	137	116	2.26	3175.53	3169	21	6.34E-03	37.2	1.64E+00	
4	1591.86	28	58	2.45	3184.90	3169	21	1.31E-03	****	1.64E+00	
0	1619.88	47	81	1.31	3241.01	3235	12	2.17E-03	89.1	1.62E+00	
0	1628.97	86	104	3.04	3259.22	3249	21	3.96E-03	63.6	1.62E+00	
0	1703.76	33	64	1.92	3408.99	3399	18	1.54E-03	****	1.58E+00	
0	1728.34	101	74	2.50	3458.22	3452	16	4.68E-03	42.6	1.57E+00	
0	1763.17	449	61	2.59	3527.97	3517	19	2.08E-02	13.1	1.56E+00	
0	1847.11	104	63	2.89	3696.10	3684	25	4.83E-03	46.8	1.54E+00	
0	1855.64	12	19	1.74	3713.20	3710	9	5.76E-04	****	1.54E+00	
0	1890.19	15	57	0.66	3782.40	3777	15	7.13E-04	****	1.53E+00	
0	1900.03	4	47	0.56	3802.10	3791	14	1.73E-04	****	1.53E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:47:41.18

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048001.CNF;1     *
* Acquisition date : 6-APR-2006 23:45:29.  Detector SN#    : 30-TP30546-A      *
* Detector ID      : GAMMA18               Sensitivity     : 3.00000           *
* Geometry         : CAN                   Energy tolerance: 2.00000           *
* Elapsed live time: 0 06:00:00.00         Abundance limit : 75.00000          *
* Elapsed real time: 0 06:00:16.40         Half life ratio : 8.00000           *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 7-MAR-2006 09:10:00.  Nuclide Library : EPI               *
* Sample ID        : G158048001            Analyst initials: MJH1              *
* Batch Number     : 513799                Sample Quantity : 1.68570E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 14-AUG-2005 18:48:42.4MS Isotope      : TOPLOADER        *
* MSD DPM          :                       MSD Isotope     :                  *
* LCS DPM          :                       LCS Isotope     :                  *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.145E+01	7.815E-01	2.081E-01	0.000E+00	151.099
MN-54	2.825E-02	2.082E-02	2.807E-02	0.000E+00	1.006
CD-109	4.147E+00	5.061E-01	5.503E-01	0.000E+00	7.536
I-126	2.331E-01	2.456E-01	2.494E-01	0.000E+00	0.935
SN-126	4.058E-01	4.951E-02	5.418E-02	0.000E+00	7.489
CS-135	4.213E-01	1.116E-01	9.970E-02	0.000E+00	4.225
EU-155	6.924E-02	6.320E-02	7.681E-02	0.000E+00	0.901
HG-203	7.444E-02	3.317E-02	3.264E-02	0.000E+00	2.281
TL-208	5.922E-01	4.088E-02	2.222E-02	0.000E+00	26.653
BI-210	2.342E+00	3.990E+00	4.135E+00	0.000E+00	0.566
PB-210	2.342E+00	3.990E+00	4.135E+00	0.000E+00	0.566
BI-211	3.193E+00	1.850E-01	1.366E-01	0.000E+00	23.377
BI-212	1.279E+00	2.376E-01	1.770E-01	0.000E+00	7.223
PB-212	1.969E+00	5.663E-02	3.913E-02	0.000E+00	50.315
BI-214	1.015E+00	6.672E-02	4.428E-02	0.000E+00	22.919
PB-214	1.111E+00	6.434E-02	4.512E-02	0.000E+00	24.621
RA-223	-8.861E-02	2.979E-01	4.231E-01	0.000E+00	-0.209
RA-224	4.621E+00	4.896E-01	4.446E-01	0.000E+00	10.393

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.015E+00	6.672E-02	4.428E-02	0.000E+00	22.919
AC-228	1.872E+00	1.264E-01	8.297E-02	0.000E+00	22.562
RA-228	1.872E+00	1.264E-01	8.297E-02	0.000E+00	22.562
TH-228	1.969E+00	5.663E-02	3.913E-02	0.000E+00	50.319
TH-229	-3.781E-02	2.164E-01	3.598E-01	0.000E+00	-0.105
TH-230	1.015E+00	6.671E-02	4.428E-02	0.000E+00	22.919
TH-232	1.910E+00	5.492E-02	3.795E-02	0.000E+00	50.321
TH-234	7.988E-01	1.058E+00	1.062E+00	0.000E+00	0.752
U-234	1.098E+00	1.007E-01	8.636E-02	0.000E+00	12.711
U-235	4.562E-02	1.347E-01	1.545E-01	0.000E+00	0.295
NP-237	1.191E+00	1.454E-01	1.616E-01	0.000E+00	7.373
U-238	7.988E-01	1.058E+00	1.062E+00	0.000E+00	0.752
AM-242	1.403E+00	1.281E+00	1.579E+00	0.000E+00	0.889
CF-249	1.525E-02	1.710E-02	2.550E-02	0.000E+00	0.598
ANH-511	1.329E-01	3.372E-02	1.813E-02	0.000E+00	7.330

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-5.319E-02		1.485E-01	2.497E-01	0.000E+00	-0.213
NA-22	-8.861E-03		1.732E-02	2.827E-02	0.000E+00	-0.313
AL-26	2.641E-03		9.543E-03	1.734E-02	0.000E+00	0.152
SC-46	-1.295E-02		1.643E-02	2.739E-02	0.000E+00	-0.473
V-48	-3.377E-02		5.043E-02	8.380E-02	0.000E+00	-0.403
CR-51	8.317E-02		2.180E-01	3.581E-01	0.000E+00	0.232
CO-56	1.348E-03		1.852E-02	2.800E-02	0.000E+00	0.048
CO-57	9.535E-03		1.117E-02	1.947E-02	0.000E+00	0.490
CO-58	-4.483E-03		1.597E-02	2.744E-02	0.000E+00	-0.163
FE-59	1.433E-02	+	3.459E-02	7.405E-02	0.000E+00	0.194
CO-60	1.116E-02		1.524E-02	2.660E-02	0.000E+00	0.420
ZN-65	7.192E-03		4.282E-02	6.304E-02	0.000E+00	0.114
SE-75	7.984E-03		1.923E-02	3.196E-02	0.000E+00	0.250
KR-85	6.431E+00		2.982E+00	4.846E+00	0.000E+00	1.327
SR-85	3.884E-02		1.801E-02	2.927E-02	0.000E+00	1.327
Y-88	9.477E-04		1.288E-02	2.277E-02	0.000E+00	0.042
Y-91	1.081E-02		1.772E-02	2.708E-02	0.000E+00	0.399
NB-94	7.937E-03		1.336E-02	2.257E-02	0.000E+00	0.352
NB-95	5.194E-02		2.887E-02	4.725E-02	0.000E+00	1.099
ZR-95	2.248E-02		3.531E-02	5.538E-02	0.000E+00	0.406
RU-103	2.720E-04		1.973E-02	3.354E-02	0.000E+00	0.008
RH-106	-5.802E-02		1.231E-01	2.021E-01	0.000E+00	-0.287
RU-106	-5.560E-02		1.237E-01	2.031E-01	0.000E+00	-0.274
AG-108M	-1.555E-03		1.216E-02	2.076E-02	0.000E+00	-0.075
AG-110M	-3.128E-03		1.378E-02	2.273E-02	0.000E+00	-0.138
SN-113	1.457E-03		2.054E-02	3.129E-02	0.000E+00	0.047
SN-115	3.574E+00	+	2.429E+00	3.182E+00	0.000E+00	1.123
SN-117M	-3.845E-02		5.098E-02	8.471E-02	0.000E+00	-0.454

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TE-123M	6.259E-04		1.295E-02	2.190E-02	0.000E+00	0.029
SB-124	-1.712E-02		2.988E-02	5.021E-02	0.000E+00	-0.341
SB-125	1.282E-02		3.388E-02	5.883E-02	0.000E+00	0.218
TE-125M	1.546E+00		4.813E+00	8.342E+00	0.000E+00	0.185
SB-126	1.197E-01		1.284E-01	2.205E-01	0.000E+00	0.543
SB-127	1.394E+01		8.464E+00	1.499E+01	0.000E+00	0.930
I-131	2.959E-02		1.643E-01	2.860E-01	0.000E+00	0.103
BA-133	-8.513E-03		1.798E-02	2.699E-02	0.000E+00	-0.315
CS-134	1.265E-01	+	3.050E-02	3.438E-02	0.000E+00	3.679
CS-136	5.881E-03		9.256E-02	1.580E-01	0.000E+00	0.037
BA-137M	3.208E-04		1.558E-02	2.265E-02	0.000E+00	0.014
CS-137	7.795E-04		1.644E-02	2.394E-02	0.000E+00	0.033
CE-139	9.622E-03		1.355E-02	2.317E-02	0.000E+00	0.415
BA-140	4.127E-02		2.232E-01	3.799E-01	0.000E+00	0.109
LA-140	5.907E-02		6.835E-02	1.138E-01	0.000E+00	0.519
CE-141	2.098E-02		4.088E-02	6.309E-02	0.000E+00	0.333
CE-144	1.541E-02		9.185E-02	1.571E-01	0.000E+00	0.098
PM-144	-1.212E-02		1.411E-02	2.255E-02	0.000E+00	-0.537
PM-146	1.424E-02		1.678E-02	2.941E-02	0.000E+00	0.484
ND-147	2.188E-01		5.583E-01	9.579E-01	0.000E+00	0.228
PM-147	6.361E+03		2.265E+04	3.905E+04	0.000E+00	0.163
EU-152	-3.636E-02		3.720E-02	6.285E-02	0.000E+00	-0.578
GD-153	4.197E-02	+	5.052E-02	6.104E-02	0.000E+00	0.688
EU-154	-2.416E-02		4.800E-02	7.841E-02	0.000E+00	-0.308
TB-160	-7.749E-03		5.901E-02	1.014E-01	0.000E+00	-0.076
TM-171	5.838E+00		1.475E+01	2.369E+01	0.000E+00	0.246
HF-181	3.895E-03		2.041E-02	3.497E-02	0.000E+00	0.111
TA-182	-5.164E-02		8.555E-02	1.395E-01	0.000E+00	-0.370
IR-192	-8.819E-03		1.593E-02	2.540E-02	0.000E+00	-0.347
BI-207	1.747E-02		2.036E-02	3.584E-02	0.000E+00	0.487
PB-211	-2.122E-02		3.904E-01	5.900E-01	0.000E+00	-0.036
RN-219	1.994E-02		1.544E-01	2.666E-01	0.000E+00	0.075
AC-227	1.446E-01	+	1.383E-01	2.633E-01	0.000E+00	0.549
TH-227	1.422E-01	+	1.360E-01	2.588E-01	0.000E+00	0.549
PA-231	1.774E-01		6.263E-01	1.032E+00	0.000E+00	0.172
TH-231	4.956E-01	+	1.313E-01	1.563E-01	0.000E+00	3.170
PA-233	-9.829E-03		2.632E-02	4.224E-02	0.000E+00	-0.233
PA-234	1.553E-02		1.115E-01	1.926E-01	0.000E+00	0.081
PA-234M	2.373E+00		1.691E+00	3.056E+00	0.000E+00	0.776
NP-239	3.483E-02		8.123E-02	1.407E-01	0.000E+00	0.248
AM-241	-2.241E-02		8.524E-02	1.357E-01	0.000E+00	-0.165
CM-247	3.201E-03		1.385E-02	2.399E-02	0.000E+00	0.133
CF-251	-1.290E-02		5.496E-02	9.178E-02	0.000E+00	-0.141

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                              CHARLESTON ,SC 29417                         *
*                               GROSS GAMMA REPORT                          *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513799                    SAMPLE ID  : G158048001        *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA18           *
*   SAMPLE DATE  :  7-MAR-2006 09:10:00.00  COUNT TIME :    0 06:00:00.00   *
*   ANALYSIS DATE:  6-APR-2006 23:45:29.51  SAMPLE ALQT:  168.570 GRAM      *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 1.081E+01
GROSS GAMMA ERROR (pCi/GRAM)	: 1.719E+00
GROSS GAMMA MDA (pCi/GRAM)	: 3.450E+00
GROSS GAMMA DLC (pCi/GRAM)	: 1.696E+00

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:48:15.09

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048002.CNF;1
Sample date      : 7-MAR-2006 10:10:00. Acquisition date : 6-APR-2006 23:45:51.
Sample ID        : G158048002           Sample quantity  : 1.48060E+02 GRAM
Detector name    : HP                   Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:05.64  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 8943324
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	37.73	124	1052	1.41	72.69	71	6	5.76E-03	42.1	
2	0	46.35*	106	1556	1.34	89.94	86	9	4.89E-03	71.1	
3	0	63.43*	192	2270	1.01	124.12	120	9	8.88E-03	47.7	
4	3	73.18	259	1889	1.51	143.63	140	18	1.20E-02	29.4	5.56E+00
5	3	74.98*	1917	2103	1.31	147.23	140	18	8.88E-02	5.2	
6	3	77.23*	3073	1748	1.21	151.74	140	18	1.42E-01	3.3	
7	2	84.35*	428	1988	1.36	165.98	161	28	1.98E-02	19.2	1.43E+00
8	2	87.33	1257	1929	1.32	171.95	161	28	5.82E-02	6.7	
9	2	90.01	711	1637	1.13	177.31	161	28	3.29E-02	10.3	
10	2	92.93*	1186	2030	1.42	183.16	161	28	5.49E-02	8.2	
11	0	105.62	265	1686	1.66	208.54	204	9	1.23E-02	28.6	
12	0	108.70*	45	957	0.80	214.70	213	5	2.08E-03	115.0	
13	0	129.02	361	1737	1.33	255.38	251	9	1.67E-02	21.4	
14	0	139.65*	49	1258	0.86	276.64	273	7	2.25E-03	127.9	
15	0	143.46*	100	1439	0.75	284.27	281	8	4.64E-03	70.5	
16	0	162.71*	53	1105	1.75	322.79	321	7	2.47E-03	110.2	
17	0	186.06*	779	1546	1.29	369.52	365	10	3.60E-02	11.2	
18	0	198.24*	47	1349	2.76	393.88	389	9	2.19E-03	152.2	
19	0	209.30*	492	1320	1.29	416.03	412	9	2.28E-02	14.4	
20	5	238.73*	6976	897	1.23	474.91	469	18	3.23E-01	1.4	1.36E+00
21	5	241.66	1729	1196	2.04	480.79	469	18	8.01E-02	6.3	
22	0	253.35*	77	768	2.04	504.17	500	8	3.57E-03	66.6	
23	0	270.25	575	1036	1.57	538.00	533	11	2.66E-02	11.6	
24	0	277.73*	297	962	1.95	552.96	548	10	1.37E-02	20.8	
25	0	295.35*	1684	963	1.43	588.23	583	11	7.80E-02	4.4	
26	0	300.18	353	768	1.50	597.89	594	9	1.63E-02	15.1	
27	0	321.33	45	600	1.33	640.21	638	8	2.08E-03	95.2	
28	0	327.88*	339	757	1.51	653.33	649	10	1.57E-02	16.7	
29	0	338.45*	1475	1068	1.37	674.47	668	14	6.83E-02	5.5	
30	0	352.00*	3070	860	1.37	701.60	696	12	1.42E-01	2.7	
31	0	409.72	200	654	0.98	817.11	812	11	9.26E-03	25.8	
32	0	453.99	165	456	3.23	905.70	901	11	7.66E-03	26.2	
33	0	463.09	424	497	1.46	923.91	919	10	1.96E-02	11.0	
34	0	510.91*	652	794	2.19	1019.61	1011	17	3.02E-02	12.6	
35	0	550.23*	35	231	1.24	1098.30	1095	6	1.63E-03	78.0	
36	0	562.50*	59	427	2.09	1122.86	1119	10	2.73E-03	68.9	
37	0	569.45*	36	323	1.40	1136.78	1134	8	1.67E-03	96.9	
38	0	583.23*	2346	698	1.53	1164.35	1155	18	1.09E-01	3.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	602.92	7	350	1.22	1203.76	1199	8	3.25E-04	462.8	
40	0	609.34*	2307	576	1.69	1216.61	1208	15	1.07E-01	3.2	
41	0	620.88	50	269	1.75	1239.70	1236	8	2.32E-03	58.3	
42	0	664.68	88	323	1.54	1327.37	1322	11	4.09E-03	40.7	
43	0	727.32	557	391	1.81	1452.73	1447	13	2.58E-02	8.5	
44	0	755.75*	51	428	1.41	1509.64	1502	14	2.36E-03	87.9	
45	0	768.27	169	401	1.59	1534.68	1530	11	7.84E-03	24.1	
46	0	772.51	92	188	1.94	1543.16	1540	7	4.28E-03	27.0	
47	0	785.29	139	350	1.88	1568.74	1562	13	6.44E-03	29.0	
48	0	794.80*	329	315	1.64	1587.78	1581	13	1.52E-02	12.5	
49	0	815.92	26	155	1.29	1630.05	1625	7	1.19E-03	83.1	
50	0	835.84*	26	246	2.15	1669.92	1666	8	1.21E-03	119.6	
51	0	860.67*	337	323	2.04	1719.62	1711	15	1.56E-02	13.1	
52	0	892.76	42	167	0.99	1783.85	1781	8	1.93E-03	56.0	
53	0	904.11	43	157	1.72	1806.56	1804	6	1.97E-03	49.2	
54	0	911.23*	1761	423	2.08	1820.81	1813	17	8.15E-02	3.7	
55	0	933.54	68	322	1.24	1865.47	1858	14	3.15E-03	57.3	
56	0	958.56	52	220	1.66	1915.55	1909	11	2.42E-03	56.9	
57	2	964.85*	405	246	2.38	1928.13	1920	24	1.87E-02	10.4	1.73E+00
58	2	969.12*	1062	246	2.17	1936.68	1920	24	4.92E-02	4.5	
59	0	1001.74*	30	235	2.08	2001.96	1996	12	1.37E-03	113.1	
60	0	1008.92*	24	127	1.63	2016.33	2014	7	1.11E-03	87.2	
61	0	1071.01*	21	119	1.30	2140.63	2137	7	9.76E-04	94.9	
62	3	1111.12	50	193	2.73	2220.90	2215	34	2.34E-03	57.7	1.80E+00
63	3	1120.42*	617	261	2.74	2239.51	2215	34	2.86E-02	7.4	
64	0	1138.77	25	101	1.39	2276.25	2274	5	1.18E-03	62.4	
65	0	1154.86	66	364	4.97	2308.45	2299	16	3.05E-03	66.0	
66	0	1237.88	199	383	1.17	2474.63	2468	14	9.23E-03	22.0	
67	0	1244.54	19	332	1.00	2487.97	2483	13	8.79E-04	199.1	
68	4	1281.91	86	124	2.57	2562.76	2558	16	3.98E-03	25.4	9.41E-01
69	4	1285.67	42	79	1.51	2570.29	2558	16	1.95E-03	39.8	
70	0	1300.12	40	161	4.05	2599.22	2592	12	1.84E-03	66.5	
71	1	1378.23*	117	139	2.41	2755.56	2749	25	5.41E-03	23.2	1.31E+00
72	1	1385.22*	43	62	2.42	2769.56	2749	25	2.00E-03	46.9	
73	0	1407.57	83	121	0.77	2814.30	2808	15	3.84E-03	30.9	
74	0	1460.91*	6814	225	2.62	2921.07	2910	22	3.15E-01	1.3	
75	0	1497.07	55	57	2.40	2993.45	2989	10	2.57E-03	29.2	
76	0	1509.92	116	114	4.29	3019.17	3010	19	5.37E-03	23.9	
77	0	1545.69*	18	75	0.72	3090.78	3085	13	8.41E-04	108.3	
78	0	1572.33*	18	25	1.25	3144.11	3141	9	8.18E-04	68.5	
79	0	1582.92*	6	43	1.23	3165.32	3162	6	2.63E-04	220.3	
80	0	1588.47	141	127	2.86	3176.41	3170	14	6.53E-03	18.9	
81	0	1620.91	89	67	3.57	3241.36	3235	14	4.13E-03	22.1	
82	0	1631.22	62	90	1.49	3262.00	3254	14	2.86E-03	34.6	
83	0	1661.56	14	76	1.07	3322.74	3314	16	6.58E-04	139.6	
84	0	1730.06	146	43	3.28	3459.86	3453	16	6.74E-03	13.1	
85	7	1739.12*	41	32	2.36	3478.00	3470	19	1.88E-03	35.1	5.99E+00
86	7	1742.42	15	17	2.93	3484.61	3470	19	7.07E-04	51.5	
87	0	1764.57*	444	106	2.73	3528.95	3519	23	2.05E-02	7.9	
88	1	1809.79	23	38	2.63	3619.48	3585	51	1.08E-03	64.0	1.37E+00
89	1	1813.55	40	31	2.39	3627.00	3585	51	1.84E-03	34.9	
90	0	1847.39	80	90	3.60	3694.74	3688	21	3.69E-03	31.7	
91	0	1864.14	21	22	1.65	3728.29	3724	9	9.74E-04	46.0	
92	0	1913.12	44	44	6.85	3826.35	3818	20	2.02E-03	40.5	
93	0	1920.56	17	14	1.94	3841.24	3837	9	7.64E-04	47.1	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
94	0	1950.50	13	52	1.39	3901.18	3894	16	5.93E-04	129.0	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048002   *
* Acquisition date :  6-APR-2006 23:45:51 Detector SN#    : 8943324     *
* Detector ID      : HP                   Sensitivity     : 3.000       *
* Geometry         : CAN                  Energy tolerance: 2.000       *
* Elapsed live time:    0 06:00:00.00     Abundance limit : 75.000      *
* Elapsed real time:    0 06:00:05.64     Half life ratio :  8.000      *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      :  7-MAR-2006 10:10:00 Nuclide Library :             *
* Sample ID        : G158048002           Analyst initials: MJH1        *
* Batch Number     : 513799               Sample Quantity : 1.4806E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  1-FEB-2006 10:50:52 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
AL-26	1.098E-02	1.407E-02	1.514E-02	0.000E+00
K-40	2.669E+01	1.728E+00	1.961E-01	0.000E+00
CR-51	1.353E-01	2.578E-01	3.573E-01	0.000E+00
MN-54	7.618E-03	1.824E-02	2.344E-02	0.000E+00
RH-106	1.168E-01	1.366E-01	2.022E-01	0.000E+00
RU-106	1.168E-01	1.371E-01	1.978E-01	0.000E+00
CD-109	3.638E+00	5.426E-01	5.213E-01	0.000E+00
TE-125M	2.130E+00	4.902E+00	8.348E+00	0.000E+00
SN-126	3.560E-01	5.309E-02	5.121E-02	0.000E+00
CS-134	1.034E-01	2.742E-02	2.507E-02	0.000E+00
CE-141	3.134E-02	4.439E-02	6.434E-02	0.000E+00
EU-155	1.179E-01	6.815E-02	8.093E-02	0.000E+00
HG-203	7.601E-02	3.201E-02	3.246E-02	0.000E+00
TL-208	5.909E-01	6.391E-02	2.329E-02	0.000E+00
BI-210	1.253E+00	1.785E+00	1.922E+00	0.000E+00
PB-210	1.253E+00	1.785E+00	1.922E+00	0.000E+00
BI-211	3.449E+00	2.962E-01	1.356E-01	0.000E+00
BI-212	1.183E+00	2.326E-01	1.834E-01	0.000E+00
PB-212	1.855E+00	1.518E-01	3.833E-02	0.000E+00
BI-214	1.059E+00	1.215E-01	4.288E-02	0.000E+00
PB-214	1.200E+00	1.206E-01	4.500E-02	0.000E+00
RA-224	5.228E+00	7.364E-01	4.355E-01	0.000E+00
RA-226	1.059E+00	1.215E-01	4.288E-02	0.000E+00
AC-228	1.870E+00	2.502E-01	8.401E-02	0.000E+00
RA-228	1.870E+00	2.502E-01	8.401E-02	0.000E+00
TH-228	1.855E+00	1.518E-01	3.833E-02	0.000E+00
TH-230	1.059E+00	1.215E-01	4.288E-02	0.000E+00
TH-232	1.800E+00	1.472E-01	3.718E-02	0.000E+00
PA-234M	1.099E+00	2.489E+00	2.699E+00	0.000E+00
TH-234	8.571E-01	8.310E-01	8.713E-01	0.000E+00
U-234	1.143E+00	1.429E-01	9.219E-02	0.000E+00
U-235	8.880E-02	1.260E-01	1.611E-01	0.000E+00
NP-237	1.045E+00	2.661E-01	1.519E-01	0.000E+00
U-238	8.571E-01	8.310E-01	8.713E-01	0.000E+00

ANH-511	1.219E-01	3.179E-02	1.834E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error) Ided	MDA (pCi/GRAM	)	
BE-7	-3.202E-02	1.408E-01	2.434E-01	0.000E+00	NOT IDENT.
NA-22	2.540E-03	1.622E-02	2.774E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	7.328E+12	0.000E+00	0.000E+00	SHORT HLIF
SC-46	5.063E-04	1.866E-02	2.846E-02	0.000E+00	FAIL ABUN
V-48	-2.053E-02	5.025E-02	8.573E-02	0.000E+00	NOT IDENT.
CO-56	5.994E-03	1.595E-02	2.851E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	1.567E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	-1.187E-02	1.122E-02	1.943E-02	0.000E+00	NOT IDENT.
CO-58	-7.720E-03	1.595E-02	2.761E-02	0.000E+00	NOT IDENT.
FE-59	3.671E-03	4.317E-02	7.443E-02	0.000E+00	NOT IDENT.
CO-60	-3.329E-03	1.418E-02	2.378E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	3.189E-02	5.883E-02	0.000E+00	NOT IDENT.
SE-75	8.492E-03	1.709E-02	3.137E-02	0.000E+00	FAIL ABUN
KR-85	0.000E+00	3.116E+00	5.289E+00	0.000E+00	NOT IDENT.
SR-85	0.000E+00	1.881E-02	3.193E-02	0.000E+00	NOT IDENT.
Y-88	2.608E-03	1.168E-02	2.120E-02	0.000E+00	NOT IDENT.
Y-91	2.618E-03	1.615E-02	2.797E-02	0.000E+00	NOT IDENT.
NB-94	2.395E-03	1.245E-02	2.231E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	2.730E-02	4.507E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	1.746E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	3.220E-02	5.670E-02	5.810E-02	0.000E+00	FAIL ABUN
MO-99	0.000E+00	3.174E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.017E+35	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.001E-02	1.916E-02	3.258E-02	0.000E+00	FAIL ABUN
AG-108M	-3.422E-03	1.150E-02	1.998E-02	0.000E+00	NOT IDENT.
AG-110M	1.682E-02	1.354E-02	2.401E-02	0.000E+00	FAIL ABUN
SN-113	1.923E-03	1.853E-02	3.280E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	5.224E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-115	2.445E+00	2.808E+00	3.074E+00	0.000E+00	FAIL ABUN
SN-117M	3.271E-02	5.025E-02	8.883E-02	0.000E+00	NOT IDENT.
TE-123M	5.512E-04	1.306E-02	2.279E-02	0.000E+00	NOT IDENT.
SB-124	-1.182E-03	2.955E-02	5.243E-02	0.000E+00	FAIL ABUN
SB-125	1.320E-02	3.478E-02	6.175E-02	0.000E+00	FAIL ABUN
I-126	2.585E-01	2.118E-01	2.644E-01	0.000E+00	FAIL ABUN
SB-126	9.116E-02	1.230E-01	2.243E-01	0.000E+00	FAIL ABUN
SB-127	1.388E+00	8.426E+00	1.435E+01	0.000E+00	FAIL ABUN
I-131	5.231E-03	1.583E-01	2.817E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	6.564E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	7.955E+00	0.000E+00	0.000E+00	SHORT HLIF
BA-133	9.488E-03	1.698E-02	2.718E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.626E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-135	0.000E+00	6.561E-02	1.108E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.840E+32	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.417E-02	8.688E-02	1.483E-01	0.000E+00	FAIL ABUN
BA-137M	-1.471E-02	1.547E-02	2.155E-02	0.000E+00	NOT IDENT.
CS-137	-1.555E-02	1.636E-02	2.278E-02	0.000E+00	NOT IDENT.
CE-139	-1.119E-02	1.536E-02	2.325E-02	0.000E+00	NOT IDENT.
BA-140	9.626E-02	2.187E-01	3.803E-01	0.000E+00	FAIL ABUN
LA-140	-8.619E-02	6.503E-02	1.039E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	3.069E+05	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.509E-02	8.964E-02	1.560E-01	0.000E+00	NOT IDENT.
PM-144	6.790E-04	1.343E-02	2.270E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	1.978E+42	0.000E+00	0.000E+00	SHORT HLIF
PM-146	0.000E+00	2.444E-02	3.038E-02	0.000E+00	FAIL ABUN
ND-147	4.490E-02	5.625E-01	9.745E-01	0.000E+00	FAIL ABUN
PM-147	-6.312E+01	2.252E+04	3.997E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	4.418E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	7.409E-03	3.710E-02	6.640E-02	0.000E+00	FAIL ABUN
GD-153	-5.865E-02	3.494E-02	6.039E-02	0.000E+00	FAIL ABUN
EU-154	6.911E-03	4.495E-02	7.684E-02	0.000E+00	FAIL ABUN
TB-160	-3.219E-02	5.685E-02	9.732E-02	0.000E+00	FAIL ABUN
TM-171	-3.999E-01	1.194E+01	1.964E+01	0.000E+00	NOT IDENT.
HF-181	-7.745E-03	1.954E-02	3.355E-02	0.000E+00	FAIL ABUN
TA-182	-2.540E-04	7.800E-02	1.323E-01	0.000E+00	FAIL ABUN
IR-192	1.513E-03	1.477E-02	2.654E-02	0.000E+00	FAIL ABUN
BI-207	1.009E-02	2.013E-02	3.538E-02	0.000E+00	FAIL ABUN
PB-211	-2.822E-01	3.951E-01	6.076E-01	0.000E+00	NOT IDENT.
RN-219	6.085E-02	1.546E-01	2.752E-01	0.000E+00	FAIL ABUN
RA-223	5.536E-03	3.750E-01	4.296E-01	0.000E+00	FAIL ABUN
AC-227	5.785E-02	1.596E-01	2.590E-01	0.000E+00	FAIL ABUN

TH-227	5.688E-02	1.570E-01	2.547E-01	0.000E+00	FAIL ABUN
TH-229	-1.058E-01	2.108E-01	3.582E-01	0.000E+00	FAIL ABUN
PA-231	-7.528E-01	5.724E-01	9.812E-01	0.000E+00	FAIL ABUN
TH-231	0.000E+00	1.275E-01	1.551E-01	0.000E+00	FAIL ABUN
PA-233	-2.067E-03	2.323E-02	4.159E-02	0.000E+00	FAIL ABUN
PA-234	-6.615E-02	1.114E-01	1.881E-01	0.000E+00	FAIL ABUN
NP-239	-2.967E-02	8.131E-02	1.435E-01	0.000E+00	FAIL ABUN
AM-241	-3.073E-02	5.502E-02	1.006E-01	0.000E+00	NOT IDENT.
AM-242	0.000E+00	1.418E+00	1.652E+00	0.000E+00	FAIL ABUN
CM-247	9.571E-03	1.395E-02	2.504E-02	0.000E+00	FAIL ABUN
CF-249	8.933E-03	1.515E-02	2.720E-02	0.000E+00	FAIL ABUN
CF-251	1.757E-02	5.333E-02	9.299E-02	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:48:17.26

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048002.CNF;1
Sample date : 7-MAR-2006 10:10:00. Acquisition date : 6-APR-2006 23:45:51.
Sample ID : G158048002 Sample quantity : 1.48060E+02 GRAM
Detector name : HP Detector geometry: CAN
Elapsed live time: 0 06:00:00.00 Elapsed real time: 0 06:00:05.64 0.0%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : 513799 Detector SN# : 8943324
Matrix Spike DPM : LCS DPM :

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AL-26	511.00	652	163.62	4.520E+00	7.451E-02	7.451E-02	26.08
	1808.65	23	99.76*	1.796E+00	1.098E-02	1.098E-02	128.18
K-40	1460.81	6814	10.67*	2.022E+00	2.669E+01	2.669E+01	6.48
CR-51	320.08	45	9.83*	6.158E+00	6.276E-02	1.353E-01	190.60
MN-54	834.83	26	99.83*	3.112E+00	7.117E-03	7.618E-03	239.39
RH-106	511.85	652	20.60	4.520E+00	5.918E-01	6.270E-01	26.08
	621.84	50	9.80*	3.921E+00	1.103E-01	1.168E-01	116.92
	1050.47	------	1.73	2.590E+00	------ Line Not Found		------
RU-106	622.20	50	9.80*	3.921E+00	1.103E-01	1.168E-01	117.37
CD-109	88.03	1257	3.79*	8.063E+00	3.475E+00	3.638E+00	14.92
TE-125M	109.28	45	0.28*	9.077E+00	1.476E+00	2.130E+00	230.20
SN-126	64.28	192	9.60	4.977E+00	3.393E-01	3.393E-01	96.48
	86.94	1257	8.90	8.063E+00	1.480E+00	1.480E+00	43.11
	87.57	1257	37.00*	8.063E+00	3.560E-01	3.560E-01	14.92
CS-134	563.23	59	8.38	4.218E+00	1.412E-01	1.453E-01	137.99
	569.32	36	15.43	4.180E+00	4.731E-02	4.867E-02	194.04
	604.70	7	97.60	4.008E+00	1.515E-03	1.558E-03	925.69
	795.84	329	85.40*	3.240E+00	1.006E-01	1.034E-01	26.50
	801.93	------	8.73	3.217E+00	------ Line Not Found		------
	1365.15	------	3.04	2.119E+00	------ Line Not Found		------
CE-141	145.44	100	48.40*	9.086E+00	1.926E-02	3.707E-02	141.08
EU-155	86.54	1257	30.90	8.063E+00	4.262E-01	4.313E-01	14.97
	105.31	265	20.70*	9.001E+00	1.201E-01	1.215E-01	57.61
HG-203	70.83	------	4.75	6.194E+00	------ Line Not Found		------
	72.87	259	8.00	6.532E+00	4.192E-01	6.617E-01	59.96
	82.60	428	3.55	7.809E+00	1.304E+00	2.059E+00	40.34
	279.20	297	77.30*	6.732E+00	4.816E-02	7.601E-02	42.12
TL-208	75.00	1917	3.43	6.774E+00	6.972E+00	7.188E+00	14.99
	277.35	297	6.80	6.732E+00	5.474E-01	5.644E-01	42.98
	510.84	652	21.60	4.520E+00	5.644E-01	5.819E-01	27.37
	583.14	2346	84.20*	4.108E+00	5.731E-01	5.909E-01	10.82
	763.30	------	1.64	3.345E+00	------ Line Not Found		------

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	860.37	337	12.46	3.040E+00	7.524E-01	7.757E-01	27.80
	1093.90	------	0.37	2.507E+00	------ Line Not Found		------
BI-210	46.50	106	4.05*	1.762E+00	1.250E+00	1.253E+00	142.44
PB-210	46.50	106	4.05*	1.762E+00	1.250E+00	1.253E+00	142.44
BI-211	351.07	3070	12.94*	5.812E+00	3.449E+00	3.449E+00	8.59
BI-212	727.18	557	11.80*	3.474E+00	1.147E+00	1.183E+00	19.66
PB-212	74.80	1917	10.70	6.774E+00	2.235E+00	2.304E+00	15.34
	87.30	1257	8.00	8.063E+00	1.646E+00	1.697E+00	17.96
	115.19	------	0.60	9.182E+00	------ Line Not Found		------
	238.63	6976	44.60*	7.345E+00	1.800E+00	1.855E+00	8.18
	300.09	353	3.41	6.423E+00	1.362E+00	1.404E+00	31.42
BI-214	609.31	2307	46.30*	3.976E+00	1.059E+00	1.059E+00	11.48
	768.36	169	5.04	3.328E+00	8.536E-01	8.536E-01	49.32
	934.06	68	3.21	2.848E+00	6.287E-01	6.287E-01	115.03
	1120.29	617	15.10	2.460E+00	1.403E+00	1.403E+00	17.59
	1238.11	199	5.94	2.277E+00	1.245E+00	1.245E+00	44.70
	1377.67	117	4.11	2.104E+00	1.141E+00	1.141E+00	47.18
PB-214	74.81	1917	6.21	6.774E+00	3.851E+00	3.851E+00	14.25
	77.11	3073	10.50	7.058E+00	3.505E+00	3.505E+00	11.83
	87.30	1257	4.41	8.063E+00	2.986E+00	2.987E+00	17.00
	241.98	1729	7.50	7.295E+00	2.671E+00	2.671E+00	15.16
	295.21	1684	19.20	6.487E+00	1.143E+00	1.143E+00	12.50
	351.92	3070	37.20*	5.812E+00	1.200E+00	1.200E+00	10.05
RA-226	295.21	1684	19.20	6.487E+00	1.143E+00	1.143E+00	12.50
	351.92	3070	37.20	5.812E+00	1.200E+00	1.200E+00	8.14
	609.31	2307	46.30*	3.976E+00	1.059E+00	1.059E+00	11.48
AC-228	209.25	492	4.40	7.876E+00	1.201E+00	1.213E+00	70.12
	338.32	1475	11.40	5.960E+00	1.835E+00	1.854E+00	42.26
	463.01	424	4.40	4.842E+00	1.680E+00	1.697E+00	32.27
	794.95	329	4.60	3.240E+00	1.867E+00	1.886E+00	34.27
	911.21	1761	27.70*	2.904E+00	1.851E+00	1.870E+00	13.38
	964.77	405	5.20	2.773E+00	2.372E+00	2.396E+00	32.17
	969.11	1062	16.60	2.763E+00	1.956E+00	1.976E+00	24.88
RA-228	209.25	492	4.40	7.876E+00	1.201E+00	1.213E+00	70.12
	338.32	1475	11.40	5.960E+00	1.835E+00	1.854E+00	42.26
	463.01	424	4.40	4.842E+00	1.680E+00	1.697E+00	32.27
	794.95	329	4.60	3.240E+00	1.867E+00	1.886E+00	34.27
	911.21	1761	27.70*	2.904E+00	1.851E+00	1.870E+00	13.38
	964.77	405	5.20	2.773E+00	2.372E+00	2.396E+00	32.17
	969.11	1062	16.60	2.763E+00	1.956E+00	1.976E+00	24.88
TH-228	84.40	428	1.21	7.809E+00	3.827E+00	3.945E+00	40.14
	238.60	6976	44.60*	7.345E+00	1.800E+00	1.855E+00	8.18
	300.10	353	3.41	6.423E+00	1.362E+00	1.404E+00	66.28
TH-230	295.21	1684	19.20	6.487E+00	1.143E+00	1.143E+00	12.50
	351.92	3070	37.20	5.812E+00	1.200E+00	1.200E+00	8.14
	609.31	2307	46.30*	3.976E+00	1.059E+00	1.059E+00	11.48
TH-232	238.59	6976	44.60*	7.345E+00	1.800E+00	1.800E+00	8.18
	911.20	1761	27.70	2.904E+00	1.851E+00	1.851E+00	13.38
	964.40	405	5.20	2.773E+00	2.372E+00	2.372E+00	32.17

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	969.11	1062	16.60	2.763E+00	1.956E+00	1.956E+00	24.88
PA-234M	766.40	169	0.21	3.328E+00	2.049E+01	2.049E+01	90.57
	1001.03	30	0.85*	2.690E+00	1.099E+00	1.099E+00	226.45
TH-234	63.29	192	3.80*	4.977E+00	8.571E-01	8.571E-01	96.96
	92.38	1186	5.41	8.455E+00	2.191E+00	2.191E+00	23.75
	112.81	------	0.24	9.151E+00	------ Line Not Found		------
U-234	67.67	------	0.37	5.701E+00	------ Line Not Found		------
	241.98	1729	7.49	7.295E+00	2.674E+00	2.674E+00	15.16
	295.21	1684	19.20*	6.487E+00	1.143E+00	1.143E+00	12.50
	351.92	3070	37.20	5.812E+00	1.200E+00	1.200E+00	10.05
U-235	89.95	711	2.70	8.264E+00	2.691E+00	2.691E+00	36.69
	93.35	1186	4.50	8.455E+00	2.634E+00	2.634E+00	31.98
	105.00	265	2.10	9.001E+00	1.184E+00	1.184E+00	64.29
	143.76	100	10.50*	9.086E+00	8.880E-02	8.880E-02	141.89
	163.33	53	4.70	8.777E+00	1.095E-01	1.095E-01	221.18
	185.71	779	54.00	8.327E+00	1.463E-01	1.463E-01	23.17
	205.31	------	5.00	7.952E+00	------ Line Not Found		------
NP-237	86.48	1257	12.60*	8.063E+00	1.045E+00	1.045E+00	25.46
	95.87	------	2.60	8.620E+00	------ Line Not Found		------
U-238	63.29	192	3.80*	4.977E+00	8.571E-01	8.571E-01	96.96
ANH-511	511.00	652	100.00*	4.520E+00	1.219E-01	1.219E-01	26.08

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	1729	3.95*	7.295E+00	5.071E+00	5.228E+00	14.09

Flag: "*" = Keyline

Sample ID : G158048002 Acquisition date : 6-APR-2006 23:45:51

Total number of lines in spectrum 94
Number of unidentified lines 34
Number of lines tentatively identified by NID 60 63.83%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AL-26	7.20E+05Y	1.00	1.098E-02	1.098E-02	1.407E-02	128.18	
K-40	1.28E+09Y	1.00	2.669E+01	2.669E+01	0.173E+01	6.48	
CR-51	27.70D	2.16	6.276E-02	1.353E-01	2.578E-01	190.60	
MN-54	312.70D	1.07	7.117E-03	7.618E-03	18.24E-03	239.39	
RH-106	368.20D	1.06	1.103E-01	1.168E-01	1.366E-01	116.92	
RU-106	368.20D	1.06	1.103E-01	1.168E-01	1.371E-01	117.37	
CD-109	464.00D	1.05	3.475E+00	3.638E+00	0.543E+00	14.92	
TE-125M	58.00D	1.44	1.476E+00	2.130E+00	4.902E+00	230.20	
SN-126	1.00E+05Y	1.00	3.560E-01	3.560E-01	0.531E-01	14.92	
CS-134	2.06Y	1.03	1.006E-01	1.034E-01	0.274E-01	26.50	
CE-141	32.50D	1.92	1.926E-02	3.707E-02	5.230E-02	141.08	
EU-155	4.96Y	1.01	1.201E-01	1.215E-01	0.700E-01	57.61	
HG-203	46.61D	1.58	4.816E-02	7.601E-02	3.201E-02	42.12	
TL-208	1.91Y	1.03	5.731E-01	5.909E-01	0.639E-01	10.82	
BI-210	22.26Y	1.00	1.250E+00	1.253E+00	1.785E+00	142.44	
PB-210	22.26Y	1.00	1.250E+00	1.253E+00	1.785E+00	142.44	
BI-211	7.04E+08Y	1.00	3.449E+00	3.449E+00	0.296E+00	8.59	
BI-212	1.91Y	1.03	1.147E+00	1.183E+00	0.233E+00	19.66	
PB-212	1.91Y	1.03	1.800E+00	1.855E+00	0.152E+00	8.18	
BI-214	1600.00Y	1.00	1.059E+00	1.059E+00	0.122E+00	11.48	
PB-214	1600.00Y	1.00	1.200E+00	1.200E+00	0.121E+00	10.05	
RA-226	1600.00Y	1.00	1.059E+00	1.059E+00	0.122E+00	11.48	
AC-228	5.75Y	1.01	1.851E+00	1.870E+00	0.250E+00	13.38	
RA-228	5.75Y	1.01	1.851E+00	1.870E+00	0.250E+00	13.38	
TH-228	1.91Y	1.03	1.800E+00	1.855E+00	0.152E+00	8.18	
TH-230	7.70E+04Y	1.00	1.059E+00	1.059E+00	0.122E+00	11.48	
TH-232	1.41E+10Y	1.00	1.800E+00	1.800E+00	0.147E+00	8.18	
PA-234M	4.47E+09Y	1.00	1.099E+00	1.099E+00	2.489E+00	226.45	
TH-234	4.47E+09Y	1.00	8.571E-01	8.571E-01	8.310E-01	96.96	
U-234	2.45E+05Y	1.00	1.143E+00	1.143E+00	0.143E+00	12.50	
U-235	7.04E+08Y	1.00	8.880E-02	8.880E-02	12.60E-02	141.89	
NP-237	2.14E+06Y	1.00	1.045E+00	1.045E+00	0.266E+00	25.46	
U-238	4.47E+09Y	1.00	8.571E-01	8.571E-01	8.310E-01	96.96	
ANH-511	1.00E+09Y	1.00	1.219E-01	1.219E-01	0.318E-01	26.08	
			---------	---------			
	Total Activity :		5.894E+01	6.011E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	5.071E+00	5.228E+00	0.736E+00	14.09	
			---------	---------			
	Total Activity :		5.071E+00	5.228E+00			

Grand Total Activity : 6.401E+01 6.533E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	37.73	124	1052	1.41	72.69	71	6	5.76E-03	84.2	5.70E-01	
0	129.02	361	1737	1.33	255.38	251	9	1.67E-02	42.8	9.22E+00	
0	139.65	49	1258	0.86	276.64	273	7	2.25E-03	****	9.13E+00	T
0	198.24	47	1349	2.76	393.88	389	9	2.19E-03	****	8.09E+00	T
0	253.35	77	768	2.04	504.17	500	8	3.57E-03	****	7.10E+00	T
0	270.25	575	1036	1.57	538.00	533	11	2.66E-02	23.2	6.84E+00	T
0	327.88	339	757	1.51	653.33	649	10	1.57E-02	33.4	6.08E+00	T
0	409.72	200	654	0.98	817.11	812	11	9.26E-03	51.7	5.26E+00	T
0	453.99	165	456	3.23	905.70	901	11	7.66E-03	52.5	4.91E+00	T
0	550.23	35	231	1.24	1098.30	1095	6	1.63E-03	****	4.29E+00	
0	664.68	88	323	1.54	1327.37	1322	11	4.09E-03	81.5	3.72E+00	T
0	755.75	51	428	1.41	1509.64	1502	14	2.36E-03	****	3.37E+00	T
0	772.51	92	188	1.94	1543.16	1540	7	4.28E-03	54.0	3.31E+00	T
0	785.29	139	350	1.88	1568.74	1562	13	6.44E-03	58.0	3.27E+00	T
0	815.92	26	155	1.29	1630.05	1625	7	1.19E-03	****	3.17E+00	T
0	892.76	42	167	0.99	1783.85	1781	8	1.93E-03	****	2.95E+00	
0	904.11	43	157	1.72	1806.56	1804	6	1.97E-03	98.3	2.92E+00	
0	958.56	52	220	1.66	1915.55	1909	11	2.42E-03	****	2.79E+00	
0	1008.92	24	127	1.63	2016.33	2014	7	1.11E-03	****	2.67E+00	
0	1071.01	21	119	1.30	2140.63	2137	7	9.76E-04	****	2.55E+00	
3	1111.12	50	193	2.73	2220.90	2215	34	2.34E-03	****	2.48E+00	
0	1138.77	25	101	1.39	2276.25	2274	5	1.18E-03	****	2.43E+00	
0	1154.86	66	364	4.97	2308.45	2299	16	3.05E-03	****	2.40E+00	
0	1244.54	19	332	1.00	2487.97	2483	13	8.79E-04	****	2.27E+00	
4	1281.91	86	124	2.57	2562.76	2558	16	3.98E-03	50.7	2.22E+00	
4	1285.67	42	79	1.51	2570.29	2558	16	1.95E-03	79.5	2.21E+00	
0	1300.12	40	161	4.05	2599.22	2592	12	1.84E-03	****	2.19E+00	T
1	1385.22	43	62	2.42	2769.56	2749	25	2.00E-03	93.7	2.10E+00	T
0	1407.57	83	121	0.77	2814.30	2808	15	3.84E-03	61.7	2.07E+00	
0	1497.07	55	57	2.40	2993.45	2989	10	2.57E-03	58.4	1.99E+00	
0	1509.92	116	114	4.29	3019.17	3010	19	5.37E-03	47.9	1.98E+00	
0	1545.69	18	75	0.72	3090.78	3085	13	8.41E-04	****	1.95E+00	
0	1572.33	18	25	1.25	3144.11	3141	9	8.18E-04	****	1.93E+00	
0	1582.92	6	43	1.23	3165.32	3162	6	2.63E-04	****	1.92E+00	
0	1588.47	141	127	2.86	3176.41	3170	14	6.53E-03	37.7	1.92E+00	
0	1620.91	89	67	3.57	3241.36	3235	14	4.13E-03	44.2	1.90E+00	
0	1631.22	62	90	1.49	3262.00	3254	14	2.86E-03	69.3	1.89E+00	
0	1661.56	14	76	1.07	3322.74	3314	16	6.58E-04	****	1.87E+00	
0	1730.06	146	43	3.28	3459.86	3453	16	6.74E-03	26.3	1.83E+00	
7	1739.12	41	32	2.36	3478.00	3470	19	1.88E-03	70.1	1.83E+00	
7	1742.42	15	17	2.93	3484.61	3470	19	7.07E-04	****	1.83E+00	
0	1764.57	444	106	2.73	3528.95	3519	23	2.05E-02	15.8	1.82E+00	
1	1813.55	40	31	2.39	3627.00	3585	51	1.84E-03	69.7	1.79E+00	
0	1847.39	80	90	3.60	3694.74	3688	21	3.69E-03	63.3	1.78E+00	
0	1864.14	21	22	1.65	3728.29	3724	9	9.74E-04	91.9	1.77E+00	
0	1913.12	44	44	6.85	3826.35	3818	20	2.02E-03	81.1	1.76E+00	
0	1920.56	17	14	1.94	3841.24	3837	9	7.64E-04	94.2	1.76E+00	
0	1950.50	13	52	1.39	3901.18	3894	16	5.93E-04	****	1.75E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:48:22.80

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048002.CNF;1     *
* Acquisition date : 6-APR-2006 23:45:51.  Detector SN#    : 8943324          *
* Detector ID      : HP                    Sensitivity     : 3.00000          *
* Geometry         : CAN                   Energy tolerance: 2.00000          *
* Elapsed live time: 0 06:00:00.00         Abundance limit : 75.00000         *
* Elapsed real time: 0 06:00:05.64         Half life ratio : 8.00000          *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 7-MAR-2006 10:10:00.  Nuclide Library : EPI              *
* Sample ID        : G158048002            Analyst initials: MJH1             *
* Batch Number     : 513799                Sample Quantity : 1.48060E+02 GRAM *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 1-FEB-2006 10:50:52.50MS Isotope      :             *
* MSD DPM          :                       MSD Isotope     :             *
* LCS DPM          :                       LCS Isotope     :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AL-26	1.098E-02	1.407E-02	1.513E-02	8.488E-04	0.726
K-40	2.669E+01	1.728E+00	1.949E-01	1.147E-02	136.937
CR-51	1.353E-01	2.578E-01	3.423E-01	2.330E-02	0.395
MN-54	7.618E-03	1.824E-02	2.298E-02	1.987E-03	0.332
RH-106	1.168E-01	1.366E-01	1.968E-01	1.582E-02	0.594
RU-106	1.168E-01	1.371E-01	1.925E-01	2.501E-02	0.607
CD-109	3.638E+00	5.426E-01	4.851E-01	3.267E-02	7.500
TE-125M	2.130E+00	4.902E+00	7.806E+00	6.613E-01	0.273
SN-126	3.560E-01	5.309E-02	4.766E-02	3.197E-03	7.469
CS-134	1.034E-01	2.742E-02	2.455E-02	2.133E-03	4.214
CE-141	3.134E-02	4.439E-02	6.054E-02	3.773E-03	0.518
EU-155	1.179E-01	6.815E-02	7.561E-02	4.810E-03	1.560
HG-203	7.601E-02	3.201E-02	3.100E-02	2.038E-03	2.452
TL-208	5.909E-01	6.391E-02	2.263E-02	1.892E-03	26.112
BI-210	1.253E+00	1.785E+00	1.764E+00	1.333E-01	0.710
PB-210	1.253E+00	1.785E+00	1.764E+00	1.333E-01	0.710
BI-211	3.449E+00	2.962E-01	1.302E-01	8.698E-03	26.495
BI-212	1.183E+00	2.326E-01	1.792E-01	1.784E-02	6.601

Sample ID : G158048002 Acquisition date : 6-APR-2006 23:45:51

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-212	1.855E+00	1.518E-01	3.648E-02	2.790E-03	50.863
BI-214	1.059E+00	1.215E-01	4.171E-02	3.949E-03	25.386
PB-214	1.200E+00	1.206E-01	4.321E-02	3.662E-03	27.769
RA-224	5.228E+00	7.364E-01	4.146E-01	2.570E-02	12.612
RA-226	1.059E+00	1.215E-01	4.171E-02	3.949E-03	25.386
AC-228	1.870E+00	2.502E-01	8.252E-02	9.227E-03	22.655
RA-228	1.870E+00	2.502E-01	8.252E-02	9.227E-03	22.655
TH-228	1.855E+00	1.518E-01	3.648E-02	2.790E-03	50.867
TH-230	1.059E+00	1.215E-01	4.171E-02	3.948E-03	25.386
TH-232	1.800E+00	1.472E-01	3.538E-02	2.706E-03	50.869
PA-234M	1.099E+00	2.489E+00	2.657E+00	2.485E-01	0.414
TH-234	8.571E-01	8.310E-01	8.051E-01	1.363E-01	1.065
U-234	1.143E+00	1.429E-01	8.817E-02	7.779E-03	12.959
U-235	8.880E-02	1.260E-01	1.515E-01	2.482E-02	0.586
NP-237	1.045E+00	2.661E-01	1.414E-01	3.064E-02	7.395
U-238	8.571E-01	8.310E-01	8.051E-01	1.363E-01	1.065
ANH-511	1.219E-01	3.179E-02	1.777E-02	1.242E-03	6.861

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-3.202E-02		1.408E-01	2.354E-01	1.769E-02	-0.136
NA-22	2.540E-03		1.622E-02	2.747E-02	1.569E-03	0.092
SC-46	5.063E-04		1.866E-02	2.794E-02	2.409E-03	0.018
V-48	-2.053E-02		5.025E-02	8.437E-02	6.798E-03	-0.243
CO-56	5.994E-03		1.595E-02	2.795E-02	2.417E-03	0.214
CO-57	-1.187E-02		1.122E-02	1.821E-02	1.129E-03	-0.652
CO-58	-7.720E-03		1.595E-02	2.704E-02	2.344E-03	-0.285
FE-59	3.671E-03		4.317E-02	7.344E-02	5.776E-03	0.050
CO-60	-3.329E-03		1.418E-02	2.357E-02	1.263E-03	-0.141
ZN-65	5.923E-02		3.189E-02	5.807E-02	3.984E-03	1.020
SE-75	8.492E-03		1.709E-02	2.993E-02	1.882E-03	0.284
KR-85	1.122E+01		3.116E+00	5.124E+00	3.596E-01	2.189
SR-85	6.772E-02		1.881E-02	3.093E-02	2.171E-03	2.189
Y-88	2.608E-03		1.168E-02	2.119E-02	1.189E-03	0.123
Y-91	2.618E-03		1.615E-02	2.715E-02	2.017E-03	0.096
NB-94	2.395E-03		1.245E-02	2.178E-02	1.854E-03	0.110
NB-95	4.558E-02		2.730E-02	4.409E-02	3.800E-03	1.034
ZR-95	3.220E-02	+	5.670E-02	5.681E-02	5.385E-03	0.567
RU-103	-1.001E-02		1.916E-02	3.154E-02	4.152E-03	-0.317
AG-108M	-3.422E-03		1.150E-02	1.928E-02	1.295E-03	-0.177
AG-110M	1.682E-02		1.354E-02	2.340E-02	2.022E-03	0.719
SN-113	1.923E-03		1.853E-02	3.158E-02	1.968E-03	0.061
SN-115	2.445E+00	+	2.808E+00	3.021E+00	2.540E-01	0.809
SN-117M	3.271E-02		5.025E-02	8.375E-02	5.007E-03	0.391
TE-123M	5.512E-04		1.306E-02	2.149E-02	1.301E-03	0.026
SB-124	-1.182E-03		2.955E-02	5.230E-02	3.212E-03	-0.023

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	1.320E-02		3.478E-02	5.957E-02	3.828E-03	0.222
I-126	2.585E-01	+	2.118E-01	2.577E-01	2.172E-02	1.003
SB-126	9.116E-02		1.230E-01	2.191E-01	1.873E-02	0.416
SB-127	1.388E+00		8.426E+00	1.400E+01	2.354E+00	0.099
I-131	5.231E-03		1.583E-01	2.707E-01	1.863E-02	0.019
BA-133	9.488E-03		1.698E-02	2.610E-02	3.051E-03	0.363
CS-135	1.486E-01		6.561E-02	1.057E-01	8.446E-03	1.406
CS-136	-2.417E-02		8.688E-02	1.462E-01	1.164E-02	-0.165
BA-137M	-1.471E-02		1.547E-02	2.100E-02	1.767E-03	-0.700
CS-137	-1.555E-02		1.636E-02	2.220E-02	1.872E-03	-0.701
CE-139	-1.119E-02		1.536E-02	2.194E-02	1.311E-03	-0.510
BA-140	9.626E-02		2.187E-01	3.688E-01	1.210E-01	0.261
LA-140	-8.619E-02		6.503E-02	1.035E-01	5.808E-03	-0.833
CE-144	-4.509E-02		8.964E-02	1.465E-01	2.097E-02	-0.308
PM-144	6.790E-04		1.343E-02	2.216E-02	1.886E-03	0.031
PM-146	4.591E-02	+	2.444E-02	2.935E-02	2.661E-03	1.564
ND-147	4.490E-02		5.625E-01	9.449E-01	1.339E-01	0.048
PM-147	-6.312E+01		2.252E+04	3.746E+04	2.317E+03	-0.002
EU-152	7.409E-03		3.710E-02	6.373E-02	4.339E-03	0.116
GD-153	-5.865E-02		3.494E-02	5.633E-02	3.584E-03	-1.041
EU-154	6.911E-03		4.495E-02	7.611E-02	7.061E-03	0.091
TB-160	-3.219E-02		5.685E-02	9.551E-02	8.241E-03	-0.337
TM-171	-3.999E-01		1.194E+01	1.817E+01	1.101E+00	-0.022
HF-181	-7.745E-03		1.954E-02	3.245E-02	2.178E-03	-0.239
TA-182	-2.540E-04		7.800E-02	1.309E-01	7.812E-03	-0.002
IR-192	1.513E-03		1.477E-02	2.542E-02	1.581E-03	0.060
BI-207	1.009E-02		2.013E-02	3.488E-02	2.573E-03	0.289
PB-211	-2.822E-01		3.951E-01	5.854E-01	3.650E-01	-0.482
RN-219	6.085E-02		1.546E-01	2.651E-01	3.623E-02	0.230
RA-223	5.536E-03		3.750E-01	4.117E-01	6.855E-02	0.013
AC-227	5.785E-02		1.596E-01	2.469E-01	3.533E-02	0.234
TH-227	5.688E-02		1.570E-01	2.427E-01	4.139E-02	0.234
TH-229	-1.058E-01		2.108E-01	3.393E-01	2.057E-02	-0.312
PA-231	-7.528E-01		5.724E-01	9.375E-01	1.310E-01	-0.803
TH-231	5.225E-01	+	1.275E-01	1.480E-01	1.131E-02	3.530
PA-233	-2.067E-03		2.323E-02	3.983E-02	2.604E-03	-0.052
PA-234	-6.615E-02		1.114E-01	1.849E-01	3.445E-02	-0.358
NP-239	-2.967E-02		8.131E-02	1.344E-01	8.286E-03	-0.221
AM-241	-3.073E-02		5.502E-02	9.279E-02	6.552E-03	-0.331
AM-242	2.463E+00	+	1.418E+00	1.543E+00	9.624E-02	1.596
CM-247	9.571E-03		1.395E-02	2.412E-02	1.436E-03	0.397
CF-249	8.933E-03		1.515E-02	2.618E-02	1.537E-03	0.341
CF-251	1.757E-02		5.333E-02	8.789E-02	5.275E-03	0.200

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513799                    SAMPLE ID  : G158048002        *
*   ANALYST      : MJH1                      DETECTOR   : HP                *
*   SAMPLE DATE  :  7-MAR-2006 10:10:00.00  COUNT TIME :    0 06:00:00.00   *
*   ANALYSIS DATE:  6-APR-2006 23:45:51.63  SAMPLE ALQT:  148.060 GRAM      *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY	(pCi/GRAM)	: 1.040E+01
GROSS GAMMA ERROR	(pCi/GRAM)	: 1.901E+00
GROSS GAMMA MDA	(pCi/GRAM)	: 4.355E+00
GROSS GAMMA DLC	(pCi/GRAM)	: 2.142E+00

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:48:59.51

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048003.CNF;1
Sample date      : 7-MAR-2006 11:45:00. Acquisition date : 6-APR-2006 23:46:13.
Sample ID        : G158048003           Sample quantity  : 1.49630E+02 GRAM
Detector name    : GAMMA13              Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:06.43  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 37-TN11260A
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	39.98	220	1517	2.69	82.33	79	8	1.02E-02	31.5	
2	0	46.37*	335	1792	1.00	95.11	92	8	1.55E-02	24.9	
3	0	52.93*	172	1989	1.09	108.24	105	8	7.95E-03	48.2	
4	0	63.11*	430	2996	0.95	128.59	124	9	1.99E-02	25.9	
5	0	67.59*	155	1975	1.70	137.54	135	6	7.15E-03	48.8	
6	2	74.69*	2853	2327	1.11	151.76	144	16	1.32E-01	3.5	6.88E+00
7	2	76.99*	4050	1856	0.94	156.35	144	16	1.88E-01	2.4	
8	4	87.07*	1358	1751	1.13	176.52	167	27	6.29E-02	6.0	1.84E+01
9	4	89.77	870	1466	0.96	181.92	167	27	4.03E-02	7.7	
10	4	92.55*	1025	1662	1.16	187.48	167	27	4.75E-02	9.2	
11	0	99.31*	229	2538	2.03	200.98	195	12	1.06E-02	45.6	
12	0	105.17	336	1487	1.83	212.72	209	8	1.56E-02	20.6	
13	0	112.53*	9	979	1.30	227.43	226	5	4.34E-04	598.3	
14	0	128.83	289	1363	0.87	260.02	257	7	1.34E-02	22.0	
15	0	143.86*	76	1231	1.06	290.09	287	7	3.53E-03	85.4	
16	0	153.74	177	1404	1.05	309.85	307	8	8.20E-03	37.3	
17	0	162.95*	6	1012	0.86	328.27	327	6	2.68E-04	974.7	
18	0	185.61*	753	1375	1.32	373.60	370	9	3.48E-02	11.0	
19	0	209.07	460	992	1.19	420.51	417	8	2.13E-02	12.8	
20	4	238.33*	5078	790	1.12	479.02	471	20	2.35E-01	1.8	3.33E+00
21	4	241.34	1430	1073	1.89	485.04	471	20	6.62E-02	6.8	
22	0	269.92	475	1075	1.31	542.19	536	12	2.20E-02	14.5	
23	0	277.24	166	752	0.91	556.84	554	8	7.67E-03	29.8	
24	0	294.85*	1605	857	1.21	592.05	587	10	7.43E-02	4.4	
25	0	299.82*	247	795	1.11	601.98	598	10	1.14E-02	23.3	
26	0	327.59*	356	952	1.37	657.51	651	13	1.65E-02	19.1	
27	0	337.81	1017	705	1.21	677.95	673	10	4.71E-02	5.8	
28	0	351.46*	2628	1022	1.29	705.24	698	14	1.22E-01	3.3	
29	0	376.61	61	560	0.63	755.53	751	9	2.82E-03	71.2	
30	0	408.72	183	593	1.42	819.75	815	10	8.47E-03	26.0	
31	0	462.77	430	545	1.33	927.82	921	14	1.99E-02	12.5	
32	0	486.66	111	398	2.33	975.59	971	10	5.12E-03	35.1	
33	0	510.08*	560	806	1.93	1022.42	1013	20	2.59E-02	14.9	
34	0	532.51*	116	629	2.58	1067.26	1057	18	5.35E-03	54.1	
35	0	562.95*	67	500	2.92	1128.11	1123	12	3.09E-03	70.4	
36	0	582.49*	1580	617	1.49	1167.18	1159	16	7.32E-02	4.5	
37	0	608.61*	1981	501	1.36	1219.41	1214	12	9.17E-02	3.3	
38	0	653.27	33	270	2.12	1308.70	1307	9	1.53E-03	91.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	664.52	84	216	1.98	1331.18	1328	7	3.87E-03	31.0	
40	0	668.17*	11	235	1.40	1338.49	1336	7	4.87E-04	270.4	
41	0	705.21	18	295	1.18	1412.53	1410	8	8.47E-04	163.7	
42	0	726.58	323	366	1.52	1455.26	1450	12	1.50E-02	13.1	
43	0	742.72	20	191	0.97	1487.50	1485	7	9.41E-04	115.2	
44	0	785.00*	94	190	1.56	1572.03	1568	8	4.33E-03	30.7	
45	0	794.32	180	257	1.31	1590.67	1586	10	8.35E-03	18.4	
46	0	829.11	33	230	0.56	1660.21	1657	9	1.52E-03	84.8	
47	0	834.61	56	201	1.17	1671.20	1668	7	2.59E-03	44.1	
48	0	859.58*	202	160	1.95	1721.11	1717	8	9.34E-03	14.8	
49	0	910.15*	1078	280	1.66	1822.20	1815	14	4.99E-02	4.6	
50	0	932.42	150	315	1.83	1866.72	1861	15	6.93E-03	27.0	
51	4	963.68	135	341	1.98	1929.18	1919	25	6.27E-03	27.4	2.16E+00
52	4	967.99*	646	261	1.79	1937.81	1919	25	2.99E-02	6.5	
53	0	1000.43*	43	329	4.46	2002.64	1996	15	1.98E-03	100.3	
54	0	1022.13	34	104	1.59	2046.02	2043	6	1.57E-03	50.8	
55	0	1077.03	64	159	1.94	2155.75	2152	9	2.95E-03	38.0	
56	0	1119.20	445	235	1.78	2240.01	2235	11	2.06E-02	8.2	
57	0	1154.24	108	251	1.83	2310.04	2306	12	4.99E-03	30.8	
58	0	1181.58	51	211	0.58	2364.67	2358	11	2.38E-03	56.7	
59	0	1219.61	51	242	1.48	2440.67	2435	12	2.38E-03	62.1	
60	0	1236.61*	128	257	2.17	2474.66	2470	11	5.92E-03	26.4	
61	0	1321.84	22	57	0.94	2644.96	2643	6	9.98E-04	59.9	
62	0	1359.91	67	444	18.76	2721.04	2689	47	3.12E-03	112.6	
63	0	1376.60	148	167	2.31	2754.38	2747	18	6.85E-03	22.3	
64	0	1459.25*	3910	168	2.13	2919.52	2909	21	1.81E-01	1.8	
65	0	1480.70	20	42	1.40	2962.39	2958	8	9.21E-04	60.7	
66	0	1507.36	38	81	1.74	3015.64	3011	12	1.74E-03	50.5	
67	0	1519.46	30	42	2.82	3039.83	3037	8	1.37E-03	42.2	
68	0	1535.08	170	126	18.53	3071.04	3049	42	7.87E-03	23.7	
69	0	1588.96	137	140	5.88	3178.68	3166	23	6.32E-03	24.7	
70	0	1619.00	70	66	2.95	3238.69	3233	15	3.25E-03	27.6	
71	0	1629.64	90	35	4.30	3259.95	3253	13	4.18E-03	17.2	
72	0	1646.26*	10	32	1.41	3293.16	3288	10	4.56E-04	135.6	
73	0	1710.93	26	37	0.75	3422.34	3414	15	1.19E-03	55.4	
74	0	1727.82	80	57	1.87	3456.07	3450	16	3.70E-03	23.8	
75	0	1738.93*	19	31	4.27	3478.26	3474	11	8.80E-04	70.4	
76	0	1749.37	9	13	1.41	3499.13	3498	6	4.21E-04	69.6	
77	0	1762.86*	342	65	2.29	3526.07	3518	19	1.58E-02	8.2	
78	0	1845.63	54	44	1.95	3691.42	3683	16	2.50E-03	30.6	
79	0	1921.34	12	18	1.66	3842.62	3840	8	5.78E-04	65.1	
80	0	1994.49	24	19	0.48	3988.72	3982	15	1.11E-03	44.3	
81	0	2005.91	18	21	5.41	4011.53	4006	14	8.31E-04	59.1	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          General Eng. Labs, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048003        *
* Acquisition date :  6-APR-2006 23:46:13 Detector SN#    : 37-TN11260      *
* Detector ID      : GAMMA13              Sensitivity     : 3.000           *
* Geometry         : CAN                  Energy tolerance: 2.000           *
* Elapsed live time:    0 06:00:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 06:00:06.43     Half life ratio :  8.000          *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      :  7-MAR-2006 11:45:00 Nuclide Library : FERMC           *
* Sample ID        : G158048003           Analyst initials: MJH1            *
* Batch Number     : 513799               Sample Quantity : 1.4963E+02 GRAM *
* Recovery         :    1.00000           Carrier Weight :    0.00000       *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight  :   0.00000                                              *
* CALIB. DATE/TIME : 20-JUN-2005 11:56:42 MS Isotope      : TOPLOADER       *
* MSD DPM          :    5.440             MSD Isotope     : TOPLOADER       *
* LCS DPM          :    0.000             LCS Isotope     : TOPLOADER       *
* LCSD DPM         :    0.000             LCSD Isotope    : TOPLOADER       *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	3.053E+01	1.114E+00	3.569E-01	0.000E+00
MN-54	3.174E-02	2.799E-02	5.058E-02	0.000E+00
CD-109	4.491E+00	5.433E-01	6.614E-01	0.000E+00
SN-126	4.395E-01	5.316E-02	6.465E-02	0.000E+00
CS-135	6.257E-01	1.819E-01	1.747E-01	0.000E+00
CE-141	3.510E-02	6.020E-02	9.405E-02	0.000E+00
ND-147	2.204E+00	2.386E+00	1.725E+00	0.000E+00
GD-153	9.837E-02	8.973E-02	8.290E-02	0.000E+00
EU-155	1.970E-01	8.202E-02	1.092E-01	0.000E+00
TM-171	1.200E+01	1.172E+01	1.843E+01	0.000E+00
HG-203	7.263E-02	4.325E-02	5.894E-02	0.000E+00
TL-208	7.546E-01	6.767E-02	4.535E-02	0.000E+00
BI-210	1.129E+00	5.621E-01	6.085E-01	0.000E+00
PB-210	1.129E+00	5.621E-01	6.085E-01	0.000E+00
BI-211	5.232E+00	3.463E-01	2.350E-01	0.000E+00
BI-212	1.328E+00	3.482E-01	3.444E-01	0.000E+00
PB-212	2.262E+00	7.967E-02	6.522E-02	0.000E+00
BI-214	1.731E+00	1.138E-01	8.354E-02	0.000E+00
PB-214	1.820E+00	1.204E-01	8.191E-02	0.000E+00
RA-223	-1.379E-01	4.948E-01	7.627E-01	0.000E+00
RA-224	7.256E+00	9.936E-01	7.422E-01	0.000E+00
RA-226	1.731E+00	1.138E-01	8.354E-02	0.000E+00
AC-228	2.237E+00	2.077E-01	1.545E-01	0.000E+00
RA-228	2.237E+00	2.077E-01	1.545E-01	0.000E+00
TH-228	2.262E+00	7.967E-02	6.522E-02	0.000E+00
TH-229	-1.820E-02	3.427E-01	5.852E-01	0.000E+00
TH-230	1.731E+00	1.138E-01	8.354E-02	0.000E+00
TH-232	2.194E+00	7.728E-02	6.326E-02	0.000E+00
PA-234M	3.121E+00	6.261E+00	5.563E+00	0.000E+00
TH-234	1.362E+00	7.040E-01	7.214E-01	0.000E+00
U-234	1.881E+00	1.664E-01	1.618E-01	0.000E+00
U-235	1.031E-01	1.761E-01	2.495E-01	0.000E+00
NP-237	1.290E+00	1.561E-01	1.894E-01	0.000E+00
U-238	1.362E+00	7.040E-01	7.214E-01	0.000E+00

AM-242	3.993E+00	1.662E+00	2.181E+00	0.000E+00
ANH-511	1.953E-01	5.803E-02	3.271E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error) Ided	MDA (pCi/GRAM	)	
BE-7	-4.083E-01	2.726E-01	4.434E-01	0.000E+00	NOT IDENT.
NA-22	-2.684E-02	3.060E-02	5.126E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.597E+13	0.000E+00	0.000E+00	SHORT HLIF
AL-26	1.438E-02	2.038E-02	3.788E-02	0.000E+00	FAIL ABUN
SC-46	-2.357E-02	3.266E-02	5.461E-02	0.000E+00	FAIL ABUN
V-48	4.008E-02	1.009E-01	1.758E-01	0.000E+00	NOT IDENT.
CR-51	1.776E-01	3.627E-01	6.523E-01	0.000E+00	NOT IDENT.
CO-56	8.258E-03	3.285E-02	5.754E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	-1.205E-02	1.657E-02	2.885E-02	0.000E+00	NOT IDENT.
CO-58	2.307E-02	3.318E-02	5.936E-02	0.000E+00	NOT IDENT.
FE-59	-3.649E-02	8.464E-02	1.402E-01	0.000E+00	NOT IDENT.
CO-60	6.497E-03	2.803E-02	4.957E-02	0.000E+00	NOT IDENT.
ZN-65	1.056E-01	8.160E-02	1.275E-01	0.000E+00	NOT IDENT.
SE-75	1.851E-02	3.122E-02	5.696E-02	0.000E+00	FAIL ABUN
KR-85	5.101E+00	5.401E+00	8.439E+00	0.000E+00	NOT IDENT.
SR-85	3.077E-02	3.258E-02	5.091E-02	0.000E+00	NOT IDENT.
Y-88	1.022E-02	2.484E-02	4.503E-02	0.000E+00	NOT IDENT.
Y-91	-2.067E-02	3.264E-02	5.406E-02	0.000E+00	NOT IDENT.
NB-94	-1.077E-02	2.784E-02	4.167E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	5.243E-02	9.722E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.785E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	4.233E-02	6.200E-02	1.111E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	4.301E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.141E+35	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.032E-02	3.821E-02	6.490E-02	0.000E+00	FAIL ABUN
RH-106	-1.396E-01	2.307E-01	4.019E-01	0.000E+00	FAIL ABUN
RU-106	-2.258E-01	2.330E-01	4.005E-01	0.000E+00	NOT IDENT.
AG-108M	-6.950E-03	2.308E-02	3.961E-02	0.000E+00	NOT IDENT.
AG-110M	1.240E-02	2.825E-02	4.457E-02	0.000E+00	FAIL ABUN
SN-113	-1.011E-02	3.358E-02	5.814E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.097E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	0.000E+00	5.676E+00	6.470E+00	0.000E+00	FAIL ABUN
SN-117M	8.440E-03	8.108E-02	1.410E-01	0.000E+00	NOT IDENT.
TE-123M	-1.058E-02	2.107E-02	3.613E-02	0.000E+00	NOT IDENT.
SB-124	-1.068E-02	5.731E-02	9.887E-02	0.000E+00	NOT IDENT.
SB-125	-1.230E-02	6.600E-02	1.138E-01	0.000E+00	FAIL ABUN
TE-125M	2.458E+00	6.576E+00	1.179E+01	0.000E+00	NOT IDENT.
I-126	4.685E-01	2.907E-01	5.589E-01	0.000E+00	FAIL ABUN
SB-126	-3.130E-02	2.485E-01	4.343E-01	0.000E+00	FAIL ABUN
SB-127	-8.248E+00	1.618E+01	2.801E+01	0.000E+00	FAIL ABUN
I-131	2.511E-01	2.973E-01	5.357E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.194E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	1.964E-02	3.230E-02	5.119E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	9.692E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.051E-02	6.068E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	3.050E+32	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.043E-01	1.833E-01	3.030E-01	0.000E+00	FAIL ABUN
BA-137M	-2.172E-04	2.810E-02	4.325E-02	0.000E+00	NOT IDENT.
CS-137	-1.722E-04	2.971E-02	4.573E-02	0.000E+00	NOT IDENT.
CE-139	-1.645E-02	2.422E-02	3.651E-02	0.000E+00	NOT IDENT.
BA-140	-4.944E-01	4.955E-01	6.962E-01	0.000E+00	FAIL ABUN
LA-140	4.425E-02	1.226E-01	1.940E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	3.854E+05	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.074E-02	1.355E-01	2.354E-01	0.000E+00	NOT IDENT.
PM-144	8.523E-03	2.515E-02	4.481E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	3.242E-02	3.077E-02	5.503E-02	0.000E+00	NOT IDENT.
PM-147	-1.572E+04	3.285E+04	5.753E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	7.711E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-4.971E-02	6.653E-02	1.149E-01	0.000E+00	FAIL ABUN
EU-154	-7.454E-02	8.478E-02	1.420E-01	0.000E+00	NOT IDENT.
TB-160	-2.698E-02	1.225E-01	2.095E-01	0.000E+00	FAIL ABUN
HF-181	6.139E-02	4.156E-02	6.728E-02	0.000E+00	NOT IDENT.
TA-182	1.653E-01	2.055E-01	2.537E-01	0.000E+00	FAIL ABUN
IR-192	-4.293E-03	2.644E-02	4.677E-02	0.000E+00	FAIL ABUN
BI-207	2.155E-03	3.947E-02	6.708E-02	0.000E+00	NOT IDENT.
PB-211	2.672E-01	7.279E-01	1.129E+00	0.000E+00	NOT IDENT.

RN-219	-3.321E-01	2.932E-01	4.933E-01	0.000E+00 FAIL ABUN
AC-227	-1.982E-03	2.511E-01	4.526E-01	0.000E+00 FAIL ABUN
TH-227	-1.948E-03	2.469E-01	4.450E-01	0.000E+00 FAIL ABUN
PA-231	1.234E-03	1.011E+00	1.809E+00	0.000E+00 FAIL ABUN
TH-231	0.000E+00	2.140E-01	2.551E-01	0.000E+00 FAIL ABUN
PA-233	-1.247E-02	4.213E-02	7.433E-02	0.000E+00 FAIL ABUN
PA-234	-4.659E-02	2.250E-01	3.825E-01	0.000E+00 FAIL ABUN
NP-239	-9.171E-02	1.145E-01	1.995E-01	0.000E+00 FAIL ABUN
AM-241	2.453E-02	4.306E-02	7.222E-02	0.000E+00 NOT IDENT.
CM-247	-1.418E-02	2.554E-02	4.375E-02	0.000E+00 FAIL ABUN
CF-249	1.038E-02	2.724E-02	4.821E-02	0.000E+00 NOT IDENT.
CF-251	7.649E-02	8.551E-02	1.502E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:49:02.00

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048003.CNF;1
Sample date : 7-MAR-2006 11:45:00. Acquisition date : 6-APR-2006 23:46:13.
Sample ID : G158048003 Sample quantity : 1.49630E+02 GRAM
Detector name : GAMMA13 Detector geometry: CAN
Elapsed live time: 0 06:00:00.00 Elapsed real time: 0 06:00:06.43 0.0%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : 513799 Detector SN# : 37-TN11260A
Matrix Spike DPM : LCS DPM :

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	3910	10.67*	1.004E+00	3.053E+01	3.053E+01	3.65
MN-54	834.83	56	99.83*	1.581E+00	2.966E-02	3.174E-02	88.18
CD-109	88.03	1358	3.79*	6.982E+00	4.290E+00	4.491E+00	12.10
SN-126	64.28	430	9.60	6.951E+00	5.390E-01	5.390E-01	51.70
	86.94	1358	8.90	6.982E+00	1.827E+00	1.827E+00	12.10
	87.57	1358	37.00*	6.982E+00	4.395E-01	4.395E-01	12.10
CS-135	268.24	475	16.00*	3.969E+00	6.257E-01	6.257E-01	29.07
CE-141	145.44	76	48.40*	5.896E+00	2.237E-02	4.299E-02	170.77
ND-147	91.11	870	28.00	6.948E+00	3.741E-01	2.586E+00	15.50
	531.02	116	13.10*	2.312E+00	3.189E-01	2.204E+00	108.25
GD-153	69.67	------	2.57	7.044E+00	------ Line Not Found		------
	83.37	------	0.22	7.021E+00	------ Line Not Found		------
	97.43	229	31.30*	6.798E+00	9.010E-02	9.837E-02	91.21
	103.18	336	22.20	6.691E+00	1.891E-01	2.065E-01	41.21
EU-155	86.54	1358	30.90	6.982E+00	5.262E-01	5.324E-01	12.10
	105.31	336	20.70*	6.691E+00	2.028E-01	2.052E-01	41.21
TM-171	51.87	172	0.81	6.586E+00	2.696E+00	2.779E+00	96.48
	59.40	------	0.21	6.855E+00	------ Line Not Found		------
	66.72	155	0.16*	7.023E+00	1.165E+01	1.200E+01	97.62
HG-203	70.83	------	4.75	7.051E+00	------ Line Not Found		------
	72.87	2853	8.00	7.063E+00	4.222E+00	6.658E+00	6.91
	82.60	------	3.55	7.028E+00	------ Line Not Found		------
	279.20	166	77.30*	3.892E+00	4.606E-02	7.263E-02	59.55
TL-208	75.00	2853	3.43	7.063E+00	9.847E+00	1.015E+01	6.91
	277.35	166	6.80	3.892E+00	5.236E-01	5.397E-01	59.55
	510.84	560	21.60	2.397E+00	9.041E-01	9.320E-01	29.72
	583.14	1580	84.20*	2.144E+00	7.319E-01	7.546E-01	8.97
	763.30	------	1.64	1.705E+00	------ Line Not Found		------
	860.37	202	12.46	1.542E+00	8.782E-01	9.053E-01	29.58
	1093.90	------	0.37	1.262E+00	------ Line Not Found		------
BI-210	46.50	335	4.05*	6.142E+00	1.126E+00	1.129E+00	49.80
PB-210	46.50	335	4.05*	6.142E+00	1.126E+00	1.129E+00	49.80

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
BI-211	351.07	2628	12.94*	3.246E+00	5.232E+00	5.232E+00	6.62
BI-212	727.18	323	11.80*	1.778E+00	1.288E+00	1.328E+00	26.23
PB-212	74.80	2853	10.70	7.063E+00	3.157E+00	3.254E+00	6.91
	87.30	1358	8.00	6.982E+00	2.032E+00	2.095E+00	12.10
	115.19	------	0.60	6.491E+00	------ Line Not Found		------
	238.63	5078	44.60*	4.339E+00	2.194E+00	2.262E+00	3.52
	300.09	247	3.41	3.671E+00	1.648E+00	1.698E+00	46.60
BI-214	609.31	1981	46.30*	2.066E+00	1.731E+00	1.731E+00	6.57
	768.36	------	5.04	1.696E+00	------ Line Not Found		------
	934.06	150	3.21	1.441E+00	2.707E+00	2.707E+00	53.98
	1120.29	445	15.10	1.238E+00	1.989E+00	1.989E+00	16.45
	1238.11	128	5.94	1.143E+00	1.576E+00	1.576E+00	52.81
	1377.67	148	4.11	1.050E+00	2.867E+00	2.867E+00	44.52
PB-214	74.81	2853	6.21	7.063E+00	5.439E+00	5.439E+00	6.91
	77.11	4050	10.50	7.060E+00	4.569E+00	4.569E+00	4.79
	87.30	1358	4.41	6.982E+00	3.687E+00	3.687E+00	12.10
	241.98	1430	7.50	4.301E+00	3.707E+00	3.707E+00	13.69
	295.21	1605	19.20	3.717E+00	1.881E+00	1.881E+00	8.85
	351.92	2628	37.20*	3.246E+00	1.820E+00	1.820E+00	6.62
RA-223	122.32	------	1.19	6.343E+00	------ Line Not Found		------
	144.24	76	3.24	5.896E+00	3.342E-01	3.342E-01	170.77
	154.21	177	5.58	5.698E+00	4.661E-01	4.661E-01	74.64
	269.46	475	13.60	3.969E+00	7.361E-01	7.361E-01	29.07
	323.87	------	3.88*	3.460E+00	------ Line Not Found		------
	338.28	1017	2.73	3.349E+00	9.307E+00	9.307E+00	11.60
	445.03	------	1.18	2.684E+00	------ Line Not Found		------
RA-226	295.21	1605	19.20	3.717E+00	1.881E+00	1.881E+00	8.85
	351.92	2628	37.20	3.246E+00	1.820E+00	1.820E+00	6.62
	609.31	1981	46.30*	2.066E+00	1.731E+00	1.731E+00	6.57
AC-228	209.25	460	4.40	4.742E+00	1.842E+00	1.861E+00	25.53
	338.32	1017	11.40	3.349E+00	2.229E+00	2.251E+00	11.60
	463.01	430	4.40	2.599E+00	3.144E+00	3.176E+00	25.04
	794.95	180	4.60	1.649E+00	1.988E+00	2.008E+00	36.78
	911.21	1078	27.70*	1.470E+00	2.215E+00	2.237E+00	9.28
	964.77	135	5.20	1.401E+00	1.554E+00	1.569E+00	54.87
	969.11	646	16.60	1.396E+00	2.332E+00	2.356E+00	12.96
RA-228	209.25	460	4.40	4.742E+00	1.842E+00	1.861E+00	25.53
	338.32	1017	11.40	3.349E+00	2.229E+00	2.251E+00	11.60
	463.01	430	4.40	2.599E+00	3.144E+00	3.176E+00	25.04
	794.95	180	4.60	1.649E+00	1.988E+00	2.008E+00	36.78
	911.21	1078	27.70*	1.470E+00	2.215E+00	2.237E+00	9.28
	964.77	135	5.20	1.401E+00	1.554E+00	1.569E+00	54.87
	969.11	646	16.60	1.396E+00	2.332E+00	2.356E+00	12.96
TH-228	84.40	------	1.21	7.011E+00	------ Line Not Found		------
	238.60	5078	44.60*	4.339E+00	2.194E+00	2.262E+00	3.52
	300.10	247	3.41	3.671E+00	1.648E+00	1.698E+00	46.60
TH-229	85.43	1358	16.50	6.982E+00	9.854E-01	9.855E-01	12.10
	88.47	870	27.10	6.948E+00	3.865E-01	3.865E-01	15.50
	100.00	229	12.40	6.798E+00	2.274E-01	2.274E-01	91.21

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	193.63	------	4.59*	4.982E+00	------ Line Not Found		------
	210.97	460	3.26	4.742E+00	2.483E+00	2.483E+00	25.53
TH-230	295.21	1605	19.20	3.717E+00	1.881E+00	1.881E+00	8.85
	351.92	2628	37.20	3.246E+00	1.820E+00	1.820E+00	6.62
	609.31	1981	46.30*	2.066E+00	1.731E+00	1.731E+00	6.57
TH-232	238.59	5078	44.60*	4.339E+00	2.194E+00	2.194E+00	3.52
	911.20	1078	27.70	1.470E+00	2.215E+00	2.215E+00	9.28
	964.40	135	5.20	1.401E+00	1.554E+00	1.554E+00	54.87
	969.11	646	16.60	1.396E+00	2.332E+00	2.332E+00	12.96
PA-234M	766.40	------	0.21	1.700E+00	------ Line Not Found		------
	1001.03	43	0.85*	1.358E+00	3.121E+00	3.121E+00	200.62
TH-234	63.29	430	3.80*	6.951E+00	1.362E+00	1.362E+00	51.70
	92.38	1025	5.41	6.909E+00	2.294E+00	2.294E+00	18.31
	112.81	9	0.24	6.545E+00	4.986E-01	4.986E-01	1196.65
U-234	67.67	155	0.37	7.023E+00	4.933E+00	4.933E+00	97.62
	241.98	1430	7.49	4.301E+00	3.712E+00	3.712E+00	13.69
	295.21	1605	19.20*	3.717E+00	1.881E+00	1.881E+00	8.85
	351.92	2628	37.20	3.246E+00	1.820E+00	1.820E+00	6.62
U-235	89.95	870	2.70	6.948E+00	3.880E+00	3.880E+00	15.50
	93.35	1025	4.50	6.909E+00	2.757E+00	2.757E+00	18.31
	105.00	336	2.10	6.691E+00	1.999E+00	1.999E+00	41.21
	143.76	76	10.50*	5.896E+00	1.031E-01	1.031E-01	170.77
	163.33	6	4.70	5.520E+00	1.868E-02	1.868E-02	1949.42
	185.71	753	54.00	5.115E+00	2.279E-01	2.279E-01	21.93
	205.31	------	5.00	4.799E+00	------ Line Not Found		------
NP-237	86.48	1358	12.60*	6.982E+00	1.290E+00	1.290E+00	12.10
	95.87	------	2.60	6.857E+00	------ Line Not Found		------
U-238	63.29	430	3.80*	6.951E+00	1.362E+00	1.362E+00	51.70
AM-242	99.55	229	0.63	6.798E+00	4.476E+00	4.478E+00	91.21
	103.70	336	1.01*	6.691E+00	4.157E+00	4.159E+00	41.21
ANH-511	511.00	560	100.00*	2.397E+00	1.953E-01	1.953E-01	29.72

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	1430	3.95*	4.301E+00	7.039E+00	7.256E+00	13.69

Flag: "*" = Keyline

Sample ID : G158048003 Acquisition date : 6-APR-2006 23:46:13

Total number of lines in spectrum 81
Number of unidentified lines 29
Number of lines tentatively identified by NID 52 64.20%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	3.053E+01	3.053E+01	0.111E+01	3.65	
MN-54	312.70D	1.07	2.966E-02	3.174E-02	2.799E-02	88.18	
CD-109	464.00D	1.05	4.290E+00	4.491E+00	0.543E+00	12.10	
SN-126	1.00E+05Y	1.00	4.395E-01	4.395E-01	0.532E-01	12.10	
CS-135	2.30E+06Y	1.00	6.257E-01	6.257E-01	1.819E-01	29.07	
CE-141	32.50D	1.92	2.237E-02	4.299E-02	7.341E-02	170.77	
ND-147	10.98D	6.91	3.189E-01	2.204E+00	2.386E+00	108.25	
GD-153	241.60D	1.09	9.010E-02	9.837E-02	8.973E-02	91.21	
EU-155	4.96Y	1.01	2.028E-01	2.052E-01	0.846E-01	41.21	
TM-171	1.92Y	1.03	1.165E+01	1.200E+01	1.172E+01	97.62	
HG-203	46.61D	1.58	4.606E-02	7.263E-02	4.325E-02	59.55	
TL-208	1.91Y	1.03	7.319E-01	7.546E-01	0.677E-01	8.97	
BI-210	22.26Y	1.00	1.126E+00	1.129E+00	0.562E+00	49.80	
PB-210	22.26Y	1.00	1.126E+00	1.129E+00	0.562E+00	49.80	
BI-211	7.04E+08Y	1.00	5.232E+00	5.232E+00	0.346E+00	6.62	
BI-212	1.91Y	1.03	1.288E+00	1.328E+00	0.348E+00	26.23	
PB-212	1.91Y	1.03	2.194E+00	2.262E+00	0.080E+00	3.52	
BI-214	1600.00Y	1.00	1.731E+00	1.731E+00	0.114E+00	6.57	
PB-214	1600.00Y	1.00	1.820E+00	1.820E+00	0.120E+00	6.62	
RA-223	7.04E+08Y	1.00	7.361E-01	7.361E-01	2.140E-01	29.07	K
RA-226	1600.00Y	1.00	1.731E+00	1.731E+00	0.114E+00	6.57	
AC-228	5.75Y	1.01	2.215E+00	2.237E+00	0.208E+00	9.28	
RA-228	5.75Y	1.01	2.215E+00	2.237E+00	0.208E+00	9.28	
TH-228	1.91Y	1.03	2.194E+00	2.262E+00	0.080E+00	3.52	
TH-229	7340.00Y	1.00	3.865E-01	3.865E-01	0.599E-01	15.50	K
TH-230	7.70E+04Y	1.00	1.731E+00	1.731E+00	0.114E+00	6.57	
TH-232	1.41E+10Y	1.00	2.194E+00	2.194E+00	0.077E+00	3.52	
PA-234M	4.47E+09Y	1.00	3.121E+00	3.121E+00	6.261E+00	200.62	
TH-234	4.47E+09Y	1.00	1.362E+00	1.362E+00	0.704E+00	51.70	
U-234	2.45E+05Y	1.00	1.881E+00	1.881E+00	0.166E+00	8.85	
U-235	7.04E+08Y	1.00	1.031E-01	1.031E-01	1.761E-01	170.77	
NP-237	2.14E+06Y	1.00	1.290E+00	1.290E+00	0.156E+00	12.10	
U-238	4.47E+09Y	1.00	1.362E+00	1.362E+00	0.704E+00	51.70	
AM-242	152.00Y	1.00	4.157E+00	4.159E+00	1.714E+00	41.21	
ANH-511	1.00E+09Y	1.00	1.953E-01	1.953E-01	0.580E-01	29.72	
			---	---			
	Total Activity :		9.037E+01	9.312E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	7.039E+00	7.256E+00	0.994E+00	13.69	
			---	---			
	Total Activity :		7.039E+00	7.256E+00			

Grand Total Activity : 9.740E+01 1.004E+02

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	39.98	220	1517	2.69	82.33	79	8	1.02E-02	62.9	5.49E+00	
0	128.83	289	1363	0.87	260.02	257	7	1.34E-02	44.1	6.21E+00	
0	327.59	356	952	1.37	657.51	651	13	1.65E-02	38.3	3.43E+00	T
0	376.61	61	560	0.63	755.53	751	9	2.82E-03	****	3.07E+00	
0	408.72	183	593	1.42	819.75	815	10	8.47E-03	52.0	2.88E+00	
0	562.95	67	500	2.92	1128.11	1123	12	3.09E-03	****	2.21E+00	T
0	653.27	33	270	2.12	1308.70	1307	9	1.53E-03	****	1.95E+00	
0	664.52	84	216	1.98	1331.18	1328	7	3.87E-03	62.1	1.92E+00	T
0	668.17	11	235	1.40	1338.49	1336	7	4.87E-04	****	1.91E+00	T
0	705.21	18	295	1.18	1412.53	1410	8	8.47E-04	****	1.82E+00	T
0	742.72	20	191	0.97	1487.50	1485	7	9.41E-04	****	1.75E+00	T
0	785.00	94	190	1.56	1572.03	1568	8	4.33E-03	61.3	1.67E+00	T
0	829.11	33	230	0.56	1660.21	1657	9	1.52E-03	****	1.59E+00	
0	1022.13	34	104	1.59	2046.02	2043	6	1.57E-03	****	1.33E+00	
0	1077.03	64	159	1.94	2155.75	2152	9	2.95E-03	76.0	1.28E+00	
0	1154.24	108	251	1.83	2310.04	2306	12	4.99E-03	61.7	1.21E+00	
0	1181.58	51	211	0.58	2364.67	2358	11	2.38E-03	****	1.19E+00	
0	1219.61	51	242	1.48	2440.67	2435	12	2.38E-03	****	1.16E+00	T
0	1321.84	22	57	0.94	2644.96	2643	6	9.98E-04	****	1.08E+00	
0	1359.91	67	444	18.76	2721.04	2689	47	3.12E-03	****	1.06E+00	
0	1480.70	20	42	1.40	2962.39	2958	8	9.21E-04	****	9.93E-01	
0	1507.36	38	81	1.74	3015.64	3011	12	1.74E-03	****	9.79E-01	
0	1519.46	30	42	2.82	3039.83	3037	8	1.37E-03	84.3	9.73E-01	
0	1535.08	170	126	18.53	3071.04	3049	42	7.87E-03	47.3	9.66E-01	
0	1588.96	137	140	5.88	3178.68	3166	23	6.32E-03	49.4	9.41E-01	
0	1619.00	70	66	2.95	3238.69	3233	15	3.25E-03	55.1	9.29E-01	
0	1629.64	90	35	4.30	3259.95	3253	13	4.18E-03	34.4	9.24E-01	
0	1646.26	10	32	1.41	3293.16	3288	10	4.56E-04	****	9.17E-01	
0	1710.93	26	37	0.75	3422.34	3414	15	1.19E-03	****	8.92E-01	
0	1727.82	80	57	1.87	3456.07	3450	16	3.70E-03	47.6	8.86E-01	
0	1738.93	19	31	4.27	3478.26	3474	11	8.80E-04	****	8.82E-01	
0	1749.37	9	13	1.41	3499.13	3498	6	4.21E-04	****	8.78E-01	
0	1762.86	342	65	2.29	3526.07	3518	19	1.58E-02	16.4	8.73E-01	
0	1845.63	54	44	1.95	3691.42	3683	16	2.50E-03	61.2	8.46E-01	
0	1921.34	12	18	1.66	3842.62	3840	8	5.78E-04	****	8.23E-01	
0	1994.49	24	19	0.48	3988.72	3982	15	1.11E-03	88.5	8.03E-01	
0	2005.91	18	21	5.41	4011.53	4006	14	8.31E-04	****	8.00E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:49:08.40

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*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048003.CNF;1  *
* Acquisition date : 6-APR-2006 23:46:13.  Detector SN#    : 37-TN11260A    *
* Detector ID      : GAMMA13               Sensitivity     : 3.00000        *
* Geometry         : CAN                   Energy tolerance: 2.00000        *
* Elapsed live time: 0 06:00:00.00         Abundance limit : 75.00000       *
* Elapsed real time: 0 06:00:06.43         Half life ratio : 8.00000        *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 7-MAR-2006 11:45:00.  Nuclide Library : EPI            *
* Sample ID        : G158048003            Analyst initials: MJH1           *
* Batch Number     : 513799                Sample Quantity : 1.49630E+02 GRAM  *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 20-JUN-2005 11:56:42.9MS Isotope      : TOPLOADER      *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	3.053E+01	1.114E+00	3.545E-01	0.000E+00	86.134
MN-54	3.174E-02	2.799E-02	4.954E-02	0.000E+00	0.641
CD-109	4.491E+00	5.433E-01	6.142E-01	0.000E+00	7.312
SN-126	4.395E-01	5.316E-02	6.002E-02	0.000E+00	7.321
CS-135	6.257E-01	1.819E-01	1.664E-01	0.000E+00	3.760
CE-141	3.510E-02	6.020E-02	8.833E-02	0.000E+00	0.397
ND-147	2.204E+00	2.386E+00	1.671E+00	0.000E+00	1.319
GD-153	9.837E-02	8.973E-02	7.715E-02	0.000E+00	1.275
EU-155	1.970E-01	8.202E-02	1.018E-01	0.000E+00	1.935
TM-171	1.200E+01	1.172E+01	1.701E+01	0.000E+00	0.706
HG-203	7.263E-02	4.325E-02	5.620E-02	0.000E+00	1.292
TL-208	7.546E-01	6.767E-02	4.402E-02	0.000E+00	17.140
BI-210	1.129E+00	5.621E-01	5.571E-01	0.000E+00	2.026
PB-210	1.129E+00	5.621E-01	5.571E-01	0.000E+00	2.026
BI-211	5.232E+00	3.463E-01	2.253E-01	0.000E+00	23.225
BI-212	1.328E+00	3.482E-01	3.362E-01	0.000E+00	3.950
PB-212	2.262E+00	7.967E-02	6.197E-02	0.000E+00	36.499
BI-214	1.731E+00	1.138E-01	8.118E-02	0.000E+00	21.325

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
PB-214	1.820E+00	1.204E-01	7.854E-02	0.000E+00	23.174
RA-223	-1.379E-01	4.948E-01	7.298E-01	0.000E+00	-0.189
RA-224	7.256E+00	9.936E-01	7.053E-01	0.000E+00	10.289
RA-226	1.731E+00	1.138E-01	8.118E-02	0.000E+00	21.325
AC-228	2.237E+00	2.077E-01	1.516E-01	0.000E+00	14.753
RA-228	2.237E+00	2.077E-01	1.516E-01	0.000E+00	14.753
TH-228	2.262E+00	7.967E-02	6.196E-02	0.000E+00	36.503
TH-229	-1.820E-02	3.427E-01	5.533E-01	0.000E+00	-0.033
TH-230	1.731E+00	1.138E-01	8.118E-02	0.000E+00	21.325
TH-232	2.194E+00	7.728E-02	6.010E-02	0.000E+00	36.504
PA-234M	3.121E+00	6.261E+00	5.472E+00	0.000E+00	0.570
TH-234	1.362E+00	7.040E-01	6.649E-01	0.000E+00	2.048
U-234	1.881E+00	1.664E-01	1.545E-01	0.000E+00	12.175
U-235	1.031E-01	1.761E-01	2.343E-01	0.000E+00	0.440
NP-237	1.290E+00	1.561E-01	1.758E-01	0.000E+00	7.342
U-238	1.362E+00	7.040E-01	6.649E-01	0.000E+00	2.048
AM-242	3.993E+00	1.662E+00	2.033E+00	0.000E+00	1.964
ANH-511	1.953E-01	5.803E-02	3.165E-02	0.000E+00	6.170

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.083E-01		2.726E-01	4.283E-01	0.000E+00	-0.953
NA-22	-2.684E-02		3.060E-02	5.074E-02	0.000E+00	-0.529
AL-26	1.438E-02		2.038E-02	3.784E-02	0.000E+00	0.380
SC-46	-2.357E-02		3.266E-02	5.356E-02	0.000E+00	-0.440
V-48	4.008E-02		1.009E-01	1.728E-01	0.000E+00	0.232
CR-51	1.776E-01		3.627E-01	6.241E-01	0.000E+00	0.285
CO-56	8.258E-03		3.285E-02	5.637E-02	0.000E+00	0.147
CO-57	-1.205E-02		1.657E-02	2.699E-02	0.000E+00	-0.447
CO-58	2.307E-02		3.318E-02	5.809E-02	0.000E+00	0.397
FE-59	-3.649E-02		8.464E-02	1.382E-01	0.000E+00	-0.264
CO-60	6.497E-03		2.803E-02	4.912E-02	0.000E+00	0.132
ZN-65	1.056E-01		8.160E-02	1.258E-01	0.000E+00	0.839
SE-75	1.851E-02		3.122E-02	5.425E-02	0.000E+00	0.341
KR-85	5.101E+00		5.401E+00	8.166E+00	0.000E+00	0.625
SR-85	3.077E-02		3.258E-02	4.926E-02	0.000E+00	0.625
Y-88	1.022E-02		2.484E-02	4.500E-02	0.000E+00	0.227
Y-91	-2.067E-02		3.264E-02	5.242E-02	0.000E+00	-0.394
NB-94	-1.077E-02		2.784E-02	4.064E-02	0.000E+00	-0.265
NB-95	1.096E-01		5.243E-02	9.501E-02	0.000E+00	1.154
ZR-95	4.233E-02		6.200E-02	1.086E-01	0.000E+00	0.390
RU-103	-1.032E-02		3.821E-02	6.276E-02	0.000E+00	-0.164
RH-106	-1.396E-01		2.307E-01	3.907E-01	0.000E+00	-0.357
RU-106	-2.258E-01		2.330E-01	3.894E-01	0.000E+00	-0.580
AG-108M	-6.950E-03		2.308E-02	3.818E-02	0.000E+00	-0.182
AG-110M	1.240E-02		2.825E-02	4.339E-02	0.000E+00	0.286

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-113	-1.011E-02		3.358E-02	5.589E-02	0.000E+00	-0.181
SN-115	1.051E+01	+	5.676E+00	6.354E+00	0.000E+00	1.655
SN-117M	8.440E-03		8.108E-02	1.327E-01	0.000E+00	0.064
TE-123M	-1.058E-02		2.107E-02	3.401E-02	0.000E+00	-0.311
SB-124	-1.068E-02		5.731E-02	9.858E-02	0.000E+00	-0.108
SB-125	-1.230E-02		6.600E-02	1.097E-01	0.000E+00	-0.112
TE-125M	2.458E+00		6.576E+00	1.100E+01	0.000E+00	0.223
I-126	4.685E-01	+	2.907E-01	5.442E-01	0.000E+00	0.861
SB-126	-3.130E-02		2.485E-01	4.237E-01	0.000E+00	-0.074
SB-127	-8.248E+00		1.618E+01	2.729E+01	0.000E+00	-0.302
I-131	2.511E-01		2.973E-01	5.141E-01	0.000E+00	0.488
BA-133	1.964E-02		3.230E-02	4.910E-02	0.000E+00	0.400
CS-134	1.101E-01	+	4.051E-02	5.935E-02	0.000E+00	1.856
CS-136	-1.043E-01		1.833E-01	2.984E-01	0.000E+00	-0.350
BA-137M	-2.172E-04		2.810E-02	4.211E-02	0.000E+00	-0.005
CS-137	-1.722E-04		2.971E-02	4.453E-02	0.000E+00	-0.004
CE-139	-1.645E-02		2.422E-02	3.439E-02	0.000E+00	-0.478
BA-140	-4.944E-01		4.955E-01	6.745E-01	0.000E+00	-0.733
LA-140	4.425E-02		1.226E-01	1.931E-01	0.000E+00	0.229
CE-144	-7.074E-02		1.355E-01	2.207E-01	0.000E+00	-0.321
PM-144	8.523E-03		2.515E-02	4.369E-02	0.000E+00	0.195
PM-146	3.242E-02		3.077E-02	5.309E-02	0.000E+00	0.611
PM-147	-1.572E+04		3.285E+04	5.381E+04	0.000E+00	-0.292
EU-152	-4.971E-02		6.653E-02	1.101E-01	0.000E+00	-0.451
EU-154	-7.454E-02		8.478E-02	1.406E-01	0.000E+00	-0.530
TB-160	-2.698E-02		1.225E-01	2.055E-01	0.000E+00	-0.131
HF-181	6.139E-02		4.156E-02	6.501E-02	0.000E+00	0.944
TA-182	1.653E-01	+	2.055E-01	2.509E-01	0.000E+00	0.659
IR-192	-4.293E-03		2.644E-02	4.473E-02	0.000E+00	-0.096
BI-207	2.155E-03		3.947E-02	6.609E-02	0.000E+00	0.033
PB-211	2.672E-01		7.279E-01	1.086E+00	0.000E+00	0.246
RN-219	-3.321E-01		2.932E-01	4.745E-01	0.000E+00	-0.700
AC-227	-1.982E-03		2.511E-01	4.308E-01	0.000E+00	-0.005
TH-227	-1.948E-03		2.469E-01	4.235E-01	0.000E+00	-0.005
PA-231	1.234E-03		1.011E+00	1.726E+00	0.000E+00	0.001
TH-231	7.361E-01	+	2.140E-01	2.430E-01	0.000E+00	3.029
PA-233	-1.247E-02		4.213E-02	7.107E-02	0.000E+00	-0.175
PA-234	-4.659E-02		2.250E-01	3.758E-01	0.000E+00	-0.124
NP-239	-9.171E-02		1.145E-01	1.865E-01	0.000E+00	-0.492
AM-241	2.453E-02		4.306E-02	6.648E-02	0.000E+00	0.369
CM-247	-1.418E-02		2.554E-02	4.209E-02	0.000E+00	-0.337
CF-249	1.038E-02		2.724E-02	4.633E-02	0.000E+00	0.224
CF-251	7.649E-02		8.551E-02	1.417E-01	0.000E+00	0.540

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513799                    SAMPLE ID  : G158048003        *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA13           *
*   SAMPLE DATE  :  7-MAR-2006 11:45:00.00  COUNT TIME :    0 06:00:00.00   *
*   ANALYSIS DATE:  6-APR-2006 23:46:13.46  SAMPLE ALQT:  149.630 GRAM      *
*                                                                           *
*****************************************************************************


      GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 1.347E+01
      GROSS GAMMA ERROR  (pCi/GRAM  )   : 2.940E+00
      GROSS GAMMA MDA    (pCi/GRAM  )   : 7.091E+00
      GROSS GAMMA DLC    (pCi/GRAM  )   : 3.494E+00
```

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:49:47.20

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048004.CNF;1
Sample date      : 7-MAR-2006 09:30:00. Acquisition date : 6-APR-2006 23:46:31.
Sample ID        : G158048004           Sample quantity  : 1.69520E+02 GRAM
Detector name    : WELL                 Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:08.48  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 3941466
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.49*	208	1939	1.12	125.55	122	8	9.63E-03	39.2	
2	2	74.94*	1592	2396	1.60	148.29	140	19	7.37E-02	7.0	3.56E+00
3	2	77.28*	2296	1804	1.32	152.94	140	19	1.06E-01	4.2	
4	3	84.28*	291	2206	1.78	166.85	161	30	1.35E-02	32.4	1.98E+00
5	3	87.38*	980	1915	1.69	173.01	161	30	4.54E-02	9.3	
6	3	90.07	676	1459	1.35	178.35	161	30	3.13E-02	11.0	
7	3	92.91*	830	1713	1.70	183.99	161	30	3.84E-02	11.4	
8	0	105.13	120	1495	2.23	208.27	205	9	5.55E-03	58.9	
9	0	115.34	124	1248	1.56	228.55	225	8	5.76E-03	50.1	
10	0	128.83*	272	1496	1.44	255.36	251	10	1.26E-02	28.5	
11	0	143.75*	23	1128	1.33	284.99	282	7	1.07E-03	258.3	
12	0	153.82	85	892	0.99	305.01	303	6	3.95E-03	56.3	
13	0	177.87	95	725	0.89	352.79	350	6	4.40E-03	46.1	
14	0	186.09*	310	1239	1.58	369.13	365	10	1.44E-02	24.1	
15	0	209.65	316	1261	1.28	415.94	412	11	1.46E-02	22.5	
16	3	238.79*	3634	790	1.38	473.85	470	17	1.68E-01	2.3	1.66E+00
17	3	241.63	816	997	1.98	479.48	470	17	3.78E-02	10.7	
18	0	270.14	412	819	1.79	536.12	529	13	1.91E-02	15.1	
19	0	278.12*	154	833	2.54	552.00	547	12	7.15E-03	39.9	
20	3	295.34	873	591	1.63	586.21	581	20	4.04E-02	6.2	1.56E+00
21	3	300.08*	191	685	1.86	595.62	581	20	8.85E-03	28.2	
22	0	308.00	102	505	2.41	611.37	606	10	4.72E-03	42.5	
23	0	313.57	106	423	1.02	622.44	619	8	4.92E-03	34.9	
24	0	328.30*	180	623	1.44	651.71	647	11	8.35E-03	28.7	
25	0	338.45*	581	515	1.37	671.87	669	9	2.69E-02	8.6	
26	0	351.96*	1305	659	1.48	698.72	692	14	6.04E-02	5.1	
27	0	410.11	84	337	1.81	814.29	811	8	3.91E-03	39.2	
28	0	428.35	58	352	3.47	850.53	846	11	2.69E-03	64.0	
29	0	463.11	299	368	1.42	919.61	913	14	1.38E-02	14.8	
30	0	493.69	53	222	1.49	980.40	977	9	2.43E-03	53.0	
31	0	510.99*	372	472	2.13	1014.78	1007	17	1.72E-02	16.3	
32	0	583.22*	1168	378	1.65	1158.35	1149	18	5.41E-02	5.0	
33	0	609.39*	818	343	1.84	1210.37	1204	13	3.79E-02	6.3	
34	0	653.09	51	168	2.10	1297.24	1293	9	2.36E-03	48.1	
35	0	661.39*	30	210	1.57	1313.74	1308	10	1.39E-03	114.7	
36	0	727.47*	236	251	1.53	1445.09	1440	12	1.09E-02	15.3	
37	0	755.66	98	236	0.88	1501.13	1494	14	4.54E-03	34.8	
38	0	767.63	99	180	2.31	1524.94	1521	10	4.57E-03	27.2	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	794.92	124	169	1.36	1579.19	1574	11	5.75E-03	22.2	
40	0	802.31*	20	112	0.70	1593.87	1591	8	9.05E-04	104.2	
41	0	835.66*	43	135	0.65	1660.19	1656	9	2.00E-03	52.9	
42	0	856.68	21	74	1.47	1701.98	1698	7	9.56E-04	73.4	
43	0	860.49	185	139	0.99	1709.56	1705	12	8.55E-03	14.6	
44	0	869.23	56	84	1.99	1726.94	1723	8	2.61E-03	31.1	
45	0	877.31	29	48	1.50	1743.00	1740	6	1.34E-03	42.1	
46	0	911.17*	691	200	1.88	1810.31	1802	15	3.20E-02	6.1	
47	0	934.08*	34	131	1.82	1855.88	1851	10	1.57E-03	67.7	
48	1	964.73*	155	125	2.23	1916.83	1908	51	7.18E-03	18.0	2.19E+00
49	1	968.93*	420	97	1.90	1925.18	1908	51	1.94E-02	7.1	
50	1	976.42	47	105	2.24	1940.06	1908	51	2.16E-03	51.2	
51	0	1031.85*	74	215	6.51	2050.30	2041	20	3.44E-03	50.2	
52	0	1040.90	27	119	1.83	2068.29	2062	11	1.26E-03	80.4	
53	0	1120.84*	227	165	2.33	2227.26	2220	17	1.05E-02	15.1	
54	0	1181.73	39	82	1.40	2348.36	2344	8	1.80E-03	44.4	
55	0	1228.06	44	113	1.35	2440.50	2438	9	2.04E-03	45.7	
56	0	1238.34*	79	216	1.96	2460.94	2454	15	3.67E-03	43.2	
57	0	1248.42	36	153	4.93	2481.00	2474	14	1.68E-03	74.8	
58	0	1314.58	34	50	1.89	2612.60	2608	8	1.59E-03	39.6	
59	0	1345.46	13	23	0.66	2674.03	2672	5	6.06E-04	61.2	
60	0	1377.01*	52	85	2.69	2736.77	2731	13	2.43E-03	39.9	
61	0	1395.50	16	58	1.20	2773.56	2768	11	7.63E-04	92.6	
62	0	1401.79*	17	48	1.05	2786.08	2782	10	7.87E-04	89.8	
63	0	1428.21	29	70	1.32	2838.64	2834	17	1.34E-03	67.9	
64	0	1460.78*	2438	159	2.22	2903.42	2895	20	1.13E-01	2.4	
65	0	1590.53	97	83	6.51	3161.57	3152	22	4.49E-03	25.9	
66	0	1620.52*	23	51	1.24	3221.25	3214	13	1.04E-03	73.4	
67	0	1642.40	51	47	12.03	3264.78	3252	31	2.34E-03	42.3	
68	0	1717.03*	7	4	0.63	3413.28	3410	6	3.29E-04	105.2	
69	0	1728.96*	22	28	1.51	3437.02	3432	10	1.01E-03	57.1	
70	0	1764.33	185	18	1.72	3507.41	3499	18	8.55E-03	9.1	
71	0	1811.60*	9	5	1.08	3601.46	3596	12	4.38E-04	81.3	
72	0	1850.50	30	28	4.89	3678.89	3671	17	1.39E-03	45.2	
73	0	1887.24	26	25	1.13	3752.00	3739	25	1.20E-03	55.4	
74	0	1906.25	13	4	1.55	3789.84	3787	7	5.79E-04	37.6	
75	0	1926.08	18	25	0.60	3829.31	3820	20	8.28E-04	72.5	
76	0	1983.53	25	17	5.86	3943.65	3933	23	1.17E-03	46.8	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048004   *
* Acquisition date :  6-APR-2006 23:46:31 Detector SN#    : 3941466    *
* Detector ID      : WELL                 Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 06:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 06:00:08.48     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      :  7-MAR-2006 09:30:00 Nuclide Library : FERMC       *
* Sample ID        : G158048004           Analyst initials: MJH1       *
* Batch Number     : 513799               Sample Quantity : 1.6952E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53 MS Isotope      :             *
* MSD DPM          : ********            MSD Isotope     :             *
* LCS DPM          :    0.000           LCS Isotope     :             *
* LCSD DPM         :    0.000           LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.518E+01	1.224E+00	4.984E-01	0.000E+00
MN-54	3.175E-02	3.360E-02	4.685E-02	0.000E+00
CS-135	6.112E-01	1.851E-01	1.816E-01	0.000E+00
BA-137M	1.848E-02	4.240E-02	4.769E-02	0.000E+00
CS-137	1.954E-02	4.482E-02	5.041E-02	0.000E+00
CE-141	1.279E-02	6.607E-02	1.051E-01	0.000E+00
HG-203	7.682E-02	6.123E-02	5.893E-02	0.000E+00
TL-208	7.043E-01	7.041E-02	4.449E-02	0.000E+00
BI-211	3.055E+00	3.116E-01	2.465E-01	0.000E+00
BI-212	1.245E+00	3.821E-01	3.937E-01	0.000E+00
PB-212	1.794E+00	8.151E-02	7.655E-02	0.000E+00
BI-214	9.065E-01	1.137E-01	8.835E-02	0.000E+00
PB-214	1.063E+00	1.084E-01	8.594E-02	0.000E+00
RA-223	3.746E-03	4.948E-01	7.796E-01	0.000E+00
RA-224	4.592E+00	9.822E-01	7.968E-01	0.000E+00
RA-226	9.065E-01	1.137E-01	8.835E-02	0.000E+00
AC-228	1.860E+00	2.270E-01	1.673E-01	0.000E+00
RA-228	1.860E+00	2.270E-01	1.673E-01	0.000E+00
TH-228	1.794E+00	8.151E-02	7.654E-02	0.000E+00
TH-230	9.065E-01	1.137E-01	8.835E-02	0.000E+00
TH-232	1.740E+00	7.906E-02	7.424E-02	0.000E+00
TH-234	9.435E-01	7.396E-01	9.809E-01	0.000E+00
U-234	1.169E+00	1.453E-01	1.522E-01	0.000E+00
U-235	3.403E-02	1.758E-01	2.653E-01	0.000E+00
U-238	9.435E-01	7.396E-01	9.809E-01	0.000E+00
ANH-511	1.615E-01	5.275E-02	3.775E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	
BE-7	2.406E-01		2.848E-01	5.169E-01	0.000E+00 NOT IDENT.

NA-22	-1.908E-02	3.292E-02	5.466E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.426E+13	0.000E+00	0.000E+00	SHORT HLIF
AL-26	5.145E-04	2.366E-02	3.746E-02	0.000E+00	FAIL ABUN
SC-46	-9.958E-03	3.117E-02	5.453E-02	0.000E+00	FAIL ABUN
V-48	1.629E-02	1.058E-01	1.646E-01	0.000E+00	NOT IDENT.
CR-51	9.870E-02	3.641E-01	6.604E-01	0.000E+00	NOT IDENT.
CO-56	2.325E-02	3.192E-02	5.915E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	1.375E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	2.242E-03	1.809E-02	3.204E-02	0.000E+00	NOT IDENT.
CO-58	-1.678E-02	3.178E-02	5.537E-02	0.000E+00	NOT IDENT.
FE-59	-5.461E-02	8.565E-02	1.439E-01	0.000E+00	NOT IDENT.
CO-60	1.700E-02	2.826E-02	5.115E-02	0.000E+00	NOT IDENT.
ZN-65	-1.902E-02	7.676E-02	1.131E-01	0.000E+00	NOT IDENT.
SE-75	1.196E-02	3.550E-02	5.745E-02	0.000E+00	FAIL ABUN
KR-85	0.000E+00	5.856E+00	9.874E+00	0.000E+00	NOT IDENT.
SR-85	0.000E+00	3.536E-02	5.962E-02	0.000E+00	NOT IDENT.
Y-88	5.589E-03	2.718E-02	5.061E-02	0.000E+00	NOT IDENT.
Y-91	-2.296E-02	3.267E-02	5.477E-02	0.000E+00	NOT IDENT.
NB-94	-9.271E-03	2.286E-02	4.052E-02	0.000E+00	FAIL ABUN
NB-95	0.000E+00	6.271E-02	9.142E-02	0.000E+00	FAIL ABUN
NB-95M	0.000E+00	2.907E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	0.000E+00	1.077E-01	1.204E-01	0.000E+00	FAIL ABUN
MO-99	0.000E+00	4.430E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.488E+35	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.407E-03	4.355E-02	6.667E-02	0.000E+00	FAIL ABUN
RH-106	6.609E-02	2.277E-01	4.203E-01	0.000E+00	FAIL ABUN
RU-106	9.852E-02	2.294E-01	4.258E-01	0.000E+00	NOT IDENT.
AG-108M	1.066E-03	2.283E-02	4.039E-02	0.000E+00	NOT IDENT.
CD-109	0.000E+00	7.323E-01	1.017E+00	0.000E+00	FAIL ABUN
AG-110M	-1.387E-03	3.007E-02	4.732E-02	0.000E+00	NOT IDENT.
SN-113	-1.268E-02	3.452E-02	6.043E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.012E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	3.100E+00	4.198E+00	6.109E+00	0.000E+00	FAIL ABUN
SN-117M	-3.437E-02	7.867E-02	1.458E-01	0.000E+00	NOT IDENT.
TE-123M	-1.588E-02	2.012E-02	3.702E-02	0.000E+00	NOT IDENT.
SB-124	5.687E-02	5.809E-02	1.178E-01	0.000E+00	NOT IDENT.
SB-125	7.393E-02	9.463E-02	1.154E-01	0.000E+00	FAIL ABUN
TE-125M	2.059E+00	8.175E+00	1.301E+01	0.000E+00	NOT IDENT.
I-126	-7.067E-01	3.378E-01	5.581E-01	0.000E+00	FAIL ABUN
SB-126	5.294E-02	2.456E-01	4.469E-01	0.000E+00	NOT IDENT.
SN-126	0.000E+00	7.165E-02	9.868E-02	0.000E+00	FAIL ABUN
SB-127	-3.833E+00	1.655E+01	2.961E+01	0.000E+00	FAIL ABUN
I-131	1.027E-02	3.004E-01	5.367E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	1.261E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.274E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-1.555E-02	3.417E-02	5.227E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.113E+09	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.351E-02	6.372E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	4.240E+32	0.000E+00	0.000E+00	SHORT HLIF
CS-136	9.077E-02	1.737E-01	3.144E-01	0.000E+00	FAIL ABUN
CE-139	-1.066E-04	2.124E-02	3.960E-02	0.000E+00	NOT IDENT.
BA-140	1.705E-01	4.602E-01	8.129E-01	0.000E+00	NOT IDENT.
LA-140	1.183E-01	1.455E-01	2.523E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	2.721E+05	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.595E-02	1.360E-01	2.545E-01	0.000E+00	NOT IDENT.
PM-144	2.108E-03	2.572E-02	4.656E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	2.000E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	2.579E-02	3.029E-02	5.525E-02	0.000E+00	NOT IDENT.
ND-147	-7.385E-01	1.093E+00	1.844E+00	0.000E+00	FAIL ABUN
PM-147	4.027E+03	3.608E+04	6.394E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	8.103E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.922E-02	6.714E-02	1.189E-01	0.000E+00	FAIL ABUN
GD-153	-5.368E-02	5.843E-02	9.049E-02	0.000E+00	FAIL ABUN
EU-154	-5.056E-02	9.098E-02	1.513E-01	0.000E+00	FAIL ABUN
EU-155	8.387E-02	9.888E-02	1.296E-01	0.000E+00	FAIL ABUN
TB-160	2.039E-02	1.282E-01	2.009E-01	0.000E+00	FAIL ABUN
TM-171	-1.359E+01	1.443E+01	2.292E+01	0.000E+00	NOT IDENT.
HF-181	-2.039E-02	3.960E-02	6.785E-02	0.000E+00	FAIL ABUN
TA-182	3.244E-02	1.584E-01	2.756E-01	0.000E+00	FAIL ABUN
IR-192	1.530E-02	2.956E-02	4.778E-02	0.000E+00	FAIL ABUN
BI-207	6.645E-03	3.788E-02	6.706E-02	0.000E+00	NOT IDENT.
BI-210	8.806E-01	6.952E-01	1.194E+00	0.000E+00	NOT IDENT.
PB-210	8.806E-01	6.952E-01	1.194E+00	0.000E+00	NOT IDENT.
PB-211	3.063E-01	6.846E-01	1.230E+00	0.000E+00	FAIL ABUN
RN-219	3.671E-02	2.990E-01	5.316E-01	0.000E+00	FAIL ABUN
AC-227	-1.477E-01	2.526E-01	4.526E-01	0.000E+00	FAIL ABUN
TH-227	-1.452E-01	2.484E-01	4.449E-01	0.000E+00	FAIL ABUN
TH-229	-3.390E-02	3.340E-01	6.157E-01	0.000E+00	FAIL ABUN

PA-231	-4.879E-01	1.019E+00	1.817E+00	0.000E+00	FAIL ABUN
TH-231	0.000E+00	2.177E-01	2.583E-01	0.000E+00	FAIL ABUN
PA-233	7.479E-02	5.216E-02	8.022E-02	0.000E+00	FAIL ABUN
PA-234	-4.076E-02	2.203E-01	3.857E-01	0.000E+00	FAIL ABUN
PA-234M	3.056E+00	3.350E+00	6.178E+00	0.000E+00	FAIL ABUN
NP-237	0.000E+00	2.104E-01	2.887E-01	0.000E+00	FAIL ABUN
NP-239	1.616E-01	1.618E-01	2.281E-01	0.000E+00	FAIL ABUN
AM-241	1.728E-02	6.485E-02	1.068E-01	0.000E+00	NOT IDENT.
AM-242	1.700E+00	2.004E+00	2.563E+00	0.000E+00	FAIL ABUN
CM-247	5.951E-03	2.692E-02	4.802E-02	0.000E+00	FAIL ABUN
CF-249	1.276E-02	2.888E-02	5.203E-02	0.000E+00	NOT IDENT.
CF-251	9.236E-02	8.508E-02	1.515E-01	0.000E+00	FAIL ABUN

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:49:49.19

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048004.CNF;1
Sample date      : 7-MAR-2006 09:30:00. Acquisition date : 6-APR-2006 23:46:31.
Sample ID        : G158048004           Sample quantity  : 1.69520E+02 GRAM
Detector name    : WELL                 Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:08.48  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 3941466
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	2438	10.67*	6.697E-01	2.518E+01	2.518E+01	4.86
MN-54	834.83	43	99.83*	1.079E+00	2.966E-02	3.175E-02	105.84
NB-95	765.79	99	99.81*	1.164E+00	6.271E-02	1.151E-01	54.49
CD-109	88.03	980	3.79*	5.056E+00	3.777E+00	3.954E+00	18.52
SN-126	64.28	208	9.60	4.283E+00	3.735E-01	3.735E-01	78.39
	86.94	980	8.90	5.056E+00	1.608E+00	1.608E+00	18.52
	87.57	980	37.00*	5.056E+00	3.869E-01	3.869E-01	18.52
CS-135	268.24	412	16.00*	3.110E+00	6.112E-01	6.112E-01	30.28
BA-137M	661.65	30	89.98*	1.333E+00	1.844E-02	1.848E-02	229.42
CS-137	661.66	30	85.12*	1.333E+00	1.950E-02	1.954E-02	229.42
CE-141	145.44	23	48.40*	4.797E+00	7.382E-03	1.421E-02	516.63
EU-155	86.54	980	30.90	5.056E+00	4.632E-01	4.687E-01	18.52
	105.31	120	20.70*	5.158E+00	8.289E-02	8.387E-02	117.89
HG-203	70.83	------	4.75	4.625E+00	------ Line Not Found		------
	72.87	------	8.00	4.702E+00	------ Line Not Found		------
	82.60	291	3.55	5.005E+00	1.208E+00	1.908E+00	64.78
	279.20	154	77.30*	3.031E+00	4.865E-02	7.682E-02	79.71
TL-208	75.00	1592	3.43	4.772E+00	7.178E+00	7.401E+00	13.95
	277.35	154	6.80	3.031E+00	5.530E-01	5.702E-01	79.71
	510.84	372	21.60	1.700E+00	7.478E-01	7.710E-01	32.66
	583.14	1168	84.20*	1.499E+00	6.831E-01	7.043E-01	10.00
	763.30	------	1.64	1.170E+00	------ Line Not Found		------
	860.37	185	12.46	1.052E+00	1.040E+00	1.072E+00	29.25
	1093.90	------	0.37	8.559E-01	------ Line Not Found		------
BI-211	351.07	1305	12.94*	2.437E+00	3.055E+00	3.055E+00	10.20
BI-212	727.18	236	11.80*	1.222E+00	1.207E+00	1.245E+00	30.70
PB-212	74.80	1592	10.70	4.772E+00	2.301E+00	2.372E+00	13.95
	87.30	980	8.00	5.056E+00	1.789E+00	1.845E+00	18.52
	115.19	124	0.60	5.114E+00	2.980E+00	3.072E+00	100.11
	238.63	3634	44.60*	3.456E+00	1.740E+00	1.794E+00	4.54
	300.09	191	3.41	2.830E+00	1.463E+00	1.508E+00	56.39
BI-214	609.31	818	46.30*	1.438E+00	9.065E-01	9.065E-01	12.54

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	768.36	99	5.04	1.164E+00	1.242E+00	1.242E+00	54.49
	934.06	34	3.21	9.794E-01	7.968E-01	7.968E-01	135.41
	1120.29	227	15.10	8.385E-01	1.323E+00	1.323E+00	30.21
	1238.11	79	5.94	7.708E-01	1.279E+00	1.279E+00	86.34
	1377.67	52	4.11	7.045E-01	1.336E+00	1.336E+00	79.89
PB-214	74.81	1592	6.21	4.772E+00	3.965E+00	3.965E+00	13.95
	77.11	2296	10.50	4.843E+00	3.332E+00	3.332E+00	8.31
	87.30	980	4.41	5.056E+00	3.246E+00	3.246E+00	18.52
	241.98	816	7.50	3.423E+00	2.346E+00	2.346E+00	21.39
	295.21	873	19.20	2.871E+00	1.169E+00	1.169E+00	12.43
	351.92	1305	37.20*	2.437E+00	1.063E+00	1.063E+00	10.20
RA-223	122.32	------	1.19	5.057E+00	------ Line Not Found		------
	144.24	23	3.24	4.797E+00	1.103E-01	1.103E-01	516.63
	154.21	85	5.58	4.651E+00	2.428E-01	2.428E-01	112.60
	269.46	412	13.60	3.110E+00	7.191E-01	7.191E-01	30.28
	323.87	------	3.88*	2.636E+00	------ Line Not Found		------
	338.28	581	2.73	2.529E+00	6.210E+00	6.210E+00	17.23
	445.03	------	1.18	1.943E+00	------ Line Not Found		------
RA-226	295.21	873	19.20	2.871E+00	1.169E+00	1.169E+00	12.43
	351.92	1305	37.20	2.437E+00	1.063E+00	1.063E+00	10.20
	609.31	818	46.30*	1.438E+00	9.065E-01	9.065E-01	12.54
AC-228	209.25	316	4.40	3.829E+00	1.384E+00	1.398E+00	45.07
	338.32	581	11.40	2.529E+00	1.487E+00	1.502E+00	17.23
	463.01	299	4.40	1.870E+00	2.682E+00	2.709E+00	29.57
	794.95	124	4.60	1.128E+00	1.765E+00	1.783E+00	44.48
	911.21	691	27.70*	1.001E+00	1.841E+00	1.860E+00	12.20
	964.77	155	5.20	9.525E-01	2.312E+00	2.336E+00	36.02
	969.11	420	16.60	9.490E-01	1.968E+00	1.988E+00	14.12
RA-228	209.25	316	4.40	3.829E+00	1.384E+00	1.398E+00	45.07
	338.32	581	11.40	2.529E+00	1.487E+00	1.502E+00	17.23
	463.01	299	4.40	1.870E+00	2.682E+00	2.709E+00	29.57
	794.95	124	4.60	1.128E+00	1.765E+00	1.783E+00	44.48
	911.21	691	27.70*	1.001E+00	1.841E+00	1.860E+00	12.20
	964.77	155	5.20	9.525E-01	2.312E+00	2.336E+00	36.02
	969.11	420	16.60	9.490E-01	1.968E+00	1.988E+00	14.12
TH-228	84.40	291	1.21	5.005E+00	3.544E+00	3.654E+00	64.78
	238.60	3634	44.60*	3.456E+00	1.740E+00	1.794E+00	4.54
	300.10	191	3.41	2.830E+00	1.463E+00	1.508E+00	56.39
TH-230	295.21	873	19.20	2.871E+00	1.169E+00	1.169E+00	12.43
	351.92	1305	37.20	2.437E+00	1.063E+00	1.063E+00	10.20
	609.31	818	46.30*	1.438E+00	9.065E-01	9.065E-01	12.54
PA-231	283.67	------	1.60*	2.978E+00	------ Line Not Found		------
	301.29	191	4.60	2.830E+00	1.084E+00	1.084E+00	56.39
	330.00	180	1.30	2.603E+00	3.932E+00	3.932E+00	57.43
TH-232	238.59	3634	44.60*	3.456E+00	1.740E+00	1.740E+00	4.54
	911.20	691	27.70	1.001E+00	1.841E+00	1.841E+00	12.20
	964.40	155	5.20	9.525E-01	2.312E+00	2.312E+00	36.02
	969.11	420	16.60	9.490E-01	1.968E+00	1.968E+00	14.12
PA-233	75.28	1592	1.26	4.772E+00	1.954E+01	1.954E+01	13.95

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	86.59	980	1.89	5.056E+00	7.573E+00	7.573E+00	18.52
	300.12	191	6.60	2.830E+00	7.557E-01	7.557E-01	56.39
	311.98	106	38.60*	2.717E+00	7.479E-02	7.479E-02	69.75
	340.50	------	4.50	2.514E+00	------ Line Not Found		------
	398.62	------	1.27	2.162E+00	------ Line Not Found		------
	415.76	------	1.62	2.076E+00	------ Line Not Found		------
TH-234	63.29	208	3.80*	4.283E+00	9.435E-01	9.435E-01	78.39
	92.38	830	5.41	5.119E+00	2.211E+00	2.211E+00	22.86
	112.81	------	0.24	5.130E+00	------ Line Not Found		------
U-234	67.67	------	0.37	4.491E+00	------ Line Not Found		------
	241.98	816	7.49	3.423E+00	2.349E+00	2.349E+00	21.39
	295.21	873	19.20*	2.871E+00	1.169E+00	1.169E+00	12.43
	351.92	1305	37.20	2.437E+00	1.063E+00	1.063E+00	10.20
U-235	89.95	676	2.70	5.091E+00	3.631E+00	3.631E+00	21.94
	93.35	830	4.50	5.119E+00	2.658E+00	2.658E+00	22.86
	105.00	120	2.10	5.158E+00	8.171E-01	8.171E-01	117.89
	143.76	23	10.50*	4.797E+00	3.403E-02	3.403E-02	516.63
	163.33	------	4.70	4.508E+00	------ Line Not Found		------
	185.71	310	54.00	4.165E+00	1.018E-01	1.018E-01	48.13
	205.31	------	5.00	3.889E+00	------ Line Not Found		------
NP-237	86.48	980	12.60*	5.056E+00	1.136E+00	1.136E+00	18.52
	95.87	------	2.60	5.140E+00	------ Line Not Found		------
U-238	63.29	208	3.80*	4.283E+00	9.435E-01	9.435E-01	78.39
ANH-511	511.00	372	100.00*	1.700E+00	1.615E-01	1.615E-01	32.66

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	816	3.95*	3.423E+00	4.454E+00	4.592E+00	21.39

Flag: "*" = Keyline

Sample ID : G158048004 Acquisition date : 6-APR-2006 23:46:31

Total number of lines in spectrum 76
Number of unidentified lines 24
Number of lines tentatively identified by NID 52 68.42%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.518E+01	2.518E+01	0.122E+01	4.86	
MN-54	312.70D	1.07	2.966E-02	3.175E-02	3.360E-02	105.84	
NB-95	35.06D	1.84	6.271E-02	1.151E-01	0.627E-01	54.49	
CD-109	464.00D	1.05	3.777E+00	3.954E+00	0.732E+00	18.52	
SN-126	1.00E+05Y	1.00	3.869E-01	3.869E-01	0.716E-01	18.52	
CS-135	2.30E+06Y	1.00	6.112E-01	6.112E-01	1.851E-01	30.28	
BA-137M	30.17Y	1.00	1.844E-02	1.848E-02	4.240E-02	229.42	
CS-137	30.17Y	1.00	1.950E-02	1.954E-02	4.482E-02	229.42	
CE-141	32.50D	1.93	7.382E-03	1.421E-02	7.344E-02	516.63	
EU-155	4.96Y	1.01	8.289E-02	8.387E-02	9.888E-02	117.89	
HG-203	46.61D	1.58	4.865E-02	7.682E-02	6.123E-02	79.71	
TL-208	1.91Y	1.03	6.831E-01	7.043E-01	0.704E-01	10.00	
BI-211	7.04E+08Y	1.00	3.055E+00	3.055E+00	0.312E+00	10.20	
BI-212	1.91Y	1.03	1.207E+00	1.245E+00	0.382E+00	30.70	
PB-212	1.91Y	1.03	1.740E+00	1.794E+00	0.082E+00	4.54	
BI-214	1600.00Y	1.00	9.065E-01	9.065E-01	1.137E-01	12.54	
PB-214	1600.00Y	1.00	1.063E+00	1.063E+00	0.108E+00	10.20	
RA-223	7.04E+08Y	1.00	7.191E-01	7.191E-01	2.177E-01	30.28	K
RA-226	1600.00Y	1.00	9.065E-01	9.065E-01	1.137E-01	12.54	
AC-228	5.75Y	1.01	1.841E+00	1.860E+00	0.227E+00	12.20	
RA-228	5.75Y	1.01	1.841E+00	1.860E+00	0.227E+00	12.20	
TH-228	1.91Y	1.03	1.740E+00	1.794E+00	0.082E+00	4.54	
TH-230	7.70E+04Y	1.00	9.065E-01	9.065E-01	1.137E-01	12.54	
PA-231	3.28E+04Y	1.00	1.084E+00	1.084E+00	0.611E+00	56.39	K
TH-232	1.41E+10Y	1.00	1.740E+00	1.740E+00	0.079E+00	4.54	
PA-233	2.14E+06Y	1.00	7.479E-02	7.479E-02	5.216E-02	69.75	
TH-234	4.47E+09Y	1.00	9.435E-01	9.435E-01	7.396E-01	78.39	
U-234	2.45E+05Y	1.00	1.169E+00	1.169E+00	0.145E+00	12.43	
U-235	7.04E+08Y	1.00	3.403E-02	3.403E-02	17.58E-02	516.63	
NP-237	2.14E+06Y	1.00	1.136E+00	1.136E+00	0.210E+00	18.52	
U-238	4.47E+09Y	1.00	9.435E-01	9.435E-01	7.396E-01	78.39	
ANH-511	1.00E+09Y	1.00	1.615E-01	1.615E-01	0.527E-01	32.66	
Total Activity :			5.412E+01	5.459E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.454E+00	4.592E+00	0.982E+00	21.39	
Total Activity :			4.454E+00	4.592E+00			

Grand Total Activity : 5.857E+01 5.918E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : G158048004 Acquisition date : 6-APR-2006 23:46:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.83	272	1496	1.44	255.36	251	10	1.26E-02	57.0	4.99E+00	
0	177.87	95	725	0.89	352.79	350	6	4.40E-03	92.1	4.29E+00	T
0	308.00	102	505	2.41	611.37	606	10	4.72E-03	85.0	2.76E+00	T
0	410.11	84	337	1.81	814.29	811	8	3.91E-03	78.5	2.10E+00	T
0	428.35	58	352	3.47	850.53	846	11	2.69E-03	****	2.02E+00	T
0	493.69	53	222	1.49	980.40	977	9	2.43E-03	****	1.76E+00	T
0	653.09	51	168	2.10	1297.24	1293	9	2.36E-03	96.3	1.35E+00	
0	755.66	98	236	0.88	1501.13	1494	14	4.54E-03	69.7	1.18E+00	T
0	802.31	20	112	0.70	1593.87	1591	8	9.05E-04	****	1.12E+00	T
0	856.68	21	74	1.47	1701.98	1698	7	9.56E-04	****	1.06E+00	
0	869.23	56	84	1.99	1726.94	1723	8	2.61E-03	62.3	1.04E+00	T
0	877.31	29	48	1.50	1743.00	1740	6	1.34E-03	84.2	1.03E+00	T
1	976.42	47	105	2.24	1940.06	1908	51	2.16E-03	****	9.43E-01	
0	1031.85	74	215	6.51	2050.30	2041	20	3.44E-03	****	8.99E-01	
0	1040.90	27	119	1.83	2068.29	2062	11	1.26E-03	****	8.93E-01	
0	1181.73	39	82	1.40	2348.36	2344	8	1.80E-03	88.8	8.02E-01	
0	1228.06	44	113	1.35	2440.50	2438	9	2.04E-03	91.4	7.76E-01	
0	1248.42	36	153	4.93	2481.00	2474	14	1.68E-03	****	7.66E-01	
0	1314.58	34	50	1.89	2612.60	2608	8	1.59E-03	79.2	7.33E-01	
0	1345.46	13	23	0.66	2674.03	2672	5	6.06E-04	****	7.19E-01	
0	1395.50	16	58	1.20	2773.56	2768	11	7.63E-04	****	6.97E-01	T
0	1401.79	17	48	1.05	2786.08	2782	10	7.87E-04	****	6.94E-01	
0	1428.21	29	70	1.32	2838.64	2834	17	1.34E-03	****	6.83E-01	
0	1590.53	97	83	6.51	3161.57	3152	22	4.49E-03	51.9	6.22E-01	
0	1620.52	23	51	1.24	3221.25	3214	13	1.04E-03	****	6.12E-01	
0	1642.40	51	47	12.03	3264.78	3252	31	2.34E-03	84.7	6.04E-01	
0	1717.03	7	4	0.63	3413.28	3410	6	3.29E-04	****	5.80E-01	
0	1728.96	22	28	1.51	3437.02	3432	10	1.01E-03	****	5.77E-01	
0	1764.33	185	18	1.72	3507.41	3499	18	8.55E-03	18.3	5.66E-01	
0	1811.60	9	5	1.08	3601.46	3596	12	4.38E-04	****	5.52E-01	T
0	1850.50	30	28	4.89	3678.89	3671	17	1.39E-03	90.4	5.41E-01	
0	1887.24	26	25	1.13	3752.00	3739	25	1.20E-03	****	5.31E-01	
0	1906.25	13	4	1.55	3789.84	3787	7	5.79E-04	75.3	5.26E-01	
0	1926.08	18	25	0.60	3829.31	3820	20	8.28E-04	****	5.21E-01	
0	1983.53	25	17	5.86	3943.65	3933	23	1.17E-03	93.7	5.06E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:49:56.91

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*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                               DETECTOR DATA                               *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048004.CNF;1  *
* Acquisition date : 6-APR-2006 23:46:31.  Detector SN#    : 3941466       *
* Detector ID      : WELL                  Sensitivity     : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 06:00:00.00         Abundance limit : 75.00000      *
* Elapsed real time: 0 06:00:08.48         Half life ratio : 8.00000       *
*****************************************************************************
*                                                                           *
*                               SAMPLE DATA                                 *
*                                                                           *
* Sample date      : 7-MAR-2006 09:30:00.  Nuclide Library : EPI            *
* Sample ID        : G158048004            Analyst initials: MJH1           *
* Batch Number     : 513799                Sample Quantity : 1.69520E+02 GRAM  *
*****************************************************************************
*                                                                           *
*                                 QC DATA                                   *
*                                                                           *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53.5MS Isotope      :               *
* MSD DPM          :                       MSD Isotope     :               *
* LCS DPM          :                       LCS Isotope     :               *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.518E+01	1.224E+00	4.921E-01	0.000E+00	51.173
MN-54	3.175E-02	3.360E-02	4.539E-02	0.000E+00	0.699
CS-135	6.112E-01	1.851E-01	1.697E-01	0.000E+00	3.603
BA-137M	1.848E-02	4.240E-02	4.584E-02	0.000E+00	0.403
CS-137	1.954E-02	4.482E-02	4.846E-02	0.000E+00	0.403
CE-141	1.279E-02	6.607E-02	9.633E-02	0.000E+00	0.133
HG-203	7.682E-02	6.123E-02	5.512E-02	0.000E+00	1.394
TL-208	7.043E-01	7.041E-02	4.260E-02	0.000E+00	16.535
BI-211	3.055E+00	3.116E-01	2.322E-01	0.000E+00	13.158
BI-212	1.245E+00	3.821E-01	3.797E-01	0.000E+00	3.278
PB-212	1.794E+00	8.151E-02	7.125E-02	0.000E+00	25.180
BI-214	9.065E-01	1.137E-01	8.471E-02	0.000E+00	10.702
PB-214	1.063E+00	1.084E-01	8.096E-02	0.000E+00	13.125
RA-223	3.746E-03	4.948E-01	7.326E-01	0.000E+00	0.005
RA-224	4.592E+00	9.822E-01	7.418E-01	0.000E+00	6.190
RA-226	9.065E-01	1.137E-01	8.471E-02	0.000E+00	10.702
AC-228	1.860E+00	2.270E-01	1.626E-01	0.000E+00	11.441
RA-228	1.860E+00	2.270E-01	1.626E-01	0.000E+00	11.441

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
TH-228	1.794E+00	8.151E-02	7.124E-02	0.000E+00	25.182
TH-230	9.065E-01	1.137E-01	8.471E-02	0.000E+00	10.702
TH-232	1.740E+00	7.906E-02	6.910E-02	0.000E+00	25.183
TH-234	9.435E-01	7.396E-01	8.779E-01	0.000E+00	1.075
U-234	1.169E+00	1.453E-01	1.426E-01	0.000E+00	8.202
U-235	3.403E-02	1.758E-01	2.432E-01	0.000E+00	0.140
U-238	9.435E-01	7.396E-01	8.779E-01	0.000E+00	1.075
ANH-511	1.615E-01	5.275E-02	3.599E-02	0.000E+00	4.488

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	2.406E-01		2.848E-01	4.918E-01	0.000E+00	0.489
NA-22	-1.908E-02		3.292E-02	5.371E-02	0.000E+00	-0.355
AL-26	5.145E-04		2.366E-02	3.726E-02	0.000E+00	0.014
SC-46	-9.958E-03		3.117E-02	5.294E-02	0.000E+00	-0.188
V-48	1.629E-02		1.058E-01	1.603E-01	0.000E+00	0.102
CR-51	9.870E-02		3.641E-01	6.203E-01	0.000E+00	0.159
CO-56	2.325E-02		3.192E-02	5.733E-02	0.000E+00	0.406
CO-57	2.242E-03		1.809E-02	2.922E-02	0.000E+00	0.077
CO-58	-1.678E-02		3.178E-02	5.358E-02	0.000E+00	-0.313
FE-59	-5.461E-02		8.565E-02	1.407E-01	0.000E+00	-0.388
CO-60	1.700E-02		2.826E-02	5.034E-02	0.000E+00	0.338
ZN-65	-1.902E-02		7.676E-02	1.106E-01	0.000E+00	-0.172
SE-75	1.196E-02		3.550E-02	5.364E-02	0.000E+00	0.223
KR-85	1.164E+01		5.856E+00	9.415E+00	0.000E+00	1.236
SR-85	7.026E-02		3.536E-02	5.685E-02	0.000E+00	1.236
Y-88	5.589E-03		2.718E-02	5.037E-02	0.000E+00	0.111
Y-91	-2.296E-02		3.267E-02	5.236E-02	0.000E+00	-0.439
NB-94	-9.271E-03		2.286E-02	3.903E-02	0.000E+00	-0.238
NB-95	1.151E-01		6.271E-02	8.831E-02	0.000E+00	1.303
ZR-95	1.547E-01	+	1.077E-01	1.163E-01	0.000E+00	1.330
RU-103	1.407E-03		4.355E-02	6.350E-02	0.000E+00	0.022
RH-106	6.609E-02		2.277E-01	4.032E-01	0.000E+00	0.164
RU-106	9.852E-02		2.294E-01	4.085E-01	0.000E+00	0.241
AG-108M	1.066E-03		2.283E-02	3.830E-02	0.000E+00	0.028
CD-109	3.954E+00		7.323E-01	9.190E-01	0.000E+00	4.303
AG-110M	-1.387E-03		3.007E-02	4.549E-02	0.000E+00	-0.031
SN-113	-1.268E-02		3.452E-02	5.712E-02	0.000E+00	-0.222
SN-115	3.100E+00	+	4.198E+00	5.940E+00	0.000E+00	0.522
SN-117M	-3.437E-02		7.867E-02	1.340E-01	0.000E+00	-0.256
TE-123M	-1.588E-02		2.012E-02	3.403E-02	0.000E+00	-0.467
SB-124	5.687E-02		5.809E-02	1.169E-01	0.000E+00	0.486
SB-125	7.393E-02	+	9.463E-02	1.094E-01	0.000E+00	0.676
TE-125M	2.059E+00		8.175E+00	1.183E+01	0.000E+00	0.174
I-126	-7.067E-01		3.378E-01	5.367E-01	0.000E+00	-1.317
SB-126	5.294E-02		2.456E-01	4.308E-01	0.000E+00	0.123

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SN-126	3.869E-01		7.165E-02	8.915E-02	0.000E+00	4.340
SB-127	-3.833E+00		1.655E+01	2.850E+01	0.000E+00	-0.134
I-131	1.027E-02		3.004E-01	5.062E-01	0.000E+00	0.020
BA-133	-1.555E-02		3.417E-02	4.926E-02	0.000E+00	-0.316
CS-134	9.782E-02	+	4.351E-02	6.163E-02	0.000E+00	1.587
CS-136	9.077E-02		1.737E-01	3.070E-01	0.000E+00	0.296
CE-139	-1.066E-04		2.124E-02	3.645E-02	0.000E+00	-0.003
BA-140	1.705E-01		4.602E-01	7.762E-01	0.000E+00	0.220
LA-140	1.183E-01		1.455E-01	2.498E-01	0.000E+00	0.474
CE-144	-6.595E-02		1.360E-01	2.328E-01	0.000E+00	-0.283
PM-144	2.108E-03		2.572E-02	4.484E-02	0.000E+00	0.047
PM-146	2.579E-02		3.029E-02	5.247E-02	0.000E+00	0.492
ND-147	-7.385E-01		1.093E+00	1.760E+00	0.000E+00	-0.420
PM-147	4.027E+03		3.608E+04	5.831E+04	0.000E+00	0.069
EU-152	-1.922E-02		6.714E-02	1.120E-01	0.000E+00	-0.172
GD-153	-5.368E-02		5.843E-02	8.200E-02	0.000E+00	-0.655
EU-154	-5.056E-02		9.098E-02	1.487E-01	0.000E+00	-0.340
EU-155	8.387E-02	+	9.888E-02	1.177E-01	0.000E+00	0.713
TB-160	2.039E-02		1.282E-01	1.950E-01	0.000E+00	0.105
TM-171	-1.359E+01		1.443E+01	2.055E+01	0.000E+00	-0.662
HF-181	-2.039E-02		3.960E-02	6.457E-02	0.000E+00	-0.316
TA-182	3.244E-02		1.584E-01	2.704E-01	0.000E+00	0.120
IR-192	1.530E-02		2.956E-02	4.487E-02	0.000E+00	0.341
BI-207	6.645E-03		3.788E-02	6.549E-02	0.000E+00	0.101
BI-210	8.806E-01		6.952E-01	1.059E+00	0.000E+00	0.831
PB-210	8.806E-01		6.952E-01	1.059E+00	0.000E+00	0.831
PB-211	3.063E-01		6.846E-01	1.163E+00	0.000E+00	0.263
RN-219	3.671E-02		2.990E-01	5.029E-01	0.000E+00	0.073
AC-227	-1.477E-01		2.526E-01	4.222E-01	0.000E+00	-0.350
TH-227	-1.452E-01		2.484E-01	4.150E-01	0.000E+00	-0.350
TH-229	-3.390E-02		3.340E-01	5.695E-01	0.000E+00	-0.060
PA-231	-4.879E-01		1.019E+00	1.701E+00	0.000E+00	-0.287
TH-231	7.191E-01	+	2.177E-01	2.414E-01	0.000E+00	2.979
PA-233	7.479E-02	+	5.216E-02	7.529E-02	0.000E+00	0.993
PA-234	-4.076E-02		2.203E-01	3.752E-01	0.000E+00	-0.109
PA-234M	3.056E+00		3.350E+00	6.022E+00	0.000E+00	0.508
NP-237	1.136E+00		2.104E-01	2.607E-01	0.000E+00	4.357
NP-239	1.616E-01	+	1.618E-01	2.078E-01	0.000E+00	0.778
AM-241	1.728E-02		6.485E-02	9.547E-02	0.000E+00	0.181
AM-242	1.700E+00	+	2.004E+00	2.327E+00	0.000E+00	0.730
CM-247	5.951E-03		2.692E-02	4.543E-02	0.000E+00	0.131
CF-249	1.276E-02		2.888E-02	4.917E-02	0.000E+00	0.259
CF-251	9.236E-02	+	8.508E-02	1.397E-01	0.000E+00	0.661

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                              CHARLESTON ,SC 29417                         *
*                               GROSS GAMMA REPORT                          *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513799                    SAMPLE ID  : G158048004        *
*   ANALYST      : MJH1                      DETECTOR   : WELL              *
*   SAMPLE DATE  :  7-MAR-2006 09:30:00.00  COUNT TIME :    0 06:00:00.00   *
*   ANALYSIS DATE:  6-APR-2006 23:46:31.90  SAMPLE ALQT:  169.520 GRAM      *
*                                                                           *
*****************************************************************************
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GROSS GAMMA ACTIVITY (pCi/GRAM) : 9.950E+00
GROSS GAMMA ERROR (pCi/GRAM) : 2.020E+00
GROSS GAMMA MDA (pCi/GRAM) : 8.646E+00
GROSS GAMMA DLC (pCi/GRAM) : 4.259E+00

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:50:30.76

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048005.CNF;1
Sample date      : 7-MAR-2006 12:45:00. Acquisition date : 6-APR-2006 23:46:50.
Sample ID        : G158048005           Sample quantity  : 1.27480E+02 GRAM
Detector name    : GAMMA3               Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:04.02  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 12922955
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	53.21*	43	859	1.01	107.20	105	6	2.00E-03	119.5	
2	0	63.06*	425	2023	1.39	126.87	121	12	1.97E-02	22.4	
3	3	74.85*	1253	1527	1.30	150.40	143	16	5.80E-02	6.5	1.66E+00
4	3	77.12*	1852	1283	1.15	154.94	143	16	8.57E-02	4.3	
5	6	84.30*	361	920	1.60	169.28	166	27	1.67E-02	14.9	3.50E+00
6	6	87.15	1041	1746	2.00	174.97	166	27	4.82E-02	8.7	
7	6	89.86	543	965	1.20	180.37	166	27	2.51E-02	10.7	
8	6	92.75*	1038	1417	1.87	186.14	166	27	4.81E-02	8.9	
9	0	104.61	190	1234	2.04	209.82	206	10	8.80E-03	35.3	
10	0	115.08*	66	982	1.12	230.73	227	8	3.05E-03	88.8	
11	0	129.16	269	1586	1.33	258.84	254	12	1.25E-02	30.2	
12	0	143.50*	34	1026	1.22	287.47	284	8	1.56E-03	176.9	
13	0	153.75	74	713	0.96	307.94	305	6	3.44E-03	57.9	
14	0	185.84*	801	1067	1.72	372.01	367	11	3.71E-02	9.3	
15	2	205.83*	41	569	1.36	411.93	409	16	1.91E-03	102.0	2.58E+00
16	2	209.42	441	870	1.72	419.09	409	16	2.04E-02	13.5	
17	0	223.82*	14	480	1.33	447.84	446	6	6.53E-04	267.2	
18	4	238.57*	3379	684	1.30	477.28	470	19	1.56E-01	2.3	7.09E-01
19	4	241.51*	907	873	1.84	483.17	470	19	4.20E-02	8.5	
20	0	270.21*	236	775	1.50	540.46	535	12	1.09E-02	25.3	
21	0	277.37*	155	670	0.96	554.76	550	11	7.18E-03	34.6	
22	0	295.13*	1320	515	1.44	590.23	586	10	6.11E-02	4.3	
23	0	300.16	313	534	1.19	600.27	596	11	1.45E-02	15.4	
24	0	327.72	146	522	1.43	655.30	652	9	6.74E-03	29.3	
25	0	338.23	780	619	1.64	676.29	671	12	3.61E-02	7.3	
26	0	351.83*	2350	646	1.51	703.45	697	15	1.09E-01	3.2	
27	0	374.05*	66	403	2.39	747.82	743	11	3.06E-03	62.0	
28	0	409.36	96	371	2.04	818.32	814	10	4.44E-03	38.9	
29	0	462.57*	139	349	1.59	924.57	919	11	6.46E-03	29.4	
30	0	510.87*	254	669	2.18	1021.02	1009	21	1.17E-02	29.0	
31	0	539.17	50	191	1.06	1077.56	1074	9	2.29E-03	52.9	
32	0	561.96*	44	249	2.12	1123.07	1118	11	2.03E-03	72.3	
33	0	582.96*	1068	238	1.65	1164.99	1160	11	4.94E-02	4.3	
34	0	595.49	30	183	1.35	1190.01	1187	8	1.40E-03	79.3	
35	0	608.85*	1577	366	1.71	1216.69	1209	16	7.30E-02	3.8	
36	0	629.55	15	117	1.19	1258.03	1256	6	6.96E-04	117.1	
37	0	692.98	35	120	1.45	1384.73	1382	6	1.64E-03	52.0	
38	0	726.87*	245	226	1.86	1452.40	1446	14	1.13E-02	16.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	769.21	336	321	5.77	1536.96	1524	25	1.56E-02	15.4	
40	0	784.41	36	224	1.65	1567.33	1564	12	1.67E-03	84.4	
41	0	794.85*	149	254	2.36	1588.18	1582	16	6.91E-03	25.6	
42	0	813.81	30	66	1.68	1626.05	1624	6	1.37E-03	47.6	
43	0	834.09	14	293	0.75	1666.55	1664	14	6.71E-04	251.0	
44	0	846.72	33	74	1.69	1691.78	1688	7	1.51E-03	47.3	
45	0	859.94	178	163	2.54	1718.19	1711	13	8.26E-03	16.5	
46	0	890.71*	43	210	6.11	1779.65	1772	16	2.00E-03	80.0	
47	0	910.62*	705	254	2.04	1819.42	1809	17	3.27E-02	6.6	
48	0	933.67*	104	158	3.14	1865.45	1859	15	4.83E-03	29.3	
49	2	964.41*	155	156	2.61	1926.86	1918	33	7.19E-03	22.5	1.29E+00
50	2	968.43*	442	121	2.04	1934.89	1918	33	2.05E-02	7.1	
51	0	1000.17*	46	114	2.85	1998.29	1994	11	2.15E-03	53.1	
52	0	1110.19	43	129	1.44	2218.06	2214	11	2.00E-03	54.0	
53	0	1119.77	346	247	2.76	2237.19	2230	19	1.60E-02	12.1	
54	0	1132.49	43	77	2.18	2262.61	2259	8	1.98E-03	38.8	
55	0	1155.43*	59	172	4.74	2308.43	2300	15	2.73E-03	52.1	
56	0	1237.43*	224	170	3.33	2472.24	2464	17	1.04E-02	15.5	
57	0	1263.52*	7	55	1.23	2524.36	2520	6	3.47E-04	176.2	
58	0	1377.30*	108	66	2.43	2751.67	2745	16	4.99E-03	21.7	
59	0	1407.59*	56	55	2.36	2812.20	2807	13	2.57E-03	32.7	
60	0	1422.59	60	107	14.10	2842.16	2828	31	2.77E-03	53.1	
61	0	1460.07*	2704	104	2.73	2917.05	2904	23	1.25E-01	2.2	
62	0	1579.68	39	33	6.23	3156.04	3147	16	1.80E-03	37.8	
63	0	1586.90*	23	75	0.76	3170.47	3165	11	1.07E-03	81.7	
64	0	1629.56	56	34	2.45	3255.70	3250	19	2.57E-03	28.3	
65	0	1691.33	19	14	0.90	3379.14	3375	9	8.95E-04	41.2	
66	0	1728.50	78	54	1.96	3453.41	3446	21	3.60E-03	25.9	
67	0	1741.43*	29	28	4.93	3479.24	3473	18	1.33E-03	54.5	
68	0	1764.05*	254	79	2.90	3524.44	3507	31	1.18E-02	12.4	
69	0	1809.97	17	66	9.39	3616.21	3590	33	7.69E-04	150.8	
70	0	1837.25	44	16	7.86	3670.73	3661	21	2.04E-03	27.1	
71	0	1847.01*	54	19	1.72	3690.23	3684	16	2.52E-03	25.8	
72	0	1901.40	45	40	10.14	3798.92	3780	33	2.08E-03	46.0	
73	2	2012.05*	18	18	3.35	4020.06	4014	19	8.28E-04	55.1	2.01E+00
74	2	2017.10	13	5	2.24	4030.15	4014	19	6.04E-04	40.8	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

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*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048005    *
* Acquisition date :  6-APR-2006 23:46:50 Detector SN#    : 12922955     *
* Detector ID      : GAMMA3               Sensitivity     : 3.000        *
* Geometry         : CAN                  Energy tolerance: 2.000        *
* Elapsed live time:    0 06:00:00.00     Abundance limit : 75.000       *
* Elapsed real time:    0 06:00:04.02     Half life ratio :  8.000       *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      :  7-MAR-2006 12:45:00 Nuclide Library :              *
* Sample ID        : G158048005           Analyst initials: MJH1         *
* Batch Number     : 513799               Sample Quantity : 1.2748E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000    *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME : 28-MAR-2006 04:38:19 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
AL-26	1.634E-02	4.929E-02	2.967E-02	0.000E+00
K-40	2.163E+01	1.628E+00	3.116E-01	0.000E+00
SC-46	3.057E-02	4.899E-02	4.536E-02	0.000E+00
MN-54	8.056E-03	4.044E-02	3.790E-02	0.000E+00
CO-56	2.248E-02	2.135E-02	3.807E-02	0.000E+00
CD-109	1.243E+00	6.072E+00	6.671E-01	0.000E+00
SN-126	1.216E-01	5.942E-01	6.559E-02	0.000E+00
CS-135	3.101E-01	1.589E-01	1.437E-01	0.000E+00
CE-141	1.561E-02	5.527E-02	8.067E-02	0.000E+00
EU-155	1.275E-01	9.074E-02	9.643E-02	0.000E+00
HG-203	6.771E-02	4.703E-02	4.583E-02	0.000E+00
TL-208	4.961E-01	5.701E-02	3.324E-02	0.000E+00
BI-211	4.638E+00	4.263E-01	1.832E-01	0.000E+00
BI-212	9.791E-01	3.253E-01	2.728E-01	0.000E+00
PB-212	1.503E+00	1.352E-01	5.388E-02	0.000E+00
BI-214	1.340E+00	1.551E-01	6.500E-02	0.000E+00
PB-214	1.613E+00	1.705E-01	6.386E-02	0.000E+00
RA-223	8.544E-02	3.944E-01	6.073E-01	0.000E+00
RA-224	4.592E+00	8.359E-01	6.131E-01	0.000E+00
RA-226	1.340E+00	1.551E-01	6.500E-02	0.000E+00
AC-228	1.445E+00	2.505E-01	1.279E-01	0.000E+00
RA-228	1.445E+00	2.505E-01	1.279E-01	0.000E+00
TH-228	1.503E+00	1.352E-01	5.387E-02	0.000E+00
TH-230	1.340E+00	1.551E-01	6.500E-02	0.000E+00
TH-232	1.458E+00	1.311E-01	5.226E-02	0.000E+00
PA-234M	3.366E+00	3.591E+00	4.511E+00	0.000E+00
TH-234	3.276E+00	1.583E+00	1.190E+00	0.000E+00
U-234	1.541E+00	1.912E-01	1.330E-01	0.000E+00
U-235	4.633E-02	1.640E-01	2.049E-01	0.000E+00
NP-237	3.571E-01	1.746E+00	1.949E-01	0.000E+00
U-238	3.276E+00	1.583E+00	1.190E+00	0.000E+00
ANH-511	8.649E-02	5.051E-02	2.693E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM	K.L. Act error) Ided	MDA (pCi/GRAM	)	
BE-7	5.207E-02	2.286E-01	3.901E-01	0.000E+00	NOT IDENT.
NA-22	-2.015E-02	2.514E-02	4.157E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	1.025E+13	0.000E+00	0.000E+00	SHORT HLIF
V-48	-6.008E-02	8.133E-02	1.317E-01	0.000E+00	NOT IDENT.
CR-51	6.091E-02	2.911E-01	5.097E-01	0.000E+00	NOT IDENT.
MN-56	0.000E+00	9.494E+40	0.000E+00	0.000E+00	SHORT HLIF
CO-57	5.021E-03	1.404E-02	2.432E-02	0.000E+00	NOT IDENT.
CO-58	-3.524E-02	2.992E-02	4.025E-02	0.000E+00	NOT IDENT.
FE-59	-4.467E-02	6.364E-02	1.075E-01	0.000E+00	NOT IDENT.
CO-60	6.074E-04	2.278E-02	3.977E-02	0.000E+00	NOT IDENT.
ZN-65	7.352E-02	8.808E-02	9.520E-02	0.000E+00	NOT IDENT.
SE-75	-9.175E-03	2.579E-02	4.485E-02	0.000E+00	NOT IDENT.
KR-85	0.000E+00	4.560E+00	7.436E+00	0.000E+00	NOT IDENT.
SR-85	0.000E+00	2.750E-02	4.484E-02	0.000E+00	NOT IDENT.
Y-88	0.000E+00	2.914E-02	3.947E-02	0.000E+00	FAIL ABUN
Y-91	1.276E-02	2.480E-02	3.961E-02	0.000E+00	NOT IDENT.
NB-94	-1.099E-02	1.949E-02	3.296E-02	0.000E+00	NOT IDENT.
NB-95	0.000E+00	3.854E-02	7.224E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.318E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	1.729E-02	4.821E-02	8.472E-02	0.000E+00	NOT IDENT.
MO-99	0.000E+00	3.640E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.730E+34	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-8.997E-03	2.873E-02	4.781E-02	0.000E+00	FAIL ABUN
RH-106	6.332E-02	1.773E-01	3.164E-01	0.000E+00	FAIL ABUN
RU-106	5.051E-02	1.772E-01	3.152E-01	0.000E+00	NOT IDENT.
AG-108M	-8.720E-04	1.840E-02	3.128E-02	0.000E+00	NOT IDENT.
AG-110M	-7.211E-03	1.924E-02	3.309E-02	0.000E+00	NOT IDENT.
SN-113	2.057E-03	2.690E-02	4.628E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	7.559E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-115	0.000E+00	4.285E+00	4.961E+00	0.000E+00	FAIL ABUN
SN-117M	-2.292E-02	6.672E-02	1.115E-01	0.000E+00	NOT IDENT.
TE-123M	-4.810E-03	1.717E-02	2.874E-02	0.000E+00	NOT IDENT.
SB-124	5.305E-02	4.382E-02	9.412E-02	0.000E+00	FAIL ABUN
SB-125	3.129E-02	5.090E-02	8.898E-02	0.000E+00	FAIL ABUN
TE-125M	1.471E+00	5.922E+00	1.029E+01	0.000E+00	NOT IDENT.
I-126	1.687E-01	2.298E-01	4.133E-01	0.000E+00	NOT IDENT.
SB-126	-4.174E-02	1.903E-01	3.269E-01	0.000E+00	NOT IDENT.
SB-127	2.498E+00	1.244E+01	2.186E+01	0.000E+00	FAIL ABUN
I-131	1.607E-01	2.400E-01	4.235E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	5.858E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	9.711E+00	0.000E+00	0.000E+00	SHORT HLIF
BA-133	1.052E-02	2.563E-02	3.962E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	7.964E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.627E-02	4.943E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	2.624E+32	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.027E-01	1.392E-01	2.543E-01	0.000E+00	FAIL ABUN
BA-137M	1.564E-03	1.993E-02	3.491E-02	0.000E+00	NOT IDENT.
CS-137	1.708E-03	2.107E-02	3.691E-02	0.000E+00	NOT IDENT.
CE-139	8.333E-03	1.816E-02	3.090E-02	0.000E+00	NOT IDENT.
BA-140	3.702E-01	4.097E-01	6.088E-01	0.000E+00	FAIL ABUN
LA-140	-2.007E-01	1.250E-01	1.848E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	1.005E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.690E-02	1.320E-01	1.944E-01	0.000E+00	NOT IDENT.
PM-144	-5.832E-03	2.299E-02	3.409E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	3.942E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	4.546E-03	2.437E-02	4.172E-02	0.000E+00	NOT IDENT.
ND-147	1.531E-01	8.042E-01	1.439E+00	0.000E+00	FAIL ABUN
PM-147	-3.765E+03	2.851E+04	4.880E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	6.316E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-3.757E-02	5.314E-02	8.949E-02	0.000E+00	FAIL ABUN
GD-153	-1.836E-02	4.761E-02	7.302E-02	0.000E+00	FAIL ABUN
EU-154	-5.550E-02	6.980E-02	1.153E-01	0.000E+00	NOT IDENT.
TB-160	4.377E-02	9.390E-02	1.647E-01	0.000E+00	FAIL ABUN
TM-171	1.223E+00	1.685E+01	2.683E+01	0.000E+00	FAIL ABUN
HF-181	-1.481E-02	3.149E-02	5.210E-02	0.000E+00	NOT IDENT.
TA-182	-6.460E-02	1.261E-01	2.128E-01	0.000E+00	FAIL ABUN
IR-192	2.664E-03	2.145E-02	3.747E-02	0.000E+00	FAIL ABUN
BI-207	4.031E-03	2.880E-02	5.121E-02	0.000E+00	NOT IDENT.
BI-210	2.029E+00	2.237E+00	3.733E+00	0.000E+00	NOT IDENT.
PB-210	2.029E+00	2.237E+00	3.733E+00	0.000E+00	NOT IDENT.
PB-211	-2.429E-01	5.533E-01	8.938E-01	0.000E+00	NOT IDENT.
RN-219	3.233E-02	2.313E-01	3.978E-01	0.000E+00	FAIL ABUN
AC-227	2.435E-02	2.072E-01	3.661E-01	0.000E+00	FAIL ABUN

TH-227	2.393E-02	2.037E-01	3.599E-01	0.000E+00	FAIL ABUN
TH-229	-1.153E-01	2.822E-01	4.640E-01	0.000E+00	FAIL ABUN
PA-231	-3.466E-01	8.254E-01	1.424E+00	0.000E+00	FAIL ABUN
TH-231	0.000E+00	1.867E-01	2.040E-01	0.000E+00	FAIL ABUN
PA-233	-2.319E-02	3.454E-02	5.873E-02	0.000E+00	FAIL ABUN
PA-234	8.781E-02	1.723E-01	3.007E-01	0.000E+00	FAIL ABUN
NP-239	8.284E-02	1.473E-01	1.747E-01	0.000E+00	FAIL ABUN
AM-241	8.534E-02	9.221E-02	1.511E-01	0.000E+00	NOT IDENT.
AM-242	0.000E+00	1.904E+00	2.062E+00	0.000E+00	FAIL ABUN
CM-247	7.199E-05	2.086E-02	3.568E-02	0.000E+00	FAIL ABUN
CF-249	-2.797E-04	2.203E-02	3.779E-02	0.000E+00	NOT IDENT.
CF-251	-2.239E-02	7.217E-02	1.198E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:50:32.75

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*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048005.CNF;1
Sample date      : 7-MAR-2006 12:45:00. Acquisition date : 6-APR-2006 23:46:50.
Sample ID        : G158048005           Sample quantity  : 1.27480E+02 GRAM
Detector name    : GAMMA3               Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:04.02  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 12922955
Matrix Spike DPM :                      LCS DPM          :
*********************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
AL-26	511.00	254	163.62	2.880E+00	5.286E-02	5.286E-02	58.40
	1808.65	17	99.76*	1.000E+00	1.634E-02	1.634E-02	301.70
K-40	1460.81	2704	10.67*	1.150E+00	2.163E+01	2.163E+01	7.52
SC-46	889.25	43	99.98*	1.783E+00	2.374E-02	3.057E-02	160.26
	1120.51	346	99.99	1.444E+00	2.351E-01	3.028E-01	25.22
MN-54	834.83	14	99.83*	1.893E+00	7.528E-03	8.056E-03	502.02
CO-56	846.75	33	99.96*	1.868E+00	1.718E-02	2.248E-02	94.94
	1037.82	------	14.03	1.549E+00	------ Line Not Found		------
	1238.25	224	67.00	1.320E+00	2.483E-01	3.250E-01	31.57
CD-109	88.03	1041	3.79*	6.109E+00	4.411E+00	4.618E+00	19.92
SN-126	64.28	425	9.60	3.348E+00	1.297E+00	1.297E+00	47.35
	86.94	1041	8.90	6.109E+00	1.879E+00	1.879E+00	45.09
	87.57	1041	37.00*	6.109E+00	4.519E-01	4.519E-01	19.92
CS-135	268.24	236	16.00*	4.670E+00	3.101E-01	3.101E-01	51.24
CE-141	145.44	34	48.40*	6.803E+00	1.005E-02	1.930E-02	353.79
EU-155	86.54	1041	30.90	6.109E+00	5.411E-01	5.474E-01	19.96
	105.31	190	20.70*	6.885E+00	1.309E-01	1.324E-01	70.94
HG-203	70.83	------	4.75	4.462E+00	------ Line Not Found		------
	72.87	1253	8.00	4.961E+00	3.097E+00	4.881E+00	18.66
	82.60	361	3.55	5.893E+00	1.692E+00	2.667E+00	32.99
	279.20	155	77.30*	4.582E+00	4.296E-02	6.771E-02	69.46
TL-208	75.00	1253	3.43	4.961E+00	7.224E+00	7.447E+00	18.02
	277.35	155	6.80	4.582E+00	4.884E-01	5.035E-01	69.99
	510.84	254	21.60	2.880E+00	4.004E-01	4.128E-01	58.99
	583.14	1068	84.20*	2.586E+00	4.812E-01	4.961E-01	11.49
	763.30	------	1.64	2.051E+00	------ Line Not Found		------
	860.37	178	12.46	1.841E+00	7.634E-01	7.869E-01	34.26
	1093.90	------	0.37	1.476E+00	------ Line Not Found		------
BI-211	351.07	2350	12.94*	3.843E+00	4.638E+00	4.638E+00	9.19
BI-212	727.18	245	11.80*	2.142E+00	9.498E-01	9.791E-01	33.22
PB-212	74.80	1253	10.70	4.961E+00	2.316E+00	2.387E+00	18.31
	87.30	1041	8.00	6.109E+00	2.090E+00	2.154E+00	22.29

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	115.19	66	0.60	7.023E+00	1.528E+00	1.575E+00	177.75
	238.63	3379	44.60*	5.103E+00	1.458E+00	1.503E+00	9.00
	300.09	313	3.41	4.325E+00	2.080E+00	2.144E+00	31.96
BI-214	609.31	1577	46.30*	2.494E+00	1.340E+00	1.340E+00	11.57
	768.36	336	5.04	2.037E+00	3.217E+00	3.217E+00	32.37
	934.06	104	3.21	1.708E+00	1.867E+00	1.867E+00	59.44
	1120.29	346	15.10	1.444E+00	1.557E+00	1.557E+00	26.08
	1238.11	224	5.94	1.320E+00	2.800E+00	2.800E+00	32.02
	1377.67	108	4.11	1.205E+00	2.136E+00	2.136E+00	44.18
PB-214	74.81	1253	6.21	4.961E+00	3.990E+00	3.990E+00	17.40
	77.11	1852	10.50	5.217E+00	3.319E+00	3.319E+00	14.52
	87.30	1041	4.41	6.109E+00	3.791E+00	3.791E+00	21.53
	241.98	907	7.50	5.059E+00	2.346E+00	2.346E+00	19.04
	295.21	1320	19.20	4.379E+00	1.541E+00	1.541E+00	12.41
	351.92	2350	37.20*	3.843E+00	1.613E+00	1.613E+00	10.57
RA-223	122.32	------	1.19	7.028E+00	------ Line Not Found		------
	144.24	34	3.24	6.803E+00	1.501E-01	1.501E-01	353.82
	154.21	74	5.58	6.626E+00	1.975E-01	1.975E-01	116.08
	269.46	236	13.60	4.670E+00	3.648E-01	3.648E-01	51.03
	323.87	------	3.88*	4.088E+00	------ Line Not Found		------
	338.28	780	2.73	3.958E+00	7.082E+00	7.082E+00	18.13
	445.03	------	1.18	3.211E+00	------ Line Not Found		------
RA-226	295.21	1320	19.20	4.379E+00	1.541E+00	1.541E+00	12.41
	351.92	2350	37.20	3.843E+00	1.613E+00	1.613E+00	8.78
	609.31	1577	46.30*	2.494E+00	1.340E+00	1.340E+00	11.57
AC-228	209.25	441	4.40	5.575E+00	1.765E+00	1.783E+00	69.40
	338.32	780	11.40	3.958E+00	1.696E+00	1.713E+00	43.36
	463.01	139	4.40	3.116E+00	9.986E-01	1.009E+00	63.35
	794.95	149	4.60	1.978E+00	1.611E+00	1.628E+00	56.20
	911.21	705	27.70*	1.747E+00	1.430E+00	1.445E+00	17.34
	964.77	155	5.20	1.657E+00	1.768E+00	1.786E+00	51.25
	969.11	442	16.60	1.651E+00	1.583E+00	1.599E+00	27.16
RA-228	209.25	441	4.40	5.575E+00	1.765E+00	1.783E+00	69.40
	338.32	780	11.40	3.958E+00	1.696E+00	1.713E+00	43.36
	463.01	139	4.40	3.116E+00	9.986E-01	1.009E+00	63.35
	794.95	149	4.60	1.978E+00	1.611E+00	1.628E+00	56.20
	911.21	705	27.70*	1.747E+00	1.430E+00	1.445E+00	17.34
	964.77	155	5.20	1.657E+00	1.768E+00	1.786E+00	51.25
	969.11	442	16.60	1.651E+00	1.583E+00	1.599E+00	27.16
TH-228	84.40	361	1.21	5.893E+00	4.965E+00	5.118E+00	32.74
	238.60	3379	44.60*	5.103E+00	1.458E+00	1.503E+00	9.00
	300.10	313	3.41	4.325E+00	2.080E+00	2.144E+00	66.53
TH-230	295.21	1320	19.20	4.379E+00	1.541E+00	1.541E+00	12.41
	351.92	2350	37.20	3.843E+00	1.613E+00	1.613E+00	8.78
	609.31	1577	46.30*	2.494E+00	1.340E+00	1.340E+00	11.57
TH-232	238.59	3379	44.60*	5.103E+00	1.458E+00	1.458E+00	9.00
	911.20	705	27.70	1.747E+00	1.430E+00	1.430E+00	17.34
	964.40	155	5.20	1.657E+00	1.768E+00	1.768E+00	51.25
	969.11	442	16.60	1.651E+00	1.583E+00	1.583E+00	27.16

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
PA-234M	766.40	------	0.21	2.043E+00	------ Line Not Found		------
	1001.03	46	0.85*	1.603E+00	3.366E+00	3.366E+00	106.68
TH-234	63.29	425	3.80*	3.348E+00	3.276E+00	3.276E+00	48.32
	92.38	1038	5.41	6.452E+00	2.920E+00	2.920E+00	25.40
	112.81	------	0.24	7.008E+00	------ Line Not Found		------
U-234	67.67	------	0.37	4.030E+00	------ Line Not Found		------
	241.98	907	7.49	5.059E+00	2.349E+00	2.349E+00	19.05
	295.21	1320	19.20*	4.379E+00	1.541E+00	1.541E+00	12.41
	351.92	2350	37.20	3.843E+00	1.613E+00	1.613E+00	10.57
U-235	89.95	543	2.70	6.287E+00	3.139E+00	3.139E+00	37.78
	93.35	1038	4.50	6.452E+00	3.511E+00	3.511E+00	33.22
	105.00	190	2.10	6.885E+00	1.290E+00	1.290E+00	76.47
	143.76	34	10.50*	6.803E+00	4.633E-02	4.633E-02	354.12
	163.33	------	4.70	6.445E+00	------ Line Not Found		------
	185.71	801	54.00	6.008E+00	2.422E-01	2.422E-01	19.50
	205.31	41	5.00	5.638E+00	1.440E-01	1.440E-01	204.71
NP-237	86.48	1041	12.60*	6.109E+00	1.327E+00	1.327E+00	28.68
	95.87	------	2.60	6.601E+00	------ Line Not Found		------
U-238	63.29	425	3.80*	3.348E+00	3.276E+00	3.276E+00	48.32
ANH-511	511.00	254	100.00*	2.880E+00	8.649E-02	8.649E-02	58.40

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	907	3.95*	5.059E+00	4.455E+00	4.592E+00	18.20

Flag: "*" = Keyline

Sample ID : G158048005 Acquisition date : 6-APR-2006 23:46:50

Total number of lines in spectrum 74
Number of unidentified lines 20
Number of lines tentatively identified by NID 54 72.97%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
AL-26	7.20E+05Y	1.00	1.634E-02	1.634E-02	4.929E-02	301.70	
K-40	1.28E+09Y	1.00	2.163E+01	2.163E+01	0.163E+01	7.52	
SC-46	83.83D	1.29	2.374E-02	3.057E-02	4.899E-02	160.26	
MN-54	312.70D	1.07	7.528E-03	8.056E-03	40.44E-03	502.02	
CO-56	78.76D	1.31	1.718E-02	2.248E-02	2.135E-02	94.94	
CD-109	464.00D	1.05	4.411E+00	4.618E+00	0.920E+00	19.92	
SN-126	1.00E+05Y	1.00	4.519E-01	4.519E-01	0.900E-01	19.92	
CS-135	2.30E+06Y	1.00	3.101E-01	3.101E-01	1.589E-01	51.24	
CE-141	32.50D	1.92	1.005E-02	1.930E-02	6.827E-02	353.79	
EU-155	4.96Y	1.01	1.309E-01	1.324E-01	0.940E-01	70.94	
HG-203	46.61D	1.58	4.296E-02	6.771E-02	4.703E-02	69.46	
TL-208	1.91Y	1.03	4.812E-01	4.961E-01	0.570E-01	11.49	
BI-211	7.04E+08Y	1.00	4.638E+00	4.638E+00	0.426E+00	9.19	
BI-212	1.91Y	1.03	9.498E-01	9.791E-01	3.253E-01	33.22	
PB-212	1.91Y	1.03	1.458E+00	1.503E+00	0.135E+00	9.00	
BI-214	1600.00Y	1.00	1.340E+00	1.340E+00	0.155E+00	11.57	
PB-214	1600.00Y	1.00	1.613E+00	1.613E+00	0.171E+00	10.57	
RA-223	7.04E+08Y	1.00	3.648E-01	3.648E-01	1.862E-01	51.03	K
RA-226	1600.00Y	1.00	1.340E+00	1.340E+00	0.155E+00	11.57	
AC-228	5.75Y	1.01	1.430E+00	1.445E+00	0.251E+00	17.34	
RA-228	5.75Y	1.01	1.430E+00	1.445E+00	0.251E+00	17.34	
TH-228	1.91Y	1.03	1.458E+00	1.503E+00	0.135E+00	9.00	
TH-230	7.70E+04Y	1.00	1.340E+00	1.340E+00	0.155E+00	11.57	
TH-232	1.41E+10Y	1.00	1.458E+00	1.458E+00	0.131E+00	9.00	
PA-234M	4.47E+09Y	1.00	3.366E+00	3.366E+00	3.591E+00	106.68	
TH-234	4.47E+09Y	1.00	3.276E+00	3.276E+00	1.583E+00	48.32	
U-234	2.45E+05Y	1.00	1.541E+00	1.541E+00	0.191E+00	12.41	
U-235	7.04E+08Y	1.00	4.633E-02	4.633E-02	16.40E-02	354.12	
NP-237	2.14E+06Y	1.00	1.327E+00	1.327E+00	0.381E+00	28.68	
U-238	4.47E+09Y	1.00	3.276E+00	3.276E+00	1.583E+00	48.32	
ANH-511	1.00E+09Y	1.00	8.649E-02	8.649E-02	5.051E-02	58.40	
			---	---			
	Total Activity :		5.927E+01	5.969E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.455E+00	4.592E+00	0.836E+00	18.20	
			---	---			
	Total Activity :		4.455E+00	4.592E+00			

Grand Total Activity : 6.373E+01 6.428E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : G158048005 Acquisition date : 6-APR-2006 23:46:50

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	53.21	43	859	1.01	107.20	105	6	2.00E-03	****	1.82E+00	T
0	129.16	269	1586	1.33	258.84	254	12	1.25E-02	60.4	6.99E+00	
0	223.82	14	480	1.33	447.84	446	6	6.53E-04	****	5.33E+00	T
0	327.72	146	522	1.43	655.30	652	9	6.74E-03	58.7	4.05E+00	T
0	374.05	66	403	2.39	747.82	743	11	3.06E-03	****	3.67E+00	
0	409.36	96	371	2.04	818.32	814	10	4.44E-03	77.7	3.43E+00	
0	539.17	50	191	1.06	1077.56	1074	9	2.29E-03	****	2.76E+00	T
0	561.96	44	249	2.12	1123.07	1118	11	2.03E-03	****	2.67E+00	T
0	595.49	30	183	1.35	1190.01	1187	8	1.40E-03	****	2.54E+00	
0	629.55	15	117	1.19	1258.03	1256	6	6.96E-04	****	2.42E+00	T
0	692.98	35	120	1.45	1384.73	1382	6	1.64E-03	****	2.23E+00	
0	784.41	36	224	1.65	1567.33	1564	12	1.67E-03	****	2.00E+00	T
0	813.81	30	66	1.68	1626.05	1624	6	1.37E-03	95.1	1.94E+00	T
0	1110.19	43	129	1.44	2218.06	2214	11	2.00E-03	****	1.46E+00	
0	1132.49	43	77	2.18	2262.61	2259	8	1.98E-03	77.6	1.43E+00	T
0	1155.43	59	172	4.74	2308.43	2300	15	2.73E-03	****	1.40E+00	
0	1263.52	7	55	1.23	2524.36	2520	6	3.47E-04	****	1.30E+00	
0	1407.59	56	55	2.36	2812.20	2807	13	2.57E-03	65.4	1.18E+00	
0	1422.59	60	107	14.10	2842.16	2828	31	2.77E-03	****	1.17E+00	
0	1579.68	39	33	6.23	3156.04	3147	16	1.80E-03	75.6	1.09E+00	
0	1586.90	23	75	0.76	3170.47	3165	11	1.07E-03	****	1.08E+00	
0	1629.56	56	34	2.45	3255.70	3250	19	2.57E-03	56.7	1.06E+00	
0	1691.33	19	14	0.90	3379.14	3375	9	8.95E-04	82.4	1.04E+00	T
0	1728.50	78	54	1.96	3453.41	3446	21	3.60E-03	51.9	1.02E+00	
0	1741.43	29	28	4.93	3479.24	3473	18	1.33E-03	****	1.02E+00	
0	1764.05	254	79	2.90	3524.44	3507	31	1.18E-02	24.8	1.01E+00	
0	1837.25	44	16	7.86	3670.73	3661	21	2.04E-03	54.2	9.93E-01	T
0	1847.01	54	19	1.72	3690.23	3684	16	2.52E-03	51.7	9.91E-01	
0	1901.40	45	40	10.14	3798.92	3780	33	2.08E-03	92.0	9.79E-01	
2	2012.05	18	18	3.35	4020.06	4014	19	8.28E-04	****	9.60E-01	
2	2017.10	13	5	2.24	4030.15	4014	19	6.04E-04	81.6	9.60E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 7-APR-2006 05:50:38.48

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G158048005.CNF;1     *
* Acquisition date : 6-APR-2006 23:46:50.  Detector SN#    : 12922955          *
* Detector ID      : GAMMA3                Sensitivity     : 3.00000           *
* Geometry         : CAN                   Energy tolerance: 2.00000           *
* Elapsed live time: 0 06:00:00.00         Abundance limit : 75.00000          *
* Elapsed real time: 0 06:00:04.02         Half life ratio : 8.00000           *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      : 7-MAR-2006 12:45:00.  Nuclide Library : EPI               *
* Sample ID        : G158048005            Analyst initials: MJH1              *
* Batch Number     : 513799                Sample Quantity : 1.27480E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
*                                                                       *
* CALIB. DATE/TIME : 28-MAR-2006 04:38:19.3MS Isotope      :                  *
* MSD DPM          :                       MSD Isotope     :                  *
* LCS DPM          :                       LCS Isotope     :                  *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
AL-26	1.634E-02	4.929E-02	2.977E-02	1.647E-03	0.549
K-40	2.163E+01	1.628E+00	3.117E-01	1.903E-02	69.410
SC-46	3.057E-02	4.899E-02	4.502E-02	3.861E-03	0.679
MN-54	8.056E-03	4.044E-02	3.758E-02	3.107E-03	0.214
CO-56	2.248E-02	2.135E-02	3.775E-02	3.148E-03	0.596
CD-109	1.243E+00	6.072E+00	6.397E-01	6.176E-02	1.942
SN-126	1.216E-01	5.942E-01	6.290E-02	6.046E-03	1.933
CS-135	3.101E-01	1.589E-01	1.400E-01	1.131E-02	2.214
CE-141	1.561E-02	5.527E-02	7.793E-02	4.847E-03	0.200
EU-155	1.275E-01	9.074E-02	9.272E-02	7.014E-03	1.375
HG-203	6.771E-02	4.703E-02	4.470E-02	2.976E-03	1.515
TL-208	4.961E-01	5.701E-02	3.278E-02	2.477E-03	15.135
BI-211	4.638E+00	4.263E-01	1.793E-01	1.180E-02	25.869
BI-212	9.791E-01	3.253E-01	2.699E-01	2.470E-02	3.628
PB-212	1.503E+00	1.352E-01	5.243E-02	4.057E-03	28.659
BI-214	1.340E+00	1.551E-01	6.414E-02	5.548E-03	20.900
PB-214	1.613E+00	1.705E-01	6.250E-02	5.247E-03	25.814
RA-223	8.544E-02	3.944E-01	5.936E-01	9.882E-02	0.144

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-224	4.592E+00	8.359E-01	5.967E-01	3.767E-02	7.696
RA-226	1.340E+00	1.551E-01	6.414E-02	5.548E-03	20.900
AC-228	1.445E+00	2.505E-01	1.269E-01	1.421E-02	11.383
RA-228	1.445E+00	2.505E-01	1.269E-01	1.421E-02	11.383
TH-228	1.503E+00	1.352E-01	5.242E-02	4.057E-03	28.662
TH-230	1.340E+00	1.551E-01	6.414E-02	5.548E-03	20.900
TH-232	1.458E+00	1.311E-01	5.085E-02	3.935E-03	28.663
PA-234M	3.366E+00	3.591E+00	4.485E+00	4.203E-01	0.750
TH-234	3.276E+00	1.583E+00	1.136E+00	2.051E-01	2.883
U-234	1.541E+00	1.912E-01	1.299E-01	1.152E-02	11.867
U-235	4.633E-02	1.640E-01	1.979E-01	3.241E-02	0.234
NP-237	3.571E-01	1.746E+00	1.869E-01	4.246E-02	1.911
U-238	3.276E+00	1.583E+00	1.136E+00	2.051E-01	2.883
ANH-511	8.649E-02	5.051E-02	2.651E-02	1.688E-03	3.263

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	5.207E-02		2.286E-01	3.836E-01	2.708E-02	0.136
NA-22	-2.015E-02		2.514E-02	4.149E-02	2.435E-03	-0.486
V-48	-6.008E-02		8.133E-02	1.309E-01	1.058E-02	-0.459
CR-51	6.091E-02		2.911E-01	4.982E-01	3.392E-02	0.122
CO-57	5.021E-03		1.404E-02	2.344E-02	1.450E-03	0.214
CO-58	-3.524E-02		2.992E-02	3.989E-02	3.251E-03	-0.884
FE-59	-4.467E-02		6.364E-02	1.071E-01	8.407E-03	-0.417
CO-60	6.074E-04		2.278E-02	3.972E-02	2.246E-03	0.015
ZN-65	7.352E-02		8.808E-02	9.481E-02	6.481E-03	0.775
SE-75	-9.175E-03		2.579E-02	4.371E-02	2.795E-03	-0.210
KR-85	9.881E+00		4.560E+00	7.319E+00	4.674E-01	1.350
SR-85	5.958E-02		2.750E-02	4.413E-02	2.818E-03	1.350
Y-88	5.348E-02	+	2.914E-02	3.961E-02	2.180E-03	1.350
Y-91	1.276E-02		2.480E-02	3.904E-02	2.594E-03	0.327
NB-94	-1.099E-02		1.949E-02	3.259E-02	2.429E-03	-0.337
NB-95	9.760E-02		3.854E-02	7.153E-02	5.623E-03	1.364
ZR-95	1.729E-02		4.821E-02	8.388E-02	7.343E-03	0.206
RU-103	-8.997E-03		2.873E-02	4.703E-02	6.055E-03	-0.191
RH-106	6.332E-02		1.773E-01	3.123E-01	2.182E-02	0.203
RU-106	5.051E-02		1.772E-01	3.111E-01	3.848E-02	0.162
AG-108M	-8.720E-04		1.840E-02	3.071E-02	1.950E-03	-0.028
AG-110M	-7.211E-03		1.924E-02	3.269E-02	2.441E-03	-0.221
SN-113	2.057E-03		2.690E-02	4.536E-02	2.699E-03	0.045
SN-115	7.249E+00	+	4.285E+00	4.928E+00	4.153E-01	1.471
SN-117M	-2.292E-02		6.672E-02	1.078E-01	6.436E-03	-0.213
TE-123M	-4.810E-03		1.717E-02	2.780E-02	1.680E-03	-0.173
SB-124	5.305E-02	+	4.382E-02	9.434E-02	5.837E-03	0.562
SB-125	3.129E-02		5.090E-02	8.734E-02	5.290E-03	0.358
TE-125M	1.471E+00		5.922E+00	9.898E+00	9.068E-01	0.149

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
I-126	1.687E-01		2.298E-01	4.083E-01	2.945E-02	0.413
SB-126	-4.174E-02		1.903E-01	3.234E-01	2.448E-02	-0.129
SB-127	2.498E+00		1.244E+01	2.161E+01	3.508E+00	0.116
I-131	1.607E-01		2.400E-01	4.147E-01	2.793E-02	0.388
BA-133	1.052E-02		2.563E-02	3.879E-02	4.508E-03	0.271
CS-134	8.927E-02	+	4.627E-02	4.897E-02	3.963E-03	1.823
CS-136	1.027E-01		1.392E-01	2.530E-01	2.017E-02	0.406
BA-137M	1.564E-03		1.993E-02	3.449E-02	2.476E-03	0.045
CS-137	1.708E-03		2.107E-02	3.647E-02	2.626E-03	0.047
CE-139	8.333E-03		1.816E-02	2.991E-02	1.784E-03	0.279
BA-140	3.702E-01	+	4.097E-01	5.996E-01	1.958E-01	0.617
LA-140	-2.007E-01		1.250E-01	1.851E-01	1.064E-02	-1.084
CE-144	-9.690E-02		1.320E-01	1.876E-01	2.684E-02	-0.517
PM-144	-5.832E-03		2.299E-02	3.371E-02	2.503E-03	-0.173
PM-146	4.546E-03		2.437E-02	4.099E-02	3.588E-03	0.111
ND-147	1.531E-01		8.042E-01	1.417E+00	1.960E-01	0.108
PM-147	-3.765E+03		2.851E+04	4.702E+04	2.926E+03	-0.080
EU-152	-3.757E-02		5.314E-02	8.756E-02	5.898E-03	-0.429
GD-153	-1.836E-02		4.761E-02	7.014E-02	5.798E-03	-0.262
EU-154	-5.550E-02		6.980E-02	1.151E-01	1.079E-02	-0.482
TB-160	4.377E-02		9.390E-02	1.634E-01	1.393E-02	0.268
TM-171	1.223E+00		1.685E+01	2.563E+01	2.221E+00	0.048
HF-181	-1.481E-02		3.149E-02	5.123E-02	3.168E-03	-0.289
TA-182	-6.460E-02		1.261E-01	2.122E-01	1.275E-02	-0.304
IR-192	2.664E-03		2.145E-02	3.662E-02	2.282E-03	0.073
BI-207	4.031E-03		2.880E-02	5.096E-02	3.761E-03	0.079
BI-210	2.029E+00		2.237E+00	3.547E+00	2.738E-01	0.572
PB-210	2.029E+00		2.237E+00	3.547E+00	2.738E-01	0.572
PB-211	-2.429E-01		5.533E-01	8.765E-01	5.463E-01	-0.277
RN-219	3.233E-02		2.313E-01	3.901E-01	5.278E-02	0.083
AC-227	2.435E-02		2.072E-01	3.566E-01	5.120E-02	0.068
TH-227	2.393E-02		2.037E-01	3.506E-01	5.992E-02	0.068
TH-229	-1.153E-01		2.822E-01	4.501E-01	2.754E-02	-0.256
PA-231	-3.466E-01		8.254E-01	1.389E+00	1.945E-01	-0.250
TH-231	3.648E-01	+	1.867E-01	1.989E-01	1.535E-02	1.835
PA-233	-2.319E-02		3.454E-02	5.737E-02	3.765E-03	-0.404
PA-234	8.781E-02		1.723E-01	2.987E-01	5.568E-02	0.294
NP-239	8.284E-02	+	1.473E-01	1.683E-01	1.096E-02	0.492
AM-241	8.534E-02		9.221E-02	1.441E-01	1.375E-02	0.592
AM-242	2.684E+00	+	1.904E+00	1.982E+00	1.505E-01	1.354
CM-247	7.199E-05		2.086E-02	3.499E-02	1.968E-03	0.002
CF-249	-2.797E-04		2.203E-02	3.704E-02	2.070E-03	-0.008
CF-251	-2.239E-02		7.217E-02	1.161E-01	6.986E-03	-0.193

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513799                    SAMPLE ID  : G158048005        *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA3            *
*   SAMPLE DATE  :  7-MAR-2006 12:45:00.00  COUNT TIME :    0 06:00:00.00   *
*   ANALYSIS DATE:  6-APR-2006 23:46:50.61  SAMPLE ALQT:  127.480 GRAM      *
*                                                                           *
*****************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM)	: 9.147E+00
GROSS GAMMA ERROR (pCi/GRAM)	: 4.545E+00
GROSS GAMMA MDA (pCi/GRAM)	: 5.305E+00
GROSS GAMMA DLC (pCi/GRAM)	: 2.604E+00

VAX/VMS Nuclide Identification Report Generated 10-APR-2006 15:18:07.48

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055603.CNF;1
Sample date      : 16-MAR-2006 00:00:00 Acquisition date : 10-APR-2006 11:17:40
Sample ID        : G1201055603          Sample quantity  : 1.69520E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 04:00:00.00        Elapsed real time: 0 04:00:00.97  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	83.50*	27	155	3.30	165.49	162	10	1.85E-03	97.9	
2	0	92.06*	9	204	1.00	182.60	177	12	5.93E-04	398.7	
3	0	135.50	46	134	1.11	269.42	266	9	3.22E-03	47.2	
4	0	144.06*	7	97	0.87	286.52	284	7	4.65E-04	303.3	
5	0	238.90*	70	132	1.63	476.08	469	16	4.88E-03	42.6	
6	0	257.58	16	71	0.92	513.42	511	6	1.09E-03	89.2	
7	0	286.62	37	75	1.64	571.45	568	8	2.57E-03	43.5	
8	0	312.54	17	80	1.98	623.26	619	8	1.16E-03	93.0	
9	0	338.05*	8	68	2.30	674.26	671	8	5.85E-04	224.7	
10	0	404.96*	18	62	0.96	808.00	805	9	1.27E-03	87.4	
11	0	419.61	29	43	1.92	837.29	834	9	2.01E-03	45.4	
12	0	519.77*	6	63	4.46	1037.54	1029	14	3.90E-04	315.2	
13	0	558.05*	26	55	3.32	1114.08	1109	11	1.77E-03	65.3	
14	0	704.85	14	13	0.88	1407.63	1406	5	9.37E-04	47.8	
15	0	733.19	30	36	5.64	1464.30	1456	18	2.08E-03	50.3	
16	0	813.70	5	21	0.79	1625.31	1625	8	3.55E-04	158.8	
17	0	822.69	23	15	4.17	1643.28	1637	12	1.60E-03	39.5	
18	0	898.15*	30	17	4.49	1794.21	1788	14	2.07E-03	37.2	
19	0	911.21*	0	19	3.10	1820.35	1814	13	1.48E-05	*****	
20	0	1031.22	19	7	2.52	2060.41	2056	9	1.34E-03	33.4	
21	0	1137.67	9	11	0.54	2273.37	2268	9	6.18E-04	75.6	
22	0	1191.68	22	28	5.70	2381.43	2372	23	1.53E-03	66.5	
23	0	1207.70	14	12	0.83	2413.50	2408	12	9.72E-04	56.2	
24	0	1212.10*	3	61	3.33	2422.30	2421	30	1.97E-04	810.8	
25	0	1275.53*	3	20	3.43	2549.22	2547	11	1.92E-04	371.6	
26	2	1331.09	23	9	2.24	2660.41	2649	35	1.57E-03	38.9	7.31E-01
27	0	1350.35	9	18	1.53	2698.95	2692	12	5.90E-04	105.2	
28	0	1445.78	9	5	1.48	2889.94	2888	8	6.20E-04	52.5	
29	0	1634.93*	7	6	3.68	3268.55	3261	12	5.05E-04	89.8	
30	0	1737.23	13	13	9.49	3473.35	3463	27	9.19E-04	81.8	
31	0	1909.29	7	12	1.60	3817.87	3811	16	4.84E-04	117.4	
32	2	1973.26*	12	5	2.80	3945.97	3941	34	8.10E-04	47.5	5.19E-01
33	2	1982.25	14	2	2.81	3963.98	3941	34	9.86E-04	47.3	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                               DETECTOR DATA                           *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055603  *
* Acquisition date : 10-APR-2006 11:17:40 Detector SN#    : 1922864    *
* Detector ID      : GAMMA16              Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 04:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 04:00:00.97     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                               SAMPLE DATA                             *
*                                                                       *
* Sample date      : 16-MAR-2006 00:00:00 Nuclide Library :             *
* Sample ID        : G1201055603          Analyst initials: MJH1       *
* Batch Number     : 513799               Sample Quantity : 1.6952E+02 GRAM
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                 QC DATA                               *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  5-APR-2006 19:34:04 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
NA-22	2.558E-03	1.901E-02	1.952E-02	0.000E+00
Y-91	1.597E-02	2.089E-02	2.046E-02	0.000E+00
CE-141	4.419E-03	2.680E-02	3.651E-02	0.000E+00
CE-144	8.354E-02	7.985E-02	1.031E-01	0.000E+00
TH-228	3.942E-02	3.381E-02	2.621E-02	0.000E+00
TH-232	3.843E-02	3.296E-02	2.556E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	
BE-7	-4.755E-03		1.059E-01	1.997E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00		2.255E+10	0.000E+00	0.000E+00 SHORT HLIF
AL-26	1.874E-04		1.023E-02	2.035E-02	0.000E+00 NOT IDENT.
K-40	1.884E-01		1.318E-01	2.848E-01	0.000E+00 NOT IDENT.
SC-46	5.021E-03		1.279E-02	2.440E-02	0.000E+00 NOT IDENT.
V-48	-6.337E-03		3.074E-02	5.746E-02	0.000E+00 NOT IDENT.
CR-51	-2.167E-03		1.469E-01	2.647E-01	0.000E+00 NOT IDENT.
MN-54	-1.083E-02		1.119E-02	1.782E-02	0.000E+00 NOT IDENT.
CO-56	5.506E-03		1.065E-02	2.117E-02	0.000E+00 NOT IDENT.
MN-56	0.000E+00		1.932E+41	0.000E+00	0.000E+00 SHORT HLIF
CO-57	1.706E-03		6.388E-03	1.258E-02	0.000E+00 FAIL ABUN
CO-58	-1.189E-02		1.176E-02	1.855E-02	0.000E+00 NOT IDENT.
FE-59	-2.950E-02		2.718E-02	4.367E-02	0.000E+00 NOT IDENT.
CO-60	2.153E-02		1.681E-02	3.233E-02	0.000E+00 FAIL ABUN
ZN-65	2.420E-03		2.419E-02	4.632E-02	0.000E+00 NOT IDENT.
SE-75	3.879E-03		1.385E-02	2.583E-02	0.000E+00 FAIL ABUN
KR-85	-2.445E+01		4.880E+00	4.372E+00	0.000E+00 NOT IDENT.
SR-85	-1.399E-01		2.791E-02	2.501E-02	0.000E+00 NOT IDENT.
Y-88	-1.265E-02		1.096E-02	1.614E-02	0.000E+00 FAIL ABUN
NB-94	1.175E-02		1.051E-02	1.964E-02	0.000E+00 NOT IDENT.
NB-95	5.515E-03		1.426E-02	2.775E-02	0.000E+00 NOT IDENT.

NB-95M	-2.634E+00	3.948E+00	6.026E+00	0.000E+00 NOT IDENT.
ZR-95	1.616E-02	2.446E-02	4.770E-02	0.000E+00 NOT IDENT.
MO-99	0.000E+00	4.199E+00	0.000E+00	0.000E+00 SHORT HLIF
TC-99M	0.000E+00	3.492E+28	0.000E+00	0.000E+00 SHORT HLIF
RU-103	-1.291E-03	1.229E-02	2.324E-02	0.000E+00 NOT IDENT.
RH-106	-2.766E-02	1.026E-01	1.849E-01	0.000E+00 NOT IDENT.
RU-106	-3.505E-02	1.020E-01	1.824E-01	0.000E+00 NOT IDENT.
AG-108M	-2.772E-03	9.621E-03	1.787E-02	0.000E+00 NOT IDENT.
CD-109	1.734E-01	2.310E-01	3.617E-01	0.000E+00 NOT IDENT.
AG-110M	-1.634E-02	1.060E-02	1.611E-02	0.000E+00 FAIL ABUN
SN-113	-1.054E-02	1.305E-02	2.337E-02	0.000E+00 NOT IDENT.
CD-115	0.000E+00	7.087E+01	0.000E+00	0.000E+00 SHORT HLIF
SN-115	1.001E-01	9.976E-01	1.961E+00	0.000E+00 NOT IDENT.
SN-117M	-4.817E-03	2.290E-02	4.291E-02	0.000E+00 NOT IDENT.
TE-123M	-4.357E-03	7.495E-03	1.366E-02	0.000E+00 NOT IDENT.
SB-124	-1.574E-02	2.882E-02	4.854E-02	0.000E+00 NOT IDENT.
SB-125	1.595E-02	2.554E-02	5.129E-02	0.000E+00 NOT IDENT.
TE-125M	-1.260E+00	2.684E+00	5.070E+00	0.000E+00 NOT IDENT.
I-126	-6.386E-02	8.584E-02	1.458E-01	0.000E+00 NOT IDENT.
SB-126	-2.773E-02	7.385E-02	1.302E-01	0.000E+00 NOT IDENT.
SN-126	-6.841E-03	2.062E-02	3.570E-02	0.000E+00 NOT IDENT.
SB-127	9.063E-01	2.226E+00	4.366E+00	0.000E+00 NOT IDENT.
I-131	1.902E-02	8.482E-02	1.654E-01	0.000E+00 NOT IDENT.
I-132	0.000E+00	1.031E+42	0.000E+00	0.000E+00 SHORT HLIF
TE-132	3.233E-01	1.911E+00	3.549E+00	0.000E+00 NOT IDENT.
BA-133	5.143E-03	1.224E-02	2.426E-02	0.000E+00 NOT IDENT.
I-133	0.000E+00	6.982E+06	0.000E+00	0.000E+00 SHORT HLIF
CS-134	1.367E-02	1.197E-02	2.454E-02	0.000E+00 NOT IDENT.
CS-135	-1.745E-02	4.291E-02	7.593E-02	0.000E+00 NOT IDENT.
I-135	0.000E+00	2.566E+26	0.000E+00	0.000E+00 SHORT HLIF
CS-136	2.329E-02	5.472E-02	1.085E-01	0.000E+00 NOT IDENT.
BA-137M	1.898E-02	1.070E-02	2.283E-02	0.000E+00 NOT IDENT.
CS-137	2.010E-02	1.131E-02	2.414E-02	0.000E+00 NOT IDENT.
CE-139	3.423E-03	7.837E-03	1.525E-02	0.000E+00 NOT IDENT.
BA-140	-6.605E-02	1.201E-01	2.108E-01	0.000E+00 NOT IDENT.
LA-140	-3.673E-02	4.338E-02	6.789E-02	0.000E+00 NOT IDENT.
CE-143	0.000E+00	6.799E+03	0.000E+00	0.000E+00 SHORT HLIF
PM-144	3.937E-03	1.040E-02	1.983E-02	0.000E+00 NOT IDENT.
PR-144	0.000E+00	2.641E+41	0.000E+00	0.000E+00 SHORT HLIF
PM-146	4.319E-04	1.301E-02	2.472E-02	0.000E+00 NOT IDENT.
ND-147	8.689E-02	3.007E-01	5.829E-01	0.000E+00 FAIL ABUN
PM-147	1.059E+03	1.328E+04	2.583E+04	0.000E+00 NOT IDENT.
PM-149	0.000E+00	8.777E+02	0.000E+00	0.000E+00 SHORT HLIF
EU-152	-8.453E-03	3.148E-02	5.503E-02	0.000E+00 NOT IDENT.
GD-153	1.338E-03	1.837E-02	3.645E-02	0.000E+00 FAIL ABUN
EU-154	7.107E-03	5.283E-02	6.151E-02	0.000E+00 FAIL ABUN
EU-155	2.022E-02	2.461E-02	5.078E-02	0.000E+00 NOT IDENT.
TB-160	-1.392E-02	4.778E-02	8.353E-02	0.000E+00 NOT IDENT.
TM-171	9.032E+00	9.690E+00	1.878E+01	0.000E+00 NOT IDENT.
HF-181	-2.589E-03	1.459E-02	2.718E-02	0.000E+00 FAIL ABUN
TA-182	-7.568E-03	4.475E-02	8.342E-02	0.000E+00 NOT IDENT.
IR-192	3.039E-03	1.148E-02	2.119E-02	0.000E+00 NOT IDENT.
HG-203	1.012E-03	1.427E-02	2.607E-02	0.000E+00 FAIL ABUN
BI-207	3.665E-03	1.366E-02	2.703E-02	0.000E+00 FAIL ABUN
TL-208	1.340E-02	1.120E-02	2.291E-02	0.000E+00 NOT IDENT.
BI-210	1.473E+00	3.476E+00	6.215E+00	0.000E+00 NOT IDENT.
PB-210	1.473E+00	3.476E+00	6.215E+00	0.000E+00 NOT IDENT.
BI-211	9.267E-03	6.592E-02	1.189E-01	0.000E+00 NOT IDENT.
PB-211	2.198E-01	4.078E-01	5.402E-01	0.000E+00 FAIL ABUN
BI-212	-6.288E-03	9.178E-02	1.465E-01	0.000E+00 NOT IDENT.
PB-212	0.000E+00	3.381E-02	3.540E-02	0.000E+00 FAIL ABUN
BI-214	1.375E-02	2.139E-02	4.162E-02	0.000E+00 NOT IDENT.
PB-214	2.329E-03	2.141E-02	4.134E-02	0.000E+00 NOT IDENT.
RN-219	1.108E-02	1.298E-01	2.214E-01	0.000E+00 NOT IDENT.
RA-223	-1.608E-01	1.983E-01	3.286E-01	0.000E+00 FAIL ABUN
RA-224	1.378E-01	1.721E-01	3.350E-01	0.000E+00 NOT IDENT.
RA-226	1.375E-02	2.139E-02	4.162E-02	0.000E+00 NOT IDENT.
AC-227	6.532E-02	1.169E-01	2.211E-01	0.000E+00 FAIL ABUN
TH-227	6.425E-02	1.151E-01	2.175E-01	0.000E+00 FAIL ABUN
AC-228	5.148E-04	6.187E-02	9.603E-02	0.000E+00 FAIL ABUN
RA-228	5.148E-04	6.187E-02	9.603E-02	0.000E+00 FAIL ABUN
TH-229	3.450E-02	1.366E-01	2.591E-01	0.000E+00 FAIL ABUN
TH-230	1.375E-02	2.139E-02	4.161E-02	0.000E+00 NOT IDENT.
PA-231	-3.315E-01	5.064E-01	7.573E-01	0.000E+00 NOT IDENT.
TH-231	2.709E-02	5.058E-02	9.632E-02	0.000E+00 FAIL ABUN
PA-233	1.267E-02	2.361E-02	3.820E-02	0.000E+00 FAIL ABUN
PA-234	5.257E-02	8.675E-02	1.755E-01	0.000E+00 FAIL ABUN
PA-234M	1.088E+00	1.424E+00	2.879E+00	0.000E+00 NOT IDENT.

TH-234	3.046E-01	5.425E-01	1.017E+00	0.000E+00	FAIL ABUN
U-234	2.078E-02	3.819E-02	7.223E-02	0.000E+00	NOT IDENT.
U-235	1.181E-02	7.166E-02	1.048E-01	0.000E+00	FAIL ABUN
NP-237	1.033E-02	5.881E-02	1.064E-01	0.000E+00	NOT IDENT.
U-238	3.046E-01	5.425E-01	1.017E+00	0.000E+00	NOT IDENT.
NP-239	3.913E-03	4.874E-02	9.489E-02	0.000E+00	NOT IDENT.
AM-241	3.819E-02	7.126E-02	1.352E-01	0.000E+00	NOT IDENT.
AM-242	-2.136E-01	5.219E-01	9.964E-01	0.000E+00	NOT IDENT.
CM-247	6.375E-03	1.095E-02	1.980E-02	0.000E+00	FAIL ABUN
CF-249	5.776E-03	1.062E-02	2.132E-02	0.000E+00	NOT IDENT.
CF-251	2.876E-03	3.314E-02	6.272E-02	0.000E+00	FAIL ABUN
ANH-511	0.000E+00	1.717E-02	3.661E-02	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 10-APR-2006 15:18:09.35

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055603.CNF;1
Sample date      : 16-MAR-2006 00:00:00 Acquisition date : 10-APR-2006 11:17:40
Sample ID        : G1201055603          Sample quantity  : 1.69520E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 04:00:00.00        Elapsed real time: 0 04:00:00.97  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
NA-22	1274.53	3	99.94*	1.219E+00	2.511E-03	2.558E-03	743.31
Y-91	557.57	26	95.08*	2.519E+00	1.180E-02	1.597E-02	130.77
	1204.90	------	0.30	1.283E+00	------ Line Not Found		------
CE-141	145.44	7	48.40*	5.977E+00	2.562E-03	4.419E-03	606.61
CE-144	133.51	46	10.80*	6.055E+00	7.850E-02	8.354E-02	95.57
TH-228	84.40	27	1.21	4.294E+00	5.672E-01	5.817E-01	196.31
	238.60	70	44.60*	4.535E+00	3.843E-02	3.942E-02	85.76
	300.10	------	3.41	3.882E+00	------ Line Not Found		------
TH-232	238.59	70	44.60*	4.535E+00	3.843E-02	3.843E-02	85.76
	911.20	0	27.70	1.665E+00	5.105E-04	5.105E-04	12017.83
	964.40	------	5.20	1.579E+00	------ Line Not Found		------
	969.11	------	16.60	1.572E+00	------ Line Not Found		------

Flag: "*" = Keyline

Sample ID : G1201055603 Acquisition date : 10-APR-2006 11:17:40

Total number of lines in spectrum 33
Number of unidentified lines 13
Number of lines tentatively identified by NID 20 60.61%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
NA-22	2.60Y	1.02	2.511E-03	2.558E-03	19.01E-03	743.31	
Y-91	58.51D	1.35	1.180E-02	1.597E-02	2.089E-02	130.77	
CE-141	32.50D	1.72	2.562E-03	4.419E-03	26.80E-03	606.61	
CE-144	284.30D	1.06	7.850E-02	8.354E-02	7.985E-02	95.57	
TH-228	1.91Y	1.03	3.843E-02	3.942E-02	3.381E-02	85.76	
TH-232	1.41E+10Y	1.00	3.843E-02	3.843E-02	3.296E-02	85.76	
	Total Activity :		1.722E-01	1.843E-01			
	Grand Total Activity :		1.722E-01	1.843E-01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	92.06	9	204	1.00	182.60	177	12	5.93E-04	****	5.03E+00	T
0	257.58	16	71	0.92	513.42	511	6	1.09E-03	****	4.31E+00	T
0	286.62	37	75	1.64	571.45	568	8	2.57E-03	87.1	4.01E+00	T
0	312.54	17	80	1.98	623.26	619	8	1.16E-03	****	3.78E+00	T
0	338.05	8	68	2.30	674.26	671	8	5.85E-04	****	3.58E+00	T
0	404.96	18	62	0.96	808.00	805	9	1.27E-03	****	3.17E+00	T
0	419.61	29	43	1.92	837.29	834	9	2.01E-03	90.9	3.09E+00	T
0	519.77	6	63	4.46	1037.54	1029	14	3.90E-04	****	2.66E+00	
0	704.85	14	13	0.88	1407.63	1406	5	9.37E-04	95.6	2.09E+00	T
0	733.19	30	36	5.64	1464.30	1456	18	2.08E-03	****	2.02E+00	T
0	813.70	5	21	0.79	1625.31	1625	8	3.55E-04	****	1.85E+00	T
0	822.69	23	15	4.17	1643.28	1637	12	1.60E-03	78.9	1.83E+00	
0	898.15	30	17	4.49	1794.21	1788	14	2.07E-03	74.3	1.69E+00	T
0	1031.22	19	7	2.52	2060.41	2056	9	1.34E-03	66.7	1.48E+00	
0	1137.67	9	11	0.54	2273.37	2268	9	6.18E-04	****	1.35E+00	T
0	1191.68	22	28	5.70	2381.43	2372	23	1.53E-03	****	1.30E+00	
0	1207.70	14	12	0.83	2413.50	2408	12	9.72E-04	****	1.28E+00	
0	1212.10	3	61	3.33	2422.30	2421	30	1.97E-04	****	1.28E+00	
2	1331.09	23	9	2.24	2660.41	2649	35	1.57E-03	77.8	1.18E+00	T
0	1350.35	9	18	1.53	2698.95	2692	12	5.90E-04	****	1.16E+00	
0	1445.78	9	5	1.48	2889.94	2888	8	6.20E-04	****	1.10E+00	
0	1634.93	7	6	3.68	3268.55	3261	12	5.05E-04	****	1.02E+00	
0	1737.23	13	13	9.49	3473.35	3463	27	9.19E-04	****	9.87E-01	
0	1909.29	7	12	1.60	3817.87	3811	16	4.84E-04	****	9.63E-01	
2	1973.26	12	5	2.80	3945.97	3941	34	8.10E-04	94.9	9.60E-01	
2	1982.25	14	2	2.81	3963.98	3941	34	9.86E-04	94.6	9.60E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 10-APR-2006 15:18:13.12

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055603.CNF;1    *
* Acquisition date : 10-APR-2006 11:17:40  Detector SN#    : 1922864          *
* Detector ID      : GAMMA16               Sensitivity     : 3.00000          *
* Geometry         : CAN                   Energy tolerance: 2.00000          *
* Elapsed live time: 0 04:00:00.00         Abundance limit : 75.00000         *
* Elapsed real time: 0 04:00:00.97         Half life ratio : 8.00000          *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 16-MAR-2006 00:00:00  Nuclide Library : EPI              *
* Sample ID        : G1201055603           Analyst initials: MJH1             *
* Batch Number     : 513799                Sample Quantity : 1.69520E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 5-APR-2006 19:34:04.74MS Isotope      :                *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	2.558E-03	1.901E-02	1.919E-02	1.247E-03	0.133
Y-91	1.597E-02	2.089E-02	1.956E-02	1.202E-03	0.817
CE-141	4.419E-03	2.680E-02	3.348E-02	2.695E-03	0.132
CE-144	8.354E-02	7.985E-02	9.429E-02	1.424E-02	0.886
TH-228	3.942E-02	3.381E-02	2.440E-02	2.309E-03	1.615
TH-232	3.843E-02	3.296E-02	2.379E-02	2.251E-03	1.616

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.755E-03		1.059E-01	1.900E-01	1.319E-02	-0.025
AL-26	1.874E-04		1.023E-02	2.024E-02	1.165E-03	0.009
K-40	1.884E-01		1.318E-01	2.812E-01	1.856E-02	0.670
SC-46	5.021E-03		1.279E-02	2.368E-02	2.195E-03	0.212
V-48	-6.337E-03		3.074E-02	5.598E-02	4.956E-03	-0.113
CR-51	-2.167E-03		1.469E-01	2.486E-01	1.978E-02	-0.009

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
MN-54	-1.083E-02		1.119E-02	1.727E-02	1.459E-03	-0.627
CO-56	5.506E-03		1.065E-02	2.052E-02	1.770E-03	0.268
CO-57	1.706E-03		6.388E-03	1.147E-02	8.889E-04	0.149
CO-58	-1.189E-02		1.176E-02	1.795E-02	1.458E-03	-0.662
FE-59	-2.950E-02		2.718E-02	4.270E-02	3.640E-03	-0.691
CO-60	2.153E-02	+	1.681E-02	3.182E-02	1.980E-03	0.677
ZN-65	2.420E-03		2.419E-02	4.532E-02	3.432E-03	0.053
SE-75	3.879E-03		1.385E-02	2.412E-02	1.980E-03	0.161
KR-85	-2.445E+01		4.880E+00	4.169E+00	2.538E-01	-5.866
SR-85	-1.399E-01		2.791E-02	2.384E-02	1.452E-03	-5.866
Y-88	-1.265E-02		1.096E-02	1.606E-02	9.137E-04	-0.788
NB-94	1.175E-02		1.051E-02	1.892E-02	1.257E-03	0.621
NB-95	5.515E-03		1.426E-02	2.680E-02	2.005E-03	0.206
NB-95M	-2.634E+00		3.948E+00	5.607E+00	7.415E-01	-0.470
ZR-95	1.616E-02		2.446E-02	4.606E-02	3.851E-03	0.351
RU-103	-1.291E-03		1.229E-02	2.213E-02	2.825E-03	-0.058
RH-106	-2.766E-02		1.026E-01	1.774E-01	1.093E-02	-0.156
RU-106	-3.505E-02		1.020E-01	1.750E-01	2.086E-02	-0.200
AG-108M	-2.772E-03		9.621E-03	1.695E-02	1.082E-03	-0.164
CD-109	1.734E-01		2.310E-01	3.268E-01	3.460E-02	0.530
AG-110M	-1.634E-02		1.060E-02	1.548E-02	1.006E-03	-1.055
SN-113	-1.054E-02		1.305E-02	2.209E-02	1.355E-03	-0.477
SN-115	1.001E-01		9.976E-01	1.907E+00	1.755E-01	0.052
SN-117M	-4.817E-03		2.290E-02	3.945E-02	3.206E-03	-0.122
TE-123M	-4.357E-03		7.495E-03	1.256E-02	1.029E-03	-0.347
SB-124	-1.574E-02		2.882E-02	4.816E-02	3.135E-03	-0.327
SB-125	1.595E-02		2.554E-02	4.862E-02	2.975E-03	0.328
TE-125M	-1.260E+00		2.684E+00	4.610E+00	4.614E-01	-0.273
I-126	-6.386E-02		8.584E-02	1.402E-01	8.692E-03	-0.455
SB-126	-2.773E-02		7.385E-02	1.256E-01	8.633E-03	-0.221
SN-126	-6.841E-03		2.062E-02	3.225E-02	3.407E-03	-0.212
SB-127	9.063E-01		2.226E+00	4.202E+00	5.780E-01	0.216
I-131	1.902E-02		8.482E-02	1.560E-01	1.124E-02	0.122
TE-132	3.233E-01		1.911E+00	3.299E+00	5.922E-01	0.098
BA-133	5.143E-03		1.224E-02	2.286E-02	2.749E-03	0.225
CS-134	1.367E-02		1.197E-02	2.374E-02	1.886E-03	0.576
CS-135	-1.745E-02		4.291E-02	7.093E-02	6.773E-03	-0.246
CS-136	2.329E-02		5.472E-02	1.059E-01	9.199E-03	0.220
BA-137M	1.898E-02		1.070E-02	2.194E-02	1.348E-03	0.865
CS-137	2.010E-02		1.131E-02	2.321E-02	1.431E-03	0.866
CE-139	3.423E-03		7.837E-03	1.404E-02	1.165E-03	0.244
BA-140	-6.605E-02		1.201E-01	2.013E-01	6.559E-02	-0.328
LA-140	-3.673E-02		4.338E-02	6.723E-02	4.156E-03	-0.546
PM-144	3.937E-03		1.040E-02	1.910E-02	1.257E-03	0.206
PM-146	4.319E-04		1.301E-02	2.348E-02	2.049E-03	0.018
ND-147	8.689E-02		3.007E-01	5.564E-01	7.602E-02	0.156
PM-147	1.059E+03		1.328E+04	2.355E+04	1.826E+03	0.045
EU-152	-8.453E-03		3.148E-02	5.180E-02	3.922E-03	-0.163

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
GD-153	1.338E-03		1.837E-02	3.303E-02	3.014E-03	0.041
EU-154	7.107E-03	+	5.283E-02	6.045E-02	5.914E-03	0.118
EU-155	2.022E-02		2.461E-02	4.612E-02	3.938E-03	0.438
TB-160	-1.392E-02		4.778E-02	8.106E-02	7.388E-03	-0.172
TM-171	9.032E+00		9.690E+00	1.683E+01	1.923E+00	0.537
HF-181	-2.589E-03		1.459E-02	2.587E-02	1.559E-03	-0.100
TA-182	-7.568E-03		4.475E-02	8.186E-02	5.471E-03	-0.092
IR-192	3.039E-03		1.148E-02	1.990E-02	1.495E-03	0.153
HG-203	1.012E-03		1.427E-02	2.438E-02	2.020E-03	0.042
BI-207	3.665E-03		1.366E-02	2.640E-02	2.148E-03	0.139
TL-208	1.340E-02		1.120E-02	2.194E-02	1.536E-03	0.611
BI-210	1.473E+00		3.476E+00	5.515E+00	5.631E-01	0.267
PB-210	1.473E+00		3.476E+00	5.515E+00	5.631E-01	0.267
BI-211	9.267E-03		6.592E-02	1.120E-01	8.223E-03	0.083
PB-211	2.198E-01	+	4.078E-01	5.112E-01	3.186E-01	0.430
BI-212	-6.288E-03		9.178E-02	1.413E-01	1.218E-02	-0.045
PB-212	3.942E-02	+	3.381E-02	3.295E-02	3.118E-03	1.196
BI-214	1.375E-02		2.139E-02	3.990E-02	3.214E-03	0.345
PB-214	2.329E-03		2.141E-02	3.895E-02	3.502E-03	0.060
RN-219	1.108E-02		1.298E-01	2.095E-01	2.848E-02	0.053
RA-223	-1.608E-01		1.983E-01	3.088E-01	5.288E-02	-0.521
RA-224	1.378E-01		1.721E-01	3.119E-01	2.596E-02	0.442
RA-226	1.375E-02		2.139E-02	3.990E-02	3.214E-03	0.345
AC-227	6.532E-02	+	1.169E-01	2.063E-01	3.154E-02	0.317
TH-227	6.425E-02	+	1.151E-01	2.029E-01	3.628E-02	0.317
AC-228	5.148E-04	+	6.187E-02	9.331E-02	1.101E-02	0.006
RA-228	5.148E-04	+	6.187E-02	9.331E-02	1.101E-02	0.006
TH-229	3.450E-02		1.366E-01	2.396E-01	2.004E-02	0.144
TH-230	1.375E-02		2.139E-02	3.990E-02	3.214E-03	0.345
PA-231	-3.315E-01		5.064E-01	7.087E-01	1.051E-01	-0.468
TH-231	2.709E-02		5.058E-02	8.999E-02	8.320E-03	0.301
PA-233	1.267E-02	+	2.361E-02	3.585E-02	2.812E-03	0.354
PA-234	5.257E-02		8.675E-02	1.708E-01	3.244E-02	0.308
PA-234M	1.088E+00		1.424E+00	2.806E+00	2.815E-01	0.388
TH-234	3.046E-01		5.425E-01	9.105E-01	1.812E-01	0.335
U-234	2.078E-02		3.819E-02	6.767E-02	6.776E-03	0.307
U-235	1.181E-02	+	7.166E-02	9.603E-02	1.646E-02	0.123
NP-237	1.033E-02		5.881E-02	9.608E-02	2.225E-02	0.108
U-238	3.046E-01		5.425E-01	9.105E-01	1.812E-01	0.335
NP-239	3.913E-03		4.874E-02	8.645E-02	6.806E-03	0.045
AM-241	3.819E-02		7.126E-02	1.208E-01	1.637E-02	0.316
AM-242	-2.136E-01		5.219E-01	9.046E-01	7.731E-02	-0.236
CM-247	6.375E-03		1.095E-02	1.873E-02	1.084E-03	0.340
CF-249	5.776E-03		1.062E-02	2.015E-02	1.178E-03	0.287
CF-251	2.876E-03		3.314E-02	5.784E-02	4.812E-03	0.050
ANH-511	9.773E-02		1.717E-02	3.490E-02	2.123E-03	2.800

```
********************************************************************************
*                                                                              *
*                       General Engineering Labs, LLC                          *
*                           2040 SAVAGE ROAD                                   *
*                         CHARLESTON ,SC 29417                                 *
*                          GROSS GAMMA REPORT                                  *
*                                                                              *
*                                                                              *
********************************************************************************
*                                                                              *
*   BATCH ID     : 513799                     SAMPLE ID  : G1201055603         *
*   ANALYST      : MJH1                       DETECTOR   : GAMMA16             *
*   SAMPLE DATE  : 16-MAR-2006 00:00:00.00  COUNT TIME :    0 04:00:00.00      *
*   ANALYSIS DATE: 10-APR-2006 11:17:40.65  SAMPLE ALQT:  169.520 GRAM         *
*                                                                              *
********************************************************************************
```

```
GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 3.047E-01
GROSS GAMMA ERROR  (pCi/GRAM  )   : 4.900E-01
GROSS GAMMA MDA    (pCi/GRAM  )   : 1.070E+00
GROSS GAMMA DLC    (pCi/GRAM  )   : 5.071E-01
```

VAX/VMS Nuclide Identification Report Generated 10-APR-2006 21:42:49.32

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055604.CNF;1
Sample date      : 7-MAR-2006 12:45:00. Acquisition date : 10-APR-2006 15:42:21
Sample ID        : G1201055604          Sample quantity  : 1.27370E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:03.43  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.17*	164	1123	1.06	124.87	121	9	7.57E-03	39.4	
2	2	72.80*	98	842	1.25	144.12	141	15	4.52E-03	51.3	5.32E+00
3	2	74.81*	803	1133	1.26	148.13	141	15	3.72E-02	8.5	
4	2	77.04*	1325	866	0.99	152.59	141	15	6.14E-02	4.6	
5	4	84.07*	267	838	1.55	166.64	163	27	1.24E-02	19.9	1.07E+00
6	4	87.16*	727	1072	1.42	172.81	163	27	3.36E-02	9.2	
7	4	89.85	382	712	1.05	178.19	163	27	1.77E-02	12.4	
8	4	92.76*	648	1062	1.57	184.00	163	27	3.00E-02	10.9	
9	0	105.68*	82	729	1.26	209.83	207	7	3.81E-03	59.5	
10	0	129.00*	152	898	0.98	256.42	253	8	7.03E-03	36.1	
11	0	143.46*	19	737	0.64	285.32	283	7	8.91E-04	250.5	
12	0	153.55	118	857	0.90	305.49	302	8	5.48E-03	43.7	
13	0	185.79*	642	976	1.37	369.92	364	10	2.97E-02	10.5	
14	0	194.89*	23	591	1.26	388.11	386	6	1.06E-03	178.4	
15	0	209.15	358	816	1.01	416.60	412	10	1.66E-02	15.8	
16	3	238.50*	3182	538	1.14	475.27	468	22	1.47E-01	2.2	1.70E+00
17	3	241.49*	900	677	1.71	481.24	468	22	4.17E-02	7.8	
18	0	269.91	390	635	1.64	538.05	533	12	1.80E-02	13.9	
19	0	277.24	105	410	0.99	552.71	550	7	4.84E-03	33.6	
20	0	294.98*	1259	574	1.21	588.16	583	11	5.83E-02	4.8	
21	0	300.11*	221	461	1.38	598.42	596	9	1.02E-02	19.6	
22	0	313.76	35	211	1.34	625.70	624	5	1.64E-03	63.5	
23	0	327.74	158	402	1.48	653.65	649	9	7.34E-03	24.1	
24	0	338.05*	633	568	1.26	674.25	669	12	2.93E-02	8.9	
25	0	351.63*	2065	602	1.26	701.40	694	14	9.56E-02	3.4	
26	0	409.41*	52	314	0.95	816.90	813	8	2.40E-03	65.0	
27	0	421.42	33	176	1.41	840.92	839	6	1.54E-03	65.5	
28	0	462.81	227	308	1.21	923.66	918	13	1.05E-02	17.2	
29	0	479.97	92	281	1.82	957.97	953	12	4.24E-03	38.3	
30	0	510.53*	300	478	1.83	1019.07	1011	18	1.39E-02	21.3	
31	0	558.20*	28	124	1.13	1114.39	1112	6	1.31E-03	74.3	
32	0	582.73*	1014	258	1.42	1163.43	1157	12	4.69E-02	4.6	
33	0	608.88*	1652	321	1.38	1215.72	1210	14	7.65E-02	3.5	
34	0	633.64*	8	124	1.47	1265.22	1262	7	3.79E-04	249.7	
35	0	665.30	69	116	1.58	1328.54	1326	7	3.20E-03	28.7	
36	0	720.38	15	132	2.21	1438.68	1437	7	7.14E-04	125.4	
37	0	726.63	215	187	1.27	1451.17	1447	10	9.95E-03	13.7	
38	0	753.89	55	231	4.21	1505.70	1497	14	2.56E-03	59.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	3	763.07	65	84	2.29	1524.04	1520	20	3.02E-03	29.1	2.64E+00
40	3	767.64*	175	183	2.28	1533.19	1520	20	8.11E-03	18.8	
41	0	771.98*	43	94	1.29	1541.87	1539	8	1.97E-03	45.2	
42	0	785.53	49	224	1.62	1568.96	1561	12	2.26E-03	63.1	
43	0	794.26*	86	176	1.30	1586.43	1582	10	3.97E-03	32.2	
44	0	805.05*	28	172	2.01	1608.01	1606	12	1.31E-03	96.6	
45	0	834.85*	52	110	1.81	1667.61	1665	8	2.41E-03	39.6	
46	0	859.96*	126	111	1.50	1717.84	1714	10	5.82E-03	21.5	
47	0	910.56*	685	233	1.79	1819.04	1811	17	3.17E-02	6.6	
48	0	925.76*	23	51	1.66	1849.44	1847	6	1.09E-03	56.0	
49	0	932.90*	46	159	1.34	1863.72	1856	12	2.15E-03	59.5	
50	2	963.86*	184	100	2.23	1925.66	1919	26	8.51E-03	15.1	1.86E+00
51	2	968.25*	403	106	1.71	1934.44	1919	26	1.86E-02	7.2	
52	0	1000.13*	50	154	0.80	1998.20	1991	15	2.33E-03	61.7	
53	0	1078.56	37	100	0.68	2155.12	2150	11	1.73E-03	54.2	
54	0	1119.53*	345	147	1.82	2237.09	2231	14	1.60E-02	9.6	
55	0	1226.66*	70	300	10.26	2451.42	2441	24	3.25E-03	66.9	
56	0	1236.80	124	197	2.06	2471.72	2465	14	5.75E-03	25.5	
57	0	1280.29	30	72	1.86	2558.73	2554	8	1.40E-03	51.9	
58	0	1376.30	63	87	1.42	2750.89	2745	12	2.94E-03	32.0	
59	2	1400.46	46	47	2.50	2799.22	2794	24	2.15E-03	31.2	1.12E+00
60	2	1406.73*	34	49	2.51	2811.78	2794	24	1.60E-03	50.5	
61	0	1459.53*	2512	120	2.19	2917.44	2908	21	1.16E-01	2.3	
62	0	1485.74	11	38	2.36	2969.91	2967	10	4.94E-04	111.9	
63	0	1500.20*	31	20	2.58	2998.85	2996	8	1.45E-03	37.3	
64	0	1508.07*	25	21	1.98	3014.61	3012	7	1.15E-03	41.7	
65	0	1529.58	31	23	1.13	3057.66	3051	14	1.43E-03	38.3	
66	0	1579.59*	7	36	1.57	3157.76	3152	11	3.28E-04	183.6	
67	0	1586.85	56	26	2.05	3172.29	3169	8	2.61E-03	20.5	
68	0	1591.34*	29	53	3.87	3181.29	3176	11	1.36E-03	56.3	
69	2	1618.72*	24	16	2.62	3236.09	3228	53	1.13E-03	52.3	1.52E+00
70	2	1624.67	23	13	2.17	3248.00	3228	53	1.06E-03	41.3	
71	2	1629.62*	55	16	2.63	3257.91	3228	53	2.53E-03	22.8	
72	2	1639.15	23	9	2.18	3277.00	3228	53	1.07E-03	33.4	
73	0	1681.55*	28	19	8.11	3361.87	3352	20	1.31E-03	48.1	
74	0	1727.89	78	24	1.20	3454.64	3447	17	3.61E-03	18.6	
75	0	1763.31*	292	25	2.32	3525.56	3514	25	1.35E-02	7.9	
76	0	1785.81*	2	8	1.75	3570.62	3567	8	9.35E-05	379.8	
77	0	1846.35*	33	14	1.91	3691.83	3688	10	1.53E-03	29.9	
78	0	1856.79*	16	12	5.05	3712.74	3703	18	7.33E-04	66.5	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055604  *
* Acquisition date : 10-APR-2006 15:42:21 Detector SN#    : 1922864    *
* Detector ID      : GAMMA16              Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 06:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 06:00:03.43     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      :  7-MAR-2006 12:45:00 Nuclide Library :             *
* Sample ID        : G1201055604          Analyst initials: MJH1       *
* Batch Number     : 513799               Sample Quantity : 1.2737E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  5-APR-2006 19:34:04 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
K-40	2.117E+01	1.704E+00	3.064E-01	0.000E+00
MN-54	3.059E-02	2.438E-02	3.353E-02	0.000E+00
Y-91	1.741E-02	2.589E-02	4.476E-02	0.000E+00
NB-95	2.145E-02	7.317E-02	6.486E-02	0.000E+00
CD-109	4.271E+00	9.072E-01	7.625E-01	0.000E+00
SN-126	4.157E-01	8.830E-02	7.482E-02	0.000E+00
CS-135	5.731E-01	1.680E-01	1.336E-01	0.000E+00
CE-141	1.014E-02	5.084E-02	8.767E-02	0.000E+00
EU-155	6.556E-02	7.833E-02	1.000E-01	0.000E+00
HG-203	5.399E-02	3.655E-02	4.856E-02	0.000E+00
TL-208	5.019E-01	5.790E-02	3.338E-02	0.000E+00
BI-211	4.498E+00	4.508E-01	1.826E-01	0.000E+00
BI-212	9.076E-01	2.613E-01	2.700E-01	0.000E+00
PB-212	1.597E+00	1.668E-01	5.430E-02	0.000E+00
BI-214	1.488E+00	1.579E-01	5.803E-02	0.000E+00
PB-214	1.565E+00	1.768E-01	6.478E-02	0.000E+00
RA-223	-1.378E-01	4.220E-01	6.158E-01	0.000E+00
RA-224	5.142E+00	9.120E-01	6.177E-01	0.000E+00
RA-226	1.488E+00	1.579E-01	5.803E-02	0.000E+00
AC-228	1.473E+00	2.615E-01	1.268E-01	0.000E+00
RA-228	1.473E+00	2.615E-01	1.268E-01	0.000E+00
TH-228	1.597E+00	1.668E-01	5.429E-02	0.000E+00
TH-229	9.426E-02	3.364E-01	4.985E-01	0.000E+00
TH-230	1.488E+00	1.578E-01	5.803E-02	0.000E+00
TH-232	1.544E+00	1.613E-01	5.247E-02	0.000E+00
PA-233	2.396E-02	3.049E-02	6.097E-02	0.000E+00
PA-234M	3.840E+00	4.757E+00	3.813E+00	0.000E+00
TH-234	2.354E+00	1.915E+00	1.808E+00	0.000E+00
U-234	1.640E+00	2.264E-01	1.246E-01	0.000E+00
U-235	3.010E-02	1.509E-01	2.027E-01	0.000E+00
NP-237	1.221E+00	3.615E-01	2.242E-01	0.000E+00
U-238	2.354E+00	1.915E+00	1.808E+00	0.000E+00
ANH-511	1.095E-01	4.706E-02	2.599E-02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error) Ided	MDA (pCi/GRAM)		
BE-7	-1.540E-01	2.618E-01	3.906E-01	0.000E+00	NOT IDENT.
NA-22	7.325E-04	2.298E-02	4.017E-02	0.000E+00	NOT IDENT.
NA-24	0.000E+00	5.642E+14	0.000E+00	0.000E+00	SHORT HLIF
AL-26	-4.088E-03	1.383E-02	2.481E-02	0.000E+00	FAIL ABUN
SC-46	-5.587E-03	2.577E-02	4.292E-02	0.000E+00	FAIL ABUN
V-48	2.546E-02	8.357E-02	1.511E-01	0.000E+00	NOT IDENT.
CR-51	1.088E-01	3.439E-01	5.838E-01	0.000E+00	NOT IDENT.
CO-56	1.117E-02	2.530E-02	4.404E-02	0.000E+00	FAIL ABUN
MN-56	0.000E+00	2.267E+41	0.000E+00	0.000E+00	SHORT HLIF
CO-57	-1.396E-03	1.415E-02	2.503E-02	0.000E+00	NOT IDENT.
CO-58	-1.002E-02	2.852E-02	4.108E-02	0.000E+00	NOT IDENT.
FE-59	1.755E-02	6.651E-02	1.185E-01	0.000E+00	NOT IDENT.
CO-60	-1.214E-02	1.987E-02	3.307E-02	0.000E+00	NOT IDENT.
ZN-65	-2.006E-03	5.855E-02	8.869E-02	0.000E+00	NOT IDENT.
SE-75	-5.086E-03	2.723E-02	4.588E-02	0.000E+00	NOT IDENT.
KR-85	6.558E+00	4.081E+00	6.851E+00	0.000E+00	NOT IDENT.
SR-85	4.110E-02	2.557E-02	4.293E-02	0.000E+00	NOT IDENT.
Y-88	1.670E-02	1.956E-02	3.916E-02	0.000E+00	NOT IDENT.
NB-94	1.381E-02	1.842E-02	3.269E-02	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	4.763E+01	0.000E+00	0.000E+00	SHORT HLIF
ZR-95	6.145E-02	5.224E-02	8.490E-02	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.796E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.883E+39	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.397E-02	3.084E-02	5.298E-02	0.000E+00	FAIL ABUN
RH-106	1.369E-01	1.666E-01	3.014E-01	0.000E+00	FAIL ABUN
RU-106	1.103E-01	1.656E-01	2.968E-01	0.000E+00	NOT IDENT.
AG-108M	-3.907E-03	1.780E-02	3.123E-02	0.000E+00	NOT IDENT.
AG-110M	-2.719E-02	1.981E-02	3.150E-02	0.000E+00	FAIL ABUN
SN-113	-2.877E-02	2.603E-02	4.428E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	2.112E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	3.582E+00	4.275E+00	5.047E+00	0.000E+00	FAIL ABUN
SN-117M	-3.700E-02	7.918E-02	1.364E-01	0.000E+00	NOT IDENT.
TE-123M	-1.064E-02	1.752E-02	3.005E-02	0.000E+00	NOT IDENT.
SB-124	1.494E-02	4.448E-02	8.268E-02	0.000E+00	NOT IDENT.
SB-125	3.863E-02	4.880E-02	8.923E-02	0.000E+00	FAIL ABUN
TE-125M	8.872E+00	6.550E+00	1.195E+01	0.000E+00	NOT IDENT.
I-126	4.822E-01	2.785E-01	4.838E-01	0.000E+00	FAIL ABUN
SB-126	9.297E-02	2.332E-01	3.906E-01	0.000E+00	FAIL ABUN
SB-127	0.000E+00	2.309E+01	0.000E+00	0.000E+00	SHORT HLIF
I-131	1.123E-01	3.177E-01	5.758E-01	0.000E+00	NOT IDENT.
I-132	0.000E+00	7.154E+41	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.292E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-7.868E-03	2.505E-02	3.901E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	1.337E+10	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	3.500E-02	4.537E-02	0.000E+00	FAIL ABUN
I-135	0.000E+00	2.266E+36	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.479E-02	1.593E-01	2.795E-01	0.000E+00	FAIL ABUN
BA-137M	8.646E-03	2.073E-02	3.628E-02	0.000E+00	NOT IDENT.
CS-137	9.151E-03	2.191E-02	3.835E-02	0.000E+00	NOT IDENT.
CE-139	-1.162E-02	1.777E-02	3.035E-02	0.000E+00	NOT IDENT.
BA-140	1.076E-02	3.801E-01	6.661E-01	0.000E+00	NOT IDENT.
LA-140	-3.809E-02	1.428E-01	2.068E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	7.276E+06	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.853E-02	1.140E-01	1.997E-01	0.000E+00	NOT IDENT.
PM-144	8.654E-03	1.898E-02	3.333E-02	0.000E+00	NOT IDENT.
PR-144	0.000E+00	2.193E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	2.074E-02	2.398E-02	4.366E-02	0.000E+00	FAIL ABUN
ND-147	3.663E-01	9.804E-01	1.745E+00	0.000E+00	FAIL ABUN
PM-147	4.484E+03	2.870E+04	5.113E+04	0.000E+00	NOT IDENT.
PM-149	0.000E+00	2.113E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.639E-03	5.478E-02	9.135E-02	0.000E+00	FAIL ABUN
GD-153	-2.115E-03	4.561E-02	8.174E-02	0.000E+00	FAIL ABUN
EU-154	2.301E-03	6.359E-02	1.112E-01	0.000E+00	NOT IDENT.
TB-160	4.438E-02	9.017E-02	1.575E-01	0.000E+00	FAIL ABUN
TM-171	-7.020E+00	2.300E+01	3.750E+01	0.000E+00	NOT IDENT.
HF-181	1.252E-03	3.315E-02	5.159E-02	0.000E+00	NOT IDENT.
TA-182	1.838E-02	1.357E-01	2.062E-01	0.000E+00	FAIL ABUN
IR-192	-8.821E-03	2.633E-02	3.854E-02	0.000E+00	FAIL ABUN
BI-207	1.398E-02	2.853E-02	5.161E-02	0.000E+00	NOT IDENT.
BI-210	6.487E+00	7.463E+00	1.194E+01	0.000E+00	NOT IDENT.
PB-210	6.487E+00	7.463E+00	1.194E+01	0.000E+00	NOT IDENT.
PB-211	5.273E-02	5.069E-01	9.017E-01	0.000E+00	NOT IDENT.

RN-219	-6.000E-02	2.219E-01	3.901E-01	0.000E+00	FAIL ABUN
AC-227	-2.171E-01	2.221E-01	3.599E-01	0.000E+00	FAIL ABUN
TH-227	-2.133E-01	2.192E-01	3.537E-01	0.000E+00	FAIL ABUN
PA-231	-3.777E-01	8.550E-01	1.417E+00	0.000E+00	FAIL ABUN
TH-231	0.000E+00	1.970E-01	2.196E-01	0.000E+00	FAIL ABUN
PA-234	-1.078E-01	1.566E-01	2.653E-01	0.000E+00	FAIL ABUN
NP-239	-6.134E-02	1.029E-01	1.799E-01	0.000E+00	FAIL ABUN
AM-241	2.364E-02	1.467E-01	2.450E-01	0.000E+00	NOT IDENT.
AM-242	1.391E+00	1.658E+00	2.077E+00	0.000E+00	FAIL ABUN
CM-247	2.352E-03	1.974E-02	3.525E-02	0.000E+00	FAIL ABUN
CF-249	2.739E-02	2.100E-02	3.913E-02	0.000E+00	NOT IDENT.
CF-251	-4.219E-02	7.008E-02	1.194E-01	0.000E+00	NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 10-APR-2006 21:42:51.34

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*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055604.CNF;1
Sample date      : 7-MAR-2006 12:45:00. Acquisition date : 10-APR-2006 15:42:21
Sample ID        : G1201055604          Sample quantity  : 1.27370E+02 GRAM
Detector name    : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 06:00:00.00        Elapsed real time: 0 06:00:03.43  0.0%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 1922864
Matrix Spike DPM :                      LCS DPM          :
*********************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.81	2512	10.67*	1.093E+00	2.117E+01	2.117E+01	8.05
MN-54	834.83	52	99.83*	1.805E+00	2.835E-02	3.059E-02	79.69
Y-91	557.57	28	95.08*	2.519E+00	1.160E-02	1.741E-02	148.73
	1204.90	------	0.30	1.283E+00	------ Line Not Found		------
NB-95	765.79	175	99.81*	1.944E+00	8.869E-02	1.746E-01	38.27
CD-109	88.03	727	3.79*	4.640E+00	4.058E+00	4.271E+00	21.24
SN-126	64.28	164	9.60	1.796E+00	9.319E-01	9.319E-01	80.78
	86.94	727	8.90	4.640E+00	1.728E+00	1.728E+00	45.69
	87.57	727	37.00*	4.640E+00	4.157E-01	4.157E-01	21.24
CS-135	268.24	390	16.00*	4.174E+00	5.731E-01	5.731E-01	29.31
CE-141	145.44	19	48.40*	5.984E+00	6.530E-03	1.356E-02	500.97
EU-155	86.54	727	30.90	4.640E+00	4.978E-01	5.043E-01	21.28
	105.31	82	20.70*	5.755E+00	6.785E-02	6.874E-02	119.22
HG-203	70.83	98	4.75	3.057E+00	6.607E-01	1.099E+00	103.71
	72.87	98	8.00	3.057E+00	3.923E-01	6.528E-01	103.66
	82.60	267	3.55	4.351E+00	1.697E+00	2.825E+00	42.45
	279.20	105	77.30*	4.098E+00	3.244E-02	5.399E-02	67.69
TL-208	75.00	803	3.43	3.311E+00	6.943E+00	7.183E+00	21.83
	277.35	105	6.80	4.098E+00	3.688E-01	3.816E-01	68.23
	510.84	300	21.60	2.690E+00	5.067E-01	5.243E-01	43.79
	583.14	1014	84.20*	2.438E+00	4.852E-01	5.019E-01	11.53
	763.30	65	1.64	1.955E+00	1.999E+00	2.068E+00	59.74
	860.37	126	12.46	1.757E+00	5.644E-01	5.839E-01	44.02
	1093.90	------	0.37	1.403E+00	------ Line Not Found		------
BI-211	351.07	2065	12.94*	3.485E+00	4.498E+00	4.498E+00	10.02
BI-212	727.18	215	11.80*	2.039E+00	8.772E-01	9.076E-01	28.79
PB-212	74.80	803	10.70	3.311E+00	2.226E+00	2.303E+00	22.08
	87.30	727	8.00	4.640E+00	1.923E+00	1.989E+00	23.48
	115.19	------	0.60	5.993E+00	------ Line Not Found		------
	238.63	3182	44.60*	4.540E+00	1.544E+00	1.597E+00	10.45
	300.09	221	3.41	3.882E+00	1.637E+00	1.694E+00	40.29
BI-214	609.31	1652	46.30*	2.356E+00	1.488E+00	1.488E+00	10.61

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	768.36	175	5.04	1.944E+00	1.756E+00	1.756E+00	38.73
	934.06	46	3.21	1.629E+00	8.717E-01	8.717E-01	119.49
	1120.29	345	15.10	1.373E+00	1.637E+00	1.637E+00	21.58
	1238.11	124	5.94	1.253E+00	1.641E+00	1.641E+00	51.81
	1377.67	63	4.11	1.144E+00	1.326E+00	1.326E+00	64.52
PB-214	74.81	803	6.21	3.311E+00	3.835E+00	3.835E+00	21.33
	77.11	1325	10.50	3.583E+00	3.461E+00	3.462E+00	15.94
	87.30	727	4.41	4.640E+00	3.488E+00	3.488E+00	22.75
	241.98	900	7.50	4.502E+00	2.618E+00	2.618E+00	18.60
	295.21	1259	19.20	3.928E+00	1.640E+00	1.640E+00	13.81
	351.92	2065	37.20*	3.485E+00	1.565E+00	1.565E+00	11.30
RA-223	122.32	------	1.19	6.069E+00	------ Line Not Found		------
	144.24	19	3.24	5.984E+00	9.755E-02	9.755E-02	500.98
	154.21	118	5.58	5.853E+00	3.562E-01	3.562E-01	87.94
	269.46	390	13.60	4.174E+00	6.743E-01	6.743E-01	28.94
	323.87	------	3.88*	3.685E+00	------ Line Not Found		------
	338.28	633	2.73	3.580E+00	6.366E+00	6.366E+00	21.14
	445.03	------	1.18	2.966E+00	------ Line Not Found		------
RA-226	295.21	1259	19.20	3.928E+00	1.640E+00	1.640E+00	13.81
	351.92	2065	37.20	3.485E+00	1.565E+00	1.565E+00	9.65
	609.31	1652	46.30*	2.356E+00	1.488E+00	1.488E+00	10.61
AC-228	209.25	358	4.40	4.953E+00	1.615E+00	1.633E+00	71.57
	338.32	633	11.40	3.580E+00	1.524E+00	1.542E+00	44.70
	463.01	227	4.40	2.886E+00	1.754E+00	1.774E+00	41.73
	794.95	86	4.60	1.887E+00	9.713E-01	9.823E-01	68.36
	911.21	685	27.70*	1.666E+00	1.457E+00	1.473E+00	17.75
	964.77	184	5.20	1.580E+00	2.197E+00	2.222E+00	38.99
	969.11	403	16.60	1.573E+00	1.514E+00	1.531E+00	27.53
RA-228	209.25	358	4.40	4.953E+00	1.615E+00	1.633E+00	71.57
	338.32	633	11.40	3.580E+00	1.524E+00	1.542E+00	44.70
	463.01	227	4.40	2.886E+00	1.754E+00	1.774E+00	41.73
	794.95	86	4.60	1.887E+00	9.713E-01	9.823E-01	68.36
	911.21	685	27.70*	1.666E+00	1.457E+00	1.473E+00	17.75
	964.77	184	5.20	1.580E+00	2.197E+00	2.222E+00	38.99
	969.11	403	16.60	1.573E+00	1.514E+00	1.531E+00	27.53
TH-228	84.40	267	1.21	4.351E+00	4.980E+00	5.152E+00	42.26
	238.60	3182	44.60*	4.540E+00	1.544E+00	1.597E+00	10.45
	300.10	221	3.41	3.882E+00	1.637E+00	1.694E+00	70.92
TH-229	85.43	267	16.50	4.351E+00	3.652E-01	3.652E-01	41.08
	88.47	727	27.10	4.640E+00	5.676E-01	5.676E-01	21.24
	100.00	------	12.40	5.517E+00	------ Line Not Found		------
	193.63	23	4.59*	5.178E+00	9.426E-02	9.426E-02	356.83
	210.97	358	3.26	4.953E+00	2.177E+00	2.177E+00	32.76
TH-230	295.21	1259	19.20	3.928E+00	1.640E+00	1.640E+00	13.81
	351.92	2065	37.20	3.485E+00	1.565E+00	1.565E+00	9.65
	609.31	1652	46.30*	2.356E+00	1.488E+00	1.488E+00	10.61
TH-232	238.59	3182	44.60*	4.540E+00	1.544E+00	1.544E+00	10.45
	911.20	685	27.70	1.666E+00	1.457E+00	1.457E+00	17.75
	964.40	184	5.20	1.580E+00	2.197E+00	2.197E+00	38.99

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	969.11	403	16.60	1.573E+00	1.514E+00	1.514E+00	27.53
PA-233	75.28	803	1.26	3.311E+00	1.890E+01	1.890E+01	23.69
	86.59	727	1.89	4.640E+00	8.138E+00	8.138E+00	33.11
	300.12	221	6.60	3.882E+00	8.458E-01	8.458E-01	41.67
	311.98	35	38.60*	3.766E+00	2.396E-02	2.396E-02	127.24
	340.50	------	4.50	3.562E+00	------ Line Not Found		------
	398.62	------	1.27	3.200E+00	------ Line Not Found		------
	415.76	------	1.62	3.109E+00	------ Line Not Found		------
PA-234M	766.40	175	0.21	1.944E+00	4.215E+01	4.215E+01	85.26
	1001.03	50	0.85*	1.526E+00	3.840E+00	3.840E+00	123.88
TH-234	63.29	164	3.80*	1.796E+00	2.354E+00	2.354E+00	81.35
	92.38	648	5.41	5.085E+00	2.314E+00	2.314E+00	28.64
	112.81	------	0.24	5.950E+00	------ Line Not Found		------
U-234	67.67	------	0.37	2.385E+00	------ Line Not Found		------
	241.98	900	7.49	4.502E+00	2.621E+00	2.621E+00	18.60
	295.21	1259	19.20*	3.928E+00	1.640E+00	1.640E+00	13.81
	351.92	2065	37.20	3.485E+00	1.565E+00	1.565E+00	11.30
U-235	89.95	382	2.70	4.867E+00	2.858E+00	2.858E+00	39.98
	93.35	648	4.50	5.085E+00	2.782E+00	2.782E+00	35.76
	105.00	82	2.10	5.755E+00	6.688E-01	6.688E-01	122.59
	143.76	19	10.50*	5.984E+00	3.010E-02	3.010E-02	501.20
	163.33	------	4.70	5.703E+00	------ Line Not Found		------
	185.71	642	54.00	5.328E+00	2.192E-01	2.192E-01	22.55
	205.31	------	5.00	5.012E+00	------ Line Not Found		------
NP-237	86.48	727	12.60*	4.640E+00	1.221E+00	1.221E+00	29.61
	95.87	------	2.60	5.290E+00	------ Line Not Found		------
U-238	63.29	164	3.80*	1.796E+00	2.354E+00	2.354E+00	81.35
ANH-511	511.00	300	100.00*	2.690E+00	1.095E-01	1.095E-01	42.99

Nuclide Type: NATURAL

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
RA-224	240.98	900	3.95*	4.502E+00	4.970E+00	5.142E+00	17.74

Flag: "*" = Keyline

Sample ID : G1201055604 Acquisition date : 10-APR-2006 15:42:21

Total number of lines in spectrum 78
Number of unidentified lines 25
Number of lines tentatively identified by NID 53 67.95%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.28E+09Y	1.00	2.117E+01	2.117E+01	0.170E+01	8.05	
MN-54	312.70D	1.08	2.835E-02	3.059E-02	2.438E-02	79.69	
Y-91	58.51D	1.50	1.160E-02	1.741E-02	2.589E-02	148.73	
NB-95	35.06D	1.97	8.869E-02	1.746E-01	0.668E-01	38.27	
CD-109	464.00D	1.05	4.058E+00	4.271E+00	0.907E+00	21.24	
SN-126	1.00E+05Y	1.00	4.157E-01	4.157E-01	0.883E-01	21.24	
CS-135	2.30E+06Y	1.00	5.731E-01	5.731E-01	1.680E-01	29.31	
CE-141	32.50D	2.08	6.530E-03	1.356E-02	6.792E-02	500.97	
EU-155	4.96Y	1.01	6.785E-02	6.874E-02	8.195E-02	119.22	
HG-203	46.61D	1.66	3.244E-02	5.399E-02	3.655E-02	67.69	
TL-208	1.91Y	1.03	4.852E-01	5.019E-01	0.579E-01	11.53	
BI-211	7.04E+08Y	1.00	4.498E+00	4.498E+00	0.451E+00	10.02	
BI-212	1.91Y	1.03	8.772E-01	9.076E-01	2.613E-01	28.79	
PB-212	1.91Y	1.03	1.544E+00	1.597E+00	0.167E+00	10.45	
BI-214	1600.00Y	1.00	1.488E+00	1.488E+00	0.158E+00	10.61	
PB-214	1600.00Y	1.00	1.565E+00	1.565E+00	0.177E+00	11.30	
RA-223	7.04E+08Y	1.00	6.743E-01	6.743E-01	1.951E-01	28.94	K
RA-226	1600.00Y	1.00	1.488E+00	1.488E+00	0.158E+00	10.61	
AC-228	5.75Y	1.01	1.457E+00	1.473E+00	0.262E+00	17.75	
RA-228	5.75Y	1.01	1.457E+00	1.473E+00	0.262E+00	17.75	
TH-228	1.91Y	1.03	1.544E+00	1.597E+00	0.167E+00	10.45	
TH-229	7340.00Y	1.00	9.426E-02	9.426E-02	33.64E-02	356.83	
TH-230	7.70E+04Y	1.00	1.488E+00	1.488E+00	0.158E+00	10.61	
TH-232	1.41E+10Y	1.00	1.544E+00	1.544E+00	0.161E+00	10.45	
PA-233	2.14E+06Y	1.00	2.396E-02	2.396E-02	3.049E-02	127.24	
PA-234M	4.47E+09Y	1.00	3.840E+00	3.840E+00	4.757E+00	123.88	
TH-234	4.47E+09Y	1.00	2.354E+00	2.354E+00	1.915E+00	81.35	
U-234	2.45E+05Y	1.00	1.640E+00	1.640E+00	0.226E+00	13.81	
U-235	7.04E+08Y	1.00	3.010E-02	3.010E-02	15.09E-02	501.20	
NP-237	2.14E+06Y	1.00	1.221E+00	1.221E+00	0.361E+00	29.61	
U-238	4.47E+09Y	1.00	2.354E+00	2.354E+00	1.915E+00	81.35	
ANH-511	1.00E+09Y	1.00	1.095E-01	1.095E-01	0.471E-01	42.99	
Total Activity :			5.822E+01	5.875E+01			

Nuclide Type : NATURAL

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
RA-224	1.91Y	1.03	4.970E+00	5.142E+00	0.912E+00	17.74	
Total Activity :			4.970E+00	5.142E+00			

Grand Total Activity : 6.319E+01 6.389E+01

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	129.00	152	898	0.98	256.42	253	8	7.03E-03	72.3	6.08E+00	
0	327.74	158	402	1.48	653.65	649	9	7.34E-03	48.2	3.66E+00	T
0	409.41	52	314	0.95	816.90	813	8	2.40E-03	****	3.14E+00	
0	421.42	33	176	1.41	840.92	839	6	1.54E-03	****	3.08E+00	
0	479.97	92	281	1.82	957.97	953	12	4.24E-03	76.6	2.81E+00	
0	633.64	8	124	1.47	1265.22	1262	7	3.79E-04	****	2.28E+00	T
0	665.30	69	116	1.58	1328.54	1326	7	3.20E-03	57.4	2.19E+00	T
0	720.38	15	132	2.21	1438.68	1437	7	7.14E-04	****	2.05E+00	T
0	753.89	55	231	4.21	1505.70	1497	14	2.56E-03	****	1.98E+00	T
0	771.98	43	94	1.29	1541.87	1539	8	1.97E-03	90.4	1.93E+00	T
0	785.53	49	224	1.62	1568.96	1561	12	2.26E-03	****	1.91E+00	T
0	805.05	28	172	2.01	1608.01	1606	12	1.31E-03	****	1.86E+00	T
0	925.76	23	51	1.66	1849.44	1847	6	1.09E-03	****	1.64E+00	T
0	1078.56	37	100	0.68	2155.12	2150	11	1.73E-03	****	1.42E+00	
0	1226.66	70	300	10.26	2451.42	2441	24	3.25E-03	****	1.26E+00	
0	1280.29	30	72	1.86	2558.73	2554	8	1.40E-03	****	1.22E+00	
2	1400.46	46	47	2.50	2799.22	2794	24	2.15E-03	62.3	1.13E+00	T
2	1406.73	34	49	2.51	2811.78	2794	24	1.60E-03	****	1.12E+00	
0	1485.74	11	38	2.36	2969.91	2967	10	4.94E-04	****	1.08E+00	
0	1500.20	31	20	2.58	2998.85	2996	8	1.45E-03	74.5	1.07E+00	
0	1508.07	25	21	1.98	3014.61	3012	7	1.15E-03	83.4	1.07E+00	
0	1529.58	31	23	1.13	3057.66	3051	14	1.43E-03	76.6	1.06E+00	
0	1579.59	7	36	1.57	3157.76	3152	11	3.28E-04	****	1.04E+00	
0	1586.85	56	26	2.05	3172.29	3169	8	2.61E-03	41.1	1.03E+00	
0	1591.34	29	53	3.87	3181.29	3176	11	1.36E-03	****	1.03E+00	
2	1618.72	24	16	2.62	3236.09	3228	53	1.13E-03	****	1.02E+00	
2	1624.67	23	13	2.17	3248.00	3228	53	1.06E-03	82.7	1.02E+00	
2	1629.62	55	16	2.63	3257.91	3228	53	2.53E-03	45.6	1.02E+00	
2	1639.15	23	9	2.18	3277.00	3228	53	1.07E-03	66.8	1.01E+00	
0	1681.55	28	19	8.11	3361.87	3352	20	1.31E-03	96.2	1.00E+00	
0	1727.89	78	24	1.20	3454.64	3447	17	3.61E-03	37.2	9.89E-01	
0	1763.31	292	25	2.32	3525.56	3514	25	1.35E-02	15.8	9.82E-01	
0	1785.81	2	8	1.75	3570.62	3567	8	9.35E-05	****	9.77E-01	
0	1846.35	33	14	1.91	3691.83	3688	10	1.53E-03	59.7	9.68E-01	
0	1856.79	16	12	5.05	3712.74	3703	18	7.33E-04	****	9.67E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 10-APR-2006 21:42:56.93

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055604.CNF;1    *
* Acquisition date : 10-APR-2006 15:42:21  Detector SN#    : 1922864          *
* Detector ID      : GAMMA16               Sensitivity     : 3.00000          *
* Geometry         : CAN                   Energy tolerance: 2.00000          *
* Elapsed live time: 0 06:00:00.00         Abundance limit : 75.00000         *
* Elapsed real time: 0 06:00:03.43         Half life ratio : 8.00000          *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 7-MAR-2006 12:45:00.  Nuclide Library : EPI              *
* Sample ID        : G1201055604           Analyst initials: MJH1             *
* Batch Number     : 513799                Sample Quantity : 1.27370E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 5-APR-2006 19:34:04.74MS Isotope      :                 *
* MSD DPM          :                       MSD Isotope     :                 *
* LCS DPM          :                       LCS Isotope     :                 *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
K-40	2.117E+01	1.704E+00	3.065E-01	2.023E-02	69.063
MN-54	3.059E-02	2.438E-02	3.325E-02	2.809E-03	0.920
Y-91	1.741E-02	2.589E-02	4.411E-02	2.710E-03	0.395
NB-95	2.145E-02	7.317E-02	6.423E-02	4.806E-03	0.334
CD-109	4.271E+00	9.072E-01	7.314E-01	7.744E-02	5.840
SN-126	4.157E-01	8.830E-02	7.176E-02	7.583E-03	5.793
CS-135	5.731E-01	1.680E-01	1.302E-01	1.244E-02	4.400
CE-141	1.014E-02	5.084E-02	8.471E-02	6.819E-03	0.120
EU-155	6.556E-02	7.833E-02	9.618E-02	8.213E-03	0.682
HG-203	5.399E-02	3.655E-02	4.737E-02	3.926E-03	1.140
TL-208	5.019E-01	5.790E-02	3.292E-02	2.305E-03	15.246
BI-211	4.498E+00	4.508E-01	1.787E-01	1.311E-02	25.175
BI-212	9.076E-01	2.613E-01	2.672E-01	2.304E-02	3.397
PB-212	1.597E+00	1.668E-01	5.284E-02	5.000E-03	30.222
BI-214	1.488E+00	1.579E-01	5.727E-02	4.613E-03	25.983
PB-214	1.565E+00	1.768E-01	6.341E-02	5.701E-03	24.677
RA-223	-1.378E-01	4.220E-01	6.020E-01	1.031E-01	-0.229
RA-224	5.142E+00	9.120E-01	6.012E-01	5.004E-02	8.553

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
RA-226	1.488E+00	1.579E-01	5.727E-02	4.613E-03	25.983
AC-228	1.473E+00	2.615E-01	1.259E-01	1.486E-02	11.703
RA-228	1.473E+00	2.615E-01	1.259E-01	1.486E-02	11.703
TH-228	1.597E+00	1.668E-01	5.284E-02	5.000E-03	30.225
TH-229	9.426E-02	3.364E-01	4.837E-01	4.045E-02	0.195
TH-230	1.488E+00	1.578E-01	5.727E-02	4.613E-03	25.983
TH-232	1.544E+00	1.613E-01	5.107E-02	4.832E-03	30.226
PA-233	2.396E-02	3.049E-02	5.957E-02	4.673E-03	0.402
PA-234M	3.840E+00	4.757E+00	3.792E+00	3.804E-01	1.013
TH-234	2.354E+00	1.915E+00	1.727E+00	3.435E-01	1.364
U-234	1.640E+00	2.264E-01	1.216E-01	1.218E-02	13.481
U-235	3.010E-02	1.509E-01	1.958E-01	3.357E-02	0.154
NP-237	1.221E+00	3.615E-01	2.150E-01	4.980E-02	5.678
U-238	2.354E+00	1.915E+00	1.727E+00	3.435E-01	1.364
ANH-511	1.095E-01	4.706E-02	2.558E-02	1.556E-03	4.279

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-1.540E-01		2.618E-01	3.841E-01	2.666E-02	-0.401
NA-22	7.325E-04		2.298E-02	4.009E-02	2.605E-03	0.018
AL-26	-4.088E-03		1.383E-02	2.490E-02	1.432E-03	-0.164
SC-46	-5.587E-03		2.577E-02	4.260E-02	3.947E-03	-0.131
V-48	2.546E-02		8.357E-02	1.502E-01	1.330E-02	0.170
CR-51	1.088E-01		3.439E-01	5.706E-01	4.538E-02	0.191
CO-56	1.117E-02		2.530E-02	4.368E-02	3.767E-03	0.256
CO-57	-1.396E-03		1.415E-02	2.412E-02	1.869E-03	-0.058
CO-58	-1.002E-02		2.852E-02	4.071E-02	3.308E-03	-0.246
FE-59	1.755E-02		6.651E-02	1.180E-01	1.006E-02	0.149
CO-60	-1.214E-02		1.987E-02	3.303E-02	2.055E-03	-0.368
ZN-65	-2.006E-03		5.855E-02	8.834E-02	6.691E-03	-0.023
SE-75	-5.086E-03		2.723E-02	4.472E-02	3.672E-03	-0.114
KR-85	6.558E+00		4.081E+00	6.743E+00	4.106E-01	0.972
SR-85	4.110E-02		2.557E-02	4.226E-02	2.573E-03	0.972
Y-88	1.670E-02		1.956E-02	3.931E-02	2.237E-03	0.425
NB-94	1.381E-02		1.842E-02	3.233E-02	2.149E-03	0.427
ZR-95	6.145E-02		5.224E-02	8.406E-02	7.028E-03	0.731
RU-103	-1.397E-02		3.084E-02	5.213E-02	6.654E-03	-0.268
RH-106	1.369E-01		1.666E-01	2.975E-01	1.834E-02	0.460
RU-106	1.103E-01		1.656E-01	2.930E-01	3.493E-02	0.377
AG-108M	-3.907E-03		1.780E-02	3.066E-02	1.958E-03	-0.127
AG-110M	-2.719E-02		1.981E-02	3.112E-02	2.023E-03	-0.874
SN-113	-2.877E-02		2.603E-02	4.341E-02	2.662E-03	-0.663
SN-115	3.582E+00	+	4.275E+00	5.013E+00	4.614E-01	0.715
SN-117M	-3.700E-02		7.918E-02	1.319E-01	1.072E-02	-0.280
TE-123M	-1.064E-02		1.752E-02	2.907E-02	2.381E-03	-0.366
SB-124	1.494E-02		4.448E-02	8.288E-02	5.395E-03	0.180

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
SB-125	3.863E-02		4.880E-02	8.759E-02	5.360E-03	0.441
TE-125M	8.872E+00		6.550E+00	1.150E+01	1.156E+00	0.772
I-126	4.822E-01	+	2.785E-01	4.781E-01	2.963E-02	1.009
SB-126	9.297E-02	+	2.332E-01	3.865E-01	2.657E-02	0.241
I-131	1.123E-01		3.177E-01	5.638E-01	4.146E-02	0.199
BA-133	-7.868E-03		2.505E-02	3.818E-02	4.591E-03	-0.206
CS-134	5.400E-02	+	3.500E-02	4.496E-02	3.572E-03	1.201
CS-136	-1.479E-02		1.593E-01	2.781E-01	2.420E-02	-0.053
BA-137M	8.646E-03		2.073E-02	3.584E-02	2.201E-03	0.241
CS-137	9.151E-03		2.191E-02	3.789E-02	2.336E-03	0.242
CE-139	-1.162E-02		1.777E-02	2.938E-02	2.437E-03	-0.396
BA-140	1.076E-02		3.801E-01	6.561E-01	2.138E-01	0.016
LA-140	-3.809E-02		1.428E-01	2.071E-01	1.280E-02	-0.184
CE-144	-2.853E-02		1.140E-01	1.927E-01	2.909E-02	-0.148
PM-144	8.654E-03		1.898E-02	3.296E-02	2.172E-03	0.263
PM-146	2.074E-02		2.398E-02	4.290E-02	3.744E-03	0.483
ND-147	3.663E-01		9.804E-01	1.719E+00	2.349E-01	0.213
PM-147	4.484E+03		2.870E+04	4.927E+04	3.820E+03	0.091
EU-152	-1.639E-03		5.478E-02	8.938E-02	6.766E-03	-0.018
GD-153	-2.115E-03		4.561E-02	7.852E-02	7.166E-03	-0.027
EU-154	2.301E-03		6.359E-02	1.110E-01	1.085E-02	0.021
TB-160	4.438E-02		9.017E-02	1.563E-01	1.424E-02	0.284
TM-171	-7.020E+00		2.300E+01	3.583E+01	4.093E+00	-0.196
HF-181	1.252E-03		3.315E-02	5.073E-02	3.058E-03	0.025
TA-182	1.838E-02		1.357E-01	2.056E-01	1.374E-02	0.089
IR-192	-8.821E-03		2.633E-02	3.766E-02	2.829E-03	-0.234
BI-207	1.398E-02		2.853E-02	5.136E-02	4.180E-03	0.272
BI-210	6.487E+00		7.463E+00	1.135E+01	1.159E+00	0.572
PB-210	6.487E+00		7.463E+00	1.135E+01	1.159E+00	0.572
PB-211	5.273E-02		5.069E-01	8.844E-01	5.513E-01	0.060
RN-219	-6.000E-02		2.219E-01	3.825E-01	5.202E-02	-0.157
AC-227	-2.171E-01		2.221E-01	3.506E-01	5.360E-02	-0.619
TH-227	-2.133E-01		2.192E-01	3.446E-01	6.161E-02	-0.619
PA-231	-3.777E-01		8.550E-01	1.383E+00	2.050E-01	-0.273
TH-231	6.743E-01	+	1.970E-01	2.141E-01	1.979E-02	3.149
PA-234	-1.078E-01		1.566E-01	2.636E-01	5.008E-02	-0.409
NP-239	-6.134E-02		1.029E-01	1.732E-01	1.364E-02	-0.354
AM-241	2.364E-02		1.467E-01	2.337E-01	3.165E-02	0.101
AM-242	1.391E+00	+	1.658E+00	1.997E+00	1.706E-01	0.697
CM-247	2.352E-03		1.974E-02	3.457E-02	2.000E-03	0.068
CF-249	2.739E-02		2.100E-02	3.836E-02	2.243E-03	0.714
CF-251	-4.219E-02		7.008E-02	1.157E-01	9.622E-03	-0.365

```
*****************************************************************************
*                                                                           *
*                          General Engineering Labs, LLC                    *
*                                2040 SAVAGE ROAD                           *
*                             CHARLESTON ,SC 29417                          *
*                              GROSS GAMMA REPORT                           *
*                                                                           *
*                                                                           *
*****************************************************************************
*                                                                           *
*   BATCH ID     : 513799                    SAMPLE ID  : G1201055604       *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA16           *
*   SAMPLE DATE  :  7-MAR-2006 12:45:00.00   COUNT TIME :    0 06:00:00.00   *
*   ANALYSIS DATE: 10-APR-2006 15:42:21.97   SAMPLE ALQT:  127.370 GRAM      *
*                                                                           *
*****************************************************************************


      GROSS GAMMA ACTIVITY (pCi/GRAM  ) : 9.402E+00
      GROSS GAMMA ERROR  (pCi/GRAM  )   : 1.847E+00
      GROSS GAMMA MDA    (pCi/GRAM  )   : 5.267E+00
      GROSS GAMMA DLC    (pCi/GRAM  )   : 2.577E+00
```

VAX/VMS Nuclide Identification Report Generated 12-APR-2006 13:23:17.46

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055605.CNF;2
Sample date      : 16-MAR-2006 00:00:00 Acquisition date : 12-APR-2006 12:22:46
Sample ID        : G1201055605          Sample quantity  : 1.00000E+02 GRAM
Detector name    : GAMMA12              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00        Elapsed real time: 0 01:00:02.17  0.1%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 100017444
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	59.51	3302	1314	1.12	118.24	113	12	9.17E-01	2.8	
2	0	88.02	5771	1095	1.15	175.31	168	14	1.60E+00	1.8	
3	0	122.06	2251	612	1.17	243.45	236	13	6.25E-01	3.1	
4	0	136.28	351	384	1.20	271.91	266	12	9.75E-02	12.4	
5	0	165.82	1271	374	1.32	331.05	326	12	3.53E-01	4.1	
6	0	185.56*	17	204	0.66	370.56	368	7	4.81E-03	145.1	
7	0	209.51*	25	143	1.02	418.49	416	5	6.83E-03	76.4	
8	0	255.44*	54	242	2.40	510.43	506	10	1.51E-02	55.1	
9	0	304.80	39	204	1.30	609.23	605	9	1.08E-02	68.3	
10	0	381.04*	20	75	0.81	761.82	760	5	5.45E-03	71.8	
11	0	391.56	663	291	1.24	782.86	776	14	1.84E-01	6.7	
12	0	452.78	123	213	4.90	905.40	898	15	3.41E-02	27.4	
13	0	648.17*	78	114	4.03	1296.40	1289	14	2.16E-02	31.5	
14	0	661.45	2544	164	1.49	1322.97	1316	14	7.07E-01	2.3	
15	0	738.48	37	87	3.57	1477.11	1472	11	1.04E-02	51.3	
16	0	821.70*	27	89	0.75	1643.62	1638	9	7.62E-03	65.2	
17	0	848.46*	27	80	0.58	1697.17	1694	8	7.51E-03	60.9	
18	0	868.04	29	59	0.68	1736.33	1733	7	8.04E-03	47.9	
19	0	897.73	642	190	1.78	1795.74	1788	14	1.78E-01	6.0	
20	0	909.82*	25	99	1.39	1819.93	1818	8	7.04E-03	71.4	
21	0	1052.53	61	58	2.56	2105.44	2102	9	1.70E-02	25.6	
22	0	1078.05	23	82	1.54	2156.50	2151	10	6.26E-03	79.0	
23	0	1114.15	14	108	1.44	2228.70	2224	10	3.87E-03	141.7	
24	0	1128.46	39	28	1.90	2257.33	2254	8	1.08E-02	28.4	
25	0	1156.04	48	41	3.90	2312.52	2306	14	1.32E-02	32.2	
26	0	1172.87*	2614	88	1.78	2346.17	2336	19	7.26E-01	2.1	
27	0	1209.07	21	35	0.94	2418.58	2414	17	5.74E-03	68.5	
28	0	1268.31	51	25	10.99	2537.09	2520	34	1.41E-02	33.7	
29	0	1332.07	2250	43	1.85	2664.62	2656	17	6.25E-01	2.2	
30	0	1404.16	5	15	6.26	2808.80	2806	15	1.39E-03	174.6	
31	0	1515.22*	13	13	4.96	3030.93	3026	13	3.65E-03	63.6	
32	0	1534.29	18	12	5.83	3069.05	3059	15	5.06E-03	46.6	
33	0	1608.88*	6	6	0.67	3218.23	3216	6	1.69E-03	82.6	
34	0	1650.47	5	16	0.96	3301.40	3295	16	1.39E-03	184.4	
35	0	1770.79	8	40	17.53	3541.99	3517	55	2.33E-03	296.2	
36	0	1835.45	391	11	2.13	3671.30	3660	22	1.09E-01	5.5	
37	0	1882.13	16	0	0.88	3764.63	3753	21	4.44E-03	25.0	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055605  *
* Acquisition date : 12-APR-2006 12:22:46 Detector SN#    : 100017444  *
* Detector ID      : GAMMA12              Sensitivity     : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 01:00:02.17     Half life ratio :  8.000     *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 16-MAR-2006 00:00:00 Nuclide Library : FERMC       *
* Sample ID        : G1201055605          Analyst initials: MJH1        *
* Batch Number     : 513799               Sample Quantity : 1.0000E+02 GRAM  *
* Recovery         :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME :  4-JAN-2006 18:46:20 MS Isotope      : TOPLOADER   *
* MSD DPM          :    5.440             MSD Isotope     : TOPLOADER   *
* LCS DPM          :    0.000             LCS Isotope     : TOPLOADER   *
* LCSD DPM         :    0.000             LCSD Isotope    : TOPLOADER   *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	
CO-57	3.100E+00	1.914E-01	1.283E-01	0.000E+00
CO-60	1.393E+01	6.157E-01	1.721E-01	0.000E+00
ZN-65	1.555E-01	4.409E-01	5.182E-01	0.000E+00
Y-88	3.596E+00	3.956E-01	1.576E-01	0.000E+00
CD-109	1.972E+02	7.071E+00	4.022E+00	0.000E+00
SN-113	2.590E+00	3.466E-01	2.462E-01	0.000E+00
SN-126	1.938E+01	6.952E-01	3.972E-01	0.000E+00
BA-137M	9.254E+00	4.170E-01	2.022E-01	0.000E+00
CS-137	9.782E+00	4.408E-01	2.138E-01	0.000E+00
CE-139	2.185E+00	1.807E-01	1.313E-01	0.000E+00
NP-237	5.691E+01	2.041E+00	1.180E+00	0.000E+00
AM-241	2.431E+01	1.384E+00	9.206E-01	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	
BE-7	-4.756E-01		1.253E+00	2.150E+00	0.000E+00 NOT IDENT.
NA-22	5.822E-02		8.558E-02	1.528E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00		1.427E+12	0.000E+00	0.000E+00 SHORT HLIF
AL-26	4.490E-03		7.437E-02	1.436E-01	0.000E+00 NOT IDENT.
K-40	-7.900E-02		7.854E-01	1.449E+00	0.000E+00 NOT IDENT.
SC-46	-7.224E-02		1.772E-01	2.955E-01	0.000E+00 NOT IDENT.
V-48	-1.096E-01		5.114E-01	8.584E-01	0.000E+00 NOT IDENT.
CR-51	1.704E-01		1.530E+00	2.577E+00	0.000E+00 NOT IDENT.
MN-54	9.500E-03		1.356E-01	2.339E-01	0.000E+00 NOT IDENT.
CO-56	1.404E-01		1.710E-01	2.973E-01	0.000E+00 FAIL ABUN
MN-56	0.000E+00		1.217E+41	0.000E+00	0.000E+00 SHORT HLIF
CO-58	1.278E-01		1.557E-01	2.818E-01	0.000E+00 NOT IDENT.
FE-59	3.397E-02		4.173E-01	7.133E-01	0.000E+00 NOT IDENT.
SE-75	7.895E-02		1.347E-01	2.330E-01	0.000E+00 FAIL ABUN
KR-85	-1.941E+01		2.226E+01	3.713E+01	0.000E+00 NOT IDENT.

SR-85	-1.134E-01	1.300E-01	2.168E-01	0.000E+00	NOT IDENT.
Y-91	1.231E-01	1.234E-01	2.287E-01	0.000E+00	NOT IDENT.
NB-94	3.481E-02	1.093E-01	1.926E-01	0.000E+00	NOT IDENT.
NB-95	1.690E-01	1.916E-01	3.492E-01	0.000E+00	NOT IDENT.
NB-95M	-4.290E+01	5.163E+01	8.384E+01	0.000E+00	NOT IDENT.
ZR-95	1.063E-01	2.534E-01	4.518E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	7.458E+01	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	8.493E+31	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.358E-02	1.629E-01	2.803E-01	0.000E+00	NOT IDENT.
RH-106	2.955E-01	1.015E+00	1.800E+00	0.000E+00	NOT IDENT.
RU-106	1.479E-01	1.030E+00	1.809E+00	0.000E+00	NOT IDENT.
AG-108M	7.915E-02	1.160E-01	1.989E-01	0.000E+00	NOT IDENT.
AG-110M	0.000E+00	1.452E-01	2.472E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.588E+03	0.000E+00	0.000E+00	SHORT HLIF
SN-115	1.847E+00	1.813E+01	3.099E+01	0.000E+00	NOT IDENT.
SN-117M	1.315E-01	2.552E-01	4.445E-01	0.000E+00	NOT IDENT.
TE-123M	3.815E-02	7.550E-02	1.315E-01	0.000E+00	NOT IDENT.
SB-124	1.208E-02	2.348E-01	4.443E-01	0.000E+00	NOT IDENT.
SB-125	-1.303E-01	3.154E-01	5.114E-01	0.000E+00	NOT IDENT.
TE-125M	2.821E+00	2.988E+01	5.133E+01	0.000E+00	NOT IDENT.
I-126	-1.047E+00	1.328E+00	1.865E+00	0.000E+00	NOT IDENT.
SB-126	-3.998E-01	9.518E-01	1.606E+00	0.000E+00	NOT IDENT.
SB-127	-3.980E-01	3.635E+01	6.348E+01	0.000E+00	NOT IDENT.
I-131	1.299E-01	1.016E+00	1.711E+00	0.000E+00	NOT IDENT.
I-132	0.000E+00	8.851E+40	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.593E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-3.835E-02	1.308E-01	2.151E-01	0.000E+00	FAIL ABUN
I-133	0.000E+00	3.784E+08	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-8.027E-02	1.360E-01	2.260E-01	0.000E+00	NOT IDENT.
CS-135	-4.493E-01	4.375E-01	6.998E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.318E+29	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.541E-01	9.206E-01	1.229E+00	0.000E+00	FAIL ABUN
BA-140	-4.589E-01	1.562E+00	2.690E+00	0.000E+00	FAIL ABUN
LA-140	-8.713E-02	4.700E-01	8.438E-01	0.000E+00	FAIL ABUN
CE-141	-5.841E-02	1.943E-01	3.281E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.742E+05	0.000E+00	0.000E+00	SHORT HLIF
CE-144	5.604E-01	5.814E-01	9.217E-01	0.000E+00	NOT IDENT.
PM-144	-7.121E-02	1.149E-01	1.917E-01	0.000E+00	NOT IDENT.
PR-144	0.000E+00	1.613E+41	0.000E+00	0.000E+00	SHORT HLIF
PM-146	0.000E+00	2.605E-01	2.683E-01	0.000E+00	FAIL ABUN
ND-147	1.589E+00	3.821E+00	6.838E+00	0.000E+00	NOT IDENT.
PM-147	0.000E+00	3.890E+05	6.690E+05	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.276E+04	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.330E-01	2.892E-01	4.720E-01	0.000E+00	FAIL ABUN
GD-153	-2.293E-02	2.050E-01	3.513E-01	0.000E+00	NOT IDENT.
EU-154	1.623E-01	2.376E-01	4.243E-01	0.000E+00	FAIL ABUN
EU-155	5.869E-02	2.936E-01	5.071E-01	0.000E+00	FAIL ABUN
TB-160	2.993E-01	6.234E-01	1.097E+00	0.000E+00	FAIL ABUN
TM-171	4.674E+01	8.651E+01	1.509E+02	0.000E+00	FAIL ABUN
HF-181	-4.021E-03	1.673E-01	2.926E-01	0.000E+00	FAIL ABUN
TA-182	1.335E-01	3.881E-01	7.163E-01	0.000E+00	NOT IDENT.
IR-192	-8.050E-02	1.153E-01	1.864E-01	0.000E+00	NOT IDENT.
HG-203	1.396E-01	1.371E-01	2.416E-01	0.000E+00	NOT IDENT.
BI-207	-1.168E-01	2.030E-01	3.321E-01	0.000E+00	FAIL ABUN
TL-208	-3.421E-02	1.121E-01	1.923E-01	0.000E+00	NOT IDENT.
BI-210	-1.070E+01	1.610E+01	2.405E+01	0.000E+00	NOT IDENT.
PB-210	-1.070E+01	1.610E+01	2.405E+01	0.000E+00	NOT IDENT.
BI-211	-3.269E-02	6.172E-01	1.028E+00	0.000E+00	NOT IDENT.
PB-211	1.086E+00	2.864E+00	4.870E+00	0.000E+00	NOT IDENT.
BI-212	-2.481E-01	9.297E-01	1.585E+00	0.000E+00	NOT IDENT.
PB-212	8.644E-03	1.546E-01	2.614E-01	0.000E+00	FAIL ABUN
BI-214	9.318E-02	2.114E-01	3.771E-01	0.000E+00	NOT IDENT.
PB-214	1.514E-01	2.131E-01	3.689E-01	0.000E+00	FAIL ABUN
RN-219	-1.369E-01	1.223E+00	2.028E+00	0.000E+00	NOT IDENT.
RA-223	6.255E-01	1.959E+00	3.333E+00	0.000E+00	FAIL ABUN
RA-224	3.870E-01	1.772E+00	3.015E+00	0.000E+00	NOT IDENT.
RA-226	9.318E-02	2.114E-01	3.771E-01	0.000E+00	NOT IDENT.
AC-227	1.381E+00	1.522E+00	1.970E+00	0.000E+00	FAIL ABUN
TH-227	1.358E+00	1.497E+00	1.937E+00	0.000E+00	FAIL ABUN
AC-228	4.012E-01	5.725E-01	9.664E-01	0.000E+00	FAIL ABUN
RA-228	4.012E-01	5.725E-01	9.664E-01	0.000E+00	FAIL ABUN
TH-228	6.156E-03	1.545E-01	2.610E-01	0.000E+00	NOT IDENT.
TH-229	-5.684E-02	1.269E+00	2.150E+00	0.000E+00	FAIL ABUN
TH-230	9.317E-02	2.114E-01	3.771E-01	0.000E+00	NOT IDENT.
PA-231	-2.987E+00	4.489E+00	7.298E+00	0.000E+00	NOT IDENT.
TH-231	-5.000E-01	5.108E-01	8.189E-01	0.000E+00	FAIL ABUN
TH-232	5.181E-03	1.503E-01	2.538E-01	0.000E+00	FAIL ABUN
PA-233	3.367E-02	1.885E-01	3.191E-01	0.000E+00	FAIL ABUN

PA-234	-3.123E-01	1.300E+00	2.179E+00	0.000E+00 FAIL ABUN
PA-234M	1.249E+01	1.712E+01	3.055E+01	0.000E+00 NOT IDENT.
TH-234	-8.531E+00	4.409E+00	6.203E+00	0.000E+00 NOT IDENT.
U-234	2.844E-02	3.622E-01	6.115E-01	0.000E+00 NOT IDENT.
U-235	-9.373E-03	5.059E-01	8.640E-01	0.000E+00 FAIL ABUN
U-238	-8.531E+00	4.409E+00	6.203E+00	0.000E+00 NOT IDENT.
NP-239	7.308E-03	6.240E-01	9.386E-01	0.000E+00 FAIL ABUN
AM-242	-1.694E+00	5.896E+00	1.002E+01	0.000E+00 NOT IDENT.
CM-247	3.281E-02	1.095E-01	1.859E-01	0.000E+00 NOT IDENT.
CF-249	9.640E-02	1.408E-01	2.154E-01	0.000E+00 NOT IDENT.
CF-251	3.381E-02	2.978E-01	5.105E-01	0.000E+00 NOT IDENT.
ANH-511	1.457E-01	1.005E-01	1.862E-01	0.000E+00 NOT IDENT.

VAX/VMS Nuclide Identification Report Generated 12-APR-2006 13:23:19.43

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055605.CNF;2
Sample date      : 16-MAR-2006 00:00:00 Acquisition date : 12-APR-2006 12:22:46
Sample ID        : G1201055605          Sample quantity  : 1.00000E+02 GRAM
Detector name    : GAMMA12              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00        Elapsed real time: 0 01:00:02.17  0.1%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         : 513799               Detector SN#     : 100017444
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
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Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	2251	85.51*	6.840E+00	2.889E+00	3.100E+00	6.17
	136.47	351	10.47	6.724E+00	3.743E+00	4.017E+00	24.75
CO-60	1173.24	2614	99.90	1.369E+00	1.435E+01	1.449E+01	4.22
	1332.50	2250	99.98*	1.225E+00	1.379E+01	1.393E+01	4.42
ZN-65	1115.55	14	50.75*	1.434E+00	1.438E-01	1.555E-01	283.47
Y-88	898.02	642	93.40	1.750E+00	2.947E+00	3.525E+00	12.05
	1836.01	391	99.38*	9.824E-01	3.007E+00	3.596E+00	11.00
CD-109	88.03	5771	3.79*	6.042E+00	1.892E+02	1.972E+02	3.59
SN-113	391.69	663	64.90*	3.498E+00	2.194E+00	2.590E+00	13.38
SN-126	64.28	------	9.60	3.550E+00	------ Line Not Found		------
	86.94	5771	8.90	6.042E+00	8.057E+01	8.057E+01	3.59
	87.57	5771	37.00*	6.042E+00	1.938E+01	1.938E+01	3.59
BA-137M	661.65	2544	89.98*	2.297E+00	9.238E+00	9.254E+00	4.51
CS-137	661.66	2544	85.12*	2.297E+00	9.765E+00	9.782E+00	4.51
CE-139	165.85	1271	80.35*	6.241E+00	1.902E+00	2.185E+00	8.27
PM-147	121.30	2251	0.00*	6.840E+00	6.176E+06	6.301E+06	6.17
NP-237	86.48	5771	12.60*	6.042E+00	5.691E+01	5.691E+01	3.59
	95.87	------	2.60	6.445E+00	------ Line Not Found		------
AM-241	59.54	3302	35.90*	2.841E+00	2.431E+01	2.431E+01	5.69

Flag: "*" = Keyline

Sample ID : G1201055605 Acquisition date : 12-APR-2006 12:22:46

Total number of lines in spectrum 37
Number of unidentified lines 15
Number of lines tentatively identified by NID 22 59.46%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	270.90D	1.07	2.889E+00	3.100E+00	0.191E+00	6.17	
CO-60	5.27Y	1.01	1.379E+01	1.393E+01	0.062E+01	4.42	
ZN-65	244.40D	1.08	1.438E-01	1.555E-01	4.409E-01	283.47	
Y-88	106.60D	1.20	3.007E+00	3.596E+00	0.396E+00	11.00	
CD-109	464.00D	1.04	1.892E+02	1.972E+02	0.071E+02	3.59	
SN-113	115.10D	1.18	2.194E+00	2.590E+00	0.347E+00	13.38	
SN-126	1.00E+05Y	1.00	1.938E+01	1.938E+01	0.070E+01	3.59	
BA-137M	30.17Y	1.00	9.238E+00	9.254E+00	0.417E+00	4.51	
CS-137	30.17Y	1.00	9.765E+00	9.782E+00	0.441E+00	4.51	
CE-139	137.66D	1.15	1.902E+00	2.185E+00	0.181E+00	8.27	
PM-147	2.62Y	1.02	6.176E+06	6.301E+06	0.389E+06	6.17	
NP-237	2.14E+06Y	1.00	5.691E+01	5.691E+01	0.204E+01	3.59	
AM-241	432.20Y	1.00	2.431E+01	2.431E+01	0.138E+01	5.69	
	Total Activity :		6.177E+06	6.301E+06			
	Grand Total Activity :		6.177E+06	6.301E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : G1201055605 Acquisition date : 12-APR-2006 12:22:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.56	17	204	0.66	370.56	368	7	4.81E-03	****	5.88E+00	T
0	209.51	25	143	1.02	418.49	416	5	6.83E-03	****	5.46E+00	T
0	255.44	54	242	2.40	510.43	506	10	1.51E-02	****	4.78E+00	T
0	304.80	39	204	1.30	609.23	605	9	1.08E-02	****	4.21E+00	T
0	381.04	20	75	0.81	761.82	760	5	5.45E-03	****	3.57E+00	
0	452.78	123	213	4.90	905.40	898	15	3.41E-02	54.9	3.13E+00	T
0	648.17	78	114	4.03	1296.40	1289	14	2.16E-02	63.0	2.34E+00	
0	738.48	37	87	3.57	1477.11	1472	11	1.04E-02	****	2.09E+00	T
0	821.70	27	89	0.75	1643.62	1638	9	7.62E-03	****	1.90E+00	
0	848.46	27	80	0.58	1697.17	1694	8	7.51E-03	****	1.84E+00	T
0	868.04	29	59	0.68	1736.33	1733	7	8.04E-03	95.8	1.80E+00	T
0	909.82	25	99	1.39	1819.93	1818	8	7.04E-03	****	1.73E+00	T
0	1052.53	61	58	2.56	2105.44	2102	9	1.70E-02	51.2	1.51E+00	
0	1078.05	23	82	1.54	2156.50	2151	10	6.26E-03	****	1.48E+00	
0	1128.46	39	28	1.90	2257.33	2254	8	1.08E-02	56.9	1.42E+00	
0	1156.04	48	41	3.90	2312.52	2306	14	1.32E-02	64.4	1.39E+00	
0	1209.07	21	35	0.94	2418.58	2414	17	5.74E-03	****	1.33E+00	
0	1268.31	51	25	10.99	2537.09	2520	34	1.41E-02	67.4	1.28E+00	
0	1404.16	5	15	6.26	2808.80	2806	15	1.39E-03	****	1.17E+00	
0	1515.22	13	13	4.96	3030.93	3026	13	3.65E-03	****	1.11E+00	
0	1534.29	18	12	5.83	3069.05	3059	15	5.06E-03	93.2	1.10E+00	
0	1608.88	6	6	0.67	3218.23	3216	6	1.69E-03	****	1.06E+00	
0	1650.47	5	16	0.96	3301.40	3295	16	1.39E-03	****	1.04E+00	
0	1770.79	8	40	17.53	3541.99	3517	55	2.33E-03	****	1.00E+00	T
0	1882.13	16	0	0.88	3764.63	3753	21	4.44E-03	50.0	9.72E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 12-APR-2006 13:23:23.74

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1201055605.CNF;2    *
* Acquisition date : 12-APR-2006 12:22:46  Detector SN#    : 100017444         *
* Detector ID      : GAMMA12               Sensitivity     : 3.00000           *
* Geometry         : CAN                   Energy tolerance: 2.00000           *
* Elapsed live time: 0 01:00:00.00         Abundance limit : 75.00000          *
* Elapsed real time: 0 01:00:02.17         Half life ratio : 8.00000           *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      : 16-MAR-2006 00:00:00  Nuclide Library : EPI               *
* Sample ID        : G1201055605           Analyst initials: MJH1              *
* Batch Number     : 513799                Sample Quantity : 1.00000E+02 GRAM  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* CALIB. DATE/TIME : 4-JAN-2006 18:46:20.49MS Isotope      : TOPLOADER        *
* MSD DPM          :                       MSD Isotope     :                  *
* LCS DPM          :                       LCS Isotope     :                  *
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
CO-57	3.100E+00	1.914E-01	1.286E-01	0.000E+00	24.100
CO-60	1.393E+01	6.157E-01	1.736E-01	0.000E+00	80.240
ZN-65	1.555E-01	4.409E-01	5.224E-01	0.000E+00	0.298
Y-88	3.596E+00	3.956E-01	1.591E-01	0.000E+00	22.601
CD-109	1.972E+02	7.071E+00	4.027E+00	0.000E+00	48.954
SN-113	2.590E+00	3.466E-01	2.475E-01	0.000E+00	10.462
SN-126	1.938E+01	6.952E-01	3.977E-01	0.000E+00	48.727
BA-137M	9.254E+00	4.170E-01	2.036E-01	0.000E+00	45.453
CS-137	9.782E+00	4.408E-01	2.152E-01	0.000E+00	45.452
CE-139	2.185E+00	1.807E-01	1.317E-01	0.000E+00	16.591
NP-237	5.691E+01	2.041E+00	1.182E+00	0.000E+00	48.165
AM-241	2.431E+01	1.384E+00	9.210E-01	0.000E+00	26.396

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
BE-7	-4.756E-01		1.253E+00	2.162E+00	0.000E+00	-0.220

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
NA-22	5.822E-02		8.558E-02	1.540E-01	0.000E+00	0.378
AL-26	4.490E-03		7.437E-02	1.449E-01	0.000E+00	0.031
K-40	-7.900E-02		7.854E-01	1.461E+00	0.000E+00	-0.054
SC-46	-7.224E-02		1.772E-01	2.977E-01	0.000E+00	-0.243
V-48	-1.096E-01		5.114E-01	8.650E-01	0.000E+00	-0.127
CR-51	1.704E-01		1.530E+00	2.589E+00	0.000E+00	0.066
MN-54	9.500E-03		1.356E-01	2.356E-01	0.000E+00	0.040
CO-56	1.404E-01	+	1.710E-01	2.995E-01	0.000E+00	0.469
CO-58	1.278E-01		1.557E-01	2.839E-01	0.000E+00	0.450
FE-59	3.397E-02		4.173E-01	7.190E-01	0.000E+00	0.047
SE-75	7.895E-02		1.347E-01	2.339E-01	0.000E+00	0.337
KR-85	-1.941E+01		2.226E+01	3.735E+01	0.000E+00	-0.520
SR-85	-1.134E-01		1.300E-01	2.181E-01	0.000E+00	-0.520
Y-91	1.231E-01		1.234E-01	2.302E-01	0.000E+00	0.535
NB-94	3.481E-02		1.093E-01	1.939E-01	0.000E+00	0.180
NB-95	1.690E-01		1.916E-01	3.517E-01	0.000E+00	0.481
NB-95M	-4.290E+01		5.163E+01	8.418E+01	0.000E+00	-0.510
ZR-95	1.063E-01		2.534E-01	4.550E-01	0.000E+00	0.234
RU-103	-5.358E-02		1.629E-01	2.819E-01	0.000E+00	-0.190
RH-106	2.955E-01		1.015E+00	1.811E+00	0.000E+00	0.163
RU-106	1.479E-01		1.030E+00	1.821E+00	0.000E+00	0.081
AG-108M	7.915E-02		1.160E-01	2.000E-01	0.000E+00	0.396
AG-110M	2.648E-01		1.452E-01	2.489E-01	0.000E+00	1.064
SN-115	1.847E+00		1.813E+01	3.123E+01	0.000E+00	0.059
SN-117M	1.315E-01		2.552E-01	4.458E-01	0.000E+00	0.295
TE-123M	3.815E-02		7.550E-02	1.318E-01	0.000E+00	0.289
SB-124	1.208E-02		2.348E-01	4.484E-01	0.000E+00	0.027
SB-125	-1.303E-01		3.154E-01	5.142E-01	0.000E+00	-0.253
TE-125M	2.821E+00		2.988E+01	5.143E+01	0.000E+00	0.055
I-126	-1.047E+00		1.328E+00	1.878E+00	0.000E+00	-0.558
SB-126	-3.998E-01		9.518E-01	1.617E+00	0.000E+00	-0.247
SB-127	-3.980E-01		3.635E+01	6.391E+01	0.000E+00	-0.006
I-131	1.299E-01		1.016E+00	1.720E+00	0.000E+00	0.075
BA-133	-3.835E-02		1.308E-01	2.162E-01	0.000E+00	-0.177
CS-134	-8.027E-02		1.360E-01	2.277E-01	0.000E+00	-0.353
CS-135	-4.493E-01		4.375E-01	7.028E-01	0.000E+00	-0.639
CS-136	-8.541E-01		9.206E-01	1.239E+00	0.000E+00	-0.690
BA-140	-4.589E-01		1.562E+00	2.706E+00	0.000E+00	-0.170
LA-140	-8.713E-02		4.700E-01	8.514E-01	0.000E+00	-0.102
CE-141	-5.841E-02		1.943E-01	3.290E-01	0.000E+00	-0.178
CE-144	5.604E-01		5.814E-01	9.240E-01	0.000E+00	0.606
PM-144	-7.121E-02		1.149E-01	1.930E-01	0.000E+00	-0.369
PM-146	4.748E-01	+	2.605E-01	2.698E-01	0.000E+00	1.760
ND-147	1.589E+00		3.821E+00	6.879E+00	0.000E+00	0.231
PM-147	6.301E+06		3.890E+05	6.705E+05	0.000E+00	9.398
EU-152	-1.330E-01		2.892E-01	4.744E-01	0.000E+00	-0.280
GD-153	-2.293E-02		2.050E-01	3.519E-01	0.000E+00	-0.065
EU-154	1.623E-01		2.376E-01	4.279E-01	0.000E+00	0.379

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Ided	Act error	MDA (pCi/GRAM)	MDA error	Act/MDA
EU-155	5.869E-02		2.936E-01	5.080E-01	0.000E+00	0.116
TB-160	2.993E-01		6.234E-01	1.105E+00	0.000E+00	0.271
TM-171	4.674E+01		8.651E+01	1.510E+02	0.000E+00	0.309
HF-181	-4.021E-03		1.673E-01	2.943E-01	0.000E+00	-0.014
TA-182	1.335E-01		3.881E-01	7.222E-01	0.000E+00	0.185
IR-192	-8.050E-02		1.153E-01	1.873E-01	0.000E+00	-0.430
HG-203	1.396E-01		1.371E-01	2.427E-01	0.000E+00	0.575
BI-207	-1.168E-01		2.030E-01	3.347E-01	0.000E+00	-0.349
TL-208	-3.421E-02		1.121E-01	1.936E-01	0.000E+00	-0.177
BI-210	-1.070E+01		1.610E+01	2.405E+01	0.000E+00	-0.445
PB-210	-1.070E+01		1.610E+01	2.405E+01	0.000E+00	-0.445
BI-211	-3.269E-02		6.172E-01	1.033E+00	0.000E+00	-0.032
PB-211	1.086E+00		2.864E+00	4.897E+00	0.000E+00	0.222
BI-212	-2.481E-01		9.297E-01	1.596E+00	0.000E+00	-0.156
PB-212	8.644E-03		1.546E-01	2.625E-01	0.000E+00	0.033
BI-214	9.318E-02		2.114E-01	3.795E-01	0.000E+00	0.246
PB-214	1.514E-01		2.131E-01	3.707E-01	0.000E+00	0.408
RN-219	-1.369E-01		1.223E+00	2.039E+00	0.000E+00	-0.067
RA-223	6.255E-01		1.959E+00	3.349E+00	0.000E+00	0.187
RA-224	3.870E-01		1.772E+00	3.027E+00	0.000E+00	0.128
RA-226	9.318E-02		2.114E-01	3.795E-01	0.000E+00	0.246
AC-227	1.381E+00	+	1.522E+00	1.978E+00	0.000E+00	0.698
TH-227	1.358E+00	+	1.497E+00	1.945E+00	0.000E+00	0.698
AC-228	4.012E-01	+	5.725E-01	9.736E-01	0.000E+00	0.412
RA-228	4.012E-01	+	5.725E-01	9.736E-01	0.000E+00	0.412
TH-228	6.156E-03		1.545E-01	2.621E-01	0.000E+00	0.023
TH-229	-5.684E-02		1.269E+00	2.157E+00	0.000E+00	-0.026
TH-230	9.317E-02		2.114E-01	3.795E-01	0.000E+00	0.246
PA-231	-2.987E+00		4.489E+00	7.330E+00	0.000E+00	-0.407
TH-231	-5.000E-01		5.108E-01	8.224E-01	0.000E+00	-0.608
TH-232	5.181E-03		1.503E-01	2.549E-01	0.000E+00	0.020
PA-233	3.367E-02		1.885E-01	3.206E-01	0.000E+00	0.105
PA-234	-3.123E-01		1.300E+00	2.196E+00	0.000E+00	-0.142
PA-234M	1.249E+01		1.712E+01	3.078E+01	0.000E+00	0.406
TH-234	-8.531E+00		4.409E+00	6.207E+00	0.000E+00	-1.374
U-234	2.844E-02		3.622E-01	6.142E-01	0.000E+00	0.046
U-235	-9.373E-03		5.059E-01	8.663E-01	0.000E+00	-0.011
U-238	-8.531E+00		4.409E+00	6.207E+00	0.000E+00	-1.374
NP-239	7.308E-03		6.240E-01	9.406E-01	0.000E+00	0.008
AM-242	-1.694E+00		5.896E+00	1.004E+01	0.000E+00	-0.169
CM-247	3.281E-02		1.095E-01	1.869E-01	0.000E+00	0.176
CF-249	9.640E-02		1.408E-01	2.165E-01	0.000E+00	0.445
CF-251	3.381E-02		2.978E-01	5.122E-01	0.000E+00	0.066
ANH-511	1.457E-01		1.005E-01	1.873E-01	0.000E+00	0.778

```
*************************************************************************
*                                                                       *
*                          General Engineering Labs, LLC                *
*                                2040 SAVAGE ROAD                       *
*                             CHARLESTON ,SC 29417                      *
*                              GROSS GAMMA REPORT                       *
*                                                                       *
*                                                                       *
*************************************************************************
*                                                                       *
*   BATCH ID     : 513799                    SAMPLE ID  : G1201055605   *
*   ANALYST      : MJH1                      DETECTOR   : GAMMA12       *
*   SAMPLE DATE  : 16-MAR-2006 00:00:00.00   COUNT TIME :    0 01:00:00.00   *
*   ANALYSIS DATE: 12-APR-2006 12:22:46.86   SAMPLE ALQT:  100.000 GRAM  *
*                                                                       *
*************************************************************************
```

GROSS GAMMA ACTIVITY (pCi/GRAM) : 6.468E+01
GROSS GAMMA ERROR (pCi/GRAM)   : 8.726E+00
GROSS GAMMA MDA   (pCi/GRAM)   : 2.022E+01
GROSS GAMMA DLC   (pCi/GRAM)   : 9.905E+00

Radiochemistry Batch Checklist, Rev 4

Batch# 516630 Product: GAB Date: 4/5/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.	✓		
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.			NA
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			NA
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.			NA

General Engineering Laboratories

2/22/2005

Primary Review Performed By: Melanie Laywork 4/5/06

Secondary Review Performed By: [signature] 4.6.06

4/6-4/13

MW#1L

Gross Alpha Beta Que Sheet

03/31/2006 09:40:15

Batch #:516630 Analyst:CXO1 Minimum DueDate: 04/06/2006

Alpha Spike Isotope: Th-230 Spike Code: 0159-0 Vol: 0.1 Balance #: 51204863

Beta Spike Isotope: Sr-90 Spike Code: 0133-Q Vol: 0.1 Pipet #: 4497063

Alpha LCS Isotope: Th-230 LCS Code: 0159-0 Vol: 0.1 Prep Date: 3/31/06 Analytical Scale #: C31514

Beta LCS Isotope: Sr-90 LCS Code: 0133-Q Vol: 0.1 Initials: CMO Witness: SXE1 3/31/06

10% HNO3: 358220.4

Conc HNO3: 500277.20

Conc HCl:

Conc HF: NA

Conc Boric:

Sample ID	Client Description	Type	Hazard Code	RDL Alpha/Beta	Client	Matrix	Bkr#	Aliquot (mL or g)	Carrier or Det#	Initial Wt (g)	Final Wt (g)	Net Wt (mg)
158048001	2603090024	SAMPLE		5 pCi/g	MWHL002	SOIL	1	0.101	H4*	7.8494	7.8971	47.7
158048002	2603090027	SAMPLE		5 pCi/g	MWHL002	SOIL	2	0.108	B1	7.8212	7.8801	58.9
158048003	2603090028	SAMPLE		5 pCi/g	MWHL002	SOIL	3	0.101	B2	7.8139	7.8630	49.1
1201061724	MB for batch 516630	MB		5 pCi/g	QC ACCOUNT	SOIL	4	0.100	B3	7.8624	7.8626	0.2
1201061725	2603090024(158048001DUP)	DUP		5 pCi/g	QC ACCOUNT	SOIL	5	0.108	C1	7.7945	7.8416	47.1
1201061726	2603090024(158048001MS)	MS		5 pCi/g	QC ACCOUNT	SOIL	6	0.106	C2	7.7809	7.8375	56.6
1201061728	2603090024(158048001MSD)	MSD		5 pCi/g	QC ACCOUNT	SOIL	7	0.106	C3	7.8030	7.8531	50.1
1201061727	LCS for batch 516630	LCS		5 pCi/g	QC ACCOUNT	SOIL	8	0.100	C4	7.7798	7.7802	0.4

*S16269AR

√ no history WM 4.16.06

Have the planchets been flamed? (Yes) No

Instrument Used: (Circle One) LB4100 S/N: 8219 PIC S/N:10751-4 PRO-AUTO3 S/N: 0329438 Data Reviewed By: MA 4/5/06

Gross Alpha/Beta Soil

Filename : GAB.XLS
File type : Excel
Version # : 1

Batch : 516630
Analyst : CXO1
Prep Date : 3/31/2006

Calibration Date : 8/18/2005
Calibration Due Date : 8/18/2006

Alpha Spike S/N :	0159-O
Alpha Spike Exp Date :	6/23/2006
Alpha Spike Activity (dpm/ml):	239.44
Alpha Spike Volume Added:	0.1
Beta Spike S/N :	0133-Q
Beta Spike Exp Date :	12/20/2006
Beta Spike Activity (dpm/ml):	351.44
Beta Spike Volume Added:	0.1
Alpha LCS S/N :	0159-O
Alpha LCS Exp Date :	6/23/2006
AlphaLCS Activity (dpm/ml):	239.44
Alpha LCS Volume Added:	0.1
Beta LCS S/N :	0133-Q
Beta LCS Exp Date :	12/20/2006
Beta LCS Activity (dpm/ml):	351.44
Beta LCS Volume Added:	0.1

Pipet, 0.1 ml Stdev : +/-	0.000701	ml
Pipet, 0.5 ml Stdev : +/-	0.002564	ml
Pipet, 1 ml Stdev : +/-	0.005480	ml
Procedure Code :	GFCGANBS	
Parmname1 :	Alpha	
Parmname2 :	Beta	
Required Alpha MDA:	5	pCi/G
Required Beta MDA:	5	pCi/G
Batch counted on :	LB4100	
BKG Count time :	500	min

Sample Characteristics					Count Raw Data							
Sample ID	Sample Aliquot G	Sample Residue Wt. (mg)	Sample Aliquot StDev.	Sample Date/Time	Detector ID	Counting Time	Gross Counts Alpha	Gross Counts Beta	Weekly Bkg CPM Alpha	Weekly Bkg CPM Beta	Detector Efficiency Alpha	Detector Efficiency Beta
158048001	0.101	47.7	3.2296E-03	3/7/2006 9:10	H4	120	114	474	0.042	0.744	0.1771	0.3750
158048002	0.108	58.9	3.2303E-03	3/7/2006 10:10	B1	120	102	483	0.029	0.804	0.1685	0.3775
158048003	0.101	49.1	3.2296E-03	3/7/2006 11:45	B2	120	94	502	0.022	0.784	0.1780	0.3741
1201061724	0.100	0.2	4.3713E-04	3/31/2006 0:00	B3	120	7	151	0.023	1.230	0.2743	0.4080
1201061725	0.108	47.1	3.2303E-03	3/7/2006 9:10	C1	120	139	604	0.217	1.742	0.1708	0.3678
1201061726	0.106	56.6	3.2301E-03	3/7/2006 9:10	C2	120	506	3904	0.092	0.941	0.1551	0.3660
1201061728	0.106	50.1	3.2301E-03	3/7/2006 9:10	C3	120	483	3854	0.031	0.870	0.1642	0.3735
1201061727	0.100	0.4	4.3713E-04	3/31/2006 0:00	C4	120	682	3525	0.060	0.851	0.2490	0.4024

4.16.06

MA 4/18/06

Detector Efficiency Error		X-Talk		Count Start
Alpha	Beta	Alpha	Beta	Date/Time
0.03557	0.01752	0.01125	0.02933	4/3/2006 19:10
0.05118	0.01808	0.02098	0.00197	4/3/2006 19:01
0.05071	0.01942	0.01988	0.00123	4/3/2006 19:01
0.04273	0.01849	0.01602	0.00322	4/3/2006 19:01
0.04512	0.01902	0.02797	0.00704	4/3/2006 19:01
0.02803	0.01220	0.02584	0.00120	4/3/2006 19:01
0.02544	0.02111	0.02700	0.00015	4/3/2006 19:01
0.04529	0.02048	0.02603	0.00015	4/3/2006 19:01

MA415182

Alpha Results

Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	2 SIGMA Counting Uncertainty	2 SIGMA Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
1.5523	1.0960	2.7598	**19.9476**	0.1095	0.9080	0.0894	4.4147	4.9076		SAMPLE				
1.2677	0.8950	2.3482	**20.1224**	0.1188	0.8210	0.0845	4.0992	4.7304		SAMPLE				
1.1176	0.7890	2.1430	**18.9418**	0.1222	0.7613	0.0811	3.9801	4.5676		SAMPLE				
0.7491	0.5289	1.4281	**0.5136**	0.6543	0.0353	0.0231	0.7425	0.7441		MB				
3.4223	2.4162	5.3831	**22.1249**	0.1196	0.9413	0.1004	4.8077	5.3912	158048001	DUP	10.4%			
2.5005	1.7653	4.1487	**111.9684**	0.0616	4.1247	0.1879	10.0955	13.6403	158048001	MS			101.75	90.4%
1.3709	0.9679	2.5195	**103.2629**	0.0607	3.9940	0.1833	9.3004	12.2961	158048001	MSD	8.1%		101.75	81.9%
1.3327	0.9409	2.2896	**101.6285**	0.0598	5.6233	0.2179	7.7248	11.9144		LCS			107.86	94.2%

MA 4/5/06

Beta Results

Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	2 SIGMA Counting Uncertainty	2 SIGMA Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
3.0854	2.1783	4.6248	**37.9982**	0.0684	3.2060	0.1855	4.3233	5.1101		SAMPLE				
2.9802	2.1041	4.4573	**35.3935**	0.0679	3.2210	0.1875	4.0603	4.7360		SAMPLE				
3.1755	2.2419	4.7527	**40.3431**	0.0675	3.3993	0.1909	4.4602	5.3596		SAMPLE				
3.6831	2.6003	5.4495	**0.3025**	4.0158	0.0283	0.1138	2.4621	2.4621		MB				
4.5020	3.1785	6.6126	**36.9554**	0.0738	3.2913	0.2131	4.7372	5.4004	158048001	DUP	2.8%			
3.3875	2.3916	5.0450	**365.4963**	0.0368	31.5923	0.5225	11.8887	26.4224	158048001	MS			298.69	109.6%
3.1921	2.2536	4.7638	**354.2610**	0.0406	31.2467	0.5190	11.5737	28.3027	158048001	MSD	3.1%		298.69	105.9%
3.1059	2.1928	4.6380	**317.6114**	0.0272	28.5240	0.4965	10.8919	17.0380		LCS			316.61	100.3%

MA-415106

SampleID	Instr	Time	Alpha	Beta	Total Counts	Count Start Time	Count End Time	Voltage
158048001	H4	120	114	474	690	4/3/2006 19:10	4/3/2006 21:10	1522.5
158048002	B1	120	102	483	677	4/3/2006 19:01	4/3/2006 21:01	1470
158048003	B2	120	94	502	668	4/3/2006 19:01	4/3/2006 21:01	1470
1201061724	B3	120	7	151	182	4/3/2006 19:01	4/3/2006 21:01	1470
1201061725	C1	120	139	604	844	4/3/2006 19:01	4/3/2006 21:01	1470
1201061726	C2	120	506	3904	4867	4/3/2006 19:01	4/3/2006 21:01	1470
1201061728	C3	120	483	3854	4722	4/3/2006 19:01	4/3/2006 21:01	1470
1201061727	C4	120	682	3525	4494	4/3/2006 19:01	4/3/2006 21:01	1470

MLA 4/5/06

Radiochemistry Batch Checklist, Rev 4

Batch# 517517 Product: P6-210 Date: 4/10/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.	NA		
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	✓		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.	NA		
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.	✓		
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.	NA		

General Engineering Laboratories

2/22/2005

Primary Review Performed By: JParker 4/10/06

Secondary Review Performed By: KO 4/10/06

4/6 - 4/13

MWH

Pb-210 Que Sheet

04/04/06

Batch #:517517 Analyst: BXF1 Minimum DueDate 04/06/2006

Spike Isotope: Pb210 Spike Code: ET491 E Expiration Date: 11-11-06 Vol: 0.1ml Bi Separation Date/Time: 4-5-06 / 1350

LCS Isotope: Pb210 LCS Code: ET 491E Expiration Date: 11-11-06 Vol: 0.1ml Std Wt: 13.88

Carrier: Pb Carrier Code: 1006864 Expiration Date: 1-19-08 Vol: 1ml Analytical Scale #: 38110047

Prep Date: 4-4-06 Initials: BXF Pipet #: 449706 3 Balance #: 50410272 Witness: SxSH

Sample ID	Client Description	Type	Hazard Code	RDL	Client	Matrix	Collection Date & Time	Bkr#	Aliquot (mL or g)	Det	Initial Pb Weight (g)	Final Pb Weight (g)	Net Pb Weight (mg)
158048001	2603090024	SAMPLE		3 pCi/g	MWHL002	SOIL	07-MAR-06	1	2.507	1A	.0749	.0818	6.9
158048002	2603090027	SAMPLE		3 pCi/g	MWHL002	SOIL	07-MAR-06	2	2.317	1B	.0747	.0839	9.2
158048003	2603090028	SAMPLE		3 pCi/g	MWHL002	SOIL	07-MAR-06	3	2.603	1C	.0747	.0838	9.1
158048004	2603090026	SAMPLE		3 pCi/g	MWHL002	SOIL	07-MAR-06	4	2.328	1D	.0750	.0821	7.1
158048005	2603090029	SAMPLE		3 pCi/g	MWHL002	SOIL	07-MAR-06	5	2.438	2A	.0794	.0873	7.9
158269001	2603140361 M121-0.5	SAMPLE		3 pCi/g	MWHL002	SOIL	10-MAR-06	6	2.226	2B	.0799	.0891	9.2
158269002	2603140362 M121-5	SAMPLE		3 pCi/g	MWHL002	SOIL	10-MAR-06	7	2.494	2C	.0801	.0907	10.6
158269003	2603140364 M121-5D	SAMPLE		3 pCi/g	MWHL002	SOIL	10-MAR-06	8	2.318	2D	.0739	.0842	10.3
158269004	2603140365 M121-80	SAMPLE		3 pCi/g	MWHL002	SOIL	10-MAR-06	9	2.207	3B	.0763	.0826	6.3
1201063764	MB for batch 517517	MB		3 pCi/g	QC ACCOUNT	SOIL		10	2.603	3C	.0729	.0819	9
1201063765	2603090029(158048005DUP)	DUP		3 pCi/g	QC ACCOUNT	SOIL	07-MAR-06	11	2.266	3D	.0801	.0897	9.6
1201063766	2603090029(158048005MS)	MS		3 pCi/g	QC ACCOUNT	SOIL	07-MAR-06	12	2.391	4A	.0802	.0886	8.4
1201063767	LCS for batch 517517	LCS		3 pCi/g	QC ACCOUNT	SOIL		13	2.603	4B	.0762	.0871	10.9

Instrument Used (circle one): LB4100 S/N 8219 PIC S/N:10751-4

Data Reviewed By: 4/10/06

4/10/06

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

(•) Dry Weight ( ) Wet Weight

Submit

Batch ID: 517517

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 517517

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158048001	2.452	SAMPLE	NA	.0220	2.50741242
158048002	2.259	SAMPLE	NA	.0248	2.31651343
158048003	2.539	SAMPLE	NA	.0246	2.60313088
158048004	2.284	SAMPLE	NA	.0189	2.32803515
158048005	2.165	SAMPLE	NA	.1118	2.43753272
158269001	2.169	SAMPLE	NA	.0257	2.22623919
158269002	2.398	SAMPLE	NA	.0386	2.49436476
158269003	2.227	SAMPLE	NA	.0392	2.31803780
158269004	2.129	SAMPLE	NA	.0352	2.20686422
1201063764		MB	NA	NA	
1201063765	2.013	DUP	158048005	.1118	2.26639879
1201063766	2.124	MS	158048005	.1118	2.39137160
1201063767		LCS	NA	NA	

General Engineering Laboratories, LLC

JFF 4/10/06

Lead-210 Soil

Filename : PB210.XLS
File type : Excel
Version # : 1

Batch : 517517
Analyst : BXF1
Prep Date : 4/4/2006
Pb-210 Abundance : 1

Calibration Date : 7/29/2005
Calibration Due Date : 7/29/2006

Spike S/N :	ET491-E
Spike Exp Date :	11/11/2006
Spike Activity (dpm/ml):	405.94
Spike Volume Added:	0.1
LCS S/N :	ET491-E
LCS Exp Date :	11/11/2006
LCS Activity (dpm/ml):	405.94
LCS Volume Added:	0.1
Carrier S/N :	1006864
Carrier Exp Date :	1/19/2008
Carrier Volume Added:	1.0
Carrier Weight (mg/ml):	13.88
Carrier Weight StDev.:	0.05

Pipet, 0.1 ml Stdev : +/-	0.000701	ml
Pipet, 0.5 ml Stdev : +/-	0.002564	ml
Pipet, 1 ml Stdev : +/-	0.005480	ml
Procedure Code :	GFC__PBS	
Parmname :	Lead-210	
Required MDA:	3	pCi/G
Halflife of Pb-210 :	22.26	years
Halflife of Bi-210 :	5.013	days
Batch counted on :	PIC	
BKG Count time :	500	min

Sample Characteristics				**Carrier Calculations**				
Sample ID	Sample Aliquot G	Sample Aliquot StDev.	Sample Date/Time	Carrier Weight (Standard)	Net Weight (Sample)	Net Weight StDev.	Carrier Aliquot (mL)	Carrier Aliquot StDev.
158048001	2.507	3.4796E-03	3/7/2006 9:10	13.88	6.90	0.036986	1.0	0.005480
158048002	2.317	3.4600E-03	3/7/2006 10:10	13.88	9.20	0.046872	1.0	0.005480
158048003	2.603	3.4895E-03	3/7/2006 11:45	13.88	9.10	0.046442	1.0	0.005480
158048004	2.328	3.4611E-03	3/7/2006 9:30	13.88	7.10	0.037846	1.0	0.005480
158048005	2.438	3.4725E-03	3/7/2006 12:45	13.88	7.90	0.041284	1.0	0.005480
158269001	2.226	3.4505E-03	3/10/2006 7:46	13.88	9.20	0.046872	1.0	0.005480
158269002	2.494	3.4782E-03	3/10/2006 7:55	13.88	10.60	0.052889	1.0	0.005480
158269003	2.318	3.4601E-03	3/10/2006 12:00	13.88	10.30	0.051599	1.0	0.005480
158269004	2.207	3.4486E-03	3/10/2006 12:00	13.88	6.30	0.034407	1.0	0.005480
1201063764	2.603	3.4895E-03	4/4/2006 0:00	13.88	9.00	0.046012	1.0	0.005480
1201063765	2.266	3.4547E-03	3/7/2006 12:45	13.88	9.60	0.048591	1.0	0.005480
1201063766	2.391	3.4676E-03	3/7/2006 12:45	13.88	8.40	0.043433	1.0	0.005480
1201063767	2.603	3.4895E-03	4/4/2006 0:00	13.88	10.90	0.054178	1.0	0.005480

4/10/06

4/10/06

Count Raw Data

Detector ID	Counting Time	Gross Counts Alpha	Gross Counts Beta	Gross Beta CPM	Weekly Bkg CPM	Weekly Bkg Count Time	Detector Efficiency	Detector Efficiency Error	Count Start Date/Time	Bi-210 Separation Date/Time	Bi-210 Ingrowth	Pb-210 Decay	Sample Recovery %	Sample Recovery Error %
1A	60	7	37	0.617	0.422	500	0.3697	0.00600	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	49.71%	1.00%
1B	60	3	20	0.333	0.362	500	0.3436	0.00409	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	66.28%	0.97%
1C	60	1	27	0.450	0.434	500	0.3483	0.00344	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	65.56%	0.98%
1D	60	3	23	0.383	0.354	500	0.3660	0.00511	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	51.15%	1.00%
2A	60	5	39	0.650	0.406	500	0.3604	0.00349	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	56.92%	0.99%
2B	60	2	31	0.517	0.242	500	0.3492	0.00383	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	66.28%	0.97%
2C	60	2	19	0.317	0.350	500	0.3335	0.00575	4/9/2006 9:58	4/5/2006 13:50	0.414	0.997	76.37%	0.96%
2D	60	8	33	0.550	0.458	500	0.3416	0.00479	4/9/2006 9:58	4/5/2006 13:50	0.414	0.997	74.21%	0.97%
3B	60	9	24	0.400	0.382	500	0.3655	0.00655	4/9/2006 9:58	4/5/2006 13:50	0.414	0.997	45.39%	1.01%
3C	60	3	29	0.483	0.434	500	0.3441	0.00535	4/9/2006 9:57	4/5/2006 13:50	0.414	1.000	64.84%	0.98%
3D	60	1	27	0.450	0.416	500	0.3403	0.00464	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	69.16%	0.97%
4A	60	4	207	3.450	0.392	500	0.3535	0.00744	4/9/2006 9:57	4/5/2006 13:50	0.414	0.997	60.52%	0.98%
4B	60	6	231	3.850	0.454	500	0.3363	0.00196	4/9/2006 9:57	4/5/2006 13:50	0.414	1.000	78.53%	0.96%

4/11/06

Results

Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	Sample Act. Conc.	Sample Act. Error	Net Count Rate	Net Count Rate Error	**2 SIGMA** Counting Uncertainty	**2 SIGMA** Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
0.6553	0.4626	1.0322	**0.4616**	0.5419	0.1947	0.1055	0.4901	0.4902		SAMPLE				
0.5299	0.3741	0.8416	**-0.0593**	2.7643	-0.0287	0.0792	0.3216	0.3216		SAMPLE				
0.5150	0.3636	0.8100	**0.0294**	5.7173	0.0160	0.0915	0.3295	0.3295		SAMPLE				
0.6343	0.4478	1.0086	**0.0735**	2.8719	0.0293	0.0842	0.4138	0.4138		SAMPLE				
0.5921	0.4180	0.9345	**0.5330**	0.4424	0.2440	0.1079	0.4620	0.4621		SAMPLE				
0.4436	0.3132	0.7220	**0.5822**	0.3474	0.2747	0.0954	0.3962	0.3964		SAMPLE				
0.4327	0.3055	0.6884	**-0.0573**	2.3195	-0.0333	0.0773	0.2605	0.2605		SAMPLE				
0.5350	0.3777	0.8392	**0.1710**	1.0915	0.0920	0.1004	0.3657	0.3658		SAMPLE				
0.7841	0.5536	1.2417	**0.0537**	4.7890	0.0180	0.0862	0.5039	0.5039		SAMPLE				
0.5259	0.3713	0.8272	**0.0926**	1.9149	0.0493	0.0945	0.3474	0.3475		MB				
0.5620	0.3967	0.8859	**0.0696**	2.6847	0.0340	0.0913	0.3664	0.3664	158048005	DUP	0.0%			
0.5688	0.4016	0.8994	**6.5304**	0.0799	3.0580	0.2414	1.0105	1.0229	158048005	MS			7.67	85.2%
0.4544	0.3208	0.7132	**5.3840**	0.0758	3.3960	0.2551	0.7927	0.7995		LCS			7.02	76.6%

JH 4/10/00

SampleID	Instr	Time	Alpha	Beta	Count Start Time	Count End Time
158048001	1A	60	7	37	4/9/2006 9:57	4/9/2006 10:57
158048002	1B	60	3	20	4/9/2006 9:57	4/9/2006 10:57
158048003	1C	60	1	27	4/9/2006 9:57	4/9/2006 10:57
158048004	1D	60	3	23	4/9/2006 9:57	4/9/2006 10:57
158048005	2A	60	5	39	4/9/2006 9:57	4/9/2006 10:57
158269001	2B	60	2	31	4/9/2006 9:57	4/9/2006 10:57
158269002	2C	60	2	19	4/9/2006 9:58	4/9/2006 10:58
158269003	2D	60	8	33	4/9/2006 9:58	4/9/2006 10:58
158269004	3B	60	9	24	4/9/2006 9:58	4/9/2006 10:58
1201063764	3C	60	3	29	4/9/2006 9:57	4/9/2006 10:57
1201063765	3D	60	1	27	4/9/2006 9:57	4/9/2006 10:57
1201063766	4A	60	4	207	4/9/2006 9:57	4/9/2006 10:57
1201063767	4B	60	6	231	4/9/2006 9:57	4/9/2006 10:57

Radiochemistry Batch Checklist, Rev 4

Batch# 517556 Product: Total U Date: 4/10/06

Criteria:	Yes	No	Comments
Sample Solids are less than 100 mg for GAB.	✓		
If activity less 10* MDA, error is 150% or less of sample activity. If greater 10* MDA, error is 40% or less. If below the MDA, error is okay.	✓		
Instrument source check is within limits. Instument bkg check is within limits.	✓		
Method RDL has been met.	✓		
If duplicate activities are less 5* MDA, then rpd is 100% or less. If greater 5* MDA, then rpd 20% or less. If below the MDA, the rpd is 0%. Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. Or meets the client's contract acceptance criteria.	NA		
Method blank is less than the RDL. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time. Special requirements page checked	✓		
Sample was correctly preserved if required.	NA		
Smears Taken for Radioactive batches.	NA		
Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria.		✓	NCI2 # 306774 SEE BATCH Narrative
No blank spaces on data forms. All lineouts initialed and dated. No transcription errors are apparent.	✓		
QC data entered into QC database. Batch entered into Case Narrative.	✓		
Batch non-conformances completed If applicable.	✓		306774

General Engineering Laboratories

2/22/2005

Primary Review Performed By: SP 4/10/06

Secondary Review Performed By: 4/12/06

Total Uranium Que Sheet

04/04/2006

Batch #: 517556 Analyst:DRS1 Minimum DueDate: 04/06/2006 Comments

Spike Isotope: Natural U Spike Code: 0842 Expiration Date: 11-1-06 Vol: 2.0 Nom Conc: 20.0

LCS Isotope: Natural U LCS Code: 0842 Expiration Date: 11-1-06 Vol: 2.0 Nom Conc: 20.0

LCSD Code: 0842 Expiration Date: 11-1-06 Vol: 0.2 NomConc: 2.0

Prep Date: 4-4-06 Initials: DRS Pipet ID: 5028507 / 1607205 (2.0) / (0.2) Witness:

Sample I	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Bkr#	Sample Aliquot (g or m	Aliquot for Analysis (mL)
158048001	2603090024	SAMPLE		1 ug/g	SOIL	MWHL002	1	0.105:50	1.0
158048002	2603090027	SAMPLE		1 ug/g	SOIL	MWHL002	2	0.107:50	1.0
158048003	2603090028	SAMPLE		1 ug/g	SOIL	MWHL002	3	0.106:50	1.0
158048004	2603090026	SAMPLE		1 ug/g	SOIL	MWHL002	4	0.105:50	1.0
158048005	2603090029	SAMPLE		1 ug/g	SOIL	MWHL002	5	0.116:50	1.0
1201063863	MB for batch 517556	MB		1 ug/g	SOIL	QC ACCOUNT	6	0.105:50	1.0
1201063864	2603090029(158048005DUP)	DUP		1 ug/g	SOIL	QC ACCOUNT	7	0.115:50	1.0
1201063865	2603090029(158048005MS)	MS		1 ug/g	SOIL	QC ACCOUNT	8	0.114:50	1.0
1201063867	LCSD for batch 517556	LCSD		1 ug/g	SOIL	QC ACCOUNT	9	0.105:50	1.0
1201063866	LCS for batch 517556	LCS		1 ug/g	SOIL	QC ACCOUNT	10	0.105:50	1.0

Instrument Used (circle one): ~~KPA-10 S/N 89-05050-0035~~, ~~KPA-10A S/N 89-05040-025~~, KPA-11 S/N 94-45050-064 (KPA AUTO1 S/N 91-45050044)

Data Reviewed By: KP 4/10/06

General Engineering Laboratories, Radiochemistry Division

4/12/06

Weight/Loss Aliquot Correction Report

Select What to Correct Aliquot to

◉ Dry Weight ○ Wet Weight

Submit

Batch ID: 517556

Calculate Corrected Aliquot

Aliquot Correction to Dry Weight for Batch 517556

Sample Id	Aliquot (G)	Sample Type	Parent Sample Id	Loss (Dec)	Corrected Aliquot (G)
158048001	0.103	SAMPLE	NA	.0220	0.10532768
158048002	0.104	SAMPLE	NA	.0248	0.10664780
158048003	0.103	SAMPLE	NA	.0246	0.10560160
158048004	0.103	SAMPLE	NA	.0189	0.10498582
158048005	0.103	SAMPLE	NA	.1118	0.11596576
1201063863		MB	NA	NA	
1201063864	0.102	DUP	158048005	.1118	0.11483987
1201063865	0.101	MS	158048005	.1118	0.11371399
1201063867		LCSD	NA	NA	
1201063866		LCS	NA	NA	

General Engineering Laboratories, LLC

4/10/06

Uranium Soil

Filename : TOTU.XLS
File type : Excel
Version # : 1

Batch : 517556
Analyst : DRS1
Prep Date : 4/4/2006
Nat-U Abundance : 1

Calibration Date : 4/7/2006 9:12:20
Calibration Due Date : 4/8/2006 9:12:20

Spike S/N :	0842	
Spike Exp Date :	11/1/2006	
Spike Activity (ug/L):	500.00	
Spike Volume Added(mL):	2.0	
Pipet, 0.1 ml Stdev : +/-	0.000701	ml
Pipet, 0.5 ml Stdev : +/-	0.002564	ml
Pipet, 1.0 ml Stdev : +/-	0.005480	ml
Pipet, 5.0 ml Stdev : +/-	0.025729	ml

LCS S/N :	0842
LCS Exp Date :	11/1/2006
LCS Activity (ug/L):	500.00
LCS Volume Added(mL):	2.0
Procedure Code :	KPATOTUS
Parmname :	Total Uranium
Batch counted on :	KPA11AUTO1

Sample Characteristics								KPA Raw Data			
Sample ID	Initial Aliquot G	Initial Sample StDev.	Final Aliquot L	Final Aliquot StDev.	Sample Counted mL	Sample Counted StDev.	Sample Date/Time	Analysis Range	Intensity	Lifetime (us)	R^2
158048001	0.105	3.2300E-03	0.500	3.2712E-03	1.000	5.4802E-03	3/7/2006 9:10	Low	24760.440	131.4680	0.9925
158048002	0.107	3.2302E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/7/2006 10:10	Low	32854.880	154.6659	0.9966
158048003	0.106	3.2301E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/7/2006 11:45	Low	41250.730	151.3898	0.9985
158048004	0.105	3.2300E-03	0.500	3.2712E-03	1.000	5.4802E-03	3/7/2006 9:30	Low	30799.760	137.5185	0.9956
158048005	0.116	3.2311E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/7/2006 12:45	Low	53805.770	164.7062	0.9961
1201063863	0.105	3.2300E-03	0.050	2.2223E-04	1.000	5.4802E-03	4/4/2006 0:00	Low	299.289	351.8298	0.9941
1201063864	0.115	3.2310E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/7/2006 12:45	Low	54721.410	160.8109	0.9983
1201063865	0.114	3.2309E-03	0.050	2.2223E-04	1.000	5.4802E-03	3/7/2006 12:45	High	1422.359	145.6719	0.9980
1201063867	0.105	3.2300E-03	0.050	2.2223E-04	1.000	5.4802E-03	4/4/2006 0:00	Low	10125.760	330.6159	0.9999
1201063866	0.105	3.2300E-03	0.050	2.2223E-04	1.000	5.4802E-03	4/4/2006 0:00	High	976.487	75.4894	0.9956

4/7/06

Ref Ratio	Results (ug/L)	Error (ug/L)	Count Date/Time	Dilution Corrected Results KPA Result ug/G	KPA Error ug/G	Results (pCi) Decision Level pCi/G	Critical Level pCi/G	MDA pCi/G	pCi/ug= 0.67 Sample Act. Conc. pCi/G	Sample Act. Error pCi/G	1 SIGMA Counting Uncertainty	1 SIGMA Total Prop. Uncertainty
1.0010	4.4388	0.1815	4/7/2006 13:26	21.1374	0.8644	0.5141	0.3629	0.7259	14.1620	0.0274	1.1352	4.4633
0.9947	5.8511	0.1466	4/7/2006 13:28	2.7342	0.0685	0.0504	0.0356	0.0712	1.8319	0.0168	0.0900	0.5123
0.9770	7.3160	0.1379	4/7/2006 14:10	3.4509	0.0651	0.0509	0.0360	0.0719	2.3121	0.0126	0.0854	0.6452
0.9972	5.4925	0.1694	4/7/2006 13:32	26.1550	0.8066	0.5141	0.3629	0.7259	17.5238	0.0207	1.0593	5.4452
0.9982	9.5065	0.2394	4/7/2006 13:34	4.0976	0.1032	0.0465	0.0329	0.0657	2.7454	0.0169	0.1355	0.7390
0.9544	0.1710	0.0029	4/7/2006 13:10	0.0814	0.0014	0.0514	0.0363	0.0726	0.0546	0.0114	0.0018	0.0153
0.9477	9.6662	0.1815	4/7/2006 13:14	4.2027	0.0789	0.0469	0.0331	0.0663	2.8158	0.0126	0.1036	0.7554
0.9872	22.6646	0.8598	4/7/2006 13:18	9.9406	0.3771	0.0473	0.0334	0.0669	6.6602	0.0254	0.4952	1.8452
0.9853	1.8855	0.0213	4/7/2006 13:19	0.8979	0.0101	0.0514	0.0363	0.0726	0.6016	0.0076	0.0133	0.1677
1.0129	15.2487	0.8351	4/7/2006 13:24	7.2613	0.3977	0.0514	0.0363	0.0726	4.8651	0.0367	0.5222	1.4492

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MDA Study Information

Effective Date: 4/1/2006
Expiration Date: 7/1/2006
Average: 1.040000000
StDev.: 0.048900000

Results (ug) Decision Level ug/G	Critical Level ug/G	MDA ug/G	Sample Act. Conc. ug/G	Sample Act. Error ug/G	**2 SIGMA** Counting Uncertainty	**2 SIGMA** Total Prop. Uncertainty	Sample QC	Sample Type	RPD	RER	Nominal	Recovery
0.7673	0.5417	1.0834	**21.1374**	0.0409	1.6943	6.6616		SAMPLE				
0.0753	0.0532	0.1063	**2.7342**	0.0251	0.1343	0.7646		SAMPLE				
0.0760	0.0537	0.1073	**3.4509**	0.0189	0.1275	0.9630		SAMPLE				
0.7673	0.5417	1.0834	**26.1550**	0.0308	1.5810	8.1271		SAMPLE				
0.0695	0.0490	0.0981	**4.0976**	0.0252	0.2022	1.1030		SAMPLE				
0.0767	0.0542	0.1083	**0.0814**	0.0171	0.0027	0.0228		MB				
0.0701	0.0495	0.0989	**4.2027**	0.0188	0.1546	1.1275	158048005	DUP	2.5%			
0.0707	0.0499	0.0998	**9.9406**	0.0379	0.7391	2.7541	158048005	MS			8.77	66.6%
0.0767	0.0542	0.1083	**0.8979**	0.0113	0.0199	0.2503		LCSD	156.0%		0.95	94.3%
0.0767	0.0542	0.1083	**7.2613**	0.0548	0.7794	2.1630		LCS			9.52	76.2%

4/12/06

Sample-ID	Sample-Description	Refernce-ReferenceRatio	Sample-Lifetime	Sample-R^2	Sample-AnalysisDate	Analysis-Range	Sample-Intercept	Result-AnalyticalResult	Result-AnalyticalUncertainty	Standard	Recovery
2	CChkStd	1.001549	334.8634	0.9997823	4/7/2006 12:36	Low	10410.08	1.935099	2.20E-02	2	97%
5	CChkStd	0.9964899	346.7311	0.9999014	4/7/2006 12:38	Low	28008.65	5.005572	5.62E-02	5	100%
50	CChkStd	1.010204	339.274	0.9994272	4/7/2006 12:40	High	3176.904	51.65395	1.734565	50	103%
250	CChkStd	1.006067	340.8095	0.9998956	4/7/2006 12:43	High	15731.25	250.8462	8.369603	250	100%
1201063863	517556	0.9543978	351.8298	0.9941152	4/7/2006 13:10	Low	299.2885	0.1710393	2.92E-03		
1201063864	517556	0.9476835	160.8109	0.9983213	4/7/2006 13:14	Low	54721.41	9.666225	0.1814535		
1201063865	517556	0.9871938	145.6719	0.9980243	4/7/2006 13:18	High	1422.359	22.66455	0.8598205		
1201063867	517556	0.9853128	330.6159	0.9998673	4/7/2006 13:19	Low	10125.76	1.885493	2.13E-02		
1201063866	517556	1.012858	75.48935	0.9956418	4/7/2006 13:24	High	976.4872	15.24871	0.835102		
158048001	517556	1.000987	131.468	0.992466	4/7/2006 13:26	Low	24760.44	4.438848	0.1815329		
158048002	517556	0.9946983	154.6659	0.9965879	4/7/2006 13:28	Low	32854.88	5.851109	0.14662		
158048003	517556	0.9997903	148.3919	0.9984919	4/7/2006 13:30	Low	42200.14	7.481604	0.1429276		
158048004	517556	0.9972306	137.5185	0.9955803	4/7/2006 13:32	Low	30799.76	5.492546	0.1693952		
158048005	517556	0.9982477	164.7062	0.9960865	4/7/2006 13:34	Low	53805.77	9.506472	0.2393529		
2	CChkStd	0.9987924	328.3022	0.9998194	4/7/2006 13:37	Low	10409.25	1.934954	2.20E-02	2	97%
5	CChkStd	0.9919408	349.0713	0.9999194	4/7/2006 13:39	Low	27119.33	4.85041	5.43E-02	5	97%
50	CChkStd	1.005606	350.7134	0.9993061	4/7/2006 13:41	High	2916.343	47.36801	1.592296	50	95%
250	CChkStd	1.004586	343.5787	0.9998222	4/7/2006 13:44	High	14890.19	237.9204	7.94596	250	95%
1201063865	517556	1.013256	146.9828	0.9973518	4/7/2006 14:06	High	1324.562	21.03964	0.8266462		
158048003	517556	0.9770176	151.3898	0.9984915	4/7/2006 14:10	Low	41250.73	7.315957	0.1379462		
158048002	517556	0.9834877	156.8881	0.9957231	4/7/2006 14:15	Low	32158.11	5.72954	0.1557165		
158048005	517556	0.9862256	164.606	0.9958048	4/7/2006 14:17	Low	54149.02	9.566359	0.2479019		
2	CChkStd	0.9915369	335.4735	0.999804	4/7/2006 14:19	Low	10953.64	2.029935	2.31E-02	2	101%
5	CChkStd	0.9930719	343.8784	0.9999141	4/7/2006 14:22	Low	27651.52	4.943263	5.54E-02	5	99%
50	CChkStd	1.002505	348.0742	0.9995509	4/7/2006 14:24	High	3055.438	49.65679	1.664181	50	99%
250	CChkStd	1.009114	338.3733	0.9998258	4/7/2006 14:26	High	14979.73	239.2993	7.992202	250	96%
158048001**	517556	0.9994623	281.5918	0.9993141	4/7/2006 14:42	Low	4748.807	0.9473597	1.17E-02		
158048004**	517556	0.9862425	285.8799	0.9993721	4/7/2006 14:44	Low	4872.296	0.9689053	1.19E-02		
2	CChkStd	0.978199	338.489	0.9998528	4/7/2006 14:46	Low	10587.59	1.966069	2.22E-02	2	98%
5	CChkStd	0.9787298	348.0355	0.9998925	4/7/2006 14:49	Low	26548.57	4.750829	5.34E-02	5	95%
50	CChkStd	0.9981496	344.3743	0.9971662	4/7/2006 15:01	High	3109.838	50.55143	1.747228	50	101%
250	CChkStd	0.9987696	339.3408	0.9998339	4/7/2006 15:03	High	15371.51	245.3244	8.192417	250	98%
2	CChkStd	0.9983601	332.193	0.999719	4/7/2006 15:17	Low	10753.19	1.994962	2.29E-02	2	100%
5	CChkStd	0.9968351	339.996	0.9999144	4/7/2006 15:19	Low	27333.36	4.887753	5.48E-02	5	98%
50	CChkStd	1.003657	347.1366	0.9992089	4/7/2006 15:21	High	3224.435	52.43511	1.765174	50	105%
250	CChkStd	1.001629	337.9327	0.9997236	4/7/2006 15:24	High	15712.82	250.5636	8.380308	250	100%
158048001**	517557	0.9952904	274.9583	0.9997789	4/7/2006 15:28	Low	4827.999	0.9611765	1.11E-02		
158048004**	517557	0.993735	282.3176	0.9996842	4/7/2006 15:30	Low	4843.6	0.9638985	1.13E-02		
2	CChkStd	0.9891795	342.4372	0.999751	4/7/2006 15:39	Low	10632.56	1.973915	2.25E-02	2	99%
5	CChkStd	0.9836509	347.8693	0.9999391	4/7/2006 15:41	Low	27715.84	4.954484	5.53E-02	5	99%
50	CChkStd	0.9913828	348.4546	0.9992793	4/7/2006 15:43	High	3165.796	51.47139	1.731029	50	103%
250	CChkStd	0.9948093	337.1735	0.9998314	4/7/2006 15:46	High	15744.58	251.0505	8.384164	250	100%

**Denotes original was diluted 1:10

4/11/06

4/10/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
.0	None	CChkStd	CChkStd	04/07/2006 12:36 PM	25000	1	238.0289	None	None
.0	None	CChkStd	CChkStd	04/07/2006 12:38 PM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/07/2006 12:40 PM	25000	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/07/2006 12:43 PM	25000	1	238.0289	None	None
1201063863	None	MtdBlk	517556	04/07/2006 01:10 PM	25000	1	238.0289	None	None
1201063864	None	Sample	517556	04/07/2006 01:14 PM	25000	1	238.0289	None	None
1201063865	None	Sample	517556	04/07/2006 01:18 PM	25000	1	238.0289	None	None
1201063867	None	MtdStd	517556	04/07/2006 01:19 PM	25000	1	238.0289	None	None
1201063866	None	MtdStd	517556	04/07/2006 01:24 PM	25000	1	238.0289	None	None
158048001	None	Sample	517556	04/07/2006 01:26 PM	25000	1	238.0289	None	None
158048002	None	Sample	517556	04/07/2006 01:28 PM	25000	1	238.0289	None	None
158048003	None	Sample	517556	04/07/2006 01:30 PM	25000	1	238.0289	None	None
158048004	None	Sample	517556	04/07/2006 01:32 PM	25000	1	238.0289	None	None
158048005	None	Sample	517556	04/07/2006 01:34 PM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/07/2006 01:37 PM	25000	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/07/2006 01:39 PM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/07/2006 01:41 PM	25000	1	238.0289	None	None

4/7/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
250.0	None	CChkStd	CChkStd	04/07/2006 01:44 PM	25000	1	238.0289	None	None
201063865	None	Sample	517556	04/07/2006 02:06 PM	25000	1	238.0289	None	None
158048003	None	Sample	517556	04/07/2006 02:10 PM	25000	1	238.0289	None	None
158048002	None	Sample	517556	04/07/2006 02:15 PM	25000	1	238.0289	None	None
158048005	None	Sample	517556	04/07/2006 02:17 PM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/07/2006 02:19 PM	25000	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/07/2006 02:22 PM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/07/2006 02:24 PM	25000	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/07/2006 02:26 PM	25000	1	238.0289	None	None
158048001	None	Sample	517556	04/07/2006 02:42 PM	25000	1	238.0289	None	None
158048004	None	Sample	517556	04/07/2006 02:44 PM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/07/2006 02:46 PM	25000	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/07/2006 02:49 PM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/07/2006 03:01 PM	25000	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/07/2006 03:03 PM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/07/2006 03:17 PM	25000	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/07/2006 03:19 PM	25000	1	238.0289	None	None

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Sample Identification

Sample ID	Proc ID	Sample Type	Description	Date / Time	SpA	SpG	Atomic Mass	Basis Sample	Customer ID
0.0	None	CChkStd	CChkStd	04/07/2006 03:21 PM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/07/2006 03:24 PM	25000	1	238.0289	None	None
158048001	None	Sample	517557	04/07/2006 03:28 PM	25000	1	238.0289	None	None
158048004	None	Sample	517557	04/07/2006 03:30 PM	25000	1	238.0289	None	None
2.0	None	CChkStd	CChkStd	04/07/2006 03:39 PM	25000	1	238.0289	None	None
5.0	None	CChkStd	CChkStd	04/07/2006 03:41 PM	25000	1	238.0289	None	None
50.0	None	CChkStd	CChkStd	04/07/2006 03:43 PM	25000	1	238.0289	None	None
250.0	None	CChkStd	CChkStd	04/07/2006 03:46 PM	25000	1	238.0289	None	None

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Pulses	Calibration ID	Uncertainty
.0	Low	5 -49	µg/l	1.935		CChkStd		1000	4/7/06	.022
.0	Low	5 -49	µg/l	5.006		CChkStd		1000	4/7/06	.056
50.0	High	5 -49	µg/l	51.654		CChkStd		1000	4/7/06	1.735
250.0	High	5 -49	µg/l	250.846		CChkStd		1000	4/7/06	8.370
1201063863	Low	5 -49	µg/l	.171	1	MtdBlk	.171	1000	4/7/06	.003
1201063864	Low	5 -49	µg/l	9.666	1	Sample	9.666	1000	4/7/06	.181
1201063865	High	5 -49	µg/l	22.665	1	Sample	22.665	1000	4/7/06	.860
1201063867	Low	5 -49	µg/l	1.885	1	MtdStd	1.885	1000	4/7/06	.021
1201063866	High	5 -28	µg/l	15.249	1	MtdStd	15.249	1000	4/7/06	.835
158048001	Low	5 -49	µg/l	4.439	1	Sample	4.439	1000	4/7/06	.182
158048002	Low	5 -49	µg/l	5.851	1	Sample	5.851	1000	4/7/06	.147
158048003	Low	5 -49	µg/l	7.482	1	Sample	7.482	1000	4/7/06	.143
158048004	Low	5 -49	µg/l	5.493	1	Sample	5.493	1000	4/7/06	.169
158048005	Low	5 -49	µg/l	9.506	1	Sample	9.506	1000	4/7/06	.239
2.0	Low	5 -49	µg/l	1.935		CChkStd		1000	4/7/06	.022
5.0	Low	5 -49	µg/l	4.850		CChkStd		1000	4/7/06	.054
50.0	High	5 -49	µg/l	47.368		CChkStd		1000	4/7/06	1.592

 Date Printed - 4/7/2006 3:57:39 PM

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Pulses	Calibration ID	Uncertainty
250.0	High	5 -49	µg/l	237.920		CChkStd		1000	4/7/06	7.946
201063865	High	5 -49	µg/l	21.040	1	Sample	21.040	1000	4/7/06	.827
158048003	Low	5 -49	µg/l	7.316	1	Sample	7.316	1000	4/7/06	.138
158048002	Low	5 -49	µg/l	5.730	1	Sample	5.730	1000	4/7/06	.156
158048005	Low	5 -49	µg/l	9.566	1	Sample	9.566	1000	4/7/06	.248
2.0	Low	5 -49	µg/l	2.030		CChkStd		1000	4/7/06	.023
5.0	Low	5 -49	µg/l	4.943		CChkStd		1000	4/7/06	.055
50.0	High	5 -49	µg/l	49.657		CChkStd		1000	4/7/06	1.664
250.0	High	5 -49	µg/l	239.299		CChkStd		1000	4/7/06	7.992
158048001	Low	5 -49	µg/l	.947	1	Sample	.947	1000	4/7/06	.012
158048004	Low	5 -49	µg/l	.969	1	Sample	.969	1000	4/7/06	.012
2.0	Low	5 -49	µg/l	1.966		CChkStd		1000	4/7/06	.022
5.0	Low	5 -49	µg/l	4.751		CChkStd		1000	4/7/06	.053
50.0	High	5 -49	µg/l	50.551		CChkStd		1000	4/7/06	1.747
250.0	High	5 -49	µg/l	245.324		CChkStd		1000	4/7/06	8.192
2.0	Low	5 -49	µg/l	1.995		CChkStd		1000	4/7/06	.023
5.0	Low	5 -49	µg/l	4.888		CChkStd		1000	4/7/06	.055

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Analytical Results

Sample ID	Range	Time Gates	Sample Units	Analytical Result	Total Dilution	Sample Type	Final Result	Calibration Pulses	Calibration ID	Uncertainty
0.0	High	5 -49	µg/l	52.435		CChkStd		1000	4/7/06	1.765
50.0	High	5 -49	µg/l	250.564		CChkStd		1000	4/7/06	8.380
158048001	Low	5 -49	µg/l	.961	1	Sample	.961	1000	4/7/06	.011
158048004	Low	5 -49	µg/l	.964	1	Sample	.964	1000	4/7/06	.011
2.0	Low	5 -49	µg/l	1.974		CChkStd		1000	4/7/06	.023
5.0	Low	5 -49	µg/l	4.954		CChkStd		1000	4/7/06	.055
50.0	High	5 -49	µg/l	51.471		CChkStd		1000	4/7/06	1.731
250.0	High	5 -49	µg/l	251.051		CChkStd		1000	4/7/06	8.384

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KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
.0	None	324	.9998	1.00155	335	10410	0E+00/ 0E+00	96.75		
.0	None	325	.9999	.99649	347	28009	0E+00/ 0E+00	100.11		
50.0	None	323	.9994	1.01020	339	3177	0E+00/ 0E+00	103.31		
250.0	None	325	.9999	1.00607	341	15731	0E+00/ 0E+00	100.34		
1201063863	None	326	.9941	.95440	352	299	0E+00/ 0E+00			A10
1201063864	None	329	.9983	.94768	161	54721	0E+00/ 0E+00			
1201063865	None	328	.9980	.98719	146	1422	0E+00/ 0E+00			A9
1201063867	None	328	.9999	.98531	331	10126	0E+00/ 0E+00	~~188.55~~ 94%		
1201063866	None	327	.9956	1.01286	75	976	0E+00/ 0E+00	~~1524.87~~ 76%		A9
158048001	None	326	.9925	1.00099	131	24760	0E+00/ 0E+00			A9
158048002	None	328	.9966	.99470	155	32855	0E+00/ 0E+00			
158048003	None	326	.9985	.99979	148	42200	0E+00/ 0E+00			A9
158048004	None	326	.9956	.99723	138	30800	0E+00/ 0E+00			A9
158048005	None	326	.9961	.99825	165	53806	0E+00/ 0E+00			
2.0	None	326	.9998	.99879	328	10409	0E+00/ 0E+00	96.75		
5.0	None	328	.9999	.99194	349	27119	0E+00/ 0E+00	97.01		
50.0	None	325	.9993	1.00561	351	2916	0E+00/ 0E+00	94.74		A10

4/10/06

4/12/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
50.0	None	326	.9998	1.00459	344	14890	0E+00/ 0E+00	95.17		
201063865	None	322	.9974	1.01326	147	1325	0E+00/ 0E+00			A9
158048003	None	326	.9985	.97702	151	41251	0E+00/ 0E+00			
158048002	None	326	.9957	.98349	157	32158	0E+00/ 0E+00			
158048005	None	326	.9958	.98623	165	54149	0E+00/ 0E+00			
2.0	None	326	.9998	.99154	335	10954	0E+00/ 0E+00	101.50		
5.0	None	327	.9999	.99307	344	27652	0E+00/ 0E+00	98.87		
50.0	None	327	.9996	1.00250	348	3055	0E+00/ 0E+00	99.31		
250.0	None	327	.9998	1.00911	338	14980	0E+00/ 0E+00	95.72		
158048001	None	323	.9993	.99946	282	4749	0E+00/ 0E+00			
158048004	None	325	.9994	.98624	286	4872	0E+00/ 0E+00			
2.0	None	325	.9999	.97820	338	10588	0E+00/ 0E+00	98.30		
5.0	None	326	.9999	.97873	348	26549	0E+00/ 0E+00	95.02		
50.0	None	327	.9972	.99815	344	3110	0E+00/ 0E+00	101.10		
250.0	None	326	.9998	.99877	339	15372	0E+00/ 0E+00	98.13		
2.0	None	324	.9997	.99836	332	10753	0E+00/ 0E+00	99.75		
5.0	None	325	.9999	.99684	340	27333	0E+00/ 0E+00	97.76		

4/12/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Quality Control

Sample ID	Basis Sample	Reference Lifetime	R^2 Intensity	Reference Ratio	Sample Lifetime	Sample Intercept	IDL / MDL	Recovery (%)	RPD (%)	AW Flags
0.0	None	325	.9992	1.00366	347	3224	0E+00/ 0E+00	104.87		
50.0	None	325	.9997	1.00163	338	15713	0E+00/ 0E+00	100.23		
158048001	None	325	.9998	.99529	275	4828	0E+00/ 0E+00			
158048004	None	325	.9997	.99374	282	4844	0E+00/ 0E+00			
2.0	None	326	.9998	.98918	342	10633	0E+00/ 0E+00	98.70		
5.0	None	326	.9999	.98365	348	27716	0E+00/ 0E+00	99.09		
50.0	None	324	.9993	.99138	348	3166	0E+00/ 0E+00	102.94		
250.0	None	325	.9998	.99481	337	15745	0E+00/ 0E+00	100.42		

4/12/06

KPAWin© (Version 1.2.8) Multiple Sample Report

Laboratory: ANALYTE: Uranium ANALYST: Salina

Calibration Report Results

Low Calibration ID - 4/7/06 High Calibration ID - 4/7/06

Batch ID - 1601

Date - 4/7/2006 9:12:20 AM

Calibration Report Results

Range	Used	Sample ID	Std Conc	Std ID	Intercept	Uncert	Percent Discrep	Time Reference Gates	Ratio	Lifetime	R ²	AW Flags
Low	+	BckGnd	0.000		265	16	.000	5-49	1.0000	322	.9813	
Low	+	1.0 ug/L	1.000	0914	5167	72	2.026	5-49	.9936	336	.9996	
Low	+	3.0 ug/L	3.000	0872	16372	128	-.821	5-49	.9917	328	.9998	
Low	+	5.0 ug/L	5.000	0898	27965	167	-.039	5-49	1.0048	347	.9999	
Low	+	10.0 ug/L	10.000	0840	56671	238	.063	5-49	1.0128	331	.9999	
High	+	BckGnd	0.000		6	3	.000	5-21	1.0000	176	.5926	
High	+	10.0 ug/L	10.000	0840	662	26	.000	5-49	1.0129	327	.9938	
High	+	250 ug/L	250.000	0876	15676	125	.000	5-49	1.0163	343	.9999	
High	+	500 ug/L	500.000	0842	32660	181	.000	5-49	1.0131	331	.9999	

4/12/06

 4/10/06 Date Printed - 4/7/2006 3:58:27 PM

KPAWin Detailed Calibration Report

Laboratory:

Calibration Details

Laboratory ID	KPA11AUTO1	Customer ID	None
Analyst	Salina	Procedure ID	None
Calibration Config ID	1000 Release	Calibration Date -	4/7/2006 9:12:20 AM
Calibration Batch ID	1601		

	Low Range Details	High Range Details
User Calibration	True	True
Calibration Id	4/7/06	4/7/06
Minimum Number of Standards	3	3
Calibration Alarms		
Calibration R ²	0.9999763	1
Variance	3.90E+02	2.52E-10
Calibration Equation	Y= +5731.549X -681.031	Y= +0.011X^2 +59.708X +63.462

SL 4/12/06

METHOD CALIBRATION DATA

General Engineering Laboratories
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gas Flow Proportional Counter Calibration Package

Method: GAB

	YES	NO	Comments
1) Is all calibration standard information enclosed for:			
primary standard certificate?	✓		
secondard standard(s) documentation?	✓		
standard preparation information?	✓		
standard < 1 Year old or verified?	✓		
2) Are the detector graphs included?			
absorption curves?	✓		
beta plateau?	✓		
3) Is the raw count data included for:			
the plateau generation?	✓		
the absorption curve generation?	✓		
the calibration verification?	✓		
the crosstalk calculations?	✓		
4) Are the calibration verification calculations included?	✓		
are verification recoveries 100% +/- 25%	✓		

Prepared By: _____ Date: 8/30/05

Reviewed By: _____ Date: 8/30/05

Effective Date: ~~8/30/05~~ & 8/30/05
8/18/05

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

06 5

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

69030-278

Th-230 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Th-230
ACTIVITY (dps):	1.841 E4
HALF-LIFE:	7.538 E4 years
CALIBRATION DATE:	August 10, 2004 12:00 EST
RELATIVE EXPANDED UNCERTAINTY (k=2):	3.3%

Impurities: γ-impurities <0.1%
α-impurities <0.04%

RECEIVED 8/16/04 TCW

5.09582 grams 0.5M HNO_3 solution.

P O NUMBER 3246RD, Item 1

SOURCE PREPARED BY: _____
E. A. Taskaev, Production Manager

Q A APPROVED: _____ 8-12-04

pg 8/30/04

RC-S-037-094

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0695
Prepared By:	Amanda Fehr
Carrier Conc:	0.5m HNO3
Reference Date:	08/10/2004
Ampoule Mass (g):	5.09582 g
Uncertainty:	+/- 3.3 %
LogBook No:	RC-S-037-094

A Solution Material Info	
Isotope:	Thorium-230
Prepared By:	Amanda Fehr
Prep Date:	05/26/2005
Verification Date:	05/26/2005
Expiration Date:	05/26/2006
Primary Code:	0695-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.8637 g
Density(g/mL):	1.0137

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.8637 g) * (18410 dps) * (59.9 dpm/dps) / (5.09582 g * 100 mL) = 10525.2716 dpm/mL
(4.8637 g) * (18410 dps) * (59.9 dpm/dps) / (1.0137 g/mL)/ (5.09582 g * 100 mL) = 10382.8223 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

0717

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

69415-278

Sr-90 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated by liquid scintillation counting.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Sr-90
ACTIVITY (dps):	3.811 E4
HALF-LIFE:	28.79 years
CALIBRATION DATE:	October 28, 2004 12:00 EST
RELATIVE EXPANDED UNCERTAINTY (k=2):	2.0%

Impurities: γ-impurities <0.1%

5.06266 grams 0.1M HCl solution with 30 µg/g Sr carrier.

NOTE: This source also contains Y-90 in secular equilibrium with Sr-90. The Y-90 activity is equal to the Sr-90 activity. Since Sr-90 and Y-90 both decay 100% by beta emission, the total beta emission rate for the source is twice the certified Sr-90 activity. The half-life for Y-90 is 64.08 hours.

P O NUMBER 3248RD, Item 1

SOURCE PREPARED BY: M. Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED: [signature] 10-28-2004

RECEIVED 11/1/04

RC-S-039-001a

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0717
Prepared By:	Angela Albee
Carrier Conc:	0.1 M HCL
Reference Date:	10/28/2004
Ampoule Mass (g):	5.06266 g
Uncertainty:	+/- 2 %
LogBook No:	RC S 039 001

A Solution Material Info	
Isotope:	Strontium-90
Prepared By:	Angela Albee
Prep Date:	11/01/2004
Verification Date:	11/01/2004
Expiration Date:	11/01/2005
Primary Code:	0717-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.74 g
Density(g/mL):	0.9998

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.74 g) * (38110 dps) * (59.9 dpm/dps) / (5.06266 g * 100 mL) = 21372.9934 dpm/mL
(4.74 g) * (38110 dps) * (59.9 dpm/dps) / (0.9998 g/mL)/ (5.06266 g * 100 mL) = 21377.5258 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Isotope Products Laboratories
An Eckert & Ziegler Company

24937 Avenue Tibbitts
Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

0685

RECEIVED 5/24/04

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

dionuclide:	Po-210	Customer:	GENERAL ENGINEERING LABS
lf-life:	138.376 ± 0.002 days	P.O. No.:	3242RD
talog No.:	7310	Reference Date:	1-Jun-04 12:00 PST
rce No.:	1066-2	Contained Radioactivity:	9.153 µCi 338.7 kBq

ysical Description:

A. Mass of solution:	5.16490 g in 5 mL flame-sealed ampoule
B. Chemical form:	$PoCl_4$ in 2M HCl
C. Carrier content:	None
D. Density:	1.033 g/mL @ 20°C

RECEIVED 5/20/04 Tcw

dioimpurities:

None detected

adionuclide Concentration: 1.772 µCi/g, 65.56 kBq/g

ethod of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using a liquid scintillation counter.

ncertainty of Measurement:

A. Type A (random) uncertainty:	± 1.5 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.0 %
D. Total uncertainty at the 99% confidence level:	± 3.4 %

otes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (as in NRC Regulatory Guide 4.15).
- Nuclear data was taken from NCRP Report No. 58, 1985.
- This solution has a working life of 9 months.

pm 4/30/04

Daniel James Van Dalsem
Quality Control

17-May-04
Date

IPL Ref. No.: 1066-2

pm 7/12/04

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

☒ **Standard Wipe Test**

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ **Special Wipe Test**

The source is wiped over its entire surface with moistened polystyrene. The polystyrene is then dissolved in a cocktail and counted in a liquid scintillation counter. An activity level exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha is cause for rejection of the source.

☐ **Soak Test**

The source is immersed in distilled water and maintained at 50 ± 10°C for a minimum of four hours or at room temperature for a minimum of 12 hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. An activity level exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha is cause for rejection of the source.

☐ **Vacuum Bubble Test**

The source is submerged completely in isopropanol to a depth of at least 5 cm below the liquid level in a suitable vacuum chamber between 15 and 25 kPa (113 and 188 mm Hg) absolute. Observe for bubble(s) over a period of 2 minutes. After the removal of the source, the liquid is checked for activity using a liquid scintillation counter. If bubbles are observed and/or an activity level exceeds 0.001 μCi beta-gamma or 0.0001 μCi alpha, the source is rejected.

☐ **Gas Source Test**

The source is placed in a vacuum desiccator and maintained at a pressure less than 10 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. An activity level exceeding 0.001 μCi beta-gamma is cause for rejection of the source.

☐ **Ampule Leak Test**

The ampule is kept in an inverted position on a filter paper disk or polystyrene wipe for a minimum of 16 hours. The wipe is then checked for activity using a windowless proportional counter, end-window G.M. tube, or liquid scintillation counter. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

☐ **Bubble Leak Test**

The container is pressurized to its fill pressure; then soapy water is applied over its valve and neck or, the valve and neck of the vessel is immersed in water. If no growing bubbles are observed, the container is considered leak free.

☐ **Leak Test Not Applicable**

The active area of the source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

☐ **Wipe Test for Industrial Ni-63 Sources**

The sources are wipe tested by an approved sampling plan which may call for either 100% of the batch to be individually wipe tested, or, a subset thereof. The results are recorded on the front of this form.

☐ **Other Leak Test**

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0685
Prepared By:	Amanda Fehr
Carrier Conc:	2M HCl
Reference Date:	06/01/2004
Ampoule Mass (g):	5.1649 g
Uncertainty:	+/- 3.4 %
LogBook No:	RC-S-037-084

A Solution Material Info	
Isotope:	Polonium-210
Prepared By:	Amanda Fehr
Prep Date:	05/25/2004
Verification Date:	05/25/2004
Expiration Date:	05/25/2005
Primary Code:	0685-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.855 g
Specific Volume:	0.9688

Calculations Converting parent activity to dpm/mL | dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) * (Specific Volume) = Parent Activity (dpm/g)
(4.855 g) * (1.772 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 190987.9320 dpm/mL
(4.855 g) * (1.772 uCi/g) * (2220000 dpm/uCi) / (100 mL) * (0.9688) = 185021.5420 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
06/08/2004	Amanda Fehr	.7367	100	0685-B	1363.0537 dpm/mL	06/11/2004	06/11/2005
06/10/2004	Amanda Fehr	.7367	100	0685-C	1318.4635 dpm/mL	06/11/2004	06/11/2005
06/16/2004	Amanda Fehr	.135	100	0685-D	249.779 dpm/mL	06/16/2004	06/16/2005

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

6/18/2004 2:35 PM

Verification for Po-210 Standard 0685-A

A. Fehr 6/2/2004	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Vol. Used (ml)	Source DPM/ml
	0685-A N1	18517.7000	2.5000	18515.2000	0.99345189	0.1000	186372.386
	0685-A N2	18411.3000	2.5000	18408.8000	0.99345189	0.1000	185301.3729
	0685-A N3	18544.1000	2.5000	18541.6000	0.99345189	0.1000	186638.1261
Mean Value (Counting) =	186103.9617		97.70%	% of known			
Stdev =	707.6482167						
Certificate Value =	190489.00						
Lower Limit =	184688.6652						
Upper Limit =	187519.2581						
Rule 1 Pass/Fail	Pass	Pass	Fail*				
Two sigma =	1415.296433						
10 % of Mean =	18610.39617						
Rule 2 (Pass/Fail)	Pass						

*Exception taken for this rule because 97.7% of standard was recovered and all other rules were met.

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three standard verification sources for Po-210 source 0685-A by transferring portions of the standard by pipette to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1.0 mL of DI water and 10 mL of Ready Gel cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 32 for Po-210 source standard verification. The Po-210 efficiency calibration which was used for verification calculations was performed on 3/5/04 using source 0485-A (Po-210). Calibration data is recorded in this logbook under Po-210 0485-A. Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Amanda L. Fehr 6/3/04

protector
protector

PROTOCOL	: 32 Po-210 Std Ver
DATE	: 2004/06/02
TIME	: 00:32
ID	: P32AS072

Wallac 1414 WinSpectral v1.30 S/N 4140127

Counting mode	: CPM
Isotope(s)	: Po210
Po210	= 400- 900,Alpha,138.40 d
Protocol name	: Po-210 Std Ver
Counting time	: 300
Repeats	: 1
Cycles	: 1
Replicates	: 1
2 sigma %	: 0.01
Minimum cpm	: 0.00 Checking time: 10
Advanced modes	: PSA,Chemilum
PSA level	: 100
Output to Display	:

POS,CTIME,DATE,TIME,RACKPOS,CPMw1,CPM,SQPI,CPM1

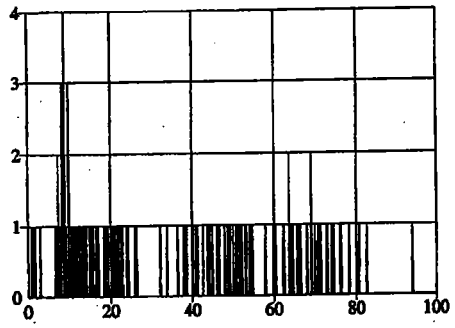
Additions to Display	: Spectrum,Header,Listing
Spectrum	: Beta,Alpha
Window 1	: 400- 900 /Alpha
Window 2	: 1-1024 /Beta
Window 3	: 1-1024 /Beta
Window 4	: 1-1024 /Beta
Window 5	: 1-1024 /Beta
Window 6	: 1-1024 /Beta
FNCT1 = FNCT1	:
FNCT2 = FNCT2	:
FNCT3 = FNCT3	:
FNCT4 = FNCT4	:

Total count rate:

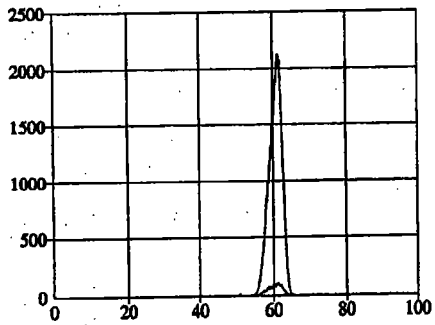
Po210 55475.6 CPM

(AF) 6/3/04
AF ~~6/2/04~~ 6/3/04

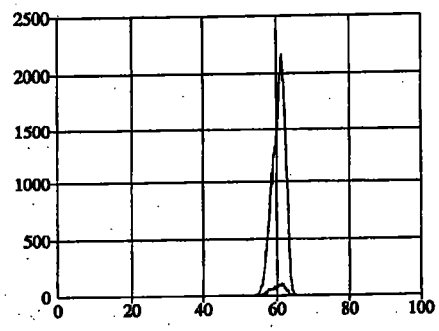
POS	CTIME	DATE	TIME	RACKPOS	CPMW1
1	300	6/2/2004	0:32 AM	1	2.50



2	300	6/2/2004	0:38 AM	2	18517.70

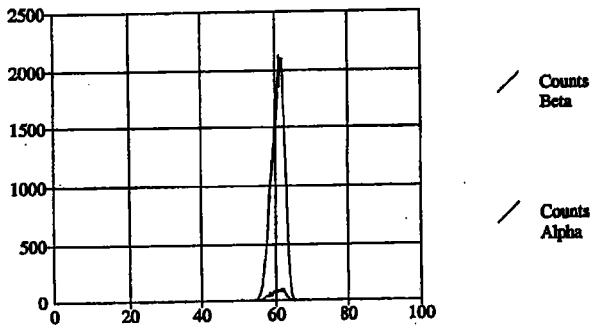


3	300	6/2/2004	0:43 AM	3	18411.30



ALF 6/3/04

POS	CTIME	DATE	TIME	RACKPOS	CPMW1
4	300	6/2/2004	0:49 AM	4	18544.10



ALF613104

General Engineering Laboratories
Calibration Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-001/001B

Isotope: Th-230

Date Standards Prepared: 8/17/05

Cocktail Type Used: N/A

Standard ID: 0695-A

Matrix of Vial/Planchett: concentric ring SS.

Amount Used (g or ml): 2.0

Standard Activity (DPM/g or mL): 10542.7

Type of Scintillation Vial: N/A

Reference Date: 8/10/04

Pipette ID Used: 1429303

Expiration Date: 5/26/06

Balance ID Used: 38080204

Residue/Carrier Agent: $BaCl_2$

Quenching Agent: N/A

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)
	~~ST~~ T1	0.0	7.4496	7.4497	0.1
	~~S2~~ T2	0.1	7.4018	7.4056	4.0
	~~S3~~ T3	0.2	7.4414	7.4485	7.1
	~~S4~~ T4	0.3	7.4090	7.4206	11.6
	~~S5~~ T5	0.5	7.3665	7.3852	18.7
	T6	0.7	7.4575	7.4838	26.3
	T7	1.0	7.4538	7.4915	37.7
	T8	1.2	7.4499	7.4955	45.6
	T9	1.5	7.4331	7.4896	56.5
	T10	2.0	7.4500	7.5247	74.7
	T11	2.5	7.3815	7.4756	94.1
	T12	3.0	7.4545	7.5603	105.8

Prepared By: _____ Date: 8/30/05

Reviewed By: _____ Date: 8/30/05

Rev 1 RLM 9/10/97

		Th-230	2 ml	0695-A		ACTIVITY:	21085.6			
Detector	Weight (mg)	Sample I.D.	Act. Time	Alpha	Beta	Alpha CPM	Alpha Eff.	Alpha Bkg.	Voltage	Date/Time
A1	0	1	5	24973	3920	4994.6	**0.236873**	7.48	1470	8/18/05 9:11
A1	4	2	5	24419	3434	4883.8	**0.231618**	7.48	1470	8/18/05 9:39
A1	7.1	3	5	23887	2929	4777.4	**0.226572**	7.48	1470	8/18/05 9:33
A1	11.6	4	5	23594	3451	4718.8	**0.223793**	7.48	1470	8/18/05 9:17
A1	18.7	5	5	21140	2990	4228	**0.200516**	7.48	1470	8/18/05 11:28
A1	26.3	6	5	19744	3238	3948.8	**0.187275**	7.48	1470	8/18/05 11:54
A1	37.7	7	5	17389	2656	3477.8	**0.164937**	7.48	1470	8/18/05 11:47
A1	45.6	8	5	16160	2724	3232	**0.15328**	7.48	1470	8/18/05 11:39
A1	56.5	9	5	15403	2382	3080.6	**0.1461**	7.48	1470	8/18/05 10:48
A1	74.7	10	5	14859	2779	2971.8	**0.14094**	7.48	1470	8/18/05 11:15
A1	94.1	11	5	14638	1887	2927.6	**0.138844**	7.48	1470	8/18/05 11:09
A1	105.8	12	5	11047	2729	2209.4	**0.104782**	7.48	1470	8/18/05 11:00
A2	0	1	5	25917	3850	5183.4	**0.245827**	0.144	1470	8/18/05 9:17
A2	4	2	5	23582	3301	4716.4	**0.223679**	0.144	1470	8/18/05 9:11
A2	7.1	3	5	22887	3064	4577.4	**0.217087**	0.144	1470	8/18/05 9:39
A2	11.6	4	5	21866	3440	4373.2	**0.207402**	0.144	1470	8/18/05 9:33
A2	18.7	5	5	20020	3005	4004	**0.189893**	0.144	1470	8/18/05 11:39
A2	26.3	6	5	19616	3047	3923.2	**0.186061**	0.144	1470	8/18/05 11:28
A2	37.7	7	5	18864	2592	3772.8	**0.178928**	0.144	1470	8/18/05 11:54
A2	45.6	8	5	17616	2830	3523.2	**0.16709**	0.144	1470	8/18/05 11:47
A2	56.5	9	5	15883	2409	3176.6	**0.150653**	0.144	1470	8/18/05 11:00
A2	74.7	10	5	14866	2593	2973.2	**0.141006**	0.144	1470	8/18/05 10:48
A2	94.1	11	5	14197	1926	2839.4	**0.134661**	0.144	1470	8/18/05 11:15
A2	105.8	12	5	11212	2685	2242.4	**0.106347**	0.144	1470	8/18/05 11:09
A3	0	1	5	26027	3874	5205.4	**0.24687**	0.124	1470	8/18/05 9:33
A3	4	2	5	24095	3517	4819	**0.228545**	0.124	1470	8/18/05 9:17
A3	7.1	3	5	23777	2952	4755.4	**0.225528**	0.124	1470	8/18/05 9:11
A3	11.6	4	5	22115	3395	4423	**0.209764**	0.124	1470	8/18/05 9:39
A3	18.7	5	5	20556	2860	4111.2	**0.194977**	0.124	1470	8/18/05 11:47
A3	26.3	6	5	20294	2926	4058.8	**0.192492**	0.124	1470	8/18/05 11:39

A3	37.7	7	5	19561	2628	3912.2	**0.185539**	0.124	1470	8/18/05 11:28
A3	45.6	8	5	17978	2962	3595.6	**0.170524**	0.124	1470	8/18/05 11:54
A3	56.5	9	5	15977	2431	3195.4	**0.151544**	0.124	1470	8/18/05 11:09
A3	74.7	10	5	14849	2559	2969.8	**0.140845**	0.124	1470	8/18/05 11:00
A3	94.1	11	5	14187	1921	2837.4	**0.134566**	0.124	1470	8/18/05 10:48
A3	105.8	12	5	11302	2856	2260.4	**0.107201**	0.124	1470	8/18/05 11:15
A4	0	1	5	30227	643240	6045.4	**0.286708**	0.064	1470	8/18/05 9:40
A4	4	2	5	29977	418606	5995.4	**0.284336**	0.064	1470	8/18/05 9:33
A4	7.1	3	5	28337	14514	5667.4	**0.268781**	0.064	1470	8/18/05 9:17
A4	11.6	4	5	27065	5822	5413	**0.256715**	0.064	1470	8/18/05 9:11
A4	18.7	5	5	25913	2849305	5182.6	**0.245789**	0.064	1470	8/18/05 11:56
A4	26.3	6	5	25215	2837239	5043	**0.239168**	0.064	1470	8/18/05 11:49
A4	37.7	7	5	25019	264817	5003.8	**0.237309**	0.064	1470	8/18/05 11:39
A4	45.6	8	5	24341	9998026	4868.2	**0.230878**	0.064	1470	8/18/05 11:33
A4	56.5	9	5	20092	94553	4018.4	**0.190576**	0.064	1470	8/18/05 11:17
A4	74.7	10	5	19391	45734	3878.2	**0.183926**	0.064	1470	8/18/05 11:09
A4	94.1	11	5	16877	331471	3375.4	**0.160081**	0.064	1470	8/18/05 11:02
A4	105.8	12	5	16069	328954	3213.8	**0.152417**	0.064	1470	8/18/05 10:50
B1	0	1	5	30255	5062	6051	**0.286973**	0.15	1470	8/18/05 10:10
B1	4	2	5	27295	4291	5459	**0.258897**	0.15	1470	8/18/05 10:29
B1	7.1	3	5	26753	3975	5350.6	**0.253756**	0.15	1470	8/18/05 10:22
B1	11.6	4	5	25687	4091	5137.4	**0.243645**	0.15	1470	8/18/05 10:16
B1	18.7	5	5	23729	3621	4745.8	**0.225073**	0.15	1470	8/18/05 9:11
B1	26.3	6	5	23355	3910	4671	**0.221526**	0.15	1470	8/18/05 9:39
B1	37.7	7	5	21394	3266	4278.8	**0.202925**	0.15	1470	8/18/05 9:33
B1	45.6	8	5	18698	3733	3739.6	**0.177353**	0.15	1470	8/18/05 9:17
B1	56.5	9	5	17839	3162	3567.8	**0.169206**	0.15	1470	8/18/05 11:28
B1	74.7	10	5	16715	3035	3343	**0.158544**	0.15	1470	8/18/05 11:54
B1	94.1	11	5	16434	3107	3286.8	**0.155879**	0.15	1470	8/18/05 11:47
B1	105.8	12	5	16312	3153	3262.4	**0.154722**	0.15	1470	8/18/05 11:39
B2	0	1	5	30479	4294	6095.8	**0.289098**	0.05	1470	8/18/05 10:16
B2	4	2	5	27737	3841	5547.4	**0.26309**	0.05	1470	8/18/05 10:10
B2	7.1	3	5	27612	3485	5522.4	**0.261904**	0.05	1470	8/18/05 10:29
B2	11.6	4	5	26455	3506	5291	**0.25093**	0.05	1470	8/18/05 10:22

B2	18.7	5	5	24193	3070	4838.6	**0.229474**	0.05	1470	8/18/05 9:17
B2	26.3	6	5	24149	3021	4829.8	**0.229057**	0.05	1470	8/18/05 9:11
B2	37.7	7	5	21753	2778	4350.6	**0.20633**	0.05	1470	8/18/05 9:39
B2	45.6	8	5	18544	3107	3708.8	**0.175893**	0.05	1470	8/18/05 9:33
B2	56.5	9	5	16637	1902	3327.4	**0.157804**	0.05	1470	8/18/05 11:39
B2	74.7	10	5	16294	2285	3258.8	**0.154551**	0.05	1470	8/18/05 11:28
B2	94.1	11	5	12560	2753	2512	**0.119133**	0.05	1470	8/18/05 11:54
B2	105.8	12	5	12445	1885	2489	**0.118043**	0.05	1470	8/18/05 11:47
B3	0	1	5	30284	4265	6056.8	**0.287248**	0.034	1470	8/18/05 10:22
B3	4	2	5	27763	3599	5552.6	**0.263336**	0.034	1470	8/18/05 10:16
B3	7.1	3	5	27457	3239	5491.4	**0.260434**	0.034	1470	8/18/05 10:10
B3	11.6	4	5	26408	3316	5281.6	**0.250484**	0.034	1470	8/18/05 10:29
B3	18.7	5	5	24545	2996	4909	**0.232813**	0.034	1470	8/18/05 9:33
B3	26.3	6	5	23918	3017	4783.6	**0.226866**	0.034	1470	8/18/05 9:17
B3	37.7	7	5	21620	2758	4324	**0.205069**	0.034	1470	8/18/05 9:11
B3	45.6	8	5	19615	2877	3923	**0.186051**	0.034	1470	8/18/05 9:39
B3	56.5	9	5	19353	2919	3870.6	**0.183566**	0.034	1470	8/18/05 11:47
B3	74.7	10	5	18277	2827	3655.4	**0.17336**	0.034	1470	8/18/05 11:39
B3	94.1	11	5	15995	2656	3199	**0.151715**	0.034	1470	8/18/05 11:28
B3	105.8	12	5	12305	1943	2461	**0.116715**	0.034	1470	8/18/05 11:54
B4	0	1	5	30387	4758	6077.4	**0.288225**	0.048	1470	8/18/05 10:29
B4	4	2	5	27484	4413	5496.8	**0.26069**	0.048	1470	8/18/05 10:22
B4	7.1	3	5	27096	3915	5419.2	**0.25701**	0.048	1470	8/18/05 10:16
B4	11.6	4	5	26153	4202	5230.6	**0.248065**	0.048	1470	8/18/05 10:10
B4	18.7	5	5	23748	3579	4749.6	**0.225253**	0.048	1470	8/18/05 9:39
B4	26.3	6	5	23669	3821	4733.8	**0.224504**	0.048	1470	8/18/05 9:33
B4	37.7	7	5	21343	3261	4268.6	**0.202441**	0.048	1470	8/18/05 9:17
B4	45.6	8	5	19200	3590	3840	**0.182115**	0.048	1470	8/18/05 9:11
B4	56.5	9	5	18446	3535	3689.2	**0.174963**	0.048	1470	8/18/05 11:54
B4	74.7	10	5	16999	2982	3399.8	**0.161238**	0.048	1470	8/18/05 11:47
B4	94.1	11	5	16876	2950	3375.2	**0.160071**	0.048	1470	8/18/05 11:39
B4	105.8	12	5	11702	2118	2340.4	**0.110995**	0.048	1470	8/18/05 11:28
C1	0	1	5	29350	3415	5870	**0.278389**	0.09	1470	8/18/05 10:48
C1	4	2	5	25419	3213	5083.8	**0.241103**	0.09	1470	8/18/05 11:15

C1	7.1	3	5	24232	3182	4846.4	**0.229844**	0.09	1470	8/18/05 11:09
C1	11.6	4	5	23901	4065	4780.2	**0.226704**	0.09	1470	8/18/05 11:00
C1	18.7	5	5	22314	2867	4462.8	**0.211652**	0.09	1470	8/18/05 10:09
C1	26.3	6	5	21564	3037	4312.8	**0.204538**	0.09	1470	8/18/05 10:29
C1	37.7	7	5	18766	2677	3753.2	**0.177998**	0.09	1470	8/18/05 10:22
C1	45.6	8	5	17948	2791	3589.6	**0.170239**	0.09	1470	8/18/05 10:16
C1	56.5	9	5	16986	2788	3397.2	**0.161115**	0.09	1470	8/18/05 9:11
C1	74.7	10	5	16044	2579	3208.8	**0.15218**	0.09	1470	8/18/05 9:39
C1	94.1	11	5	15348	2663	3069.6	**0.145578**	0.09	1470	8/18/05 9:33
C1	105.8	12	5	11901	1963	2380.2	**0.112883**	0.09	1470	8/18/05 9:17
C2	0	1	5	28312	4433	5662.4	**0.268543**	0.078	1470	8/18/05 11:00
C2	4	2	5	24513	4147	4902.6	**0.232509**	0.078	1470	8/18/05 10:48
C2	7.1	3	5	23534	4507	4706.8	**0.223223**	0.078	1470	8/18/05 11:15
C2	11.6	4	5	22812	5289	4562.4	**0.216375**	0.078	1470	8/18/05 11:09
C2	18.7	5	5	21443	3928	4288.6	**0.20339**	0.078	1470	8/18/05 10:16
C2	26.3	6	5	21009	4102	4201.8	**0.199273**	0.078	1470	8/18/05 10:09
C2	37.7	7	5	18697	3369	3739.4	**0.177344**	0.078	1470	8/18/05 10:29
C2	45.6	8	5	17223	3557	3444.6	**0.163363**	0.078	1470	8/18/05 10:22
C2	56.5	9	5	16412	3503	3282.4	**0.15567**	0.078	1470	8/18/05 9:17
C2	74.7	10	5	15629	3111	3125.8	**0.148243**	0.078	1470	8/18/05 9:11
C2	94.1	11	5	14659	3340	2931.8	**0.139043**	0.078	1470	8/18/05 9:39
C2	105.8	12	5	11406	2548	2281.2	**0.108188**	0.078	1470	8/18/05 9:33
C3	0	1	5	28537	4125	5707.4	**0.270678**	0.076	1470	8/18/05 11:09
C3	4	2	5	24734	3764	4946.8	**0.234606**	0.076	1470	8/18/05 11:00
C3	7.1	3	5	24517	3902	4903.4	**0.232547**	0.076	1470	8/18/05 10:48
C3	11.6	4	5	23641	4727	4728.2	**0.224238**	0.076	1470	8/18/05 11:15
C3	18.7	5	5	21587	3394	4317.4	**0.204756**	0.076	1470	8/18/05 10:22
C3	26.3	6	5	21508	3675	4301.6	**0.204007**	0.076	1470	8/18/05 10:16
C3	37.7	7	5	18683	3035	3736.6	**0.177211**	0.076	1470	8/18/05 10:09
C3	45.6	8	5	17703	3235	3540.6	**0.167916**	0.076	1470	8/18/05 10:29
C3	56.5	9	5	16020	3393	3204	**0.151952**	0.076	1470	8/18/05 9:33
C3	74.7	10	5	15816	3008	3163.2	**0.150017**	0.076	1470	8/18/05 9:17
C3	94.1	11	5	15256	2942	3051.2	**0.144705**	0.076	1470	8/18/05 9:11
C3	105.8	12	5	11504	2139	2300.8	**0.109117**	0.076	1470	8/18/05 9:39

C4	0	1	5	28199	4625	5639.8	**0.267472**	0.048	1470	8/18/05 11:15
C4	4	2	5	24788	4339	4957.6	**0.235118**	0.048	1470	8/18/05 11:09
C4	7.1	3	5	24229	4482	4845.8	**0.229816**	0.048	1470	8/18/05 11:00
C4	11.6	4	5	23523	5418	4704.6	**0.223119**	0.048	1470	8/18/05 10:48
C4	18.7	5	5	21938	3884	4387.6	**0.208085**	0.048	1470	8/18/05 10:29
C4	26.3	6	5	21449	4254	4289.8	**0.203447**	0.048	1470	8/18/05 10:22
C4	37.7	7	5	18019	3494	3603.8	**0.170913**	0.048	1470	8/18/05 10:16
C4	45.6	8	5	17280	3918	3456	**0.163903**	0.048	1470	8/18/05 10:09
C4	56.5	9	5	16782	3619	3356.4	**0.15918**	0.048	1470	8/18/05 9:39
C4	74.7	10	5	16042	3384	3208.4	**0.152161**	0.048	1470	8/18/05 9:33
C4	94.1	11	5	15222	3364	3044.4	**0.144383**	0.048	1470	8/18/05 9:17
C4	105.8	12	5	11500	2561	2300	**0.109079**	0.048	1470	8/18/05 9:11
D1	0	1	5	30819	4857	6163.8	**0.292323**	0.09	1470	8/18/05 11:28
D1	4	2	5	28744	4492	5748.8	**0.272641**	0.09	1470	8/18/05 11:54
D1	7.1	3	5	26236	4022	5247.2	**0.248852**	0.09	1470	8/18/05 11:47
D1	11.6	4	5	25215	4033	5043	**0.239168**	0.09	1470	8/18/05 11:39
D1	18.7	5	5	24904	3621	4980.8	**0.236218**	0.09	1470	8/18/05 10:48
D1	26.3	6	5	24749	3338	4949.8	**0.234748**	0.09	1470	8/18/05 11:15
D1	37.7	7	5	22517	3673	4503.4	**0.213577**	0.09	1470	8/18/05 11:09
D1	45.6	8	5	19027	3567	3805.4	**0.180474**	0.09	1470	8/18/05 11:00
D1	56.5	9	5	18977	3307	3795.4	**0.18**	0.09	1470	8/18/05 10:09
D1	74.7	10	5	17886	2874	3577.2	**0.169651**	0.09	1470	8/18/05 10:29
D1	94.1	11	5	17631	3320	3526.2	**0.167233**	0.09	1470	8/18/05 10:22
D1	105.8	12	5	13296	2224	2659.2	**0.126115**	0.09	1470	8/18/05 10:16
D2	0	1	5	28245	5093	5649	**0.267908**	0.064	1470	8/18/05 11:39
D2	4	2	5	28202	5113	5640.4	**0.2675**	0.064	1470	8/18/05 11:28
D2	7.1	3	5	28174	4594	5634.8	**0.267235**	0.064	1470	8/18/05 11:54
D2	11.6	4	5	26519	4894	5303.8	**0.251537**	0.064	1470	8/18/05 11:47
D2	18.7	5	5	25009	4677	5001.8	**0.237214**	0.064	1470	8/18/05 11:00
D2	26.3	6	5	24409	3939	4881.8	**0.231523**	0.064	1470	8/18/05 10:48
D2	37.7	7	5	22151	4418	4430.2	**0.210105**	0.064	1470	8/18/05 11:15
D2	45.6	8	5	20001	4398	4000.2	**0.189712**	0.064	1470	8/18/05 11:09
D2	56.5	9	5	18682	4048	3736.4	**0.177202**	0.064	1470	8/18/05 10:16
D2	74.7	10	5	17485	3418	3497	**0.165848**	0.064	1470	8/18/05 10:09
D2	94.1	11	5	16267	3869	3253.4	**0.154295**	0.064	1470	8/18/05 10:29

D2	105.8	12	5	13141	2819	2628.2	**0.124644**	0.064	1470	8/18/05 10:22
D3	0	1	5	30835	4993	6167	**0.292474**	0.06	1470	8/18/05 11:47
D3	4	2	5	30565	5001	6113	**0.289913**	0.06	1470	8/18/05 11:39
D3	7.1	3	5	27194	4200	5438.8	**0.257939**	0.06	1470	8/18/05 11:28
D3	11.6	4	5	25972	4337	5194.4	**0.246348**	0.06	1470	8/18/05 11:54
D3	18.7	5	5	24418	3910	4883.6	**0.231608**	0.06	1470	8/18/05 11:09
D3	26.3	6	5	24017	3329	4803.4	**0.227805**	0.06	1470	8/18/05 11:00
D3	37.7	7	5	21662	3762	4332.4	**0.205467**	0.06	1470	8/18/05 10:48
D3	45.6	8	5	19368	3670	3873.6	**0.183708**	0.06	1470	8/18/05 11:15
D3	56.5	9	5	18506	3552	3701.2	**0.175532**	0.06	1470	8/18/05 10:22
D3	74.7	10	5	17698	3156	3539.6	**0.167868**	0.06	1470	8/18/05 10:16
D3	94.1	11	5	15823	3142	3164.6	**0.150083**	0.06	1470	8/18/05 10:09
D3	105.8	12	5	12731	2431	2546.2	**0.120755**	0.06	1470	8/18/05 10:29
D4	0	1	5	31076	5646	6215.2	**0.29476**	0.092	1470	8/18/05 11:54
D4	4	2	5	28384	5099	5676.8	**0.269226**	0.092	1470	8/18/05 11:47
D4	7.1	3	5	28171	4899	5634.2	**0.267206**	0.092	1470	8/18/05 11:39
D4	11.6	4	5	27872	4823	5574.4	**0.26437**	0.092	1470	8/18/05 11:28
D4	18.7	5	5	26580	4419	5316	**0.252115**	0.092	1470	8/18/05 11:15
D4	26.3	6	5	24409	3748	4881.8	**0.231523**	0.092	1470	8/18/05 11:09
D4	37.7	7	5	22085	4113	4417	**0.209479**	0.092	1470	8/18/05 11:00
D4	45.6	8	5	19840	4136	3968	**0.188185**	0.092	1470	8/18/05 10:48
D4	56.5	9	5	18777	3933	3755.4	**0.178103**	0.092	1470	8/18/05 10:29
D4	74.7	10	5	17788	3643	3557.6	**0.168722**	0.092	1470	8/18/05 10:22
D4	94.1	11	5	17637	3664	3527.4	**0.16729**	0.092	1470	8/18/05 10:16
D4	105.8	12	5	12247	2503	2449.4	**0.116165**	0.092	1470	8/18/05 10:09
E1	0	1	5	31311	4188	6262.2	**0.296989**	0.094	1470	8/18/05 12:03
E1	4	2	5	28599	3781	5719.8	**0.271266**	0.094	1470	8/18/05 12:20
E1	7.1	3	5	28233	3518	5646.6	**0.267794**	0.094	1470	8/18/05 12:15
E1	11.6	4	5	26093	3404	5218.6	**0.247496**	0.094	1470	8/18/05 12:09
E1	18.7	5	5	24726	3087	4945.2	**0.23453**	0.094	1470	8/18/05 13:15
E1	26.3	6	5	24537	3094	4907.4	**0.232737**	0.094	1470	8/18/05 13:33
E1	37.7	7	5	22561	2910	4512.2	**0.213994**	0.094	1470	8/18/05 13:27
E1	45.6	8	5	19842	3056	3968.4	**0.188204**	0.094	1470	8/18/05 13:21
E1	56.5	9	5	18915	3016	3783	**0.179412**	0.094	1470	8/18/05 12:51

E1	74.7	10	5	17729	2555	3545.8	**0.168162**	0.094	1470	8/18/05 13:09
E1	94.1	11	5	17246	2892	3449.2	**0.163581**	0.094	1470	8/18/05 13:03
E1	105.8	12	5	13075	2033	2615	**0.124018**	0.094	1470	8/18/05 12:57
E2	0	1	5	30785	5160	6157	**0.292**	0.082	1470	8/18/05 12:09
E2	4	2	5	28194	4639	5638.8	**0.267424**	0.082	1470	8/18/05 12:03
E2	7.1	3	5	27623	4189	5524.6	**0.262008**	0.082	1470	8/18/05 12:20
E2	11.6	4	5	25553	4281	5110.6	**0.242374**	0.082	1470	8/18/05 12:15
E2	18.7	5	5	24158	3900	4831.6	**0.229142**	0.082	1470	8/18/05 13:21
E2	26.3	6	5	24086	3909	4817.2	**0.228459**	0.082	1470	8/18/05 13:15
E2	37.7	7	5	21844	3478	4368.8	**0.207194**	0.082	1470	8/18/05 13:33
E2	45.6	8	5	19389	3725	3877.8	**0.183908**	0.082	1470	8/18/05 13:27
E2	56.5	9	5	18501	3549	3700.2	**0.175485**	0.082	1470	8/18/05 12:57
E2	74.7	10	5	17503	3039	3500.6	**0.166019**	0.082	1470	8/18/05 12:51
E2	94.1	11	5	17253	3496	3450.6	**0.163647**	0.082	1470	8/18/05 13:09
E2	105.8	12	5	12746	2431	2549.2	**0.120898**	0.082	1470	8/18/05 13:03
E3	0	1	5	31152	3899	6230.4	**0.295481**	0.056	1470	8/18/05 12:15
E3	4	2	5	28483	3530	5696.6	**0.270165**	0.056	1470	8/18/05 12:09
E3	7.1	3	5	28366	3324	5673.2	**0.269056**	0.056	1470	8/18/05 12:03
E3	11.6	4	5	26173	3197	5234.6	**0.248255**	0.056	1470	8/18/05 12:20
E3	18.7	5	5	24742	2760	4948.4	**0.234681**	0.056	1470	8/18/05 13:27
E3	26.3	6	5	24687	2858	4937.4	**0.23416**	0.056	1470	8/18/05 13:21
E3	37.7	7	5	22118	2657	4423.6	**0.209792**	0.056	1470	8/18/05 13:15
E3	45.6	8	5	19984	2873	3996.8	**0.189551**	0.056	1470	8/18/05 13:33
E3	56.5	9	5	18660	2736	3732	**0.176993**	0.056	1470	8/18/05 13:03
E3	74.7	10	5	18096	2388	3619.2	**0.171643**	0.056	1470	8/18/05 12:57
E3	94.1	11	5	17428	2723	3485.6	**0.165307**	0.056	1470	8/18/05 12:51
E3	105.8	12	5	12832	1868	2566.4	**0.121713**	0.056	1470	8/18/05 13:09
E4	0	1	5	31551	4553	6310.2	**0.299266**	0.098	1470	8/18/05 12:20
E4	4	2	5	28773	4052	5754.6	**0.272916**	0.098	1470	8/18/05 12:15
E4	7.1	3	5	28490	3670	5698	**0.270232**	0.098	1470	8/18/05 12:09
E4	11.6	4	5	26165	3778	5233	**0.248179**	0.098	1470	8/18/05 12:03
E4	18.7	5	5	24643	3202	4928.6	**0.233742**	0.098	1470	8/18/05 13:33
E4	26.3	6	5	24637	3443	4927.4	**0.233686**	0.098	1470	8/18/05 13:27
E4	37.7	7	5	22297	3064	4459.4	**0.21149**	0.098	1470	8/18/05 13:21

E4	45.6	8	5	19362	3423	3872.4	**0.183651**	0.098	1470	8/18/05 13:15
E4	56.5	9	5	18758	3065	3751.6	**0.177922**	0.098	1470	8/18/05 13:09
E4	74.7	10	5	17998	2729	3599.6	**0.170714**	0.098	1470	8/18/05 13:03
E4	94.1	11	5	17266	3045	3453.2	**0.163771**	0.098	1470	8/18/05 12:57
E4	105.8	12	5	13077	2227	2615.4	**0.124037**	0.098	1470	8/18/05 12:51
F1	0	1	5	30096	3971	6019.2	**0.285465**	0.086	1470	8/18/05 12:27
F1	4	2	5	27260	3650	5452	**0.258565**	0.086	1470	8/18/05 12:45
F1	7.1	3	5	26805	3022	5361	**0.254249**	0.086	1470	8/18/05 12:39
F1	11.6	4	5	25884	3028	5176.8	**0.245514**	0.086	1470	8/18/05 12:33
F1	18.7	5	5	23892	2802	4778.4	**0.226619**	0.086	1470	8/18/05 12:03
F1	26.3	6	5	23349	2804	4669.8	**0.221469**	0.086	1470	8/18/05 12:20
F1	37.7	7	5	21648	2562	4329.6	**0.205334**	0.086	1470	8/18/05 12:15
F1	45.6	8	5	19004	2716	3800.8	**0.180256**	0.086	1470	8/18/05 12:09
F1	56.5	9	5	18023	2947	3604.6	**0.170951**	0.086	1470	8/18/05 13:15
F1	74.7	10	5	16675	2273	3335	**0.158165**	0.086	1470	8/18/05 13:33
F1	94.1	11	5	16584	2602	3316.8	**0.157302**	0.086	1470	8/18/05 13:27
F1	105.8	12	5	12340	1897	2468	**0.117047**	0.086	1470	8/18/05 13:21
F2	0	1	5	30317	5497	6063.4	**0.287561**	0.152	1470	8/18/05 12:33
F2	4	2	5	27867	5042	5573.4	**0.264323**	0.152	1470	8/18/05 12:27
F2	7.1	3	5	27812	4324	5562.4	**0.263801**	0.152	1470	8/18/05 12:45
F2	11.6	4	5	26587	4273	5317.4	**0.252182**	0.152	1470	8/18/05 12:39
F2	18.7	5	5	24718	4032	4943.6	**0.234454**	0.152	1470	8/18/05 12:09
F2	26.3	6	5	24390	3850	4878	**0.231343**	0.152	1470	8/18/05 12:03
F2	37.7	7	5	21636	3577	4327.2	**0.205221**	0.152	1470	8/18/05 12:20
F2	45.6	8	5	19155	3831	3831	**0.181688**	0.152	1470	8/18/05 12:15
F2	56.5	9	5	18599	4000	3719.8	**0.176414**	0.152	1470	8/18/05 13:21
F2	74.7	10	5	17854	3212	3570.8	**0.169348**	0.152	1470	8/18/05 13:15
F2	94.1	11	5	17058	3456	3411.6	**0.161798**	0.152	1470	8/18/05 13:33
F2	105.8	12	5	13023	2300	2604.6	**0.123525**	0.152	1470	8/18/05 13:27
F3	0	1	5	29705	6163	5941	**0.281756**	0.116	1470	8/18/05 12:39
F3	4	2	5	27049	5511	5409.8	**0.256564**	0.116	1470	8/18/05 12:33
F3	7.1	3	5	26818	5016	5363.6	**0.254373**	0.116	1470	8/18/05 12:27
F3	11.6	4	5	25181	5362	5036.2	**0.238845**	0.116	1470	8/18/05 12:45
F3	18.7	5	5	23823	4515	4764.6	**0.225965**	0.116	1470	8/18/05 12:15

F3	26.3	6	5	23493	4672	4698.6	**0.222835**	0.116	1470	8/18/05 12:09
F3	37.7	7	5	21190	4076	4238	**0.20099**	0.116	1470	8/18/05 12:03
F3	45.6	8	5	19046	4328	3809.2	**0.180654**	0.116	1470	8/18/05 12:20
F3	56.5	9	5	18039	4351	3607.8	**0.171103**	0.116	1470	8/18/05 13:27
F3	74.7	10	5	17066	3772	3413.2	**0.161874**	0.116	1470	8/18/05 13:21
F3	94.1	11	5	16638	3924	3327.6	**0.157814**	0.116	1470	8/18/05 13:15
F3	105.8	12	5	12420	2771	2484	**0.117806**	0.116	1470	8/18/05 13:33
F4	0	1	5	30937	4777	6187.4	**0.293442**	0.174	1470	8/18/05 12:45
F4	4	2	5	28272	4330	5654.4	**0.268164**	0.174	1470	8/18/05 12:39
F4	7.1	3	5	28173	3720	5634.6	**0.267225**	0.174	1470	8/18/05 12:33
F4	11.6	4	5	26615	3845	5323	**0.252447**	0.174	1470	8/18/05 12:27
F4	18.7	5	5	24778	3418	4955.6	**0.235023**	0.174	1470	8/18/05 12:20
F4	26.3	6	5	24556	3483	4911.2	**0.232917**	0.174	1470	8/18/05 12:15
F4	37.7	7	5	22379	3217	4475.8	**0.212268**	0.174	1470	8/18/05 12:09
F4	45.6	8	5	19296	3348	3859.2	**0.183025**	0.174	1470	8/18/05 12:03
F4	56.5	9	5	18604	3425	3720.8	**0.176462**	0.174	1470	8/18/05 13:33
F4	74.7	10	5	18123	2847	3624.6	**0.171899**	0.174	1470	8/18/05 13:27
F4	94.1	11	5	17466	3125	3493.2	**0.165668**	0.174	1470	8/18/05 13:21
F4	105.8	12	5	13186	2041	2637.2	**0.125071**	0.174	1470	8/18/05 13:15
G1	0	1	5	27641	3993	5528.2	**0.262179**	0.056	1470	8/18/05 12:51
G1	4	2	5	24577	3482	4915.4	**0.233116**	0.056	1470	8/18/05 13:09
G1	7.1	3	5	24156	3111	4831.2	**0.229123**	0.056	1470	8/18/05 13:03
G1	11.6	4	5	23511	3273	4702.2	**0.223005**	0.056	1470	8/18/05 12:57
G1	18.7	5	5	21871	2953	4374.2	**0.20745**	0.056	1470	8/18/05 12:27
G1	26.3	6	5	20681	2984	4136.2	**0.196162**	0.056	1470	8/18/05 12:45
G1	37.7	7	5	19040	2557	3808	**0.180597**	0.056	1470	8/18/05 12:39
G1	45.6	8	5	17131	2797	3426.2	**0.16249**	0.056	1470	8/18/05 12:33
G1	56.5	9	5	16239	2687	3247.8	**0.154029**	0.056	1470	8/18/05 12:03
G1	74.7	10	5	15745	2360	3149	**0.149344**	0.056	1470	8/18/05 12:20
G1	94.1	11	5	15663	2612	3132.6	**0.148566**	0.056	1470	8/18/05 12:15
G1	105.8	12	5	11860	1859	2372	**0.112494**	0.056	1470	8/18/05 12:09
G2	0	1	5	27084	6011	5416.8	**0.256896**	0.1	1470	8/18/05 12:57
G2	4	2	5	23828	5036	4765.6	**0.226012**	0.1	1470	8/18/05 12:51
G2	7.1	3	5	22861	4676	4572.2	**0.21684**	0.1	1470	8/18/05 13:09

G2	11.6	4	5	22860	4866	4572	**0.21683**	0.1	1470	8/18/05 13:03
G2	18.7	5	5	20897	4209	4179.4	**0.198211**	0.1	1470	8/18/05 12:33
G2	26.3	6	5	20448	4599	4089.6	**0.193952**	0.1	1470	8/18/05 12:27
G2	37.7	7	5	17817	3852	3563.4	**0.168997**	0.1	1470	8/18/05 12:45
G2	45.6	8	5	16124	4234	3224.8	**0.152938**	0.1	1470	8/18/05 12:39
G2	56.5	9	5	15820	3838	3164	**0.150055**	0.1	1470	8/18/05 12:09
G2	74.7	10	5	15507	3385	3101.4	**0.147086**	0.1	1470	8/18/05 12:03
G2	94.1	11	5	15005	3824	3001	**0.142325**	0.1	1470	8/18/05 12:20
G2	105.8	12	5	11419	2783	2283.8	**0.108311**	0.1	1470	8/18/05 12:15
G3	0	1	5	26710	7327	5342	**0.253348**	0.226	1470	8/18/05 13:03
G3	4	2	5	24059	6239	4811.8	**0.228203**	0.226	1470	8/18/05 12:57
G3	7.1	3	5	23009	5610	4601.8	**0.218244**	0.226	1470	8/18/05 12:51
G3	11.6	4	5	22735	6229	4547	**0.215645**	0.226	1470	8/18/05 13:09
G3	18.7	5	5	20953	5539	4190.6	**0.198742**	0.226	1470	8/18/05 12:39
G3	26.3	6	5	20678	5669	4135.6	**0.196134**	0.226	1470	8/18/05 12:33
G3	37.7	7	5	18745	4644	3749	**0.177799**	0.226	1470	8/18/05 12:27
G3	45.6	8	5	16658	5416	3331.6	**0.158004**	0.226	1470	8/18/05 12:45
G3	56.5	9	5	15694	4783	3138.8	**0.14886**	0.226	1470	8/18/05 12:15
G3	74.7	10	5	15512	4489	3102.4	**0.147134**	0.226	1470	8/18/05 12:09
G3	94.1	11	5	15014	4663	3002.8	**0.14241**	0.226	1470	8/18/05 12:03
G3	105.8	12	5	11336	3347	2267.2	**0.107524**	0.226	1470	8/18/05 12:20
G4	0	1	5	27468	7132	5493.6	**0.260538**	0.08	1470	8/18/05 13:09
G4	4	2	5	24295	6012	4859	**0.230442**	0.08	1470	8/18/05 13:03
G4	7.1	3	5	23019	5560	4603.8	**0.218339**	0.08	1470	8/18/05 12:57
G4	11.6	4	5	22884	5789	4576.8	**0.217058**	0.08	1470	8/18/05 12:51
G4	18.7	5	5	21361	5275	4272.2	**0.202612**	0.08	1470	8/18/05 12:45
G4	26.3	6	5	20128	5354	4025.6	**0.190917**	0.08	1470	8/18/05 12:39
G4	37.7	7	5	18499	4625	3699.8	**0.175466**	0.08	1470	8/18/05 12:33
G4	45.6	8	5	15744	4935	3148.8	**0.149334**	0.08	1470	8/18/05 12:27
G4	56.5	9	5	15318	4274	3063.6	**0.145293**	0.08	1470	8/18/05 12:20
G4	74.7	10	5	15206	4072	3041.2	**0.144231**	0.08	1470	8/18/05 12:15
G4	94.1	11	5	15128	4432	3025.6	**0.143491**	0.08	1470	8/18/05 12:09
G4	105.8	12	5	11307	3372	2261.4	**0.107249**	0.08	1470	8/18/05 12:03
H1	0	1	5	31121	3491	6224.2	**0.295187**	0.12	1522.5	8/18/05 13:15

H1	4	2	5	27403	3162	5480.6	**0.259921**	0.12	1522.5	8/18/05 13:33
H1	7.1	3	5	27274	3003	5454.8	**0.258698**	0.12	1522.5	8/18/05 13:27
H1	11.6	4	5	25576	2839	5115.2	**0.242592**	0.12	1522.5	8/18/05 13:21
H1	18.7	5	5	24211	2580	4842.2	**0.229645**	0.12	1522.5	8/18/05 12:51
H1	26.3	6	5	24155	2436	4831	**0.229114**	0.12	1522.5	8/18/05 13:09
H1	37.7	7	5	21690	2454	4338	**0.205733**	0.12	1522.5	8/18/05 13:03
H1	45.6	8	5	19223	2519	3844.6	**0.182333**	0.12	1522.5	8/18/05 12:57
H1	56.5	9	5	18608	2629	3721.6	**0.1765**	0.12	1522.5	8/18/05 12:27
H1	74.7	10	5	17551	2081	3510.2	**0.166474**	0.12	1522.5	8/18/05 12:45
H1	94.1	11	5	17361	2498	3472.2	**0.164672**	0.12	1522.5	8/18/05 12:39
H1	105.8	12	5	12850	1556	2570	**0.121884**	0.12	1522.5	8/18/05 12:33
H2	0	1	5	30290	4128	6058	**0.287305**	0.104	1522.5	8/18/05 13:21
H2	4	2	5	27198	3742	5439.6	**0.257977**	0.104	1522.5	8/18/05 13:15
H2	7.1	3	5	26385	3423	5277	**0.250266**	0.104	1522.5	8/18/05 13:33
H2	11.6	4	5	25413	3278	5082.6	**0.241046**	0.104	1522.5	8/18/05 13:27
H2	18.7	5	5	23872	3100	4774.4	**0.226429**	0.104	1522.5	8/18/05 12:57
H2	26.3	6	5	23752	2938	4750.4	**0.225291**	0.104	1522.5	8/18/05 12:51
H2	37.7	7	5	21080	2801	4216	**0.199947**	0.104	1522.5	8/18/05 13:09
H2	45.6	8	5	18865	2892	3773	**0.178937**	0.104	1522.5	8/18/05 13:03
H2	56.5	9	5	18022	3038	3604.4	**0.170941**	0.104	1522.5	8/18/05 12:33
H2	74.7	10	5	17174	2494	3434.8	**0.162898**	0.104	1522.5	8/18/05 12:27
H2	94.1	11	5	17085	2811	3417	**0.162054**	0.104	1522.5	8/18/05 12:45
H2	105.8	12	5	12568	1917	2513.6	**0.119209**	0.104	1522.5	8/18/05 12:39
H3	0	1	5	30646	4366	6129.2	**0.290682**	0.066	1522.5	8/18/05 13:27
H3	4	2	5	27718	3990	5543.6	**0.262909**	0.066	1522.5	8/18/05 13:21
H3	7.1	3	5	27527	3532	5505.4	**0.261098**	0.066	1522.5	8/18/05 13:15
H3	11.6	4	5	25502	3606	5100.4	**0.24189**	0.066	1522.5	8/18/05 13:33
H3	18.7	5	5	24436	3149	4887.2	**0.231779**	0.066	1522.5	8/18/05 13:03
H3	26.3	6	5	23836	3022	4767.2	**0.226088**	0.066	1522.5	8/18/05 12:57
H3	37.7	7	5	21616	2879	4323.2	**0.205031**	0.066	1522.5	8/18/05 12:51
H3	45.6	8	5	19101	3142	3820.2	**0.181176**	0.066	1522.5	8/18/05 13:09
H3	56.5	9	5	18029	3210	3605.8	**0.171008**	0.066	1522.5	8/18/05 12:39
H3	74.7	10	5	17406	2542	3481.2	**0.165098**	0.066	1522.5	8/18/05 12:33
H3	94.1	11	5	17242	2973	3448.4	**0.163543**	0.066	1522.5	8/18/05 12:27
H3	105.8	12	5	12717	1975	2543.4	**0.120623**	0.066	1522.5	8/18/05 12:45

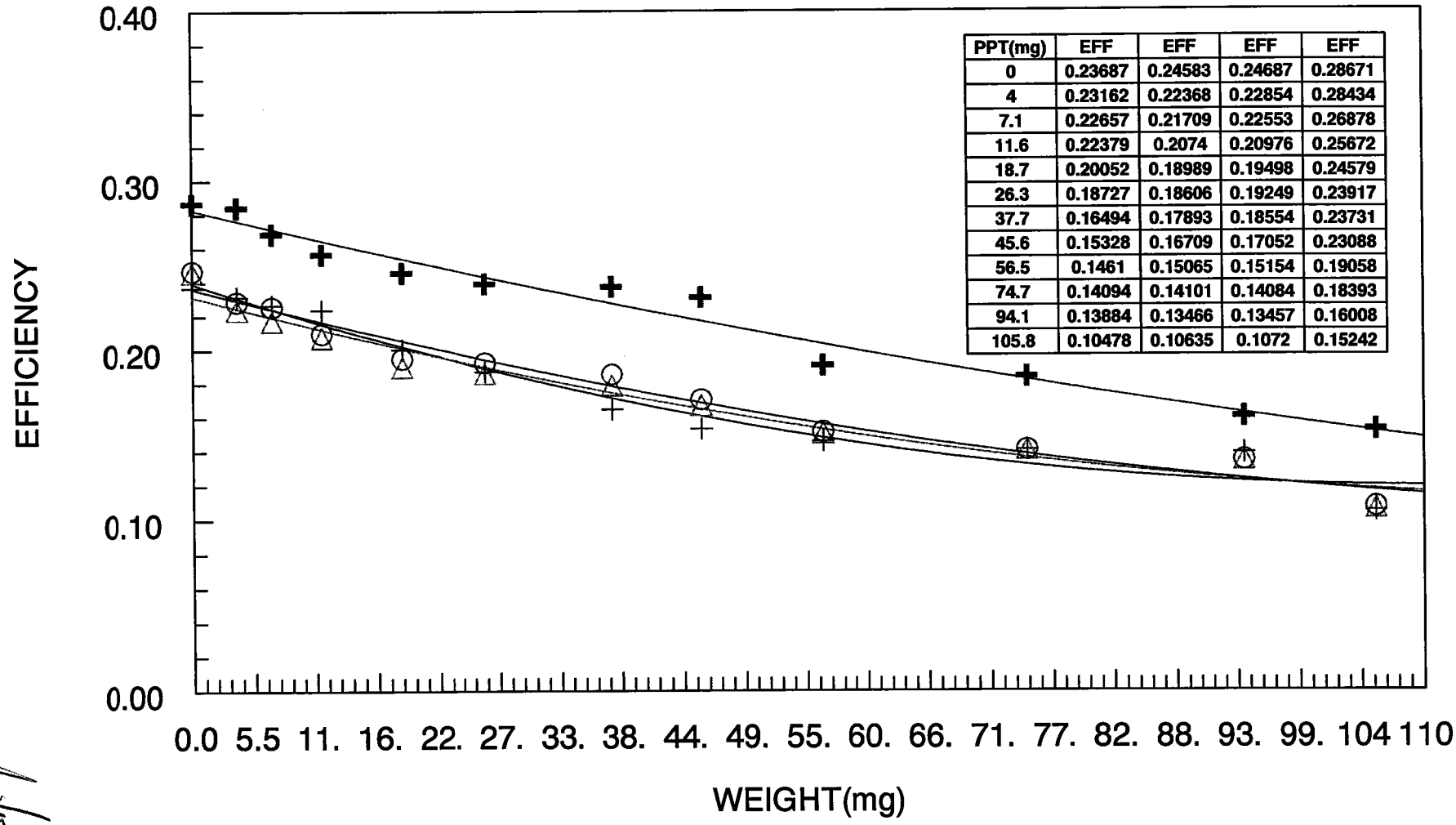
H4	0	1	5	30338	4000	6067.6	**0.28776**	0.076	1522.5	8/18/05 13:33
H4	4	2	5	26925	3667	5385	**0.255388**	0.076	1522.5	8/18/05 13:27
H4	7.1	3	5	25897	3276	5179.4	**0.245637**	0.076	1522.5	8/18/05 13:21
H4	11.6	4	5	24029	3272	4805.8	**0.227919**	0.076	1522.5	8/18/05 13:15
H4	18.7	5	5	23445	2914	4689	**0.222379**	0.076	1522.5	8/18/05 13:09
H4	26.3	6	5	22926	2833	4585.2	**0.217456**	0.076	1522.5	8/18/05 13:03
H4	37.7	7	5	20355	2732	4071	**0.19307**	0.076	1522.5	8/18/05 12:57
H4	45.6	8	5	18456	2837	3691.2	**0.175058**	0.076	1522.5	8/18/05 12:51
H4	56.5	9	5	17247	2787	3449.4	**0.16359**	0.076	1522.5	8/18/05 12:45
H4	74.7	10	5	16567	2368	3313.4	**0.15714**	0.076	1522.5	8/18/05 12:39
H4	94.1	11	5	16353	2717	3270.6	**0.155111**	0.076	1522.5	8/18/05 12:33
H4	105.8	12	5	12186	1821	2437.2	**0.115586**	0.076	1522.5	8/18/05 12:27

ALPHA EFF LB4100 8/05

DRAWER A

+ A1 △ A2 ○ A3 + A4

Th-230 2mL 0695-A



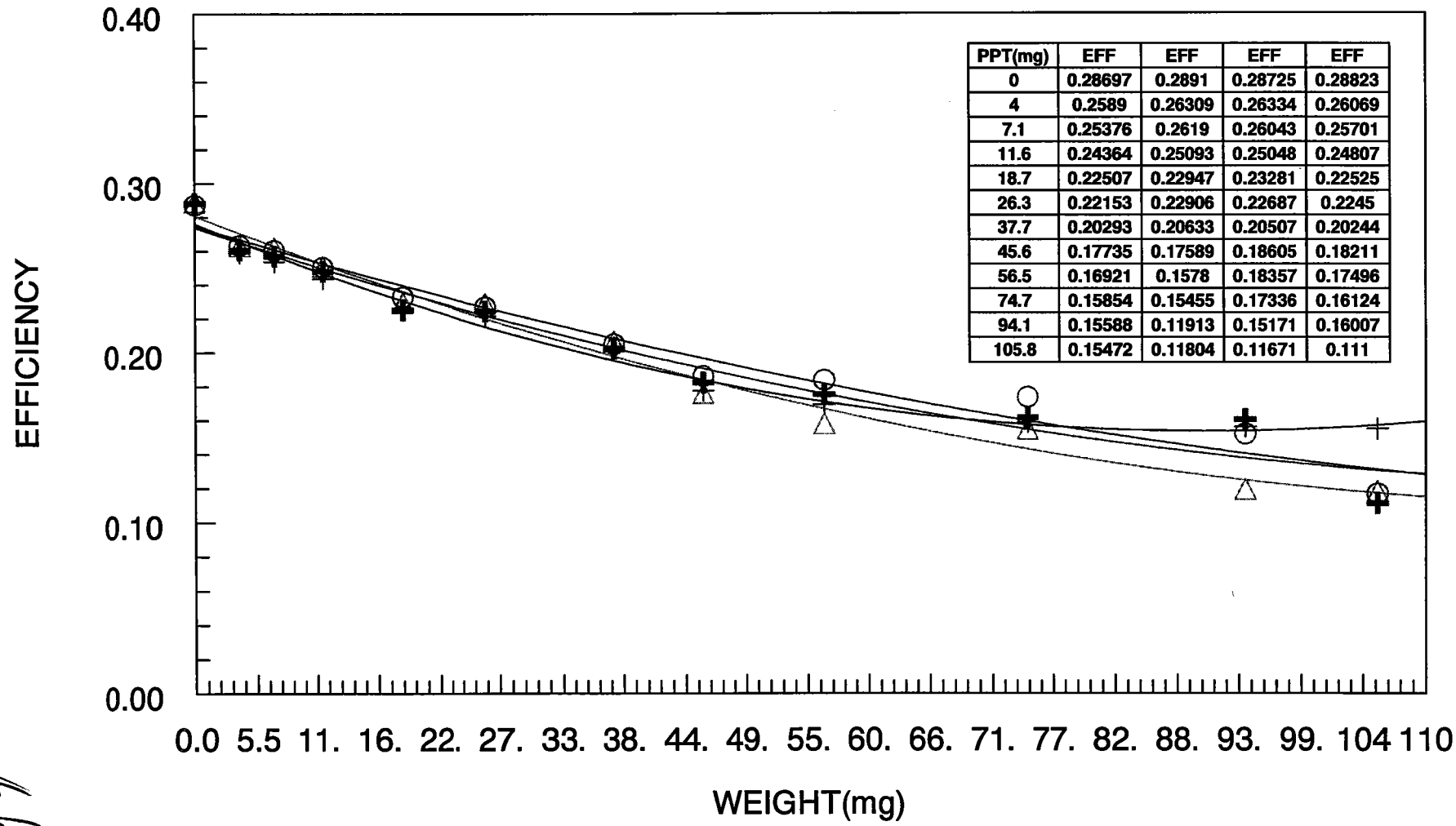
PPT(mg)	EFF	EFF	EFF	EFF
0	0.23687	0.24583	0.24687	0.28671
4	0.23162	0.22368	0.22854	0.28434
7.1	0.22657	0.21709	0.22553	0.26878
11.6	0.22379	0.2074	0.20976	0.25672
18.7	0.20052	0.18989	0.19498	0.24579
26.3	0.18727	0.18606	0.19249	0.23917
37.7	0.16494	0.17893	0.18554	0.23731
45.6	0.15328	0.16709	0.17052	0.23088
56.5	0.1461	0.15065	0.15154	0.19058
74.7	0.14094	0.14101	0.14084	0.18393
94.1	0.13884	0.13466	0.13457	0.16008
105.8	0.10478	0.10635	0.1072	0.15242

ALPHA EFF LB4100 8/05

DRAWER B

+ B1 △ B2 ○ B3 + B4

Th-230 2mL 0695-A



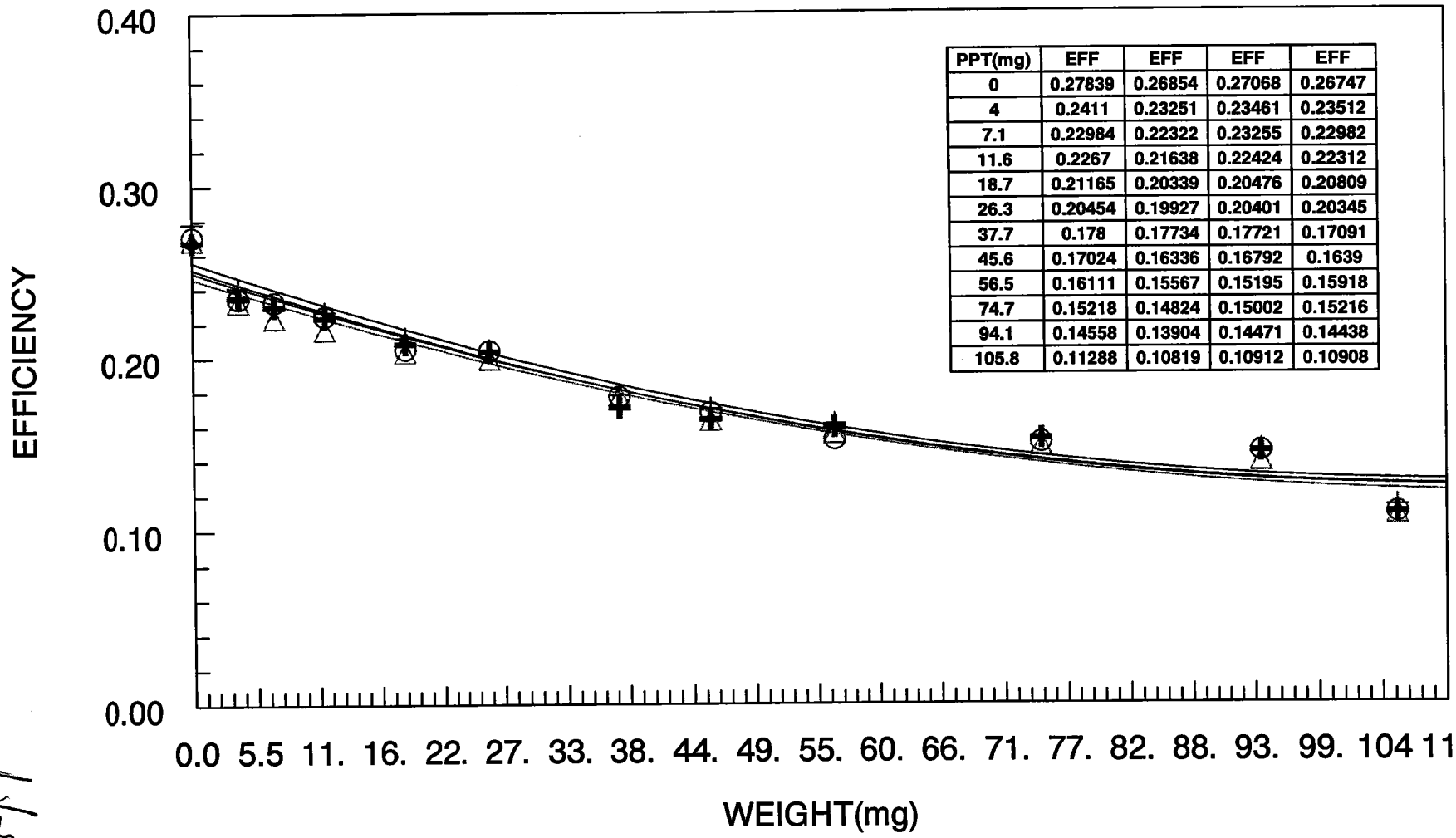
PPT(mg)	EFF	EFF	EFF	EFF
0	0.28697	0.2891	0.28725	0.28823
4	0.2589	0.26309	0.26334	0.26069
7.1	0.25376	0.2619	0.26043	0.25701
11.6	0.24364	0.25093	0.25048	0.24807
18.7	0.22507	0.22947	0.23281	0.22525
26.3	0.22153	0.22906	0.22687	0.2245
37.7	0.20293	0.20633	0.20507	0.20244
45.6	0.17735	0.17589	0.18605	0.18211
56.5	0.16921	0.1578	0.18357	0.17496
74.7	0.15854	0.15455	0.17336	0.16124
94.1	0.15588	0.11913	0.15171	0.16007
105.8	0.15472	0.11804	0.11671	0.111

ALPHA EFF LB4100 8/05

DRAWER C

+ C1 △ C2 ○ C3 + C4

Th-230 2mL 0695-A



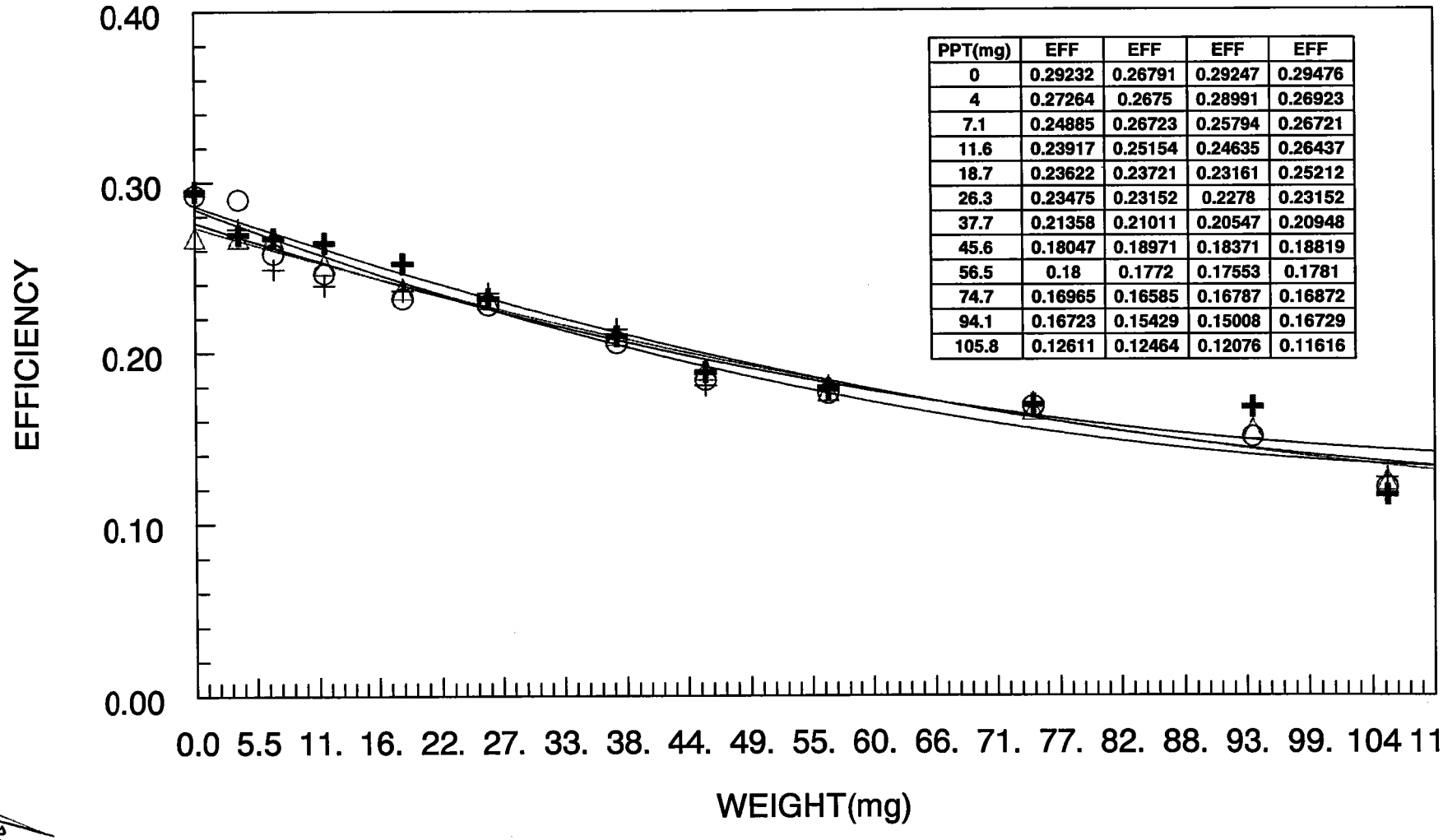
PPT(mg)	EFF	EFF	EFF	EFF
0	0.27839	0.26854	0.27068	0.26747
4	0.2411	0.23251	0.23461	0.23512
7.1	0.22984	0.22322	0.23255	0.22982
11.6	0.2267	0.21638	0.22424	0.22312
18.7	0.21165	0.20339	0.20476	0.20809
26.3	0.20454	0.19927	0.20401	0.20345
37.7	0.178	0.17734	0.17721	0.17091
45.6	0.17024	0.16336	0.16792	0.1639
56.5	0.16111	0.15567	0.15195	0.15918
74.7	0.15218	0.14824	0.15002	0.15216
94.1	0.14558	0.13904	0.14471	0.14438
105.8	0.11288	0.10819	0.10912	0.10908

ALPHA EFF LB4100 8/05

DRAWER D

+ D1 △ D2 ○ D3 + D4

Th-230 2mL 0695-A



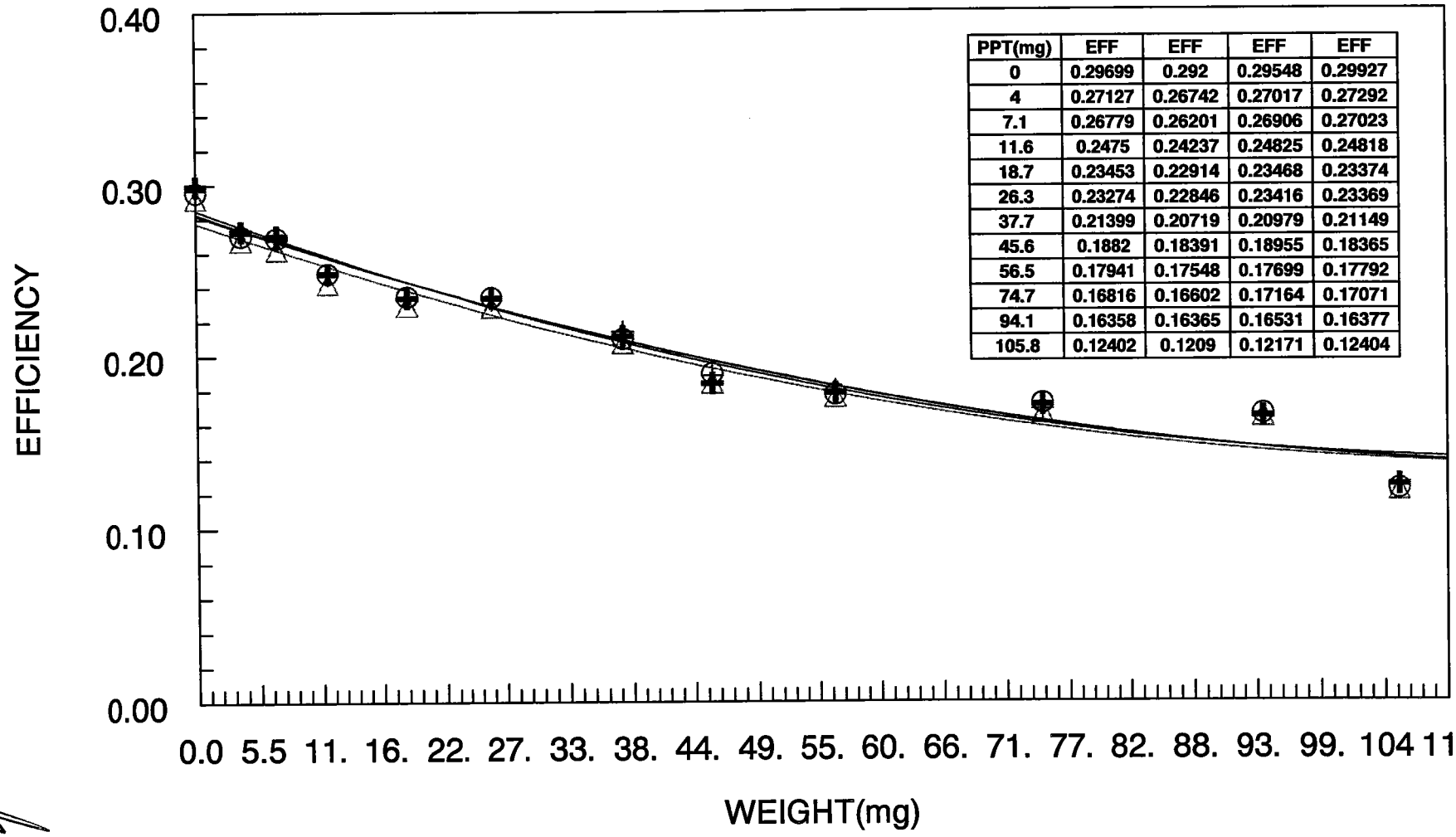
PPT(mg)	EFF	EFF	EFF	EFF
0	0.29232	0.26791	0.29247	0.29476
4	0.27264	0.2675	0.28991	0.26923
7.1	0.24885	0.26723	0.25794	0.26721
11.6	0.23917	0.25154	0.24635	0.26437
18.7	0.23622	0.23721	0.23161	0.25212
26.3	0.23475	0.23152	0.2278	0.23152
37.7	0.21358	0.21011	0.20547	0.20948
45.6	0.18047	0.18971	0.18371	0.18819
56.5	0.18	0.1772	0.17553	0.1781
74.7	0.16965	0.16585	0.16787	0.16872
94.1	0.16723	0.15429	0.15008	0.16729
105.8	0.12611	0.12464	0.12076	0.11616

ALPHA EFF LB4100 8/05

DRAWER E

+ E1 △ E2 ○ E3 + E4

Th-230 2mL 0695-A



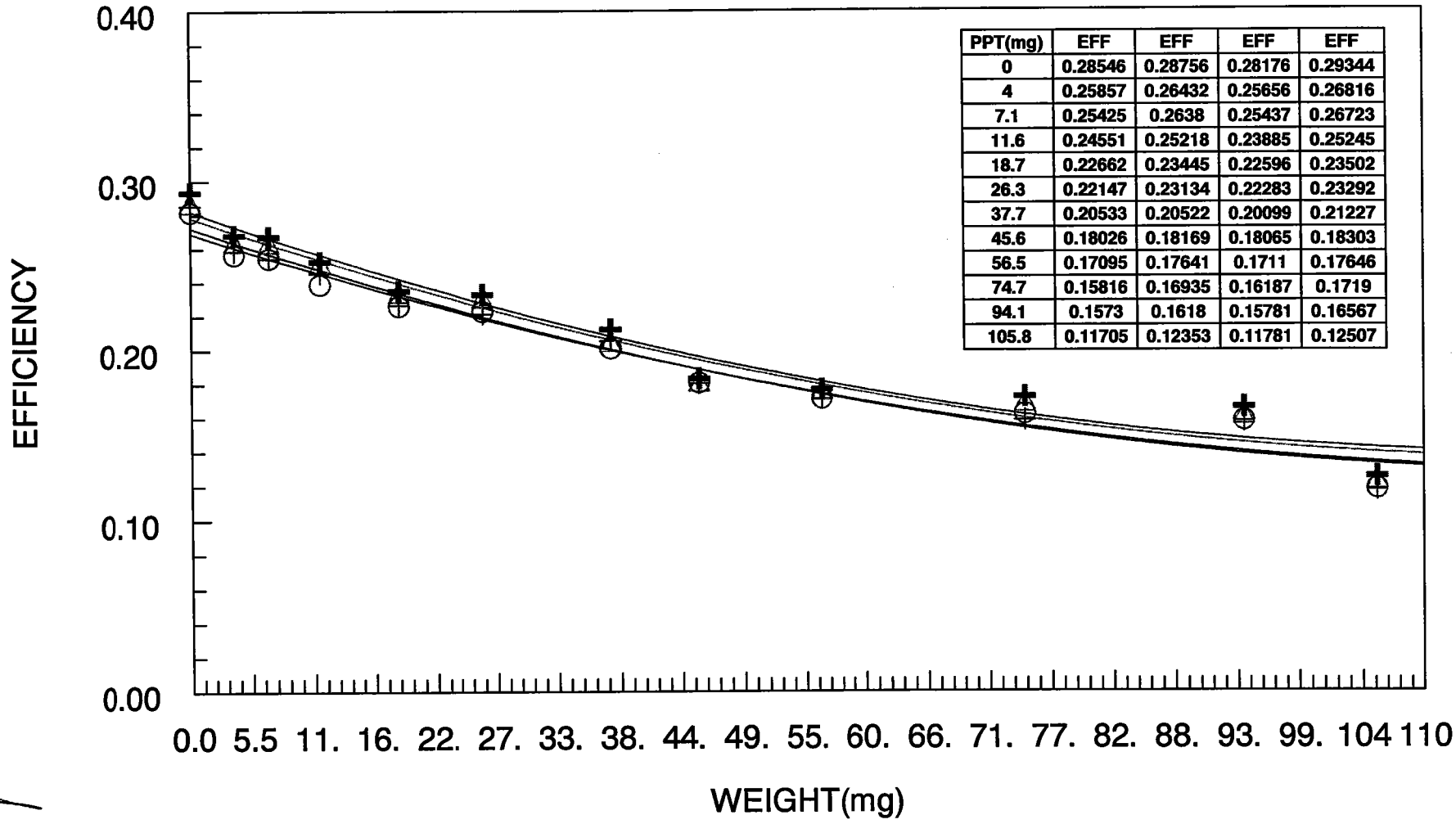
PPT(mg)	EFF	EFF	EFF	EFF
0	0.29699	0.292	0.29548	0.29927
4	0.27127	0.26742	0.27017	0.27292
7.1	0.26779	0.26201	0.26906	0.27023
11.6	0.2475	0.24237	0.24825	0.24818
18.7	0.23453	0.22914	0.23468	0.23374
26.3	0.23274	0.22846	0.23416	0.23369
37.7	0.21399	0.20719	0.20979	0.21149
45.6	0.1882	0.18391	0.18955	0.18365
56.5	0.17941	0.17548	0.17699	0.17792
74.7	0.16816	0.16602	0.17164	0.17071
94.1	0.16358	0.16365	0.16531	0.16377
105.8	0.12402	0.1209	0.12171	0.12404

ALPHA EFF LB4100 8/05

DRAWER F

+ F1 △ F2 ○ F3 + F4

Th-230 2mL 0695-A



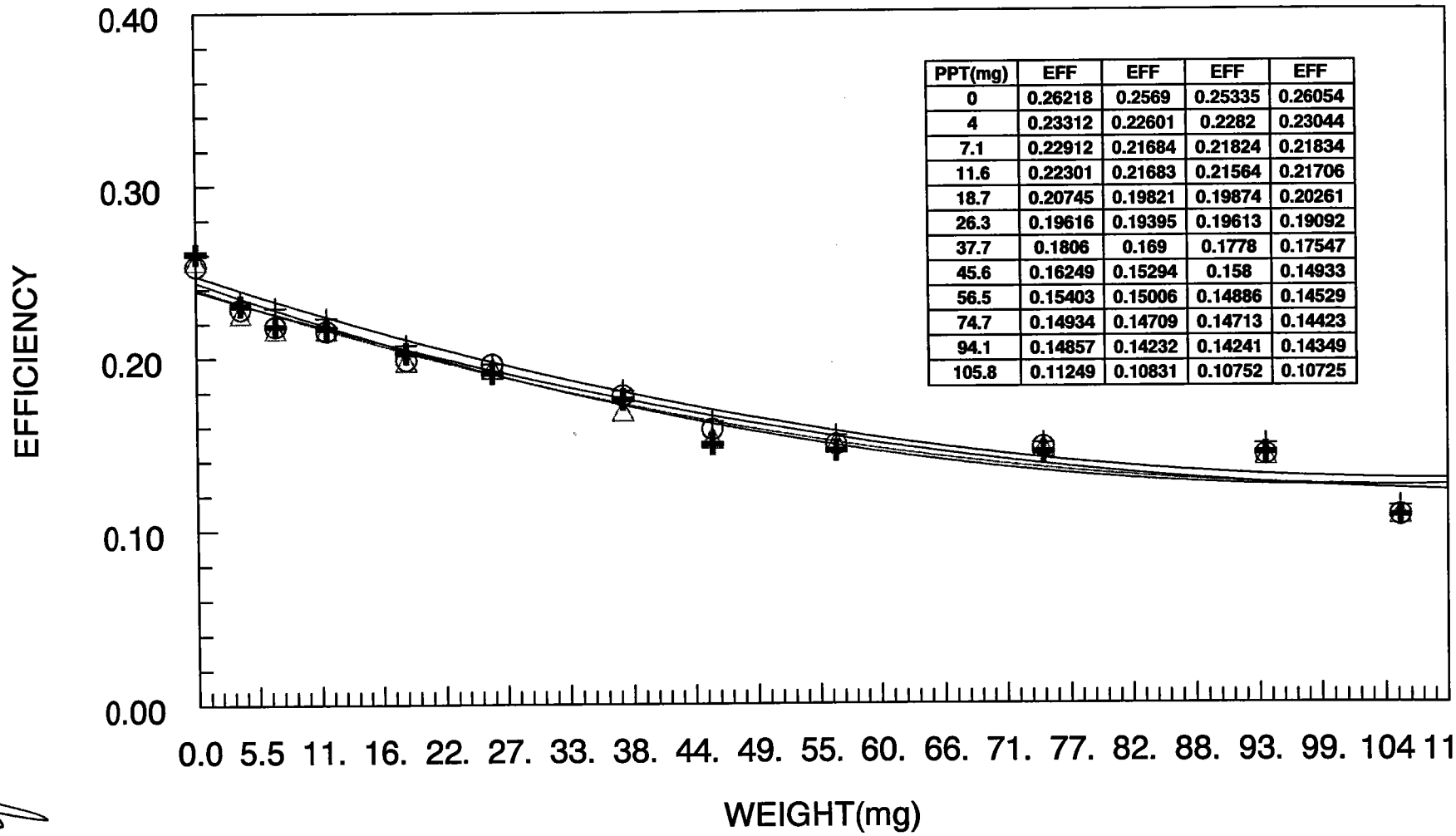
PPT(mg)	EFF	EFF	EFF	EFF
0	0.28546	0.28756	0.28176	0.29344
4	0.25857	0.26432	0.25656	0.26816
7.1	0.25425	0.2638	0.25437	0.26723
11.6	0.24551	0.25218	0.23885	0.25245
18.7	0.22662	0.23445	0.22596	0.23502
26.3	0.22147	0.23134	0.22283	0.23292
37.7	0.20533	0.20522	0.20099	0.21227
45.6	0.18026	0.18169	0.18065	0.18303
56.5	0.17095	0.17641	0.1711	0.17646
74.7	0.15816	0.16935	0.16187	0.1719
94.1	0.1573	0.1618	0.15781	0.16567
105.8	0.11705	0.12353	0.11781	0.12507

ALPHA EFF LB4100 8/05

DRAWER G

+ G1 △ G2 ○ G3 ✚ G4

Th-230 2mL 0695-A



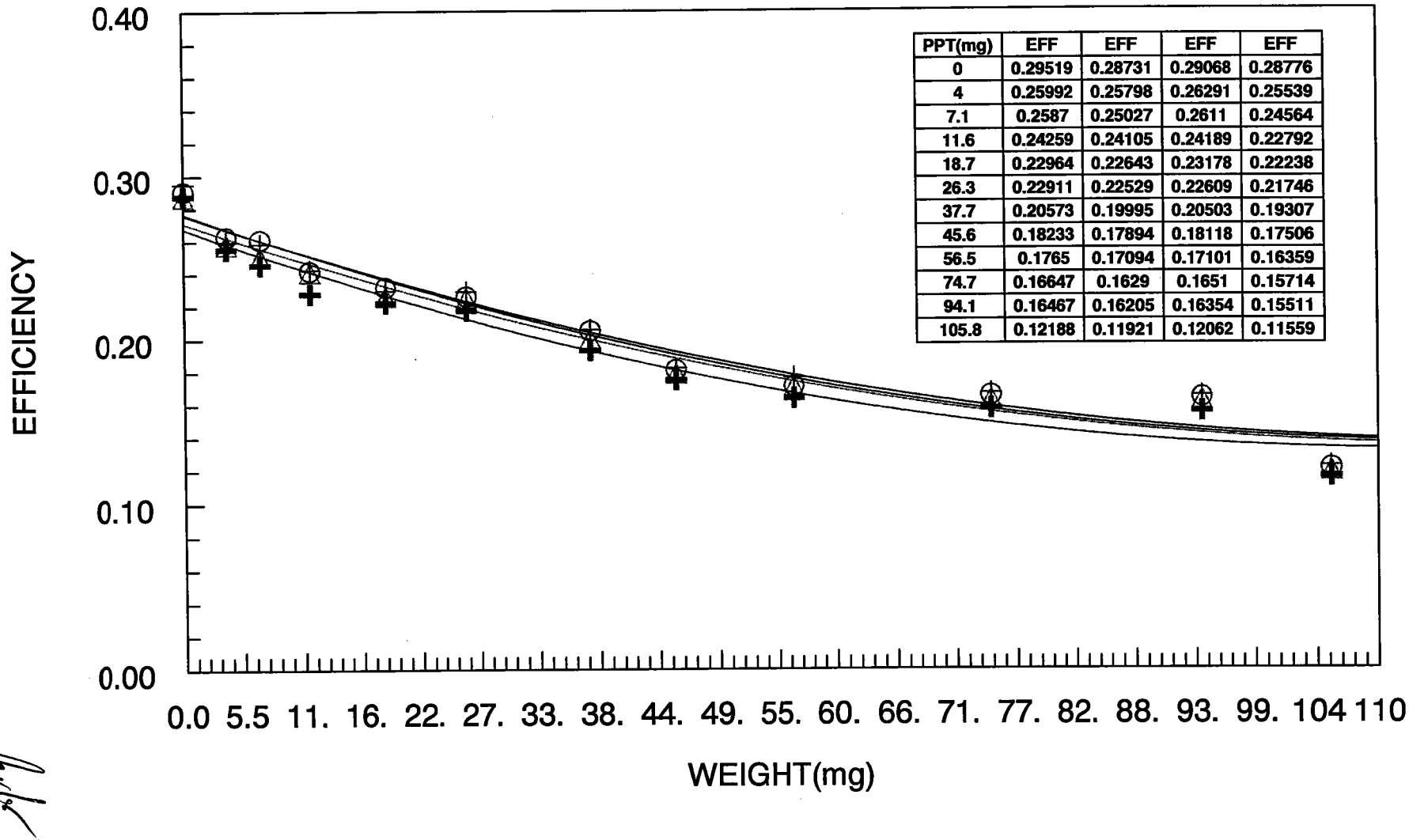
PPT(mg)	EFF	EFF	EFF	EFF
0	0.26218	0.2569	0.25335	0.26054
4	0.23312	0.22601	0.2282	0.23044
7.1	0.22912	0.21684	0.21824	0.21834
11.6	0.22301	0.21683	0.21564	0.21706
18.7	0.20745	0.19821	0.19874	0.20261
26.3	0.19616	0.19395	0.19613	0.19092
37.7	0.1806	0.169	0.1778	0.17547
45.6	0.16249	0.15294	0.158	0.14933
56.5	0.15403	0.15006	0.14886	0.14529
74.7	0.14934	0.14709	0.14713	0.14423
94.1	0.14857	0.14232	0.14241	0.14349
105.8	0.11249	0.10831	0.10752	0.10725

ALPHA EFF LB4100 8/05

DRAWER H

+ H1 △ H2 ○ H3 ✚ H4

Th-230 2mL 0695-A



PPT(mg)	EFF	EFF	EFF	EFF
0	0.29519	0.28731	0.29068	0.28776
4	0.25992	0.25798	0.26291	0.25539
7.1	0.2587	0.25027	0.2611	0.24564
11.6	0.24259	0.24105	0.24189	0.22792
18.7	0.22964	0.22643	0.23178	0.22238
26.3	0.22911	0.22529	0.22609	0.21746
37.7	0.20573	0.19995	0.20503	0.19307
45.6	0.18233	0.17894	0.18118	0.17506
56.5	0.1765	0.17094	0.17101	0.16359
74.7	0.16647	0.1629	0.1651	0.15714
94.1	0.16467	0.16205	0.16354	0.15511
105.8	0.12188	0.11921	0.12062	0.11559

General Engineering Laboratories
Calibration Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-001/001B

Isotope: Sr90

Date Standards Prepared: 8/17/05

Cocktail Type Used: N/A

Standard ID: (AP) 8/17/05 ~~0133 A~~ 0717-A

Matrix of Vial/Planchett: Concentric ring S.S.

Amount Used (g or (ml)): (AP) ~~0.1 1.0~~ 2.0

Standard Activity (DPM/g or (mL)): ~~110282.0~~ 20996.2

Type of Scintillation Vial: N/A

Reference Date: 4/1/96

Pipette ID Used: 1429303

Expiration Date: 8/16/06

Balance ID Used: 38080209

Residue/Carrier Agent: BaCl2

Quenching Agent: N/A

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)	
	S1	0.0	7.4218	7.4219	0.1	
	S2	0.1	7.4131	~~7.4175~~	7.4171	4.0
	S3	0.2	7.4507	7.4585	7.8	
	S4	0.3	7.4236	7.4360	12.4	
	S5	0.5	7.4246	7.4435	18.9	
	S6	0.7	7.3795	7.4058	26.3	
	S7	1.0	7.4184	7.4521	33.8	
	S8	1.2	7.4198	7.4645	44.7	
	S9	1.5	7.3723	7.4277	55.4	
	S10	2.0	7.5400	7.6165	76.5	
	S11	2.5	7.4125	7.5073	94.8	
	S12	3.0	7.3692	7.4824	113.2	

Prepared By: [signature] Date: 8/30/05

Reviewed By: [signature] Date: 8/31/05

Rev 1 RLM 9/10/97

		Sr-90	2ml	0717-A		ACTIVITY:	**41991.6**			
Detector	Weight (mg)	Sample I.D.	Act. Time	Alpha	Beta	Beta CPM	**Beta Eff.**	Beta Bkg.	Voltage	Date/Time
A1	0	1	2	185	31895	15947.5	**0.379778**	7.48	1470	8/18/05 9:11
A1	4	2	2	238	31671	15835.5	**0.377111**	7.48	1470	8/18/05 9:39
A1	7.8	3	2	255	31486	15743	**0.374908**	7.48	1470	8/18/05 9:33
A1	12.4	4	2	217	30903	15451.5	**0.367966**	7.48	1470	8/18/05 9:17
A1	18.9	5	2	236	30651	15325.5	**0.364966**	7.48	1470	8/18/05 11:28
A1	26.3	6	2	180	30643	15321.5	**0.364871**	7.48	1470	8/18/05 11:54
A1	33.8	7	2	193	30328	15164	**0.36112**	7.48	1470	8/18/05 11:47
A1	44.7	8	2	201	29767	14883.5	**0.35444**	7.48	1470	8/18/05 11:39
A1	55.4	9	2	242	29642	14821	**0.352952**	7.48	1470	8/18/05 10:48
A1	76.5	10	2	180	29063	14531.5	**0.346057**	7.48	1470	8/18/05 11:15
A1	94.8	11	2	207	28851	14425.5	**0.343533**	7.48	1470	8/18/05 11:09
A1	113.2	12	2	210	27970	13985	**0.333043**	7.48	1470	8/18/05 11:00
A2	0	1	2	328	31165	15582.5	**0.371086**	0.144	1470	8/18/05 9:17
A2	4	2	2	344	31030	15515	**0.369479**	0.144	1470	8/18/05 9:11
A2	7.8	3	2	317	30756	15378	**0.366216**	0.144	1470	8/18/05 9:39
A2	12.4	4	2	274	30684	15342	**0.365359**	0.144	1470	8/18/05 9:33
A2	18.9	5	2	301	30628	15314	**0.364692**	0.144	1470	8/18/05 11:39
A2	26.3	6	2	264	30467	15233.5	**0.362775**	0.144	1470	8/18/05 11:28
A2	33.8	7	2	260	30461	15230.5	**0.362703**	0.144	1470	8/18/05 11:54
A2	44.7	8	2	294	28997	14498.5	**0.345271**	0.144	1470	8/18/05 11:47
A2	55.4	9	2	306	28978	14489	**0.345045**	0.144	1470	8/18/05 11:00
A2	76.5	10	2	274	28843	14421.5	**0.343438**	0.144	1470	8/18/05 10:48
A2	94.8	11	2	275	28628	14314	**0.340878**	0.144	1470	8/18/05 11:15
A2	113.2	12	2	259	28320	14160	**0.33721**	0.144	1470	8/18/05 11:09
A3	0	1	2	378	32008	16004	**0.381124**	0.124	1470	8/18/05 9:33
A3	4	2	2	435	31906	15953	**0.379909**	0.124	1470	8/18/05 9:17
A3	7.8	3	2	437	31788	15894	**0.378504**	0.124	1470	8/18/05 9:11
A3	12.4	4	2	374	30713	15356.5	**0.365704**	0.124	1470	8/18/05 9:39
A3	18.9	5	2	407	30623	15311.5	**0.364632**	0.124	1470	8/18/05 11:47
A3	26.3	6	2	327	30148	15074	**0.358977**	0.124	1470	8/18/05 11:39

A3	33.8	7	2	362	29992	14996	**0.357119**	0.124	1470	8/18/05 11:28
A3	44.7	8	2	384	29726	14863	**0.353952**	0.124	1470	8/18/05 11:54
A3	55.4	9	2	404	29568	14784	**0.35207**	0.124	1470	8/18/05 11:09
A3	76.5	10	2	337	29041	14520.5	**0.345795**	0.124	1470	8/18/05 11:00
A3	94.8	11	2	371	28290	14145	**0.336853**	0.124	1470	8/18/05 10:48
A3	113.2	12	2	332	28018	14009	**0.333614**	0.124	1470	8/18/05 11:15
B1	0	1	2	145	35217	17608.5	**0.419334**	0.15	1470	8/18/05 10:10
B1	4	2	2	157	34858	17429	**0.415059**	0.15	1470	8/18/05 10:29
B1	7.8	3	2	154	34649	17324.5	**0.412571**	0.15	1470	8/18/05 10:22
B1	12.4	4	2	125	34540	17270	**0.411273**	0.15	1470	8/18/05 10:16
B1	18.9	5	2	140	33880	16940	**0.403414**	0.15	1470	8/18/05 9:11
B1	26.3	6	2	116	33226	16613	**0.395627**	0.15	1470	8/18/05 9:39
B1	33.8	7	2	112	33126	16563	**0.394436**	0.15	1470	8/18/05 9:33
B1	44.7	8	2	104	33045	16522.5	**0.393472**	0.15	1470	8/18/05 9:17
B1	55.4	9	2	188	32905	16452.5	**0.391805**	0.15	1470	8/18/05 11:28
B1	76.5	10	2	99	32670	16335	**0.389006**	0.15	1470	8/18/05 11:54
B1	94.8	11	2	118	32367	16183.5	**0.385399**	0.15	1470	8/18/05 11:47
B1	113.2	12	2	129	31854	15927	**0.37929**	0.15	1470	8/18/05 11:39
B2	0	1	2	99	34523	17261.5	**0.41107**	0.05	1470	8/18/05 10:16
B2	4	2	2	142	33902	16951	**0.403676**	0.05	1470	8/18/05 10:10
B2	7.8	3	2	142	33851	16925.5	**0.403069**	0.05	1470	8/18/05 10:29
B2	12.4	4	2	139	33553	16776.5	**0.39952**	0.05	1470	8/18/05 10:22
B2	18.9	5	2	120	32974	16487	**0.392626**	0.05	1470	8/18/05 9:17
B2	26.3	6	2	98	32684	16342	**0.389173**	0.05	1470	8/18/05 9:11
B2	33.8	7	2	116	32505	16252.5	**0.387042**	0.05	1470	8/18/05 9:39
B2	44.7	8	2	128	32142	16071	**0.382719**	0.05	1470	8/18/05 9:33
B2	55.4	9	2	164	31973	15986.5	**0.380707**	0.05	1470	8/18/05 11:39
B2	76.5	10	2	103	31907	15953.5	**0.379921**	0.05	1470	8/18/05 11:28
B2	94.8	11	2	100	31807	15903.5	**0.378731**	0.05	1470	8/18/05 11:54
B2	113.2	12	2	99	31214	15607	**0.37167**	0.05	1470	8/18/05 11:47
B3	0	1	2	164	34871	17435.5	**0.415214**	0.034	1470	8/18/05 10:22
B3	4	2	2	178	34050	17025	**0.405438**	0.034	1470	8/18/05 10:16
B3	7.8	3	2	195	33493	16746.5	**0.398806**	0.034	1470	8/18/05 10:10
B3	12.4	4	2	160	33483	16741.5	**0.398687**	0.034	1470	8/18/05 10:29

B3	18.9	5	2	146	33467	16733.5	**0.398496**	0.034	1470	8/18/05 9:33
B3	26.3	6	2	126	33311	16655.5	**0.396639**	0.034	1470	8/18/05 9:17
B3	33.8	7	2	128	33041	16520.5	**0.393424**	0.034	1470	8/18/05 9:11
B3	44.7	8	2	160	32670	16335	**0.389006**	0.034	1470	8/18/05 9:39
B3	55.4	9	2	201	32336	16168	**0.385029**	0.034	1470	8/18/05 11:47
B3	76.5	10	2	141	32223	16111.5	**0.383684**	0.034	1470	8/18/05 11:39
B3	94.8	11	2	144	32193	16096.5	**0.383327**	0.034	1470	8/18/05 11:28
B3	113.2	12	2	153	31734	15867	**0.377861**	0.034	1470	8/18/05 11:54
B4	0	1	2	131	35273	17636.5	**0.420001**	0.048	1470	8/18/05 10:29
B4	4	2	2	174	34590	17295	**0.411868**	0.048	1470	8/18/05 10:22
B4	7.8	3	2	161	34440	17220	**0.410082**	0.048	1470	8/18/05 10:16
B4	12.4	4	2	126	34041	17020.5	**0.405331**	0.048	1470	8/18/05 10:10
B4	18.9	5	2	141	33731	16865.5	**0.40164**	0.048	1470	8/18/05 9:39
B4	26.3	6	2	123	33522	16761	**0.399151**	0.048	1470	8/18/05 9:33
B4	33.8	7	2	127	33416	16708	**0.397889**	0.048	1470	8/18/05 9:17
B4	44.7	8	2	161	32802	16401	**0.390578**	0.048	1470	8/18/05 9:11
B4	55.4	9	2	189	32683	16341.5	**0.389161**	0.048	1470	8/18/05 11:54
B4	76.5	10	2	122	32669	16334.5	**0.388994**	0.048	1470	8/18/05 11:47
B4	94.8	11	2	127	32580	16290	**0.387935**	0.048	1470	8/18/05 11:39
B4	113.2	12	2	157	32409	16204.5	**0.385899**	0.048	1470	8/18/05 11:28
C1	0	1	2	534	33855	16927.5	**0.403116**	0.09	1470	8/18/05 10:48
C1	4	2	2	606	32735	16367.5	**0.38978**	0.09	1470	8/18/05 11:15
C1	7.8	3	2	607	32373	16186.5	**0.38547**	0.09	1470	8/18/05 11:09
C1	12.4	4	2	573	32098	16049	**0.382195**	0.09	1470	8/18/05 11:00
C1	18.9	5	2	551	31868	15934	**0.379457**	0.09	1470	8/18/05 10:09
C1	26.3	6	2	511	31741	15870.5	**0.377945**	0.09	1470	8/18/05 10:29
C1	33.8	7	2	467	31696	15848	**0.377409**	0.09	1470	8/18/05 10:22
C1	44.7	8	2	543	31347	15673.5	**0.373253**	0.09	1470	8/18/05 10:16
C1	55.4	9	2	572	31330	15665	**0.373051**	0.09	1470	8/18/05 9:11
C1	76.5	10	2	521	30805	15402.5	**0.3668**	0.09	1470	8/18/05 9:39
C1	94.8	11	2	502	30280	15140	**0.360548**	0.09	1470	8/18/05 9:33
C1	113.2	12	2	502	29894	14947	**0.355952**	0.09	1470	8/18/05 9:17
C2	0	1	2	287	33761	16880.5	**0.401997**	0.078	1470	8/18/05 11:00
C2	4	2	2	299	32908	16454	**0.39184**	0.078	1470	8/18/05 10:48

C2	7.8	3	2	360	32375	16187.5	**0.385494**	0.078	1470	8/18/05 11:15
C2	12.4	4	2	311	32180	16090	**0.383172**	0.078	1470	8/18/05 11:09
C2	18.9	5	2	300	32140	16070	**0.382696**	0.078	1470	8/18/05 10:16
C2	26.3	6	2	261	31971	15985.5	**0.380683**	0.078	1470	8/18/05 10:09
C2	33.8	7	2	306	31870	15935	**0.379481**	0.078	1470	8/18/05 10:29
C2	44.7	8	2	289	31750	15875	**0.378052**	0.078	1470	8/18/05 10:22
C2	55.4	9	2	311	31743	15871.5	**0.377968**	0.078	1470	8/18/05 9:17
C2	76.5	10	2	341	30772	15386	**0.366407**	0.078	1470	8/18/05 9:11
C2	94.8	11	2	271	30711	15355.5	**0.36568**	0.078	1470	8/18/05 9:39
C2	113.2	12	2	249	30571	15285.5	**0.364013**	0.078	1470	8/18/05 9:33
C3	0	1	2	293	34161	17080.5	**0.40676**	0.076	1470	8/18/05 11:09
C3	4	2	2	271	33043	16521.5	**0.393448**	0.076	1470	8/18/05 11:00
C3	7.8	3	2	304	32743	16371.5	**0.389876**	0.076	1470	8/18/05 10:48
C3	12.4	4	2	299	32301	16150.5	**0.384613**	0.076	1470	8/18/05 11:15
C3	18.9	5	2	289	32196	16098	**0.383362**	0.076	1470	8/18/05 10:22
C3	26.3	6	2	227	32178	16089	**0.383148**	0.076	1470	8/18/05 10:16
C3	33.8	7	2	242	32077	16038.5	**0.381945**	0.076	1470	8/18/05 10:09
C3	44.7	8	2	249	32023	16011.5	**0.381302**	0.076	1470	8/18/05 10:29
C3	55.4	9	2	272	31796	15898	**0.3786**	0.076	1470	8/18/05 9:33
C3	76.5	10	2	229	31684	15842	**0.377266**	0.076	1470	8/18/05 9:17
C3	94.8	11	2	242	31162	15581	**0.37105**	0.076	1470	8/18/05 9:11
C3	113.2	12	2	255	30733	15366.5	**0.365942**	0.076	1470	8/18/05 9:39
C4	0	1	2	165	34457	17228.5	**0.410284**	0.048	1470	8/18/05 11:15
C4	4	2	2	198	33404	16702	**0.397746**	0.048	1470	8/18/05 11:09
C4	7.8	3	2	198	33286	16643	**0.396341**	0.048	1470	8/18/05 11:00
C4	12.4	4	2	138	33118	16559	**0.394341**	0.048	1470	8/18/05 10:48
C4	18.9	5	2	184	33046	16523	**0.393483**	0.048	1470	8/18/05 10:29
C4	26.3	6	2	150	32921	16460.5	**0.391995**	0.048	1470	8/18/05 10:22
C4	33.8	7	2	153	32894	16447	**0.391674**	0.048	1470	8/18/05 10:16
C4	44.7	8	2	164	32593	16296.5	**0.38809**	0.048	1470	8/18/05 10:09
C4	55.4	9	2	197	32300	16150	**0.384601**	0.048	1470	8/18/05 9:39
C4	76.5	10	2	169	31573	15786.5	**0.375944**	0.048	1470	8/18/05 9:33
C4	94.8	11	2	176	30934	15467	**0.368336**	0.048	1470	8/18/05 9:17
C4	113.2	12	2	186	30932	15466	**0.368312**	0.048	1470	8/18/05 9:11

D1	0	1	2	142	35781	17890.5	**0.426049**	0.09	1470	8/18/05 11:28
D1	4	2	2	171	35267	17633.5	**0.419929**	0.09	1470	8/18/05 11:54
D1	7.8	3	2	175	35041	17520.5	**0.417238**	0.09	1470	8/18/05 11:47
D1	12.4	4	2	149	34937	17468.5	**0.416**	0.09	1470	8/18/05 11:39
D1	18.9	5	2	160	34390	17195	**0.409487**	0.09	1470	8/18/05 10:48
D1	26.3	6	2	113	34353	17176.5	**0.409046**	0.09	1470	8/18/05 11:15
D1	33.8	7	2	128	33798	16899	**0.402438**	0.09	1470	8/18/05 11:09
D1	44.7	8	2	177	33089	16544.5	**0.393995**	0.09	1470	8/18/05 11:00
D1	55.4	9	2	140	32731	16365.5	**0.389733**	0.09	1470	8/18/05 10:09
D1	76.5	10	2	105	31959	15979.5	**0.38054**	0.09	1470	8/18/05 10:29
D1	94.8	11	2	133	31438	15719	**0.374337**	0.09	1470	8/18/05 10:22
D1	113.2	12	2	119	31174	15587	**0.371193**	0.09	1470	8/18/05 10:16
D2	0	1	2	221	35869	17934.5	**0.427097**	0.064	1470	8/18/05 11:39
D2	4	2	2	235	35784	17892	**0.426085**	0.064	1470	8/18/05 11:28
D2	7.8	3	2	259	35747	17873.5	**0.425645**	0.064	1470	8/18/05 11:54
D2	12.4	4	2	234	35564	17782	**0.423466**	0.064	1470	8/18/05 11:47
D2	18.9	5	2	218	35288	17644	**0.420179**	0.064	1470	8/18/05 11:00
D2	26.3	6	2	177	34253	17126.5	**0.407855**	0.064	1470	8/18/05 10:48
D2	33.8	7	2	193	33946	16973	**0.4042**	0.064	1470	8/18/05 11:15
D2	44.7	8	2	224	33869	16934.5	**0.403283**	0.064	1470	8/18/05 11:09
D2	55.4	9	2	244	33745	16872.5	**0.401807**	0.064	1470	8/18/05 10:16
D2	76.5	10	2	234	33632	16816	**0.400461**	0.064	1470	8/18/05 10:09
D2	94.8	11	2	213	33062	16531	**0.393674**	0.064	1470	8/18/05 10:29
D2	113.2	12	2	192	31593	15796.5	**0.376182**	0.064	1470	8/18/05 10:22
D3	0	1	2	183	35760	17880	**0.425799**	0.06	1470	8/18/05 11:47
D3	4	2	2	234	35187	17593.5	**0.418977**	0.06	1470	8/18/05 11:39
D3	7.8	3	2	235	34614	17307	**0.412154**	0.06	1470	8/18/05 11:28
D3	12.4	4	2	198	34284	17142	**0.408225**	0.06	1470	8/18/05 11:54
D3	18.9	5	2	209	34041	17020.5	**0.405331**	0.06	1470	8/18/05 11:09
D3	26.3	6	2	178	33807	16903.5	**0.402545**	0.06	1470	8/18/05 11:00
D3	33.8	7	2	171	33338	16669	**0.39696**	0.06	1470	8/18/05 10:48
D3	44.7	8	2	179	33233	16616.5	**0.39571**	0.06	1470	8/18/05 11:15
D3	55.4	9	2	234	33174	16587	**0.395008**	0.06	1470	8/18/05 10:22
D3	76.5	10	2	195	32949	16474.5	**0.392328**	0.06	1470	8/18/05 10:16
D3	94.8	11	2	189	32517	16258.5	**0.387185**	0.06	1470	8/18/05 10:09

D3	113.2	12	2	166	32321	16160.5	**0.384851**	0.06	1470	8/18/05 10:29
D4	0	1	2	112	36781	18390.5	**0.437957**	0.092	1470	8/18/05 11:54
D4	4	2	2	107	35883	17941.5	**0.427264**	0.092	1470	8/18/05 11:47
D4	7.8	3	2	152	35761	17880.5	**0.425811**	0.092	1470	8/18/05 11:39
D4	12.4	4	2	130	35299	17649.5	**0.42031**	0.092	1470	8/18/05 11:28
D4	18.9	5	2	103	34905	17452.5	**0.415619**	0.092	1470	8/18/05 11:15
D4	26.3	6	2	79	34879	17439.5	**0.415309**	0.092	1470	8/18/05 11:09
D4	33.8	7	2	93	34358	17179	**0.409106**	0.092	1470	8/18/05 11:00
D4	44.7	8	2	109	34113	17056.5	**0.406188**	0.092	1470	8/18/05 10:48
D4	55.4	9	2	109	33681	16840.5	**0.401044**	0.092	1470	8/18/05 10:29
D4	76.5	10	2	78	33666	16833	**0.400866**	0.092	1470	8/18/05 10:22
D4	94.8	11	2	118	32902	16451	**0.391769**	0.092	1470	8/18/05 10:16
D4	113.2	12	2	96	32391	16195.5	**0.385684**	0.092	1470	8/18/05 10:09
E1	0	1	2	288	35739	17869.5	**0.425549**	0.094	1470	8/18/05 12:03
E1	4	2	2	359	35697	17848.5	**0.425049**	0.094	1470	8/18/05 12:20
E1	7.8	3	2	330	35395	17697.5	**0.421453**	0.094	1470	8/18/05 12:15
E1	12.4	4	2	294	34602	17301	**0.412011**	0.094	1470	8/18/05 12:09
E1	18.9	5	2	320	34561	17280.5	**0.411523**	0.094	1470	8/18/05 13:15
E1	26.3	6	2	282	34293	17146.5	**0.408332**	0.094	1470	8/18/05 13:33
E1	33.8	7	2	265	34177	17088.5	**0.40695**	0.094	1470	8/18/05 13:27
E1	44.7	8	2	276	33769	16884.5	**0.402092**	0.094	1470	8/18/05 13:21
E1	55.4	9	2	338	33720	16860	**0.401509**	0.094	1470	8/18/05 12:51
E1	76.5	10	2	266	33327	16663.5	**0.396829**	0.094	1470	8/18/05 13:09
E1	94.8	11	2	291	32783	16391.5	**0.390352**	0.094	1470	8/18/05 13:03
E1	113.2	12	2	274	32675	16337.5	**0.389066**	0.094	1470	8/18/05 12:57
E2	0	1	2	330	35608	17804	**0.42399**	0.082	1470	8/18/05 12:09
E2	4	2	2	360	35447	17723.5	**0.422073**	0.082	1470	8/18/05 12:03
E2	7.8	3	2	330	35444	17722	**0.422037**	0.082	1470	8/18/05 12:20
E2	12.4	4	2	330	35082	17541	**0.417726**	0.082	1470	8/18/05 12:15
E2	18.9	5	2	280	34598	17299	**0.411963**	0.082	1470	8/18/05 13:21
E2	26.3	6	2	280	34494	17247	**0.410725**	0.082	1470	8/18/05 13:15
E2	33.8	7	2	307	34214	17107	**0.407391**	0.082	1470	8/18/05 13:33
E2	44.7	8	2	305	34154	17077	**0.406677**	0.082	1470	8/18/05 13:27
E2	55.4	9	2	332	34112	17056	**0.406176**	0.082	1470	8/18/05 12:57

E2	76.5	10	2	315	33316	16658	**0.396698**	0.082	1470	8/18/05 12:51
E2	94.8	11	2	240	33308	16654	**0.396603**	0.082	1470	8/18/05 13:09
E2	113.2	12	2	283	33140	16570	**0.394603**	0.082	1470	8/18/05 13:03
E3	0	1	2	423	34428	17214	**0.409939**	0.056	1470	8/18/05 12:15
E3	4	2	2	400	34288	17144	**0.408272**	0.056	1470	8/18/05 12:09
E3	7.8	3	2	466	33995	16997.5	**0.404783**	0.056	1470	8/18/05 12:03
E3	12.4	4	2	405	33842	16921	**0.402962**	0.056	1470	8/18/05 12:20
E3	18.9	5	2	388	33722	16861	**0.401533**	0.056	1470	8/18/05 13:27
E3	26.3	6	2	346	32958	16479	**0.392436**	0.056	1470	8/18/05 13:21
E3	33.8	7	2	391	32727	16363.5	**0.389685**	0.056	1470	8/18/05 13:15
E3	44.7	8	2	361	32624	16312	**0.388459**	0.056	1470	8/18/05 13:33
E3	55.4	9	2	378	32600	16300	**0.388173**	0.056	1470	8/18/05 13:03
E3	76.5	10	2	339	32248	16124	**0.383982**	0.056	1470	8/18/05 12:57
E3	94.8	11	2	397	32023	16011.5	**0.381302**	0.056	1470	8/18/05 12:51
E3	113.2	12	2	337	31839	15919.5	**0.379112**	0.056	1470	8/18/05 13:09
E4	0	1	2	327	35569	17784.5	**0.423525**	0.098	1470	8/18/05 12:20
E4	4	2	2	335	35420	17710	**0.421751**	0.098	1470	8/18/05 12:15
E4	7.8	3	2	308	35271	17635.5	**0.419977**	0.098	1470	8/18/05 12:09
E4	12.4	4	2	319	34967	17483.5	**0.416357**	0.098	1470	8/18/05 12:03
E4	18.9	5	2	330	34830	17415	**0.414726**	0.098	1470	8/18/05 13:33
E4	26.3	6	2	273	34622	17311	**0.412249**	0.098	1470	8/18/05 13:27
E4	33.8	7	2	245	34258	17129	**0.407915**	0.098	1470	8/18/05 13:21
E4	44.7	8	2	291	34089	17044.5	**0.405903**	0.098	1470	8/18/05 13:15
E4	55.4	9	2	305	33684	16842	**0.40108**	0.098	1470	8/18/05 13:09
E4	76.5	10	2	305	33603	16801.5	**0.400116**	0.098	1470	8/18/05 13:03
E4	94.8	11	2	262	32984	16492	**0.392745**	0.098	1470	8/18/05 12:57
E4	113.2	12	2	328	32722	16361	**0.389626**	0.098	1470	8/18/05 12:51
F1	0	1	2	251	34103	17051.5	**0.406069**	0.086	1470	8/18/05 12:27
F1	4	2	2	272	33641	16820.5	**0.400568**	0.086	1470	8/18/05 12:45
F1	7.8	3	2	284	33591	16795.5	**0.399973**	0.086	1470	8/18/05 12:39
F1	12.4	4	2	255	33476	16738	**0.398604**	0.086	1470	8/18/05 12:33
F1	18.9	5	2	259	32937	16468.5	**0.392186**	0.086	1470	8/18/05 12:03
F1	26.3	6	2	244	32925	16462.5	**0.392043**	0.086	1470	8/18/05 12:20
F1	33.8	7	2	269	32805	16402.5	**0.390614**	0.086	1470	8/18/05 12:15

F1	44.7	8	2	255	32504	16252	**0.38703**	0.086	1470	8/18/05 12:09
F1	55.4	9	2	302	32106	16053	**0.382291**	0.086	1470	8/18/05 13:15
F1	76.5	10	2	241	31979	15989.5	**0.380779**	0.086	1470	8/18/05 13:33
F1	94.8	11	2	256	31872	15936	**0.379504**	0.086	1470	8/18/05 13:27
F1	113.2	12	2	222	31084	15542	**0.370122**	0.086	1470	8/18/05 13:21
F2	0	1	2	111	36057	18028.5	**0.429336**	0.152	1470	8/18/05 12:33
F2	4	2	2	110	35992	17996	**0.428562**	0.152	1470	8/18/05 12:27
F2	7.8	3	2	154	35877	17938.5	**0.427193**	0.152	1470	8/18/05 12:45
F2	12.4	4	2	119	35467	17733.5	**0.422311**	0.152	1470	8/18/05 12:39
F2	18.9	5	2	126	35346	17673	**0.42087**	0.152	1470	8/18/05 12:09
F2	26.3	6	2	104	35003	17501.5	**0.416786**	0.152	1470	8/18/05 12:03
F2	33.8	7	2	102	34752	17376	**0.413797**	0.152	1470	8/18/05 12:20
F2	44.7	8	2	98	34666	17333	**0.412773**	0.152	1470	8/18/05 12:15
F2	55.4	9	2	160	34566	17283	**0.411582**	0.152	1470	8/18/05 13:21
F2	76.5	10	2	80	34021	17010.5	**0.405093**	0.152	1470	8/18/05 13:15
F2	94.8	11	2	119	33853	16926.5	**0.403093**	0.152	1470	8/18/05 13:33
F2	113.2	12	2	97	33763	16881.5	**0.402021**	0.152	1470	8/18/05 13:27
F3	0	1	2	97	35292	17646	**0.420227**	0.116	1470	8/18/05 12:39
F3	4	2	2	126	35070	17535	**0.417584**	0.116	1470	8/18/05 12:33
F3	7.8	3	2	97	34830	17415	**0.414726**	0.116	1470	8/18/05 12:27
F3	12.4	4	2	80	34609	17304.5	**0.412094**	0.116	1470	8/18/05 12:45
F3	18.9	5	2	94	34297	17148.5	**0.408379**	0.116	1470	8/18/05 12:15
F3	26.3	6	2	98	33980	16990	**0.404605**	0.116	1470	8/18/05 12:09
F3	33.8	7	2	63	33663	16831.5	**0.40083**	0.116	1470	8/18/05 12:03
F3	44.7	8	2	108	33575	16787.5	**0.399782**	0.116	1470	8/18/05 12:20
F3	55.4	9	2	113	32917	16458.5	**0.391947**	0.116	1470	8/18/05 13:27
F3	76.5	10	2	67	32894	16447	**0.391674**	0.116	1470	8/18/05 13:21
F3	94.8	11	2	84	32675	16337.5	**0.389066**	0.116	1470	8/18/05 13:15
F3	113.2	12	2	82	32298	16149	**0.384577**	0.116	1470	8/18/05 13:33
F4	0	1	2	165	35776	17888	**0.42599**	0.174	1470	8/18/05 12:45
F4	4	2	2	195	35529	17764.5	**0.423049**	0.174	1470	8/18/05 12:39
F4	7.8	3	2	189	35093	17546.5	**0.417857**	0.174	1470	8/18/05 12:33
F4	12.4	4	2	160	34954	17477	**0.416202**	0.174	1470	8/18/05 12:27
F4	18.9	5	2	152	34926	17463	**0.415869**	0.174	1470	8/18/05 12:20

F4	26.3	6	2	186	34618	17309	**0.412201**	0.174	1470	8/18/05 12:15
F4	33.8	7	2	153	34354	17177	**0.409058**	0.174	1470	8/18/05 12:09
F4	44.7	8	2	176	34087	17043.5	**0.405879**	0.174	1470	8/18/05 12:03
F4	55.4	9	2	184	33803	16901.5	**0.402497**	0.174	1470	8/18/05 13:33
F4	76.5	10	2	135	33538	16769	**0.399342**	0.174	1470	8/18/05 13:27
F4	94.8	11	2	190	33098	16549	**0.394103**	0.174	1470	8/18/05 13:21
F4	113.2	12	2	141	32388	16194	**0.385649**	0.174	1470	8/18/05 13:15
G1	0	1	2	352	32798	16399	**0.39053**	0.056	1470	8/18/05 12:51
G1	4	2	2	346	32332	16166	**0.384982**	0.056	1470	8/18/05 13:09
G1	7.8	3	2	409	32144	16072	**0.382743**	0.056	1470	8/18/05 13:03
G1	12.4	4	2	341	32072	16036	**0.381886**	0.056	1470	8/18/05 12:57
G1	18.9	5	2	416	31454	15727	**0.374527**	0.056	1470	8/18/05 12:27
G1	26.3	6	2	337	31122	15561	**0.370574**	0.056	1470	8/18/05 12:45
G1	33.8	7	2	358	31084	15542	**0.370122**	0.056	1470	8/18/05 12:39
G1	44.7	8	2	405	31072	15536	**0.369979**	0.056	1470	8/18/05 12:33
G1	55.4	9	2	361	30937	15468.5	**0.368371**	0.056	1470	8/18/05 12:03
G1	76.5	10	2	308	30900	15450	**0.367931**	0.056	1470	8/18/05 12:20
G1	94.8	11	2	345	29705	14852.5	**0.353702**	0.056	1470	8/18/05 12:15
G1	113.2	12	2	328	29544	14772	**0.351785**	0.056	1470	8/18/05 12:09
G2	0	1	2	162	34535	17267.5	**0.411213**	0.1	1470	8/18/05 12:57
G2	4	2	2	183	34288	17144	**0.408272**	0.1	1470	8/18/05 12:51
G2	7.8	3	2	201	34199	17099.5	**0.407212**	0.1	1470	8/18/05 13:09
G2	12.4	4	2	144	33934	16967	**0.404057**	0.1	1470	8/18/05 13:03
G2	18.9	5	2	177	33618	16809	**0.400294**	0.1	1470	8/18/05 12:33
G2	26.3	6	2	160	33153	16576.5	**0.394758**	0.1	1470	8/18/05 12:27
G2	33.8	7	2	163	33148	16574	**0.394698**	0.1	1470	8/18/05 12:45
G2	44.7	8	2	175	32875	16437.5	**0.391447**	0.1	1470	8/18/05 12:39
G2	55.4	9	2	152	32565	16282.5	**0.387756**	0.1	1470	8/18/05 12:09
G2	76.5	10	2	152	32100	16050	**0.382219**	0.1	1470	8/18/05 12:03
G2	94.8	11	2	173	31964	15982	**0.3806**	0.1	1470	8/18/05 12:20
G2	113.2	12	2	141	31461	15730.5	**0.374611**	0.1	1470	8/18/05 12:15
G3	0	1	2	15	34939	17469.5	**0.416024**	0.226	1470	8/18/05 13:03
G3	4	2	2	29	34897	17448.5	**0.415524**	0.226	1470	8/18/05 12:57
G3	7.8	3	2	49	34323	17161.5	**0.408689**	0.226	1470	8/18/05 12:51

G3	12.4	4	2	19	34254	17127	**0.407867**	0.226	1470	8/18/05 13:09
G3	18.9	5	2	26	33736	16868	**0.401699**	0.226	1470	8/18/05 12:39
G3	26.3	6	2	8	33695	16847.5	**0.401211**	0.226	1470	8/18/05 12:33
G3	33.8	7	2	18	33554	16777	**0.399532**	0.226	1470	8/18/05 12:27
G3	44.7	8	2	29	33400	16700	**0.397699**	0.226	1470	8/18/05 12:45
G3	55.4	9	2	47	33331	16665.5	**0.396877**	0.226	1470	8/18/05 12:15
G3	76.5	10	2	7	33194	16597	**0.395246**	0.226	1470	8/18/05 12:09
G3	94.8	11	2	25	32582	16291	**0.387959**	0.226	1470	8/18/05 12:03
G3	113.2	12	2	13	32348	16174	**0.385172**	0.226	1470	8/18/05 12:20
G4	0	1	2	3	34995	17497.5	**0.41669**	0.08	1470	8/18/05 13:09
G4	4	2	2	31	34722	17361	**0.41344**	0.08	1470	8/18/05 13:03
G4	7.8	3	2	49	34464	17232	**0.410368**	0.08	1470	8/18/05 12:57
G4	12.4	4	2	6	34222	17111	**0.407486**	0.08	1470	8/18/05 12:51
G4	18.9	5	2	16	33900	16950	**0.403652**	0.08	1470	8/18/05 12:45
G4	26.3	6	2	2	33432	16716	**0.39808**	0.08	1470	8/18/05 12:39
G4	33.8	7	2	12	33115	16557.5	**0.394305**	0.08	1470	8/18/05 12:33
G4	44.7	8	2	16	33071	16535.5	**0.393781**	0.08	1470	8/18/05 12:27
G4	55.4	9	2	48	32888	16444	**0.391602**	0.08	1470	8/18/05 12:20
G4	76.5	10	2	5	32049	16024.5	**0.381612**	0.08	1470	8/18/05 12:15
G4	94.8	11	2	13	31913	15956.5	**0.379993**	0.08	1470	8/18/05 12:09
G4	113.2	12	2	19	31764	15882	**0.378219**	0.08	1470	8/18/05 12:03
H1	0	1	2	1879	32413	16206.5	**0.385946**	0.12	1522.5	8/18/05 13:15
H1	4	2	2	1869	31699	15849.5	**0.377445**	0.12	1522.5	8/18/05 13:33
H1	7.8	3	2	1913	31565	15782.5	**0.375849**	0.12	1522.5	8/18/05 13:27
H1	12.4	4	2	1861	31468	15734	**0.374694**	0.12	1522.5	8/18/05 13:21
H1	18.9	5	2	1750	31163	15581.5	**0.371062**	0.12	1522.5	8/18/05 12:51
H1	26.3	6	2	1643	30940	15470	**0.368407**	0.12	1522.5	8/18/05 13:09
H1	33.8	7	2	1674	30938	15469	**0.368383**	0.12	1522.5	8/18/05 13:03
H1	44.7	8	2	1722	30533	15266.5	**0.363561**	0.12	1522.5	8/18/05 12:57
H1	55.4	9	2	1755	30361	15180.5	**0.361513**	0.12	1522.5	8/18/05 12:27
H1	76.5	10	2	1586	30264	15132	**0.360358**	0.12	1522.5	8/18/05 12:45
H1	94.8	11	2	1626	29478	14739	**0.350999**	0.12	1522.5	8/18/05 12:39
H1	113.2	12	2	1570	28932	14466	**0.344497**	0.12	1522.5	8/18/05 12:33
H2	0	1	2	944	33633	16816.5	**0.400473**	0.104	1522.5	8/18/05 13:21

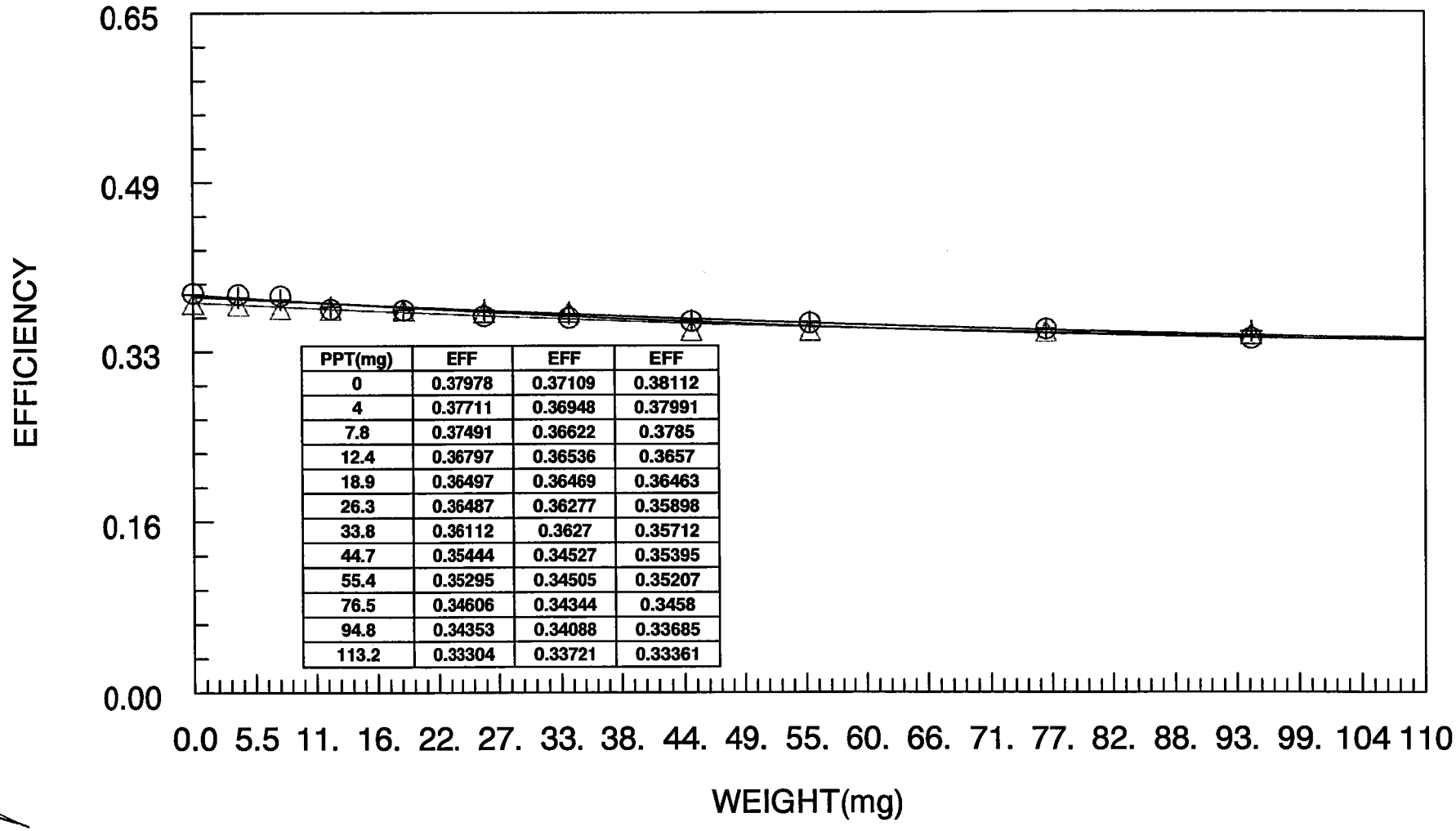
H2	4	2	2	994	33575	16787.5	**0.399782**	0.104	1522.5	8/18/05 13:15
H2	7.8	3	2	1029	33377	16688.5	**0.397425**	0.104	1522.5	8/18/05 13:33
H2	12.4	4	2	942	33266	16633	**0.396103**	0.104	1522.5	8/18/05 13:27
H2	18.9	5	2	905	33247	16623.5	**0.395877**	0.104	1522.5	8/18/05 12:57
H2	26.3	6	2	787	32849	16424.5	**0.391138**	0.104	1522.5	8/18/05 12:51
H2	33.8	7	2	875	32771	16385.5	**0.390209**	0.104	1522.5	8/18/05 13:09
H2	44.7	8	2	954	32733	16366.5	**0.389757**	0.104	1522.5	8/18/05 13:03
H2	55.4	9	2	938	32643	16321.5	**0.388685**	0.104	1522.5	8/18/05 12:33
H2	76.5	10	2	933	32344	16172	**0.385125**	0.104	1522.5	8/18/05 12:27
H2	94.8	11	2	864	31341	15670.5	**0.373182**	0.104	1522.5	8/18/05 12:45
H2	113.2	12	2	809	31308	15654	**0.372789**	0.104	1522.5	8/18/05 12:39
H3	0	1	2	1124	34411	17205.5	**0.409737**	0.066	1522.5	8/18/05 13:27
H3	4	2	2	1166	34300	17150	**0.408415**	0.066	1522.5	8/18/05 13:21
H3	7.8	3	2	1137	33800	16900	**0.402461**	0.066	1522.5	8/18/05 13:15
H3	12.4	4	2	1067	33669	16834.5	**0.400902**	0.066	1522.5	8/18/05 13:33
H3	18.9	5	2	1080	33483	16741.5	**0.398687**	0.066	1522.5	8/18/05 13:03
H3	26.3	6	2	1017	33450	16725	**0.398294**	0.066	1522.5	8/18/05 12:57
H3	33.8	7	2	1040	33417	16708.5	**0.397901**	0.066	1522.5	8/18/05 12:51
H3	44.7	8	2	1072	32937	16468.5	**0.392186**	0.066	1522.5	8/18/05 13:09
H3	55.4	9	2	1045	32640	16320	**0.388649**	0.066	1522.5	8/18/05 12:39
H3	76.5	10	2	890	32308	16154	**0.384696**	0.066	1522.5	8/18/05 12:33
H3	94.8	11	2	993	32159	16079.5	**0.382922**	0.066	1522.5	8/18/05 12:27
H3	113.2	12	2	997	31988	15994	**0.380886**	0.066	1522.5	8/18/05 12:45
H4	0	1	2	1214	33719	16859.5	**0.401497**	0.076	1522.5	8/18/05 13:33
H4	4	2	2	1274	33488	16744	**0.398746**	0.076	1522.5	8/18/05 13:27
H4	7.8	3	2	1218	33064	16532	**0.393698**	0.076	1522.5	8/18/05 13:21
H4	12.4	4	2	1240	33015	16507.5	**0.393114**	0.076	1522.5	8/18/05 13:15
H4	18.9	5	2	1060	32645	16322.5	**0.388709**	0.076	1522.5	8/18/05 13:09
H4	26.3	6	2	1034	32315	16157.5	**0.384779**	0.076	1522.5	8/18/05 13:03
H4	33.8	7	2	1044	32095	16047.5	**0.38216**	0.076	1522.5	8/18/05 12:57
H4	44.7	8	2	1150	32016	16008	**0.381219**	0.076	1522.5	8/18/05 12:51
H4	55.4	9	2	1132	31783	15891.5	**0.378445**	0.076	1522.5	8/18/05 12:45
H4	76.5	10	2	1047	31420	15710	**0.374122**	0.076	1522.5	8/18/05 12:39
H4	94.8	11	2	1022	31188	15594	**0.37136**	0.076	1522.5	8/18/05 12:33
H4	113.2	12	2	1140	30694	15347	**0.365478**	0.076	1522.5	8/18/05 12:27

BETA EFF LB4100 8/05

DRAWER A

+ A1 △ A2 ○ A3

Sr-90 2mL 0717-A



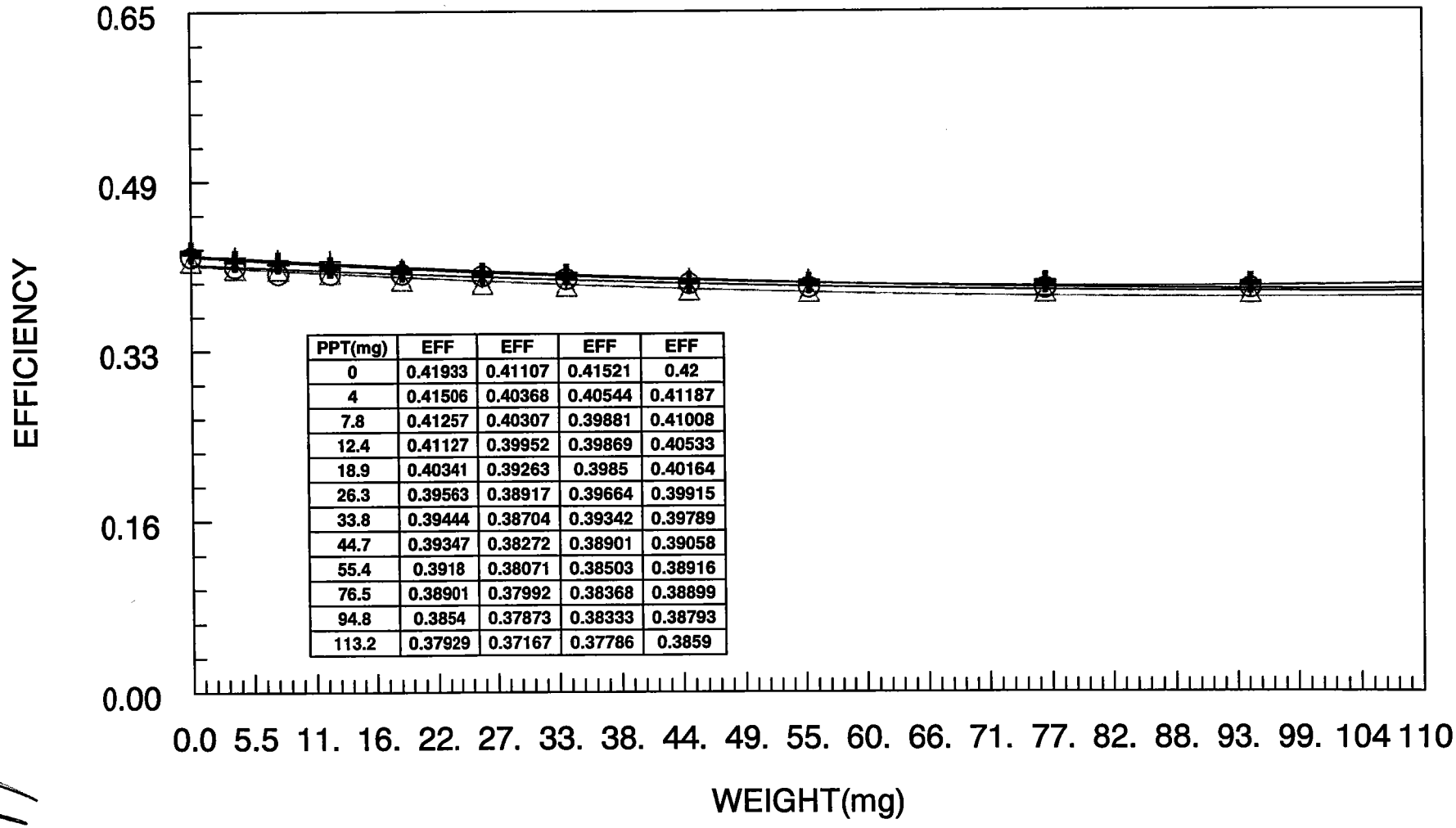
PPT(mg)	EFF	EFF	EFF
0	0.37978	0.37109	0.38112
4	0.37711	0.36948	0.37991
7.8	0.37491	0.36622	0.3785
12.4	0.36797	0.36536	0.3657
18.9	0.36497	0.36469	0.36463
26.3	0.36487	0.36277	0.35898
33.8	0.36112	0.3627	0.35712
44.7	0.35444	0.34527	0.35395
55.4	0.35295	0.34505	0.35207
76.5	0.34606	0.34344	0.3458
94.8	0.34353	0.34088	0.33685
113.2	0.33304	0.33721	0.33361

BETA EFF LB4100 8/05

DRAWER B

+ B1 △ B2 ○ B3 ✚ B4

Sr-90 2mL 0717-A



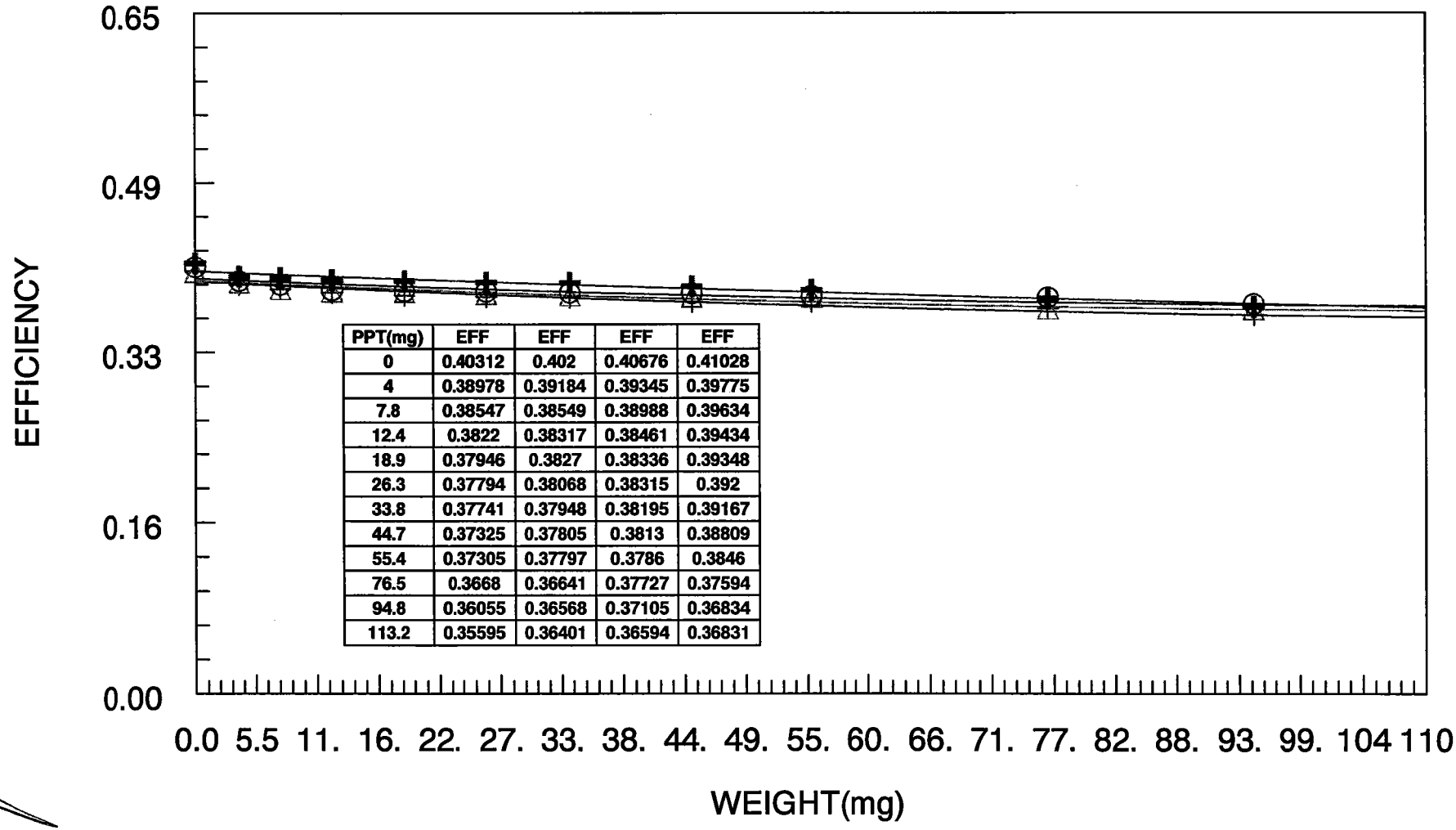
PPT(mg)	EFF	EFF	EFF	EFF
0	0.41933	0.41107	0.41521	0.42
4	0.41506	0.40368	0.40544	0.41187
7.8	0.41257	0.40307	0.39881	0.41008
12.4	0.41127	0.39952	0.39869	0.40533
18.9	0.40341	0.39263	0.3985	0.40164
26.3	0.39563	0.38917	0.39664	0.39915
33.8	0.39444	0.38704	0.39342	0.39789
44.7	0.39347	0.38272	0.38901	0.39058
55.4	0.3918	0.38071	0.38503	0.38916
76.5	0.38901	0.37992	0.38368	0.38899
94.8	0.3854	0.37873	0.38333	0.38793
113.2	0.37929	0.37167	0.37786	0.3859

BETA EFF LB4100 8/05

DRAWER C

+ C1 △ C2 ○ C3 ✚ C4

Sr-90 2mL 0717-A



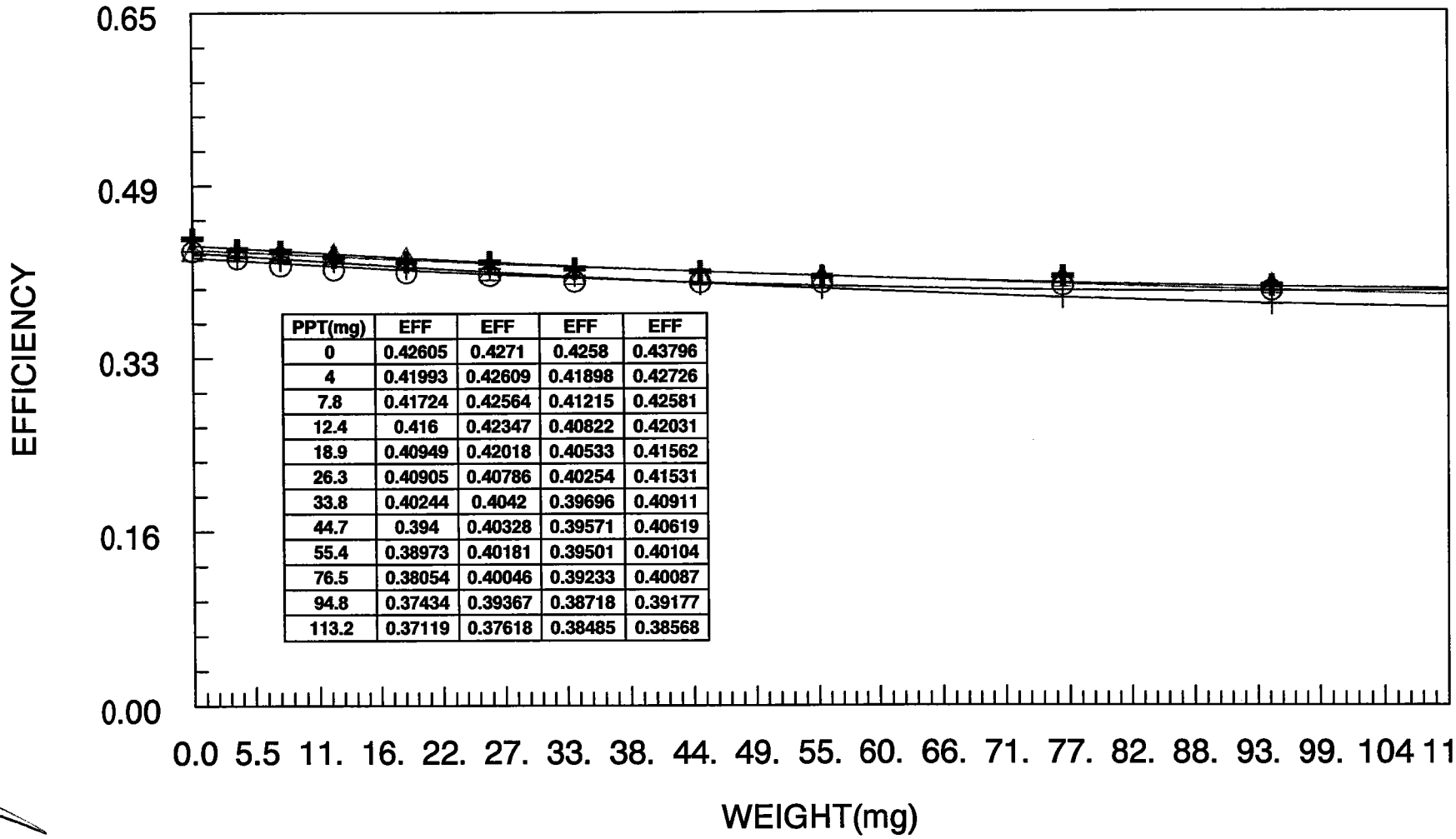
PPT(mg)	EFF	EFF	EFF	EFF
0	0.40312	0.402	0.40676	0.41028
4	0.38978	0.39184	0.39345	0.39775
7.8	0.38547	0.38549	0.38988	0.39634
12.4	0.3822	0.38317	0.38461	0.39434
18.9	0.37946	0.3827	0.38336	0.39348
26.3	0.37794	0.38068	0.38315	0.392
33.8	0.37741	0.37948	0.38195	0.39167
44.7	0.37325	0.37805	0.3813	0.38809
55.4	0.37305	0.37797	0.3786	0.3846
76.5	0.3668	0.36641	0.37727	0.37594
94.8	0.36055	0.36568	0.37105	0.36834
113.2	0.35595	0.36401	0.36594	0.36831

BETA EFF LB4100 8/05

DRAWER D

+ D1 △ D2 ○ D3 + D4

Sr-90 2mL 0717-A



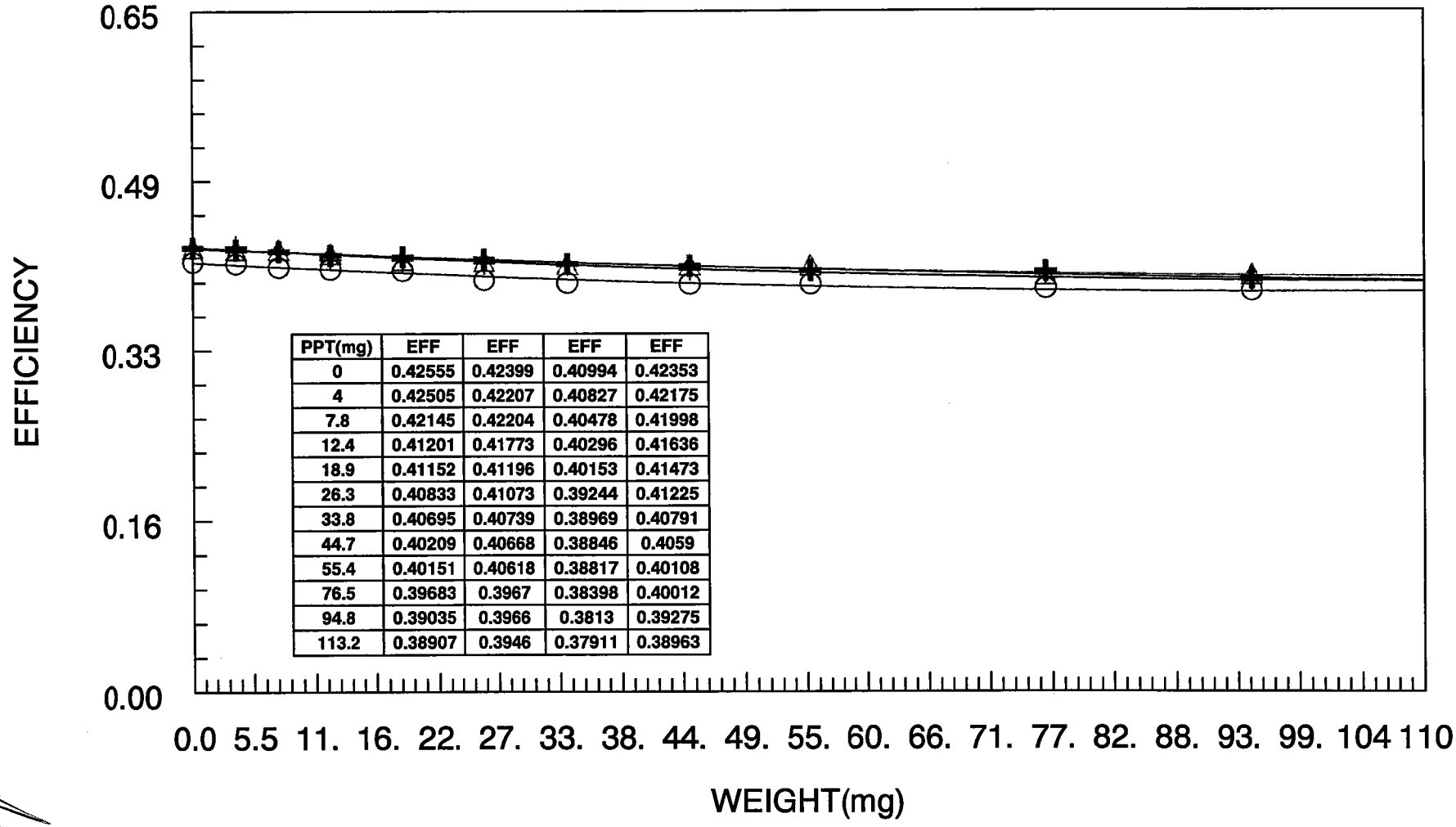
PPT(mg)	EFF	EFF	EFF	EFF
0	0.42605	0.4271	0.4258	0.43796
4	0.41993	0.42609	0.41898	0.42726
7.8	0.41724	0.42564	0.41215	0.42581
12.4	0.416	0.42347	0.40822	0.42031
18.9	0.40949	0.42018	0.40533	0.41562
26.3	0.40905	0.40786	0.40254	0.41531
33.8	0.40244	0.4042	0.39696	0.40911
44.7	0.394	0.40328	0.39571	0.40619
55.4	0.38973	0.40181	0.39501	0.40104
76.5	0.38054	0.40046	0.39233	0.40087
94.8	0.37434	0.39367	0.38718	0.39177
113.2	0.37119	0.37618	0.38485	0.38568

BETA EFF LB4100 8/05

DRAWER E

+ E1 △ E2 ○ E3 + E4

Sr-90 2mL 0717-A



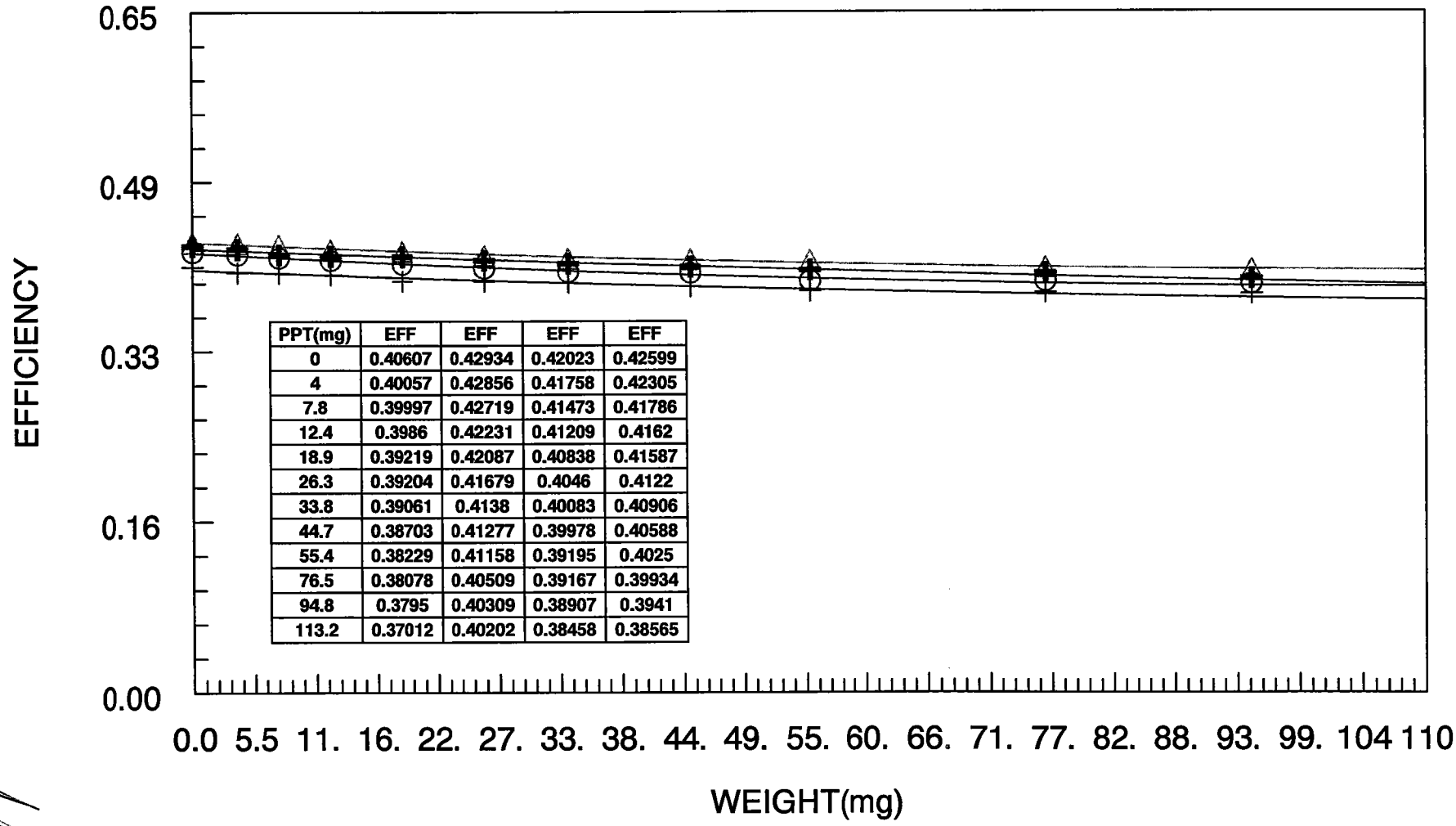
PPT(mg)	EFF	EFF	EFF	EFF
0	0.42555	0.42399	0.40994	0.42353
4	0.42505	0.42207	0.40827	0.42175
7.8	0.42145	0.42204	0.40478	0.41998
12.4	0.41201	0.41773	0.40296	0.41636
18.9	0.41152	0.41196	0.40153	0.41473
26.3	0.40833	0.41073	0.39244	0.41225
33.8	0.40695	0.40739	0.38969	0.40791
44.7	0.40209	0.40668	0.38846	0.4059
55.4	0.40151	0.40618	0.38817	0.40108
76.5	0.39683	0.3967	0.38398	0.40012
94.8	0.39035	0.3966	0.3813	0.39275
113.2	0.38907	0.3946	0.37911	0.38963

BETA EFF LB4100 8/05

DRAWER F

+ F1 △ F2 ○ F3 + F4

Sr-90 2mL 0717-A



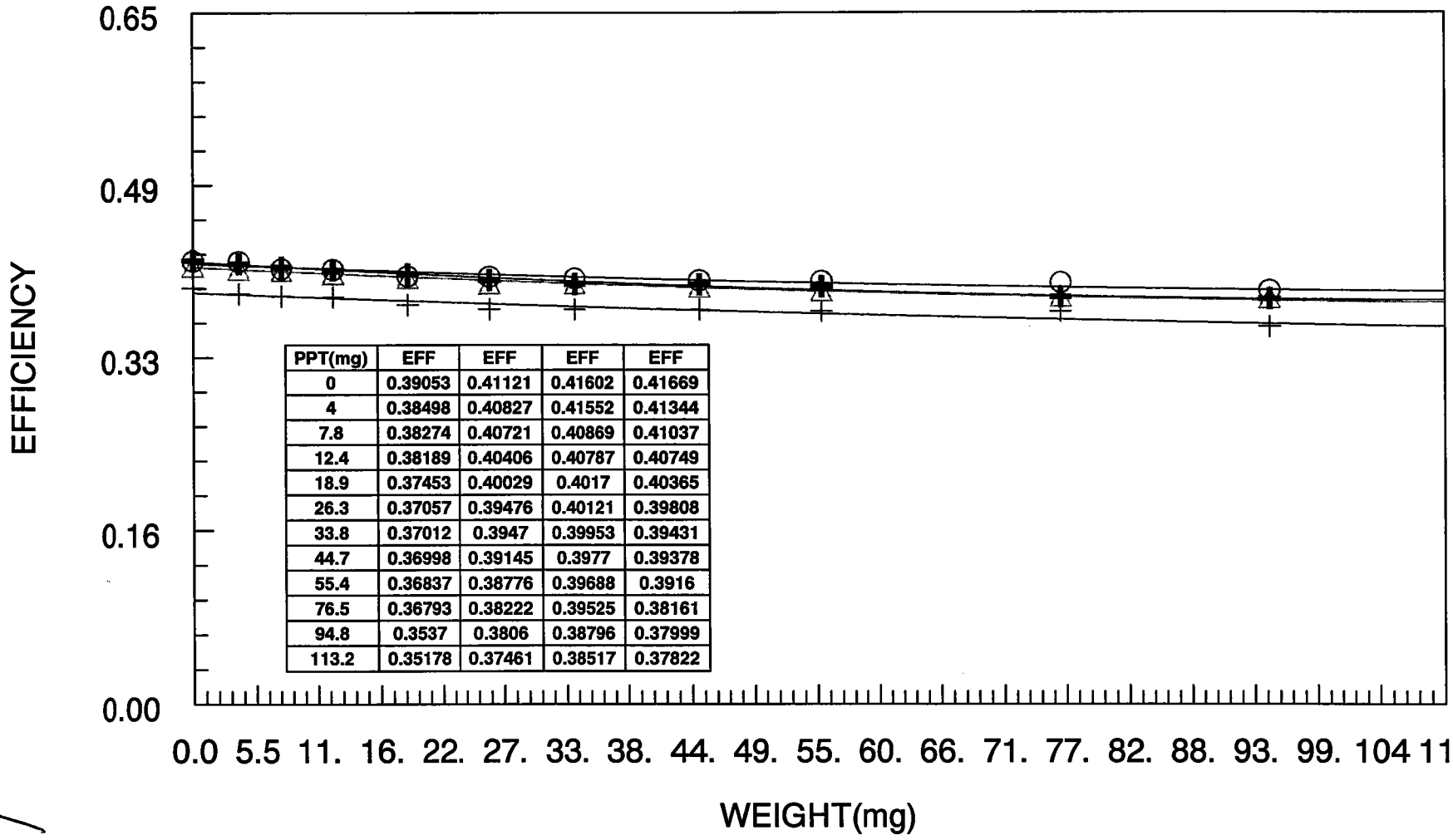
PPT(mg)	EFF	EFF	EFF	EFF
0	0.40607	0.42934	0.42023	0.42599
4	0.40057	0.42856	0.41758	0.42305
7.8	0.39997	0.42719	0.41473	0.41786
12.4	0.3986	0.42231	0.41209	0.4162
18.9	0.39219	0.42087	0.40838	0.41587
26.3	0.39204	0.41679	0.4046	0.4122
33.8	0.39061	0.4138	0.40083	0.40906
44.7	0.38703	0.41277	0.39978	0.40588
55.4	0.38229	0.41158	0.39195	0.4025
76.5	0.38078	0.40509	0.39167	0.39934
94.8	0.3795	0.40309	0.38907	0.3941
113.2	0.37012	0.40202	0.38458	0.38565

BETA EFF LB4100 8/05

DRAWER G

+ G1 △ G2 ○ G3 + G4

Sr-90 2mL 0717-A



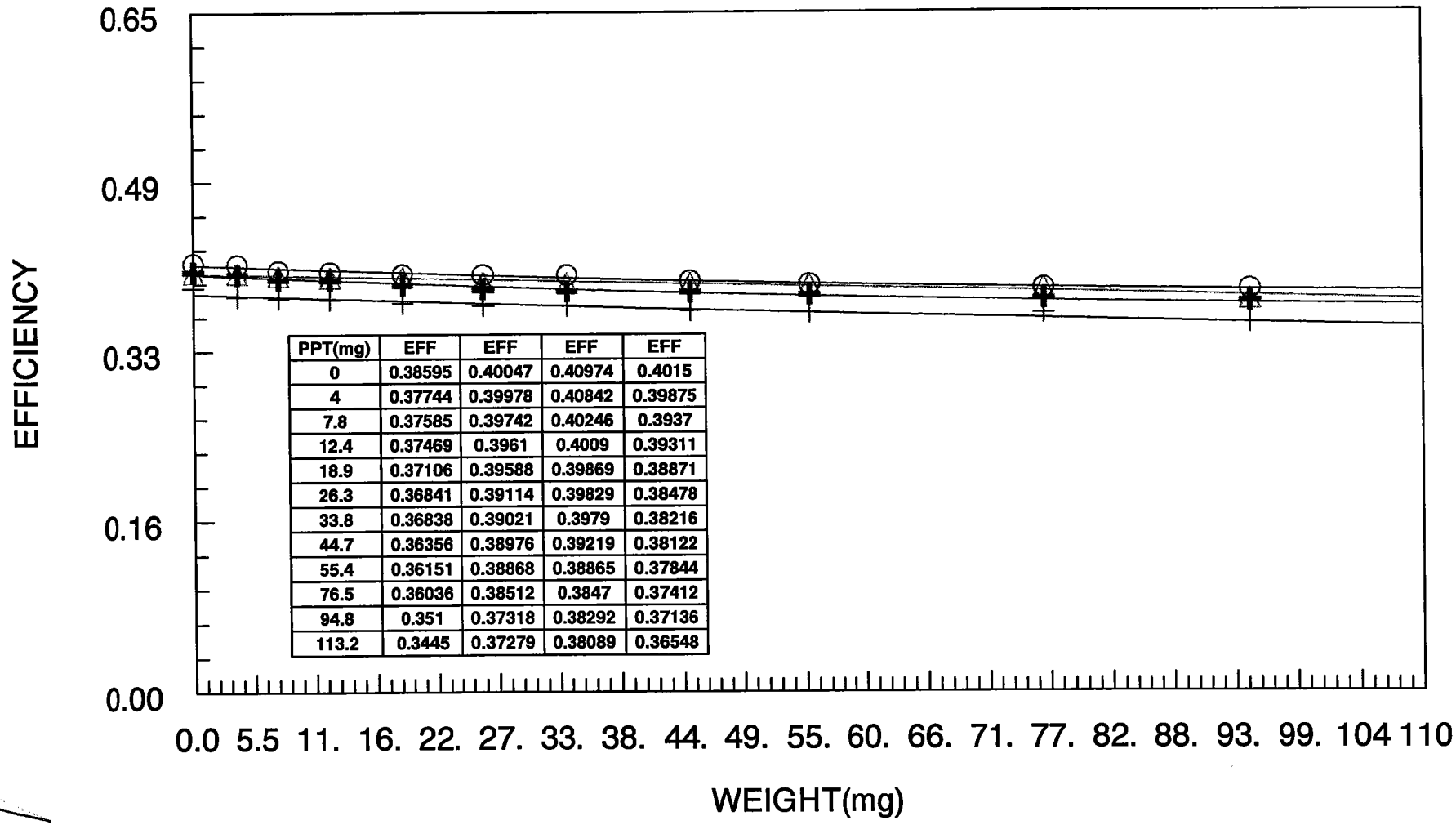
PPT(mg)	EFF	EFF	EFF	EFF
0	0.39053	0.41121	0.41602	0.41669
4	0.38498	0.40827	0.41552	0.41344
7.8	0.38274	0.40721	0.40869	0.41037
12.4	0.38189	0.40406	0.40787	0.40749
18.9	0.37453	0.40029	0.4017	0.40365
26.3	0.37057	0.39476	0.40121	0.39808
33.8	0.37012	0.3947	0.39953	0.39431
44.7	0.36998	0.39145	0.3977	0.39378
55.4	0.36837	0.38776	0.39688	0.3916
76.5	0.36793	0.38222	0.39525	0.38161
94.8	0.3537	0.3806	0.38796	0.37999
113.2	0.35178	0.37461	0.38517	0.37822

BETA EFF LB4100 8/05

DRAWER H

+ H1 △ H2 ○ H3 + H4

Sr-90 2mL 0717-A



PPT(mg)	EFF	EFF	EFF	EFF
0	0.38595	0.40047	0.40974	0.4015
4	0.37744	0.39978	0.40842	0.39875
7.8	0.37585	0.39742	0.40246	0.3937
12.4	0.37469	0.3961	0.4009	0.39311
18.9	0.37106	0.39588	0.39869	0.38871
26.3	0.36841	0.39114	0.39829	0.38478
33.8	0.36838	0.39021	0.3979	0.38216
44.7	0.36356	0.38976	0.39219	0.38122
55.4	0.36151	0.38868	0.38865	0.37844
76.5	0.36036	0.38512	0.3847	0.37412
94.8	0.351	0.37318	0.38292	0.37136
113.2	0.3445	0.37279	0.38089	0.36548

General Engineering Laboratories
Cross Talk Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-001/001B
Isotope: Po-210
Date Standards Prepared: 6/18/04
Cocktail Type Used: —
Standard ID: 0685-A
Matrix of Vial (Planchet): concentric ring SS
Amount Used (g or ml): 1.0
Standard Activity (DPM/g or mL): 190987.932
Type of Scintillation Vial: —
Reference Date: 6/1/04
Pipette ID Used: 110265
Expiration Date: 5/25/05
Balance ID Used: C31514
Residue/Carrier Agent: BaCl2
Quenching Agent: —

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)
C1	1	0.0	7.4480	7.4480	0.0
C2	2	0.1	7.4377	7.4403	2.6
C3	3	0.2	7.4223	7.4289	6.6
C4	4	0.3	7.4367	7.4464	9.7
C5	5	0.4	7.4405	7.4543	13.8
C6	6	0.5	7.4463	7.4628	16.5
C7	7	0.7	7.4540	7.4784	24.4
C8	8	1.0	7.4066	7.4411	34.5
C9	9	1.5	7.4488	7.5029	54.1
C10	10	2.0	7.4475	7.5225	75.0
C11	11	3.0 ~~2.5~~ 7.4405 6/18/04		7.5486	108.1
C12	12	3.5	7.4437	7.5723	128.6

Prepared By: Angela Z. Albee Date: 6/18/04
Reviewed By: [signature] Date: 7/21/04

Rev 1 RLM 9/10/97

jm 8/30/04

Detector	Sample I.D.	Act. Time	Alpha	Beta	Voltage	Date/Time	XTLK
A1	1	2	196	67795	1470	7/19/04 9:40	0.002891
A2	2	2	207	70957	1470	7/19/04 9:40	0.002917
A3	3	2	286	69558	1470	7/19/04 9:40	0.004112
A4	4	2	71	66601	1470	7/19/04 9:40	0.001066
B1	5	2	161	81714	1470	7/19/04 9:40	0.00197
B2	6	2	84	68086	1470	7/19/04 9:40	0.001234
B3	7	2	195	60476	1470	7/19/04 9:40	0.003224
B4	8	2	157	84853	1470	7/19/04 9:40	0.00185
C1	9	2	515	73137	1470	7/19/04 9:40	0.007042
C2	10	2	69	57389	1470	7/19/04 9:40	0.001202
C3	11	2	10	68036	1470	7/19/04 9:40	0.000147
C4	12	2	12	77755	1470	7/19/04 9:40	0.000154
D1	13	2	115	85335	1470	7/19/04 9:40	0.001348
D2	14	2	128	58337	1470	7/19/04 9:40	0.002194
D3	15	2	157	68137	1470	7/19/04 9:40	0.002304
D4	16	2	64	75279	1470	7/19/04 9:40	0.00085
E1	1	2	678	68521	1470	7/19/04 10:42	0.009895
E2	2	2	421	74913	1470	7/19/04 10:42	0.00562
E3	3	2	663	68949	1470	7/19/04 10:42	0.009616
E4	4	2	457	67355	1470	7/19/04 10:42	0.006785
F1	5	2	366	77863	1470	7/19/04 10:42	0.004701
F2	6	2	170	70109	1470	7/19/04 10:42	0.002425
F3	7	2	25	61436	1470	7/19/04 10:42	0.000407
F4	8	2	231	85661	1470	7/19/04 10:42	0.002697
G1	9	2	449	68285	1470	7/19/04 10:42	0.006575
G2	10	2	199	58763	1470	7/19/04 10:42	0.003386
G3	11	2	11	71884	1470	7/19/04 10:42	0.000153
G4	12	2	14	81759	1470	7/19/04 10:42	0.000171
H1	13	2	3716	76542	1522.5	7/19/04 10:42	0.048549
H2	14	2	1388	54198	1522.5	7/19/04 10:42	0.02561
H3	15	2	2076	64735	1522.5	7/19/04 10:42	0.032069
H4	16	2	1978	67443	1522.5	7/19/04 10:42	0.029328

Detector	Weight (mg)	Sample I.D.	Act. Time	Alpha	Beta	Voltage	Date/Time	Alpha Xtlk		
A1	0	1	4	123717	1302	1470	7/19/04 9:52	0.010524019		
A1	2.6	2	4	136730	1988	1470	7/19/04 10:11	0.014539604		
A1	6.6	3	4	140290	2162	1470	7/19/04 10:04	0.015410934		
A1	9.7	4	4	122222	1759	1470	7/19/04 9:58	0.014391844		
A1	13.8	5	4	149603	2108	1470	7/19/04 11:14	0.014090627		
A1	16.5	6	4	160708	2304	1470	7/19/04 11:30	0.014336561		
A1	24.4	7	4	130029	1849	1470	7/19/04 11:25	0.014219905		
A1	34.5	8	4	129722	1907	1470	7/19/04 11:18	0.014700668		
A1	54.1	9	4	124053	1898	1470	7/19/04 10:42	0.015299912		
A1	75	10	4	100346	1736	1470	7/19/04 11:07	0.017300142		
A1	108.1	11	4	104788	1621	1470	7/19/04 11:00	0.015469329		
A1	128.6	12	4	102926	1462	1470	7/19/04 10:49	0.01420438	AVERAGE=	0.01454066
A2	0	1	4	130307	1237	1470	7/19/04 9:58	0.009492967		
A2	2.6	2	4	138866	2058	1470	7/19/04 9:52	0.014820042		
A2	6.6	3	4	145776	2074	1470	7/19/04 10:11	0.014227308		
A2	9.7	4	4	127305	1773	1470	7/19/04 10:04	0.013927183		
A2	13.8	5	4	154279	2052	1470	7/19/04 11:18	0.013300579		
A2	16.5	6	4	165687	2157	1470	7/19/04 11:14	0.013018523		
A2	24.4	7	4	138119	1869	1470	7/19/04 11:30	0.01353181		
A2	34.5	8	4	130953	1900	1470	7/19/04 11:25	0.014509022		
A2	54.1	9	4	130041	1950	1470	7/19/04 10:49	0.014995271		
A2	75	10	4	104410	1657	1470	7/19/04 10:42	0.015870127		
A2	108.1	11	4	108997	1756	1470	7/19/04 11:07	0.016110535		
A2	128.6	12	4	106331	1572	1470	7/19/04 11:00	0.014784023	AVERAGE=	0.014048949
A3	0	1	4	130783	937	1470	7/19/04 10:04	0.00716454		
A3	2.6	2	4	143586	1643	1470	7/19/04 9:58	0.01144262		
A3	6.6	3	4	147082	1465	1470	7/19/04 9:52	0.00996043		
A3	9.7	4	4	129766	1350	1470	7/19/04 10:11	0.010403341		
A3	13.8	5	4	154169	1559	1470	7/19/04 11:25	0.010112279		
A3	16.5	6	4	168726	1710	1470	7/19/04 11:18	0.010134775		
A3	24.4	7	4	138452	1515	1470	7/19/04 11:14	0.01094242		
A3	34.5	8	4	136632	1475	1470	7/19/04 11:30	0.010795421		
A3	54.1	9	4	130139	1393	1470	7/19/04 11:00	0.01070394		
A3	75	10	4	105636	1459	1470	7/19/04 10:49	0.013811579		
A3	108.1	11	4	108753	1311	1470	7/19/04 10:42	0.01205484		
A3	128.6	12	4	106754	1221	1470	7/19/04 11:07	0.011437511	AVERAGE=	0.010746975
A4	0	1	4	135486	1232	1470	7/19/04 10:11	0.00909319		
A4	2.6	2	4	146040	2088	1470	7/19/04 10:04	0.014297453		
A4	6.6	3	4	153755	2090	1470	7/19/04 9:58	0.013593054		
A4	9.7	4	4	132749	1856	1470	7/19/04 9:52	0.013981273		
A4	13.8	5	4	162322	2162	1470	7/19/04 11:30	0.013319205		
A4	16.5	6	4	171420	2245	1470	7/19/04 11:25	0.013096488		
A4	24.4	7	4	143298	1980	1470	7/19/04 11:18	0.01381736		
A4	34.5	8	4	141360	2005	1470	7/19/04 11:14	0.014183645		
A4	54.1	9	4	133616	1984	1470	7/19/04 11:07	0.014848521		
A4	75	10	4	108311	1876	1470	7/19/04 11:00	0.017320494		
A4	108.1	11	4	112868	1868	1470	7/19/04 10:49	0.016550307		
A4	128.6	12	4	110913	1841	1470	7/19/04 10:42	0.016598595	AVERAGE=	0.014224965

B1	0	1	4	136855	1718	1470	7/19/04 10:18	0.012553432		
B1	2.6	2	4	150611	3194	1470	7/19/04 10:35	0.02120695		
B1	6.6	2	4	157772	3182	1470	7/19/04 10:29	0.020168344		
B1	9.7	3	4	137486	2647	1470	7/19/04 10:23	0.019252869		
B1	13.8	5	4	151499	3124	1470	7/19/04 9:52	0.020620598		
B1	16.5	6	4	178375	3624	1470	7/19/04 10:11	0.020316748		
B1	24.4	7	4	146445	2994	1470	7/19/04 10:04	0.020444535		
B1	34.5	8	4	140044	3280	1470	7/19/04 9:58	0.02342121		
B1	54.1	9	4	135197	2910	1470	7/19/04 11:14	0.021524146		
B1	75	10	4	109731	2405	1470	7/19/04 11:30	0.021917234		
B1	108.1	11	4	117355	2932	1470	7/19/04 11:25	0.024984023		
B1	128.6	12	4	113124	2863	1470	7/19/04 11:18	0.025308511	AVERAGE=	0.02097655
B2	0	2	4	137607	1589	1470	7/19/04 10:23	0.011547378		
B2	2.6	3	4	152047	3110	1470	7/19/04 10:18	0.020454202		
B2	6.6	3	4	157696	3092	1470	7/19/04 10:35	0.019607346		
B2	9.7	4	4	137643	2647	1470	7/19/04 10:29	0.019230909		
B2	13.8	5	4	158139	3185	1470	7/19/04 9:58	0.020140509		
B2	16.5	6	4	161449	3256	1470	7/19/04 9:52	0.020167359		
B2	24.4	7	4	147272	2856	1470	7/19/04 10:11	0.019392688		
B2	34.5	8	4	143406	3166	1470	7/19/04 10:04	0.022077179		
B2	54.1	9	4	138245	2760	1470	7/19/04 11:18	0.019964556		
B2	75	10	4	105891	2167	1470	7/19/04 11:14	0.02046444		
B2	108.1	11	4	117177	2706	1470	7/19/04 11:30	0.023093269		
B2	128.6	12	4	114792	2573	1470	7/19/04 11:25	0.022414454	AVERAGE=	0.019879524
B3	0	1	4	138852	1164	1470	7/19/04 10:29	0.008383027		
B3	2.6	3	4	154826	2289	1470	7/19/04 10:23	0.014784339		
B3	6.6	4	4	160372	2397	1470	7/19/04 10:18	0.014946499		
B3	9.7	4	4	140528	2154	1470	7/19/04 10:35	0.015327906		
B3	13.8	5	4	169176	2442	1470	7/19/04 10:04	0.014434672		
B3	16.5	6	4	172395	3075	1470	7/19/04 9:58	0.017836944		
B3	24.4	7	4	133136	2167	1470	7/19/04 9:52	0.016276589		
B3	34.5	8	4	147646	2581	1470	7/19/04 10:11	0.017481002		
B3	54.1	9	4	141138	2436	1470	7/19/04 11:25	0.017259703		
B3	75	10	4	113459	1922	1470	7/19/04 11:18	0.01694004		
B3	108.1	11	4	116253	2297	1470	7/19/04 11:14	0.01975863		
B3	128.6	12	4	116340	2184	1470	7/19/04 11:30	0.018772563	AVERAGE=	0.016016826
B4	0	1	4	138357	1358	1470	7/19/04 10:35	0.009815188		
B4	2.6	1	4	153797	2540	1470	7/19/04 10:29	0.016515277		
B4	6.6	2	4	158499	2834	1470	7/19/04 10:23	0.017880239		
B4	9.7	4	4	137345	2493	1470	7/19/04 10:18	0.018151371		
B4	13.8	5	4	167244	2966	1470	7/19/04 10:11	0.017734567		
B4	16.5	6	4	176687	3385	1470	7/19/04 10:04	0.019158172		
B4	24.4	7	4	142295	2780	1470	7/19/04 9:58	0.019536878		
B4	34.5	8	4	132760	2942	1470	7/19/04 9:52	0.022160289		
B4	54.1	9	4	137917	2516	1470	7/19/04 11:30	0.018242856		
B4	75	10	4	111108	2181	1470	7/19/04 11:25	0.01962955		
B4	108.1	11	4	117999	2747	1470	7/19/04 11:18	0.023279858		
B4	128.6	12	4	110997	2552	1470	7/19/04 11:14	0.022991612	AVERAGE=	0.018757988
C1	0	1	4	138219	2163	1470	7/19/04 10:42	0.015649079		

C1	2.6	2	4	153291	4652	1470	7/19/04 11:07	0.030347509		
C1	6.6	3	4	158108	4902	1470	7/19/04 11:00	0.031004124		
C1	9.7	4	4	137978	4809	1470	7/19/04 10:49	0.034853382		
C1	13.8	5	4	161750	3849	1470	7/19/04 10:18	0.023795981		
C1	16.5	6	4	179689	5144	1470	7/19/04 10:35	0.028627239		
C1	24.4	7	4	147770	4051	1470	7/19/04 10:29	0.027414225		
C1	34.5	8	4	145864	3799	1470	7/19/04 10:23	0.026044809		
C1	54.1	9	4	135877	3569	1470	7/19/04 9:52	0.026266403		
C1	75	10	4	112561	4081	1470	7/19/04 10:11	0.036255897		
C1	108.1	11	4	117648	3452	1470	7/19/04 10:04	0.029341765		
C1	128.6	12	4	116523	3039	1470	7/19/04 9:58	0.026080688	AVERAGE=	0.027973425
C2	0	1	4	134961	2296	1470	7/19/04 10:49	0.017012322		
C2	2.6	2	4	146449	4336	1470	7/19/04 10:42	0.029607577		
C2	6.6	3	4	155197	4139	1470	7/19/04 11:07	0.02666933		
C2	9.7	4	4	135438	3421	1470	7/19/04 11:00	0.02525879		
C2	13.8	5	4	162753	3917	1470	7/19/04 10:23	0.024067145		
C2	16.5	6	4	162621	4061	1470	7/19/04 10:18	0.024972175		
C2	24.4	7	4	144036	3683	1470	7/19/04 10:35	0.025569996		
C2	34.5	8	4	141748	3949	1470	7/19/04 10:29	0.0278593		
C2	54.1	9	4	134227	3745	1470	7/19/04 9:58	0.027900497		
C2	75	10	4	104861	2613	1470	7/19/04 9:52	0.024918702		
C2	108.1	11	4	114870	3342	1470	7/19/04 10:11	0.029093758		
C2	128.6	12	4	112700	3059	1470	7/19/04 10:04	0.027142857	AVERAGE=	0.025839371
C3	0	1	4	133041	2324	1470	7/19/04 11:00	0.017468299		
C3	2.6	2	4	145708	4317	1470	7/19/04 10:49	0.029627749		
C3	6.6	3	4	149428	4212	1470	7/19/04 10:42	0.028187488		
C3	9.7	4	4	131067	3495	1470	7/19/04 11:07	0.026665751		
C3	13.8	5	4	158877	4028	1470	7/19/04 10:29	0.025352946		
C3	16.5	6	4	170289	4407	1470	7/19/04 10:23	0.025879534		
C3	24.4	7	4	137489	3932	1470	7/19/04 10:18	0.028598652		
C3	34.5	8	4	137350	4105	1470	7/19/04 10:35	0.02988715		
C3	54.1	9	4	132544	3521	1470	7/19/04 10:04	0.026564763		
C3	75	10	4	105750	2549	1470	7/19/04 9:58	0.024104019		
C3	108.1	11	4	109529	3571	1470	7/19/04 9:52	0.032603237		
C3	128.6	12	4	110261	3199	1470	7/19/04 10:11	0.029012978	AVERAGE=	0.026996047
C4	0	1	4	134746	2194	1470	7/19/04 11:07	0.016282487		
C4	2.6	2	4	148747	3773	1470	7/19/04 11:00	0.025365217		
C4	6.6	3	4	153786	3731	1470	7/19/04 10:49	0.024260986		
C4	9.7	4	4	133542	3415	1470	7/19/04 10:42	0.025572479		
C4	13.8	5	4	161892	3928	1470	7/19/04 10:35	0.024263089		
C4	16.5	6	4	170420	4387	1470	7/19/04 10:29	0.025742284		
C4	24.4	7	4	144020	3534	1470	7/19/04 10:23	0.024538259		
C4	34.5	8	4	134159	4073	1470	7/19/04 10:18	0.030359499		
C4	54.1	9	4	132938	4065	1470	7/19/04 10:11	0.030578164		
C4	75	10	4	107125	3069	1470	7/19/04 10:04	0.028648775		
C4	108.1	11	4	111548	3284	1470	7/19/04 9:58	0.029440241		
C4	128.6	12	4	108909	2974	1470	7/19/04 9:52	0.027307201	AVERAGE=	0.02602989
D1	0	1	4	137183	836	1470	7/19/04 11:14	0.00609405		
D1	2.6	2	4	152146	1493	1470	7/19/04 11:30	0.009812943		

D1	6.6	3	4	157199	1410	1470	7/19/04 11:25	0.008969523		
D1	9.7	4	4	137356	1369	1470	7/19/04 11:18	0.009966802		
D1	13.8	5	4	163988	1354	1470	7/19/04 10:42	0.008256702		
D1	16.5	6	4	176886	1588	1470	7/19/04 11:07	0.008977534		
D1	24.4	7	4	147078	1394	1470	7/19/04 11:00	0.009477964		
D1	34.5	8	4	141703	1295	1470	7/19/04 10:49	0.009138833		
D1	54.1	9	4	139394	1402	1470	7/19/04 10:18	0.010057822		
D1	75	10	4	110371	1345	1470	7/19/04 10:35	0.012186172		
D1	108.1	11	4	117305	1282	1470	7/19/04 10:29	0.010928775		
D1	128.6	12	4	114717	1384	1470	7/19/04 10:23	0.012064472	AVERAGE=	0.009660966
D2	0	1	4	136308	1089	1470	7/19/04 11:18	0.00798926		
D2	2.6	2	4	150733	1897	1470	7/19/04 11:14	0.012585167		
D2	6.6	3	4	155852	1978	1470	7/19/04 11:30	0.012691528		
D2	9.7	4	4	136225	1670	1470	7/19/04 11:25	0.01225913		
D2	13.8	5	4	163314	1857	1470	7/19/04 10:49	0.011370734		
D2	16.5	6	4	175487	1984	1470	7/19/04 10:42	0.011305681		
D2	24.4	7	4	145522	1761	1470	7/19/04 11:07	0.012101263		
D2	34.5	8	4	143353	1869	1470	7/19/04 11:00	0.013037746		
D2	54.1	9	4	137872	1944	1470	7/19/04 10:23	0.014100035		
D2	75	10	4	109877	1929	1470	7/19/04 10:18	0.017555994		
D2	108.1	11	4	115832	1698	1470	7/19/04 10:35	0.014659162		
D2	128.6	12	4	112801	1686	1470	7/19/04 10:29	0.014946676	AVERAGE=	0.012883531
D3	0	1	4	136324	946	1470	7/19/04 11:25	0.00693935		
D3	2.6	2	4	150332	1529	1470	7/19/04 11:18	0.010170822		
D3	6.6	3	4	154792	1744	1470	7/19/04 11:14	0.011266732		
D3	9.7	4	4	134673	1519	1470	7/19/04 11:30	0.011279173		
D3	13.8	5	4	160967	1586	1470	7/19/04 11:00	0.009852951		
D3	16.5	6	4	170608	1766	1470	7/19/04 10:49	0.010351214		
D3	24.4	7	4	144894	1647	1470	7/19/04 10:42	0.01136693		
D3	34.5	8	4	142521	1646	1470	7/19/04 11:07	0.011549175		
D3	54.1	9	4	136291	1558	1470	7/19/04 10:29	0.011431422		
D3	75	10	4	108998	1596	1470	7/19/04 10:23	0.014642471		
D3	108.1	11	4	115214	1586	1470	7/19/04 10:18	0.013765688		
D3	128.6	12	4	113270	1481	1470	7/19/04 10:35	0.013074954	AVERAGE=	0.011307574
D4	0	1	4	136048	1072	1470	7/19/04 11:30	0.007879572		
D4	2.6	2	4	150927	1904	1470	7/19/04 11:25	0.01261537		
D4	6.6	3	4	157221	1906	1470	7/19/04 11:18	0.012123062		
D4	9.7	4	4	136596	1795	1470	7/19/04 11:14	0.013140941		
D4	13.8	5	4	164743	1764	1470	7/19/04 11:07	0.010707587		
D4	16.5	6	4	175983	2193	1470	7/19/04 11:00	0.012461431		
D4	24.4	7	4	144187	1883	1470	7/19/04 10:49	0.01305943		
D4	34.5	8	4	142773	2010	1470	7/19/04 10:42	0.014078292		
D4	54.1	9	4	137914	1896	1470	7/19/04 10:35	0.013747698		
D4	75	10	4	111428	1922	1470	7/19/04 10:29	0.017248806		
D4	108.1	11	4	117783	1762	1470	7/19/04 10:23	0.014959714		
D4	128.6	12	4	114284	1805	1470	7/19/04 10:18	0.015793987	AVERAGE=	0.013151324
E1	0	1	4	137237	1055	1470	7/19/04 14:37	0.007687431		
E1	2.6	2	4	150399	1078	1470	7/19/04 14:55	0.007167601		
E1	6.6	3	4	158695	1132	1470	7/19/04 14:49	0.00713318		

E1	9.7	4	4	137598	1032	1470	7/19/04 14:44	0.007500109		
E1	13.8	5	4	166520	1079	1470	7/19/04 15:49	0.006479702		
E1	16.5	6	4	175322	1214	1470	7/19/04 16:05	0.006924402		
E1	24.4	7	4	145851	1067	1470	7/19/04 16:00	0.007315685		
E1	34.5	8	4	139221	1152	1470	7/19/04 15:55	0.008274614		
E1	54.1	9	4	139940	1056	1470	7/19/04 15:28	0.007546091		
E1	75	10	4	113062	1152	1470	7/19/04 15:44	0.0101891		
E1	108.1	11	4	117022	946	1470	7/19/04 15:38	0.00808395		
E1	128.6	12	4	113637	1028	1470	7/19/04 15:33	0.009046349	AVERAGE=	0.007779018
E2	0	1	4	134148	1773	1470	7/19/04 14:44	0.013216746		
E2	2.6	2	4	147290	2442	1470	7/19/04 14:37	0.016579537		
E2	6.6	3	4	153367	2565	1470	7/19/04 14:55	0.016724589		
E2	9.7	4	4	133927	2073	1470	7/19/04 14:49	0.015478582		
E2	13.8	5	4	160373	2285	1470	7/19/04 15:55	0.014248034		
E2	16.5	6	4	173566	2777	1470	7/19/04 15:49	0.015999677		
E2	24.4	7	4	142143	2252	1470	7/19/04 16:05	0.0158432		
E2	34.5	8	4	137311	2298	1470	7/19/04 16:00	0.016735731		
E2	54.1	9	4	133456	2269	1470	7/19/04 15:33	0.017001858		
E2	75	10	4	109190	2062	1470	7/19/04 15:28	0.018884513		
E2	108.1	11	4	114947	2041	1470	7/19/04 15:44	0.017756009		
E2	128.6	12	4	112200	1907	1470	7/19/04 15:38	0.016996435	AVERAGE=	0.016288743
E3	0	1	4	136853	1530	1470	7/19/04 14:49	0.011179879		
E3	2.6	2	4	149460	2235	1470	7/19/04 14:44	0.014953834		
E3	6.6	3	4	157056	2346	1470	7/19/04 14:37	0.014937347		
E3	9.7	4	4	136746	2083	1470	7/19/04 14:55	0.015232621		
E3	13.8	5	4	165222	2404	1470	7/19/04 16:00	0.01455012		
E3	16.5	6	4	175732	2814	1470	7/19/04 15:55	0.01601302		
E3	24.4	7	4	145988	2366	1470	7/19/04 15:49	0.016206812		
E3	34.5	8	4	141445	2492	1470	7/19/04 16:05	0.017618155		
E3	54.1	9	4	138076	2171	1470	7/19/04 15:38	0.015723225		
E3	75	10	4	109960	1670	1470	7/19/04 15:33	0.015187341		
E3	108.1	11	4	115508	2122	1470	7/19/04 15:28	0.018371022		
E3	128.6	12	4	113364	2071	1470	7/19/04 15:44	0.018268586	AVERAGE=	0.01568683
E4	0	1	4	136681	1911	1470	7/19/04 14:55	0.01398146		
E4	2.6	2	4	149661	3044	1470	7/19/04 14:49	0.0203393		
E4	6.6	3	4	157492	3117	1470	7/19/04 14:44	0.019791481		
E4	9.7	4	4	138013	2670	1470	7/19/04 14:37	0.019346004		
E4	13.8	5	4	162274	3314	1470	7/19/04 16:05	0.020422249		
E4	16.5	6	4	173369	3672	1470	7/19/04 16:00	0.021180257		
E4	24.4	7	4	144542	3262	1470	7/19/04 15:55	0.022567835		
E4	34.5	8	4	142646	3088	1470	7/19/04 15:49	0.021647996		
E4	54.1	9	4	137724	3001	1470	7/19/04 15:44	0.021789957		
E4	75	10	4	111632	2178	1470	7/19/04 15:38	0.019510535		
E4	108.1	11	4	113857	2800	1470	7/19/04 15:33	0.024592252		
E4	128.6	12	4	114413	2472	1470	7/19/04 15:28	0.021605936	AVERAGE=	0.020564605
F1	0	1	4	134677	1802	1470	7/19/04 15:00	0.013380161		
F1	2.6	2	4	148604	2300	1470	7/19/04 15:21	0.015477376		
F1	6.6	3	4	155092	2283	1470	7/19/04 15:16	0.014720295		
F1	9.7	4	4	135403	1937	1470	7/19/04 15:05	0.014305444		

F1	13.8	5	4	163522	2352	1470	7/19/04 14:37	0.014383386		
F1	16.5	6	4	172812	2915	1470	7/19/04 14:55	0.016868042		
F1	24.4	7	4	145730	2224	1470	7/19/04 14:49	0.015261099		
F1	34.5	8	4	139746	2527	1470	7/19/04 14:44	0.018082807		
F1	54.1	9	4	136594	2049	1470	7/19/04 15:49	0.015000659		
F1	75	10	4	109354	1947	1470	7/19/04 16:05	0.017804561		
F1	108.1	11	4	113990	2101	1470	7/19/04 16:00	0.018431441		
F1	128.6	12	4	114198	1942	1470	7/19/04 15:55	0.017005552	AVERAGE=	0.015893402
F2	0	1	4	134307	3011	1470	7/19/04 15:05	0.022418787		
F2	2.6	2	4	146311	4626	1470	7/19/04 15:00	0.031617582		
F2	6.6	3	4	154104	4688	1470	7/19/04 15:21	0.030421014		
F2	9.7	4	4	135420	3931	1470	7/19/04 15:16	0.029028209		
F2	13.8	5	4	161889	4597	1470	7/19/04 14:44	0.028396		
F2	16.5	6	4	173818	4612	1470	7/19/04 14:37	0.026533501		
F2	24.4	7	4	143592	4173	1470	7/19/04 14:55	0.029061508		
F2	34.5	8	4	141288	4413	1470	7/19/04 14:49	0.031234075		
F2	54.1	9	4	136989	3957	1470	7/19/04 15:55	0.028885531		
F2	75	10	4	111213	2787	1470	7/19/04 15:49	0.02506002		
F2	108.1	11	4	113958	3611	1470	7/19/04 16:05	0.031687113		
F2	128.6	12	4	114318	3116	1470	7/19/04 16:00	0.0272573	AVERAGE=	0.02846672
F3	0	1	4	132310	2934	1470	7/19/04 15:16	0.022175195		
F3	2.6	2	4	142989	4498	1470	7/19/04 15:05	0.031456965		
F3	6.6	3	4	149733	4634	1470	7/19/04 15:00	0.030948422		
F3	9.7	4	4	130537	3835	1470	7/19/04 15:21	0.029378644		
F3	13.8	5	4	157952	4324	1470	7/19/04 14:49	0.027375405		
F3	16.5	6	4	168986	4617	1470	7/19/04 14:44	0.02732179		
F3	24.4	7	4	140324	4098	1470	7/19/04 14:37	0.029203843		
F3	34.5	8	4	134869	4370	1470	7/19/04 14:55	0.032401812		
F3	54.1	9	4	131644	4032	1470	7/19/04 16:00	0.030628057		
F3	75	10	4	105294	3486	1470	7/19/04 15:55	0.0331073		
F3	108.1	11	4	110025	3604	1470	7/19/04 15:49	0.032756192		
F3	128.6	12	4	108095	3243	1470	7/19/04 16:05	0.030001388	AVERAGE=	0.029729584
F4	0	1	4	134259	2759	1470	7/19/04 15:21	0.020549833		
F4	2.6	2	4	146564	4598	1470	7/19/04 15:16	0.03137196		
F4	6.6	3	4	153224	4466	1470	7/19/04 15:05	0.02914687		
F4	9.7	4	4	134146	3626	1470	7/19/04 15:00	0.027030251		
F4	13.8	5	4	161912	4154	1470	7/19/04 14:55	0.025655912		
F4	16.5	6	4	174980	4493	1470	7/19/04 14:49	0.02567722		
F4	24.4	7	4	144239	3953	1470	7/19/04 14:44	0.027405903		
F4	34.5	8	4	140475	4158	1470	7/19/04 14:37	0.029599573		
F4	54.1	9	4	135509	3801	1470	7/19/04 16:05	0.028049797		
F4	75	10	4	110399	2685	1470	7/19/04 16:00	0.024320872		
F4	108.1	11	4	114432	3518	1470	7/19/04 15:55	0.030743149		
F4	128.6	12	4	112050	3336	1470	7/19/04 15:49	0.029772423	AVERAGE=	0.027443647
G1	0	1	4	114116	1325	1470	7/19/04 15:29	0.011610992		
G1	2.6	2	4	119605	1327	1470	7/19/04 15:44	0.011094854		
G1	6.6	3	4	123093	1375	1470	7/19/04 15:39	0.011170416		
G1	9.7	4	4	116669	1308	1470	7/19/04 15:33	0.011211204		
G1	13.8	5	4	129770	1424	1470	7/19/04 15:01	0.01097326		

G1	16.5	6	4	149994	1546	1470	7/19/04 15:21	0.010307079		
G1	24.4	7	4	126830	1415	1470	7/19/04 15:16	0.011156666		
G1	34.5	8	4	120384	1376	1470	7/19/04 15:05	0.01143009		
G1	54.1	9	4	102626	1222	1470	7/19/04 14:38	0.011907314		
G1	75	10	4	96090	1288	1470	7/19/04 14:55	0.0134041		
G1	108.1	11	4	91633	1104	1470	7/19/04 14:50	0.012048061		
G1	128.6	12	4	99178	1242	1470	7/19/04 14:44	0.012522939	AVERAGE=	0.011569748
G2	0	1	4	129854	2318	1470	7/19/04 15:33	0.017850817		
G2	2.6	2	4	140486	2868	1470	7/19/04 15:29	0.020414846		
G2	6.6	3	4	141986	2783	1470	7/19/04 15:44	0.019600524		
G2	9.7	4	4	125232	2337	1470	7/19/04 15:39	0.018661365		
G2	13.8	5	4	147426	2555	1470	7/19/04 15:05	0.017330729		
G2	16.5	6	4	159664	3056	1470	7/19/04 15:01	0.019140194		
G2	24.4	7	4	138009	2604	1470	7/19/04 15:21	0.018868335		
G2	34.5	8	4	132563	2669	1470	7/19/04 15:16	0.020133823		
G2	54.1	9	4	130522	2642	1470	7/19/04 14:44	0.020241798		
G2	75	10	4	100613	2124	1470	7/19/04 14:38	0.021110592		
G2	108.1	11	4	108188	2212	1470	7/19/04 14:55	0.02044589		
G2	128.6	12	4	106064	2353	1470	7/19/04 14:50	0.022184719	AVERAGE=	0.019665303
G3	0	1	4	124600	2406	1470	7/19/04 15:39	0.019309791		
G3	2.6	2	4	132133	2829	1470	7/19/04 15:33	0.021410246		
G3	6.6	3	4	141994	2764	1470	7/19/04 15:29	0.019465611		
G3	9.7	4	4	117185	2211	1470	7/19/04 15:44	0.018867603		
G3	13.8	5	4	146232	2692	1470	7/19/04 15:16	0.018409103		
G3	16.5	6	4	151541	2882	1470	7/19/04 15:05	0.019017956		
G3	24.4	7	4	125618	2487	1470	7/19/04 15:01	0.019798118		
G3	34.5	8	4	130052	2720	1470	7/19/04 15:21	0.020914711		
G3	54.1	9	4	126433	2550	1470	7/19/04 14:50	0.020168785		
G3	75	10	4	99983	2258	1470	7/19/04 14:44	0.022583839		
G3	108.1	11	4	102221	2245	1470	7/19/04 14:38	0.021962219		
G3	128.6	12	4	101968	2162	1470	7/19/04 14:55	0.02120273	AVERAGE=	0.020259226
G4	0	1	4	122506	1877	1470	7/19/04 15:44	0.015321699		
G4	2.6	2	4	131808	2106	1470	7/19/04 15:39	0.015977786		
G4	6.6	3	4	139419	2044	1470	7/19/04 15:33	0.014660842		
G4	9.7	4	4	126460	2010	1470	7/19/04 15:29	0.015894354		
G4	13.8	5	4	148675	2192	1470	7/19/04 15:21	0.014743568		
G4	16.5	6	4	161908	2426	1470	7/19/04 15:16	0.014983818		
G4	24.4	7	4	126856	1785	1470	7/19/04 15:05	0.014071073		
G4	34.5	8	4	122914	1952	1470	7/19/04 15:01	0.015881023		
G4	54.1	9	4	125496	2093	1470	7/19/04 14:55	0.016677822		
G4	75	10	4	100175	2175	1470	7/19/04 14:50	0.021712004		
G4	108.1	11	4	103182	1867	1470	7/19/04 14:44	0.018094241		
G4	128.6	12	4	100780	1839	1470	7/19/04 14:38	0.018247668	AVERAGE=	0.016355492
H1	0	1	4	130221	2512	1522.5	7/19/04 15:49	0.019290283		
H1	2.6	2	4	140982	3517	1522.5	7/19/04 16:05	0.024946447		
H1	6.6	3	4	145972	3890	1522.5	7/19/04 16:00	0.026648946		
H1	9.7	4	4	129846	2734	1522.5	7/19/04 15:55	0.021055712		
H1	13.8	5	4	156251	3425	1522.5	7/19/04 15:28	0.02191986		
H1	16.5	6	4	166970	3134	1522.5	7/19/04 15:44	0.018769839		

H1	24.4	7	4	138967	3001	1522.5	7/19/04 15:38	0.021595055		
H1	34.5	8	4	134324	2906	1522.5	7/19/04 15:33	0.021634257		
H1	54.1	9	4	130741	2732	1522.5	7/19/04 15:00	0.020896276		
H1	75	10	4	105775	1984	1522.5	7/19/04 15:21	0.018756795		
H1	108.1	11	4	109100	2469	1522.5	7/19/04 15:16	0.022630614		
H1	128.6	12	4	108273	2453	1522.5	7/19/04 15:05	0.022655694	AVERAGE=	0.021733315
H2	0	1	4	131225	1762	1522.5	7/19/04 15:55	0.013427319		
H2	2.6	2	4	141982	2287	1522.5	7/19/04 15:49	0.016107676		
H2	6.6	3	4	150504	1888	1522.5	7/19/04 16:05	0.012544517		
H2	9.7	4	4	130591	1746	1522.5	7/19/04 16:00	0.013369987		
H2	13.8	5	4	156370	2124	1522.5	7/19/04 15:33	0.013583168		
H2	16.5	6	4	169890	1979	1522.5	7/19/04 15:28	0.011648714		
H2	24.4	7	4	139421	2031	1522.5	7/19/04 15:44	0.014567389		
H2	34.5	8	4	134048	1787	1522.5	7/19/04 15:38	0.013331046		
H2	54.1	9	4	132177	1812	1522.5	7/19/04 15:05	0.01370889		
H2	75	10	4	106645	1626	1522.5	7/19/04 15:00	0.015246847		
H2	108.1	11	4	109915	1639	1522.5	7/19/04 15:21	0.014911523		
H2	128.6	12	4	109840	1584	1522.5	7/19/04 15:16	0.014420976	AVERAGE=	0.013905671
H3	0	1	4	133883	1981	1522.5	7/19/04 16:00	0.014796501		
H3	2.6	2	4	144332	2994	1522.5	7/19/04 15:55	0.020743841		
H3	6.6	3	4	151541	2740	1522.5	7/19/04 15:49	0.018080915		
H3	9.7	4	4	133382	2282	1522.5	7/19/04 16:05	0.017108755		
H3	13.8	5	4	160573	2720	1522.5	7/19/04 15:38	0.016939336		
H3	16.5	6	4	174202	2619	1522.5	7/19/04 15:33	0.015034271		
H3	24.4	7	4	141579	2479	1522.5	7/19/04 15:28	0.017509659		
H3	34.5	8	4	139121	2374	1522.5	7/19/04 15:44	0.017064282		
H3	54.1	9	4	133615	2258	1522.5	7/19/04 15:16	0.0168993		
H3	75	10	4	108785	1915	1522.5	7/19/04 15:05	0.01760353		
H3	108.1	11	4	111759	2109	1522.5	7/19/04 15:00	0.018870963		
H3	128.6	12	4	110381	2083	1522.5	7/19/04 15:21	0.018871001	AVERAGE=	0.017460196
H4	0	1	4	128380	1455	1522.5	7/19/04 16:05	0.011333541		
H4	2.6	2	4	137234	1641	1522.5	7/19/04 16:00	0.011957678		
H4	6.6	3	4	144736	1537	1522.5	7/19/04 15:55	0.010619335		
H4	9.7	4	4	126330	1346	1522.5	7/19/04 15:49	0.010654635		
H4	13.8	5	4	152866	1672	1522.5	7/19/04 15:44	0.010937684		
H4	16.5	6	4	163306	1546	1522.5	7/19/04 15:38	0.00946689		
H4	24.4	7	4	135565	1484	1522.5	7/19/04 15:33	0.010946778		
H4	34.5	8	4	129860	1346	1522.5	7/19/04 15:28	0.010365008		
H4	54.1	9	4	126971	1490	1522.5	7/19/04 15:21	0.011734963		
H4	75	10	4	101810	1427	1522.5	7/19/04 15:16	0.014016305		
H4	108.1	11	4	105293	1190	1522.5	7/19/04 15:05	0.011301796		
H4	128.6	12	4	104583	1219	1522.5	7/19/04 15:00	0.011655814	AVERAGE=	0.011249202

ALPHA Xtlk LB4100 July, 2004

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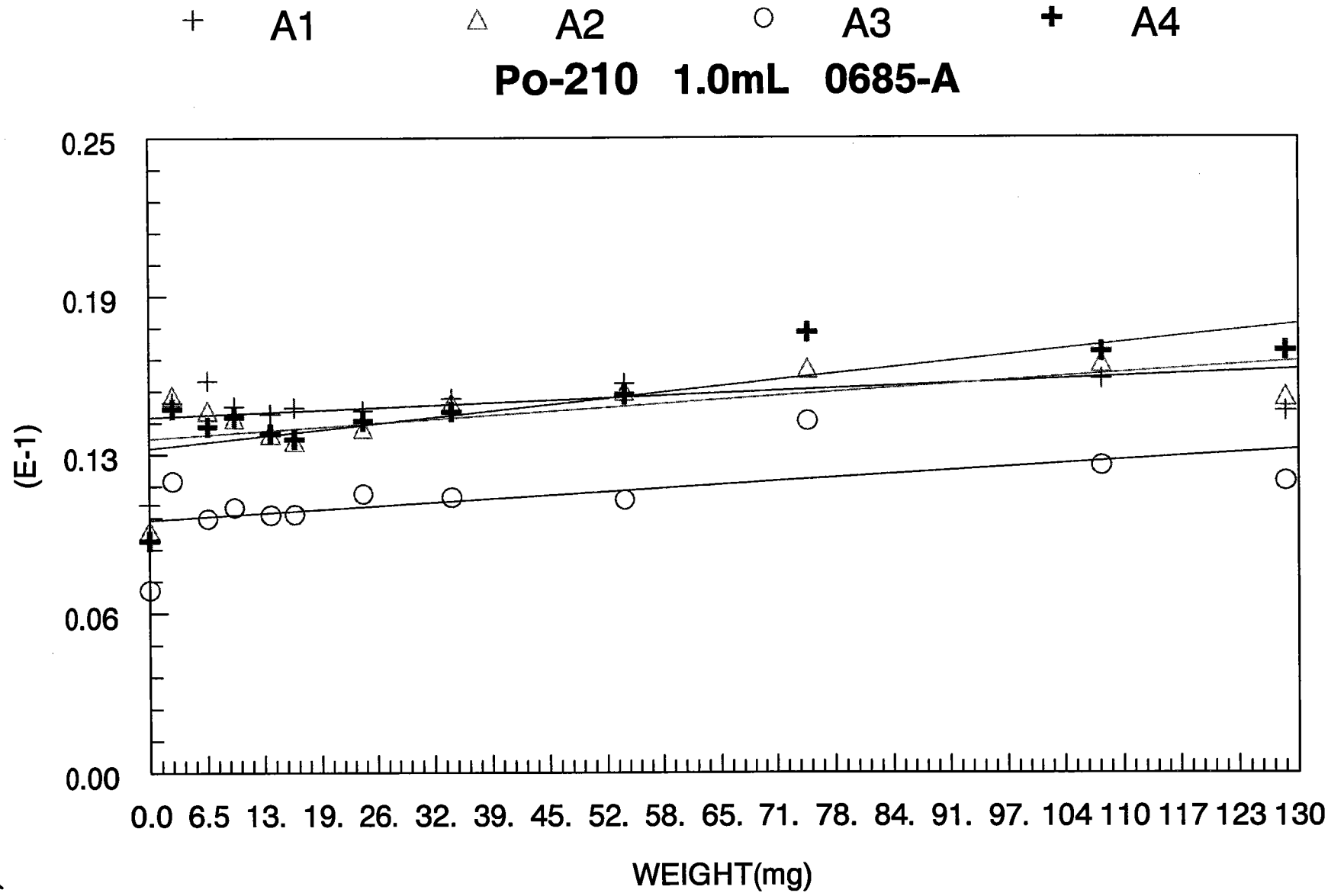
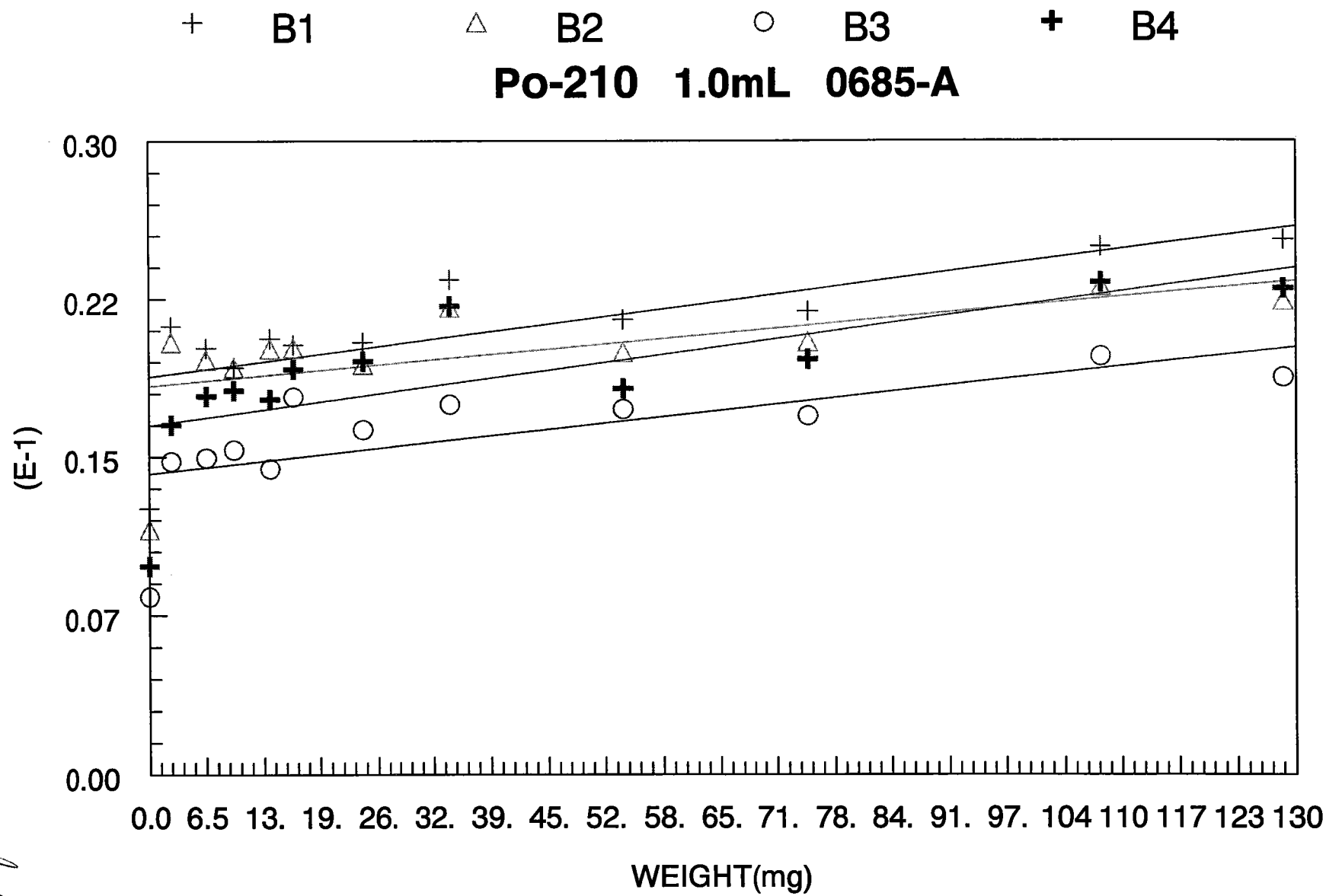


ALPHA Xtlk LB4100 July, 2004

DRAWER B



ALPHA Xtlk LB4100 July, 2004

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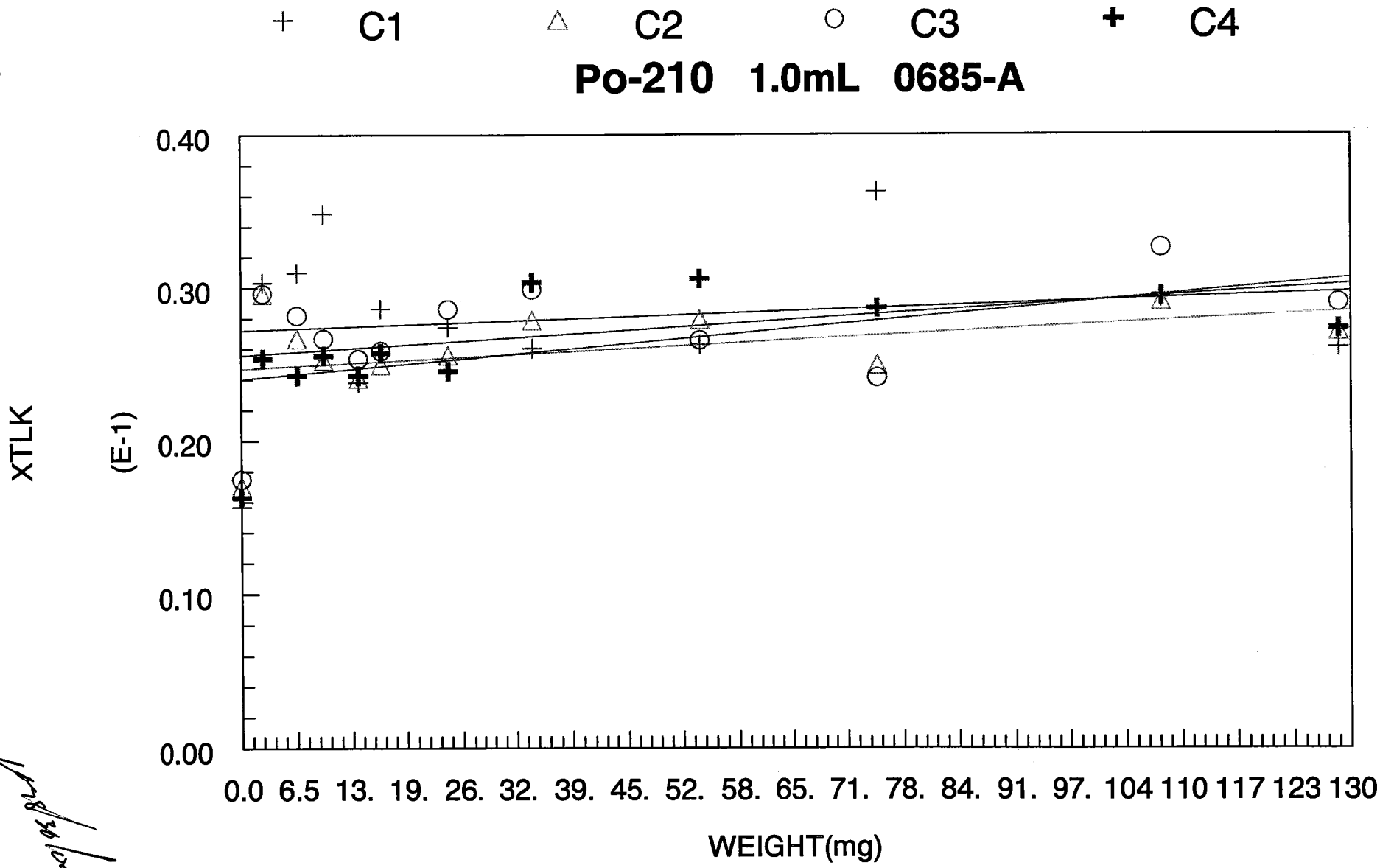

ALPHA Xtlk LB4100 July, 2004

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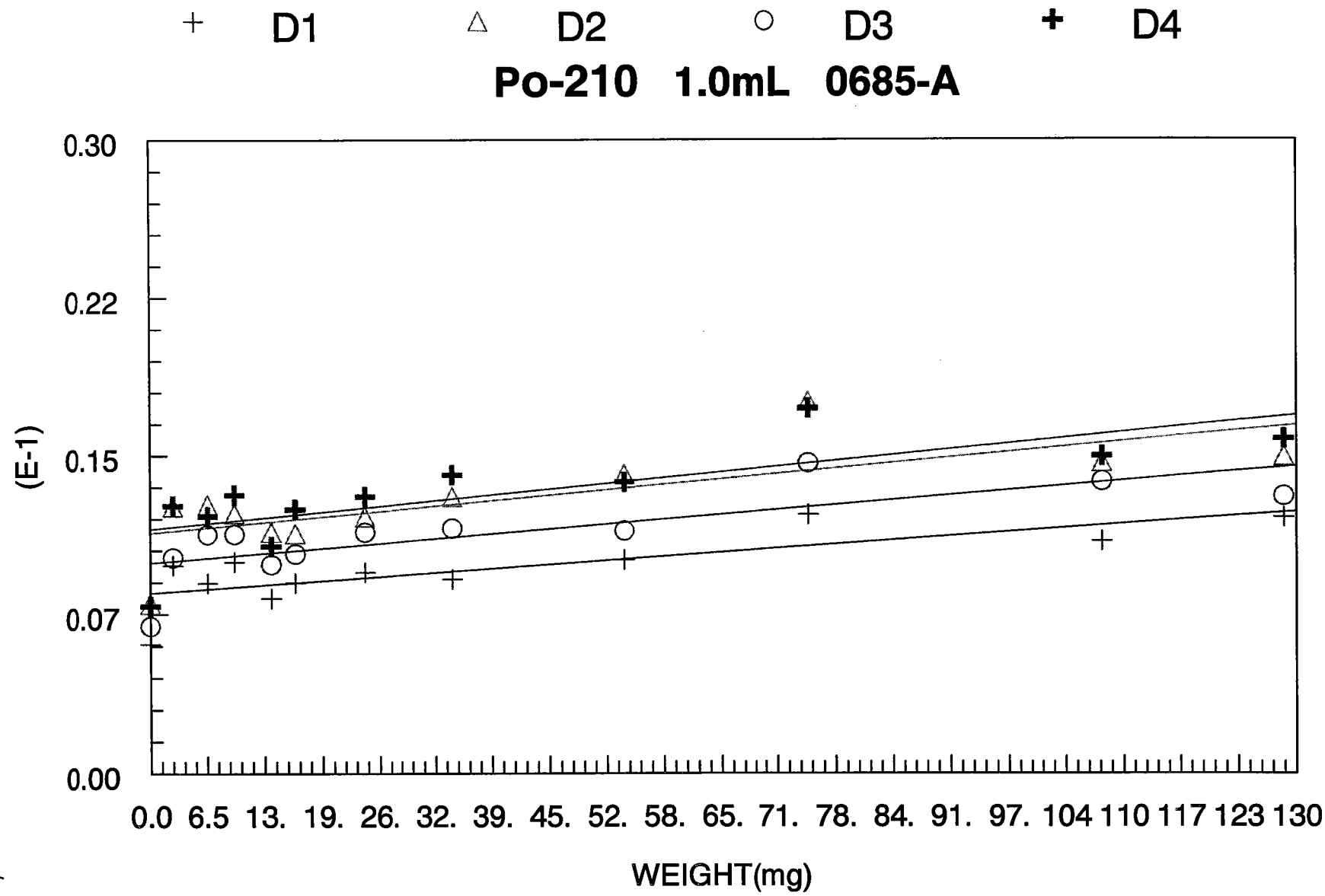

ALPHA Xtlk LB4100 July, 2004

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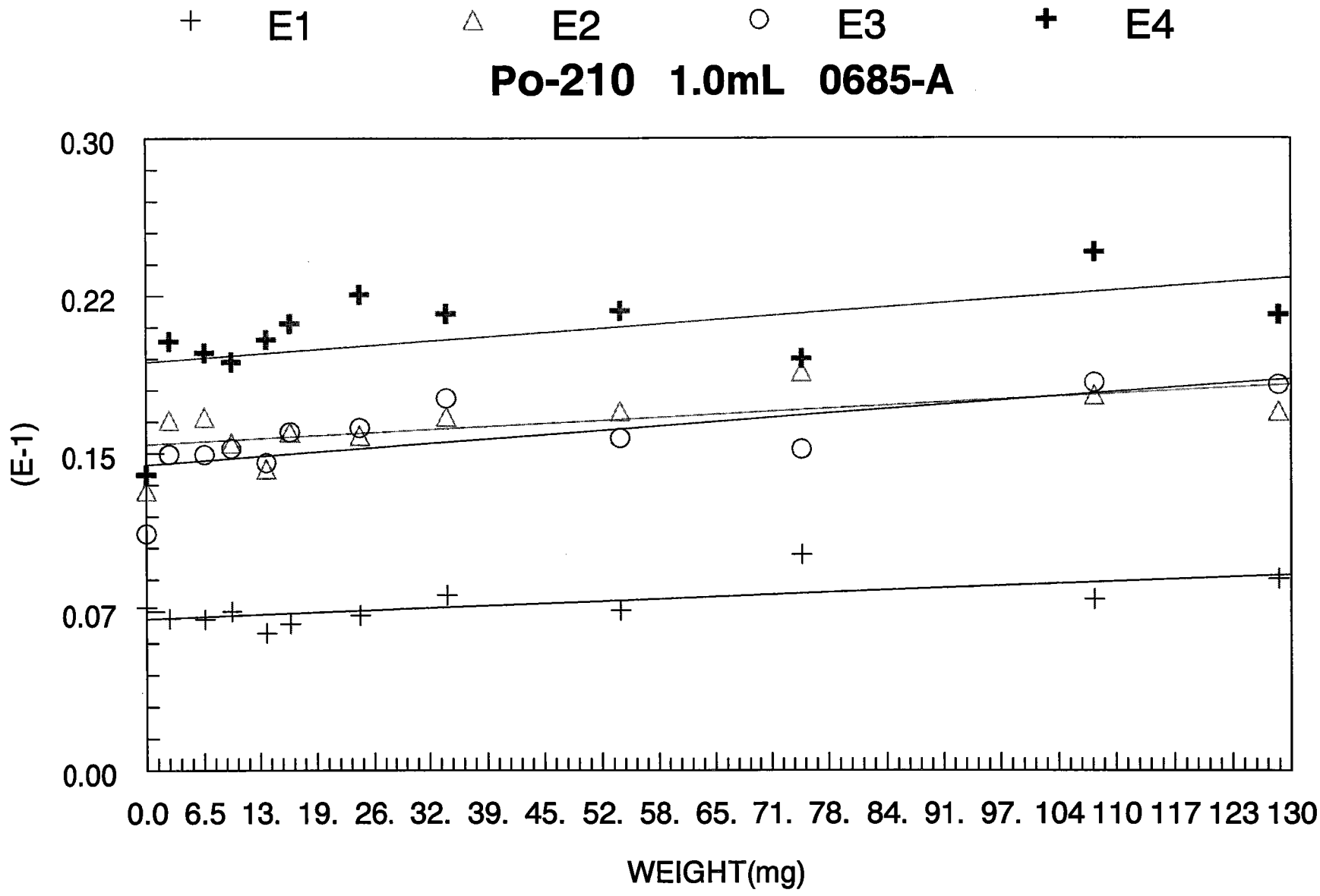

ALPHA Xtlk LB4100 July, 2004

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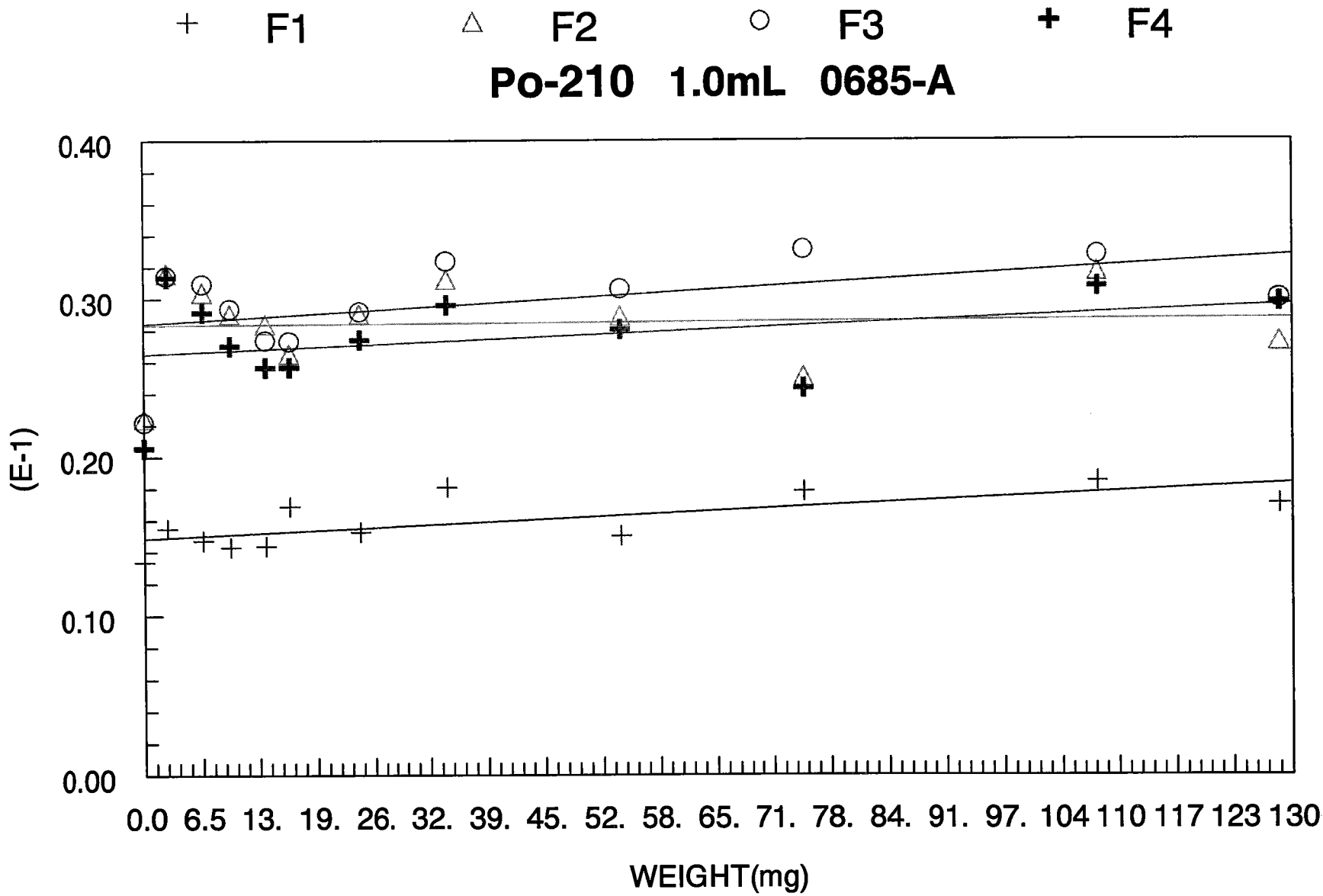

ALPHA Xtlk LB4100 July, 2004

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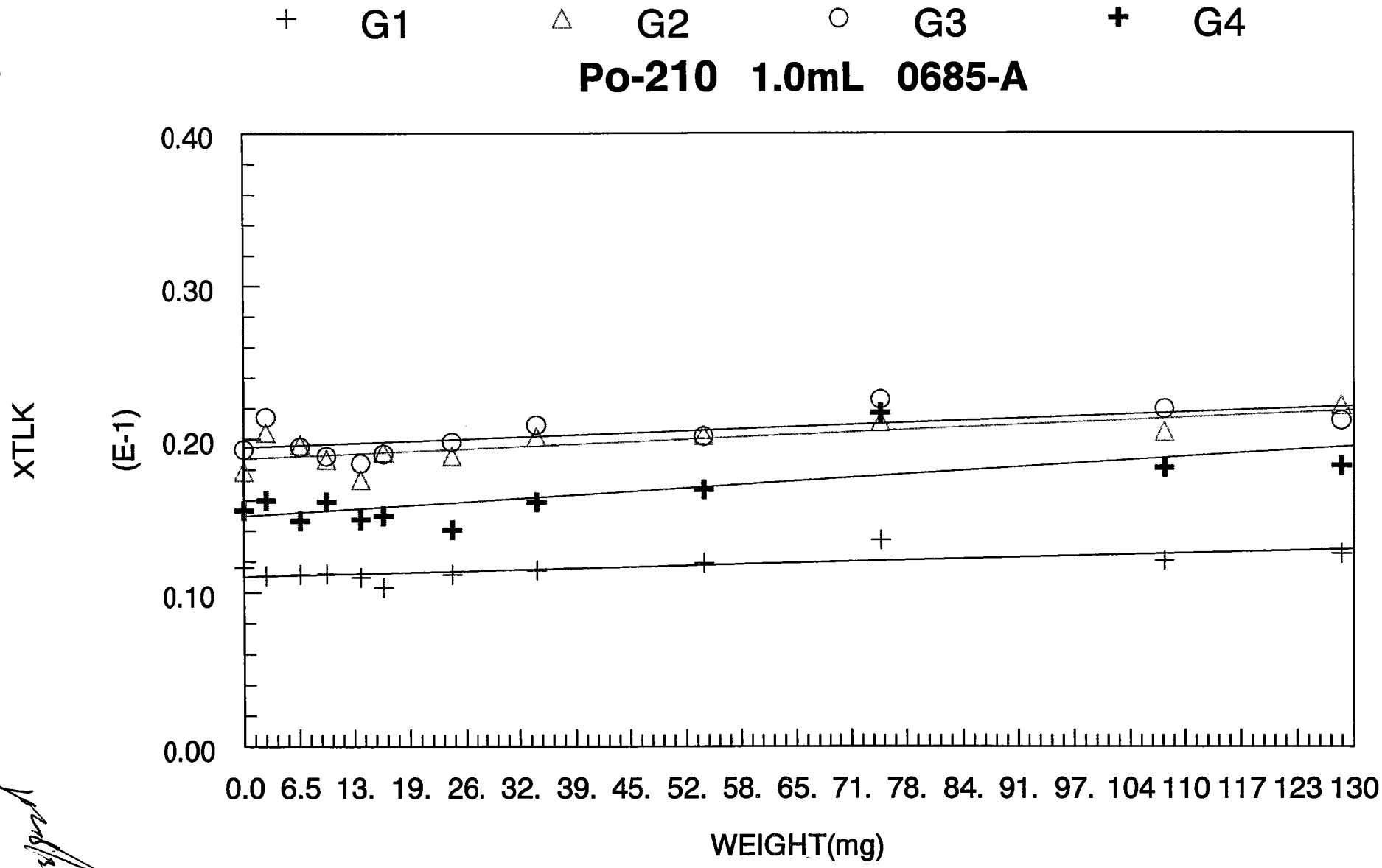
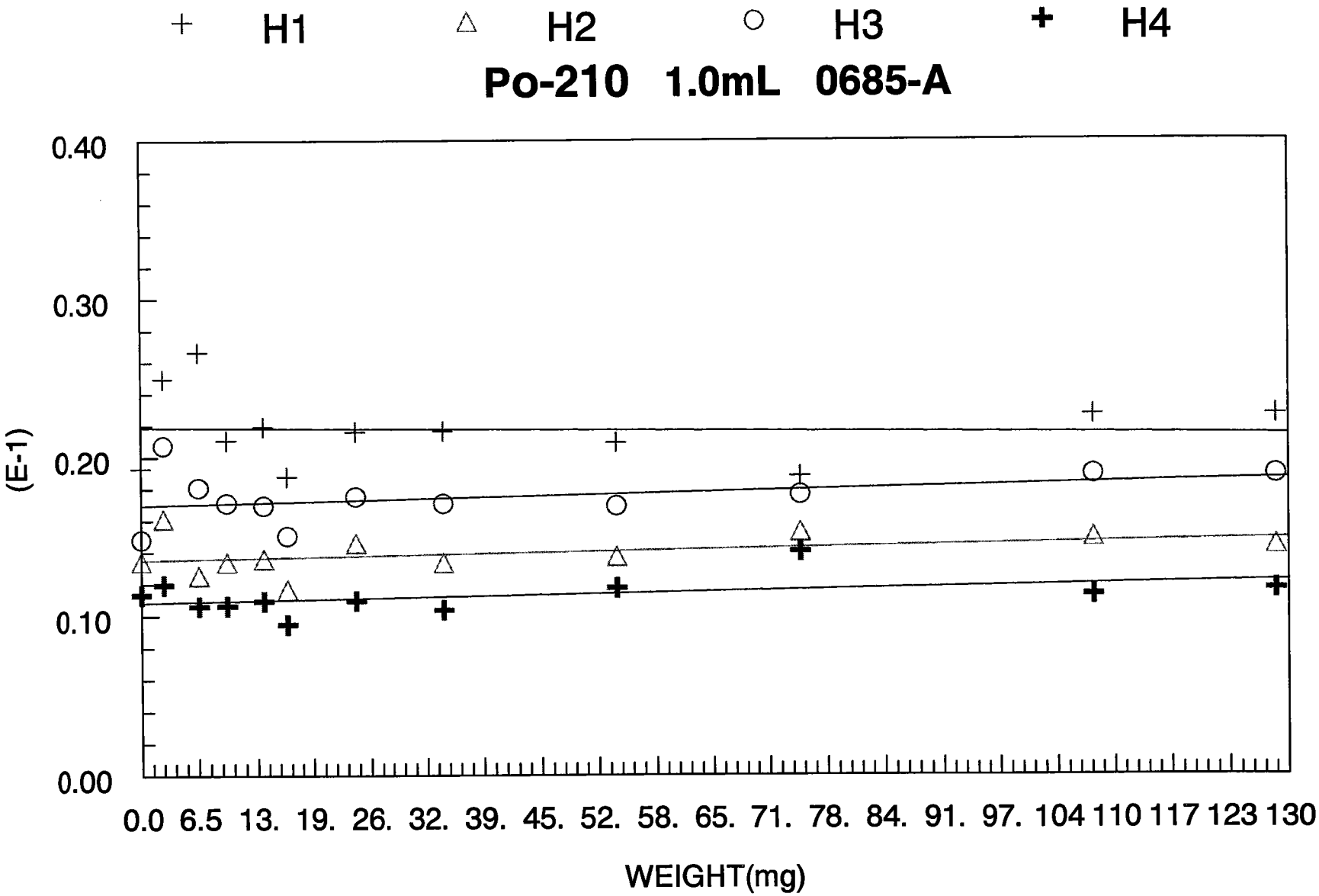


ALPHA Xtlk LB4100 July, 2004

DRAWER H



Plateau Raw Data

Detector	Pgm time	Sample I.D.	Alpha	Beta	Total	Voltage	Date/Time	
A1	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
A1	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
A1	1	SR-90	0	0	0	60	7/18/05 4:53	#DIV/0!
A1	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
A1	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
A1	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
A1	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
A1	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
A1	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
A1	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
A1	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
A1	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
A1	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
A1	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
A1	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
A1	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
A1	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
A1	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
A1	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
A1	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
A1	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
A1	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
A1	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
A1	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
A1	1	SR-90	0	0	0	720	7/18/05 5:16	#DIV/0!
A1	1	SR-90	0	0	0	750	7/18/05 5:17	#DIV/0!
A1	1	SR-90	0	0	0	780	7/18/05 5:18	333.33
A1	1	SR-90	0	0	0	810	7/18/05 5:19	284.72
A1	1	SR-90	0	0	0	840	7/18/05 5:20	298.19
A1	1	SR-90	0	7	7	870	7/18/05 5:21	279.49
A1	1	SR-90	0	17	17	900	7/18/05 5:23	254.90
A1	1	SR-90	0	123	123	930	7/18/05 5:24	222.73
A1	1	SR-90	0	403	404	960	7/18/05 5:25	188.37
A1	1	SR-90	0	998	998	990	7/18/05 5:26	152.63
A1	1	SR-90	0	1838	1838	1020	7/18/05 5:27	122.86
A1	1	SR-90	0	3004	3004	1050	7/18/05 5:28	103.20
A1	1	SR-90	0	4169	4169	1080	7/18/05 5:29	91.12
A1	1	SR-90	0	5577	5577	1110	7/18/05 5:30	85.48
A1	1	SR-90	1	7339	7341	1140	7/18/05 5:31	79.16
A1	1	SR-90	0	9510	9510	1170	7/18/05 5:32	72.88
A1	1	SR-90	0	12135	12135	1200	7/18/05 5:33	53.65
A1	1	SR-90	0	14934	14934	1230	7/18/05 5:34	55.69
A1	1	SR-90	0	18213	18213	1260	7/18/05 5:35	54.66
A1	1	SR-90	0	18223	18223	1290	7/18/05 5:36	44.32
A1	1	SR-90	1	25280	25332	1320	7/18/05 5:38	41.95
A1	1	SR-90	0	28384	28652	1350	7/18/05 5:39	24.03
A1	1	SR-90	1	28594	28856	1380	7/18/05 5:40	17.39
A1	1	SR-90	1	31498	33381	1410	7/18/05 5:41	13.10
A1	1	SR-90	15	30829	33781	1440	7/18/05 5:42	4.57
A1	1	SR-90	111	30014	34493	1470	7/18/05 5:43	2.72
A1	1	SR-90	505	28509	34796	1500	7/18/05 5:44	1.76
A1	1	SR-90	1274	26860	35229	1530	7/18/05 5:45	1.84
A1	1	SR-90	2342	23878	34827	1560	7/18/05 5:46	0.81
A1	1	SR-90	3787	20987	35402	1590	7/18/05 5:47	1.69
A1	1	SR-90	5651	17432	35681	1620	7/18/05 5:48	0.77
A1	1	SR-90	7512	13129	35232	1650	7/18/05 5:49	-0.04
A1	1	SR-90	10660	9267	35811	1680	7/18/05 5:50	-0.08
A1	1	SR-90	13871	5593	35747	1710	7/18/05 5:51	-1.02
A1	1	SR-90	18147	2960	35404	1740	7/18/05 5:53	5.64
A1	1	SR-90	22962	1438	35391	1770	7/18/05 5:54	5.55
A1	1	SR-90	27878	828	35443	1800	7/18/05 5:55	
A2	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
A2	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
A2	1	SR-90	0	0	0	60	7/18/05 4:53	333.33
A2	1	SR-90	0	0	0	90	7/18/05 4:54	0.00
A2	1	SR-90	0	1	1	120	7/18/05 4:55	-166.67
A2	1	SR-90	0	0	0	150	7/18/05 4:56	-333.33
A2	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
A2	1	SR-90	0	0	0	210	7/18/05 4:58	333.33
A2	1	SR-90	0	0	0	240	7/18/05 4:59	166.67
A2	1	SR-90	0	0	0	270	7/18/05 5:00	166.67
A2	1	SR-90	0	1	1	300	7/18/05 5:01	0.00
A2	1	SR-90	0	0	0	330	7/18/05 5:02	-166.67
A2	1	SR-90	0	1	1	360	7/18/05 5:03	-166.67
A2	1	SR-90	0	0	0	390	7/18/05 5:04	-333.33

Plateau Raw Data

A2	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
A2	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
A2	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
A2	1	SR-90	0	0	0	510	7/18/05 5:09	333.33
A2	1	SR-90	0	0	0	540	7/18/05 5:10	166.67
A2	1	SR-90	0	0	0	570	7/18/05 5:11	0.00
A2	1	SR-90	0	1	1	600	7/18/05 5:12	83.33
A2	1	SR-90	0	0	0	630	7/18/05 5:13	-83.33
A2	1	SR-90	0	0	0	660	7/18/05 5:14	0.00
A2	1	SR-90	0	1	1	690	7/18/05 5:15	-166.67
A2	1	SR-90	0	0	0	720	7/18/05 5:16	-333.33
A2	1	SR-90	0	0	0	750	7/18/05 5:17	333.33
A2	1	SR-90	0	0	0	780	7/18/05 5:18	300.00
A2	1	SR-90	0	0	0	810	7/18/05 5:19	312.93
A2	1	SR-90	0	1	1	840	7/18/05 5:20	298.74
A2	1	SR-90	0	4	4	870	7/18/05 5:21	280.48
A2	1	SR-90	0	44	44	900	7/18/05 5:23	247.74
A2	1	SR-90	0	215	216	930	7/18/05 5:24	209.10
A2	1	SR-90	0	744	744	960	7/18/05 5:25	167.71
A2	1	SR-90	0	1570	1570	990	7/18/05 5:26	134.76
A2	1	SR-90	0	2634	2634	1020	7/18/05 5:27	112.82
A2	1	SR-90	0	3761	3762	1050	7/18/05 5:28	99.17
A2	1	SR-90	0	5320	5320	1080	7/18/05 5:29	89.93
A2	1	SR-90	0	7141	7141	1110	7/18/05 5:30	81.25
A2	1	SR-90	0	9331	9331	1140	7/18/05 5:31	75.41
A2	1	SR-90	0	11847	11847	1170	7/18/05 5:32	69.85
A2	1	SR-90	1	14765	14766	1200	7/18/05 5:33	52.03
A2	1	SR-90	0	18314	18314	1230	7/18/05 5:34	53.78
A2	1	SR-90	0	22098	22098	1260	7/18/05 5:35	51.91
A2	1	SR-90	1	22091	22092	1290	7/18/05 5:36	40.17
A2	1	SR-90	0	30160	30218	1320	7/18/05 5:38	36.11
A2	1	SR-90	0	33613	33987	1350	7/18/05 5:39	19.35
A2	1	SR-90	0	32881	33215	1380	7/18/05 5:40	14.01
A2	1	SR-90	4	35631	37615	1410	7/18/05 5:41	11.36
A2	1	SR-90	53	35224	38476	1440	7/18/05 5:42	2.83
A2	1	SR-90	269	34199	39018	1470	7/18/05 5:43	1.73
A2	1	SR-90	854	32271	38895	1500	7/18/05 5:44	2.14
A2	1	SR-90	1874	30057	39045	1530	7/18/05 5:45	2.15
A2	1	SR-90	3127	27554	39474	1560	7/18/05 5:46	1.57
A2	1	SR-90	4798	24380	39988	1590	7/18/05 5:47	0.41
A2	1	SR-90	6950	20013	39697	1620	7/18/05 5:48	-0.46
A2	1	SR-90	9611	15377	39865	1650	7/18/05 5:49	0.02
A2	1	SR-90	12741	10912	39778	1680	7/18/05 5:50	-0.32
A2	1	SR-90	16877	6656	39672	1710	7/18/05 5:51	-0.38
A2	1	SR-90	22212	3779	39806	1740	7/18/05 5:53	5.64
A2	1	SR-90	27588	1861	39663	1770	7/18/05 5:54	5.55
A2	1	SR-90	32401	948	39558	1800	7/18/05 5:55	
A3	1	SR-90	0	11	11	0	7/18/05 4:50	% slope
A3	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
A3	1	SR-90	0	0	0	60	7/18/05 4:53	#DIV/0!
A3	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
A3	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
A3	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
A3	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
A3	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
A3	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
A3	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
A3	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
A3	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
A3	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
A3	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
A3	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
A3	1	SR-90	0	0	0	450	7/18/05 5:06	333.33
A3	1	SR-90	0	0	0	480	7/18/05 5:08	166.67
A3	1	SR-90	0	0	0	510	7/18/05 5:09	0.00
A3	1	SR-90	0	1	1	540	7/18/05 5:10	-166.67
A3	1	SR-90	0	0	0	570	7/18/05 5:11	-333.33
A3	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
A3	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
A3	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
A3	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
A3	1	SR-90	0	0	0	720	7/18/05 5:16	#DIV/0!
A3	1	SR-90	0	0	0	750	7/18/05 5:17	#DIV/0!
A3	1	SR-90	0	0	0	780	7/18/05 5:18	333.33
A3	1	SR-90	0	0	0	810	7/18/05 5:19	311.11
A3	1	SR-90	0	0	0	840	7/18/05 5:20	300.10

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A3	1	SR-90	0	8	8	870	7/18/05 5:21	267.60
A3	1	SR-90	0	52	52	900	7/18/05 5:23	240.14
A3	1	SR-90	0	281	281	930	7/18/05 5:24	205.75
A3	1	SR-90	0	696	696	960	7/18/05 5:25	168.20
A3	1	SR-90	0	1549	1549	990	7/18/05 5:26	136.37
A3	1	SR-90	0	2637	2637	1020	7/18/05 5:27	112.03
A3	1	SR-90	0	3867	3867	1050	7/18/05 5:28	96.62
A3	1	SR-90	0	5274	5274	1080	7/18/05 5:29	88.48
A3	1	SR-90	0	7094	7094	1110	7/18/05 5:30	81.85
A3	1	SR-90	0	9144	9144	1140	7/18/05 5:31	74.96
A3	1	SR-90	0	11801	11801	1170	7/18/05 5:32	68.63
A3	1	SR-90	0	14714	14714	1200	7/18/05 5:33	50.27
A3	1	SR-90	0	17963	17963	1230	7/18/05 5:34	51.56
A3	1	SR-90	1	21536	21537	1260	7/18/05 5:35	50.05
A3	1	SR-90	0	21603	21604	1290	7/18/05 5:36	40.16
A3	1	SR-90	0	28975	29128	1320	7/18/05 5:38	37.24
A3	1	SR-90	2	32048	32613	1350	7/18/05 5:39	21.23
A3	1	SR-90	0	32063	32596	1380	7/18/05 5:40	16.00
A3	1	SR-90	5	34534	36952	1410	7/18/05 5:41	12.86
A3	1	SR-90	42	33920	37721	1440	7/18/05 5:42	4.07
A3	1	SR-90	259	33297	38618	1470	7/18/05 5:43	2.60
A3	1	SR-90	748	31333	38892	1500	7/18/05 5:44	1.36
A3	1	SR-90	1710	28753	38696	1530	7/18/05 5:45	1.41
A3	1	SR-90	2868	26177	39186	1560	7/18/05 5:46	0.69
A3	1	SR-90	4509	22609	39266	1590	7/18/05 5:47	-0.31
A3	1	SR-90	6494	18757	39432	1620	7/18/05 5:48	-0.19
A3	1	SR-90	8715	13996	38978	1650	7/18/05 5:49	0.62
A3	1	SR-90	12095	9794	39148	1680	7/18/05 5:50	1.25
A3	1	SR-90	16007	6208	39296	1710	7/18/05 5:51	0.98
A3	1	SR-90	21007	3580	39641	1740	7/18/05 5:53	5.64
A3	1	SR-90	26440	1844	39471	1770	7/18/05 5:54	5.55
A3	1	SR-90	31417	976	39639	1800	7/18/05 5:55	
A4	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
A4	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
A4	1	SR-90	0	0	0	60	7/18/05 4:53	666.67
A4	1	SR-90	0	0	0	90	7/18/05 4:54	277.78
A4	1	SR-90	0	0	0	120	7/18/05 4:55	0.00
A4	1	SR-90	0	1	1	150	7/18/05 4:56	-166.67
A4	1	SR-90	0	0	0	180	7/18/05 4:57	-333.33
A4	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
A4	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
A4	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
A4	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
A4	1	SR-90	0	0	0	330	7/18/05 5:02	333.33
A4	1	SR-90	0	0	0	360	7/18/05 5:03	166.67
A4	1	SR-90	0	0	0	390	7/18/05 5:04	0.00
A4	1	SR-90	0	1	1	420	7/18/05 5:05	-166.67
A4	1	SR-90	0	0	0	450	7/18/05 5:06	-333.33
A4	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
A4	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
A4	1	SR-90	0	0	0	540	7/18/05 5:10	333.33
A4	1	SR-90	0	0	0	570	7/18/05 5:11	166.67
A4	1	SR-90	0	0	0	600	7/18/05 5:12	0.00
A4	1	SR-90	0	1	1	630	7/18/05 5:13	83.33
A4	1	SR-90	0	0	0	660	7/18/05 5:14	-83.33
A4	1	SR-90	0	0	0	690	7/18/05 5:15	0.00
A4	1	SR-90	0	1	1	720	7/18/05 5:16	83.33
A4	1	SR-90	0	0	0	750	7/18/05 5:17	240.74
A4	1	SR-90	0	0	0	780	7/18/05 5:18	312.21
A4	1	SR-90	0	1	1	810	7/18/05 5:19	289.62
A4	1	SR-90	0	7	7	840	7/18/05 5:20	271.46
A4	1	SR-90	0	63	63	870	7/18/05 5:21	238.22
A4	1	SR-90	0	234	234	900	7/18/05 5:23	204.29
A4	1	SR-90	0	732	732	930	7/18/05 5:24	166.63
A4	1	SR-90	0	1447	1447	960	7/18/05 5:25	135.84
A4	1	SR-90	0	2516	2516	990	7/18/05 5:26	112.71
A4	1	SR-90	0	3611	3611	1020	7/18/05 5:27	95.78
A4	1	SR-90	0	5122	5122	1050	7/18/05 5:28	85.64
A4	1	SR-90	0	6703	6704	1080	7/18/05 5:29	77.16
A4	1	SR-90	0	8599	8599	1110	7/18/05 5:30	71.82
A4	1	SR-90	0	10830	10830	1140	7/18/05 5:31	69.54
A4	1	SR-90	0	13395	13395	1170	7/18/05 5:32	64.60
A4	1	SR-90	0	16345	16345	1200	7/18/05 5:33	47.73
A4	1	SR-90	1	20343	20344	1230	7/18/05 5:34	47.37
A4	1	SR-90	0	23768	23768	1260	7/18/05 5:35	42.48
A4	1	SR-90	0	23644	23644	1290	7/18/05 5:36	33.45

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A4	1	SR-90	1	31016	31062	1320	7/18/05 5:38	28.81
A4	1	SR-90	0	33323	33570	1350	7/18/05 5:39	13.92
A4	1	SR-90	1	33198	33399	1380	7/18/05 5:40	9.48
A4	1	SR-90	2	34483	36112	1410	7/18/05 5:41	7.55
A4	1	SR-90	27	34181	36937	1440	7/18/05 5:42	1.90
A4	1	SR-90	158	32782	36833	1470	7/18/05 5:43	1.27
A4	1	SR-90	550	31486	37127	1500	7/18/05 5:44	1.89
A4	1	SR-90	1327	29318	37067	1530	7/18/05 5:45	0.70
A4	1	SR-90	2354	27179	37528	1560	7/18/05 5:46	0.45
A4	1	SR-90	3723	24373	37689	1590	7/18/05 5:47	-0.11
A4	1	SR-90	5185	20682	37207	1620	7/18/05 5:48	0.02
A4	1	SR-90	7689	16690	37482	1650	7/18/05 5:49	0.37
A4	1	SR-90	10296	12553	37569	1680	7/18/05 5:50	-0.41
A4	1	SR-90	13553	8428	37522	1710	7/18/05 5:51	0.48
A4	1	SR-90	17625	5217	37394	1740	7/18/05 5:53	5.64
A4	1	SR-90	22655	2849	37340	1770	7/18/05 5:54	5.55
A4	1	SR-90	28013	1423	37930	1800	7/18/05 5:55	
B1	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
B1	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
B1	1	SR-90	0	0	0	60	7/18/05 4:53	0.00
B1	1	SR-90	0	1	1	90	7/18/05 4:54	-277.78
B1	1	SR-90	0	0	0	120	7/18/05 4:55	0.00
B1	1	SR-90	0	0	0	150	7/18/05 4:56	166.67
B1	1	SR-90	0	0	0	180	7/18/05 4:57	166.67
B1	1	SR-90	0	1	1	210	7/18/05 4:58	0.00
B1	1	SR-90	0	0	0	240	7/18/05 4:59	0.00
B1	1	SR-90	0	1	1	270	7/18/05 5:00	0.00
B1	1	SR-90	0	0	0	300	7/18/05 5:01	-166.67
B1	1	SR-90	0	1	1	330	7/18/05 5:02	-166.67
B1	1	SR-90	0	0	0	360	7/18/05 5:03	0.00
B1	1	SR-90	0	0	0	390	7/18/05 5:04	250.00
B1	1	SR-90	0	0	0	420	7/18/05 5:05	83.33
B1	1	SR-90	0	1	1	450	7/18/05 5:06	55.56
B1	1	SR-90	0	1	1	480	7/18/05 5:08	0.00
B1	1	SR-90	0	0	0	510	7/18/05 5:09	-55.56
B1	1	SR-90	0	1	1	540	7/18/05 5:10	-83.33
B1	1	SR-90	0	1	1	570	7/18/05 5:11	-250.00
B1	1	SR-90	0	0	0	600	7/18/05 5:12	-333.33
B1	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
B1	1	SR-90	0	0	0	660	7/18/05 5:14	333.33
B1	1	SR-90	0	0	0	690	7/18/05 5:15	166.67
B1	1	SR-90	0	0	0	720	7/18/05 5:16	0.00
B1	1	SR-90	0	1	1	750	7/18/05 5:17	-166.67
B1	1	SR-90	0	0	0	780	7/18/05 5:18	200.00
B1	1	SR-90	0	0	0	810	7/18/05 5:19	285.71
B1	1	SR-90	0	0	0	840	7/18/05 5:20	299.63
B1	1	SR-90	0	4	4	870	7/18/05 5:21	290.67
B1	1	SR-90	0	10	10	900	7/18/05 5:23	274.88
B1	1	SR-90	0	75	75	930	7/18/05 5:24	238.76
B1	1	SR-90	0	329	329	960	7/18/05 5:25	199.59
B1	1	SR-90	0	1079	1079	990	7/18/05 5:26	158.61
B1	1	SR-90	0	2035	2035	1020	7/18/05 5:27	126.45
B1	1	SR-90	0	3310	3311	1050	7/18/05 5:28	107.69
B1	1	SR-90	0	4630	4630	1080	7/18/05 5:29	94.24
B1	1	SR-90	0	6404	6405	1110	7/18/05 5:30	88.25
B1	1	SR-90	1	8538	8539	1140	7/18/05 5:31	80.43
B1	1	SR-90	0	10910	10911	1170	7/18/05 5:32	76.29
B1	1	SR-90	0	14210	14210	1200	7/18/05 5:33	56.68
B1	1	SR-90	0	17446	17446	1230	7/18/05 5:34	59.48
B1	1	SR-90	0	22005	22005	1260	7/18/05 5:35	57.25
B1	1	SR-90	0	21680	21680	1290	7/18/05 5:36	44.43
B1	1	SR-90	0	31053	31082	1320	7/18/05 5:38	42.43
B1	1	SR-90	0	34463	34706	1350	7/18/05 5:39	26.13
B1	1	SR-90	0	34524	34711	1380	7/18/05 5:40	21.38
B1	1	SR-90	0	38806	40586	1410	7/18/05 5:41	22.37
B1	1	SR-90	3	39501	42538	1440	7/18/05 5:42	8.92
B1	1	SR-90	50	38695	43359	1470	7/18/05 5:43	2.69
B1	1	SR-90	31396	1603	44537	1470	7/18/05 6:00	-0.06
B1	1	SR-90	248	37384	43819	1500	7/18/05 5:44	-0.89
B1	1	SR-90	866	34940	43902	1530	7/18/05 5:45	1.36
B1	1	SR-90	1929	32170	43923	1560	7/18/05 5:46	1.15
B1	1	SR-90	3312	28651	43900	1590	7/18/05 5:47	1.38
B1	1	SR-90	5063	24989	44720	1620	7/18/05 5:48	0.72
B1	1	SR-90	7251	19880	44266	1650	7/18/05 5:49	0.20
B1	1	SR-90	10358	14644	44656	1680	7/18/05 5:50	1.00
B1	1	SR-90	14074	9581	44414	1710	7/18/05 5:51	5.74

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B1	1	SR-90	19158	5768	44780	1740	7/18/05 5:53	5.65
B1	1	SR-90	25118	3133	44876	1770	7/18/05 5:54	
B2	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
B2	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
B2	1	SR-90	0	0	0	60	7/18/05 4:53	#DIV/0!
B2	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
B2	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
B2	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
B2	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
B2	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
B2	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
B2	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
B2	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
B2	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
B2	1	SR-90	0	0	0	360	7/18/05 5:03	333.33
B2	1	SR-90	0	0	0	390	7/18/05 5:04	166.67
B2	1	SR-90	0	0	0	420	7/18/05 5:05	166.67
B2	1	SR-90	0	1	1	450	7/18/05 5:06	0.00
B2	1	SR-90	0	0	0	480	7/18/05 5:08	-166.67
B2	1	SR-90	0	1	1	510	7/18/05 5:09	-166.67
B2	1	SR-90	0	0	0	540	7/18/05 5:10	0.00
B2	1	SR-90	0	0	0	570	7/18/05 5:11	166.67
B2	1	SR-90	0	0	0	600	7/18/05 5:12	0.00
B2	1	SR-90	0	1	1	630	7/18/05 5:13	83.33
B2	1	SR-90	0	0	0	660	7/18/05 5:14	-83.33
B2	1	SR-90	0	0	0	690	7/18/05 5:15	166.67
B2	1	SR-90	0	1	1	720	7/18/05 5:16	111.11
B2	1	SR-90	0	0	0	750	7/18/05 5:17	-55.56
B2	1	SR-90	0	1	1	780	7/18/05 5:18	-83.33
B2	1	SR-90	0	1	1	810	7/18/05 5:19	227.27
B2	1	SR-90	0	0	0	840	7/18/05 5:20	293.94
B2	1	SR-90	0	0	0	870	7/18/05 5:21	303.25
B2	1	SR-90	0	9	9	900	7/18/05 5:23	272.08
B2	1	SR-90	0	45	45	930	7/18/05 5:24	238.95
B2	1	SR-90	0	295	295	960	7/18/05 5:25	205.28
B2	1	SR-90	0	772	772	990	7/18/05 5:26	166.83
B2	1	SR-90	0	1586	1586	1020	7/18/05 5:27	134.27
B2	1	SR-90	0	2762	2762	1050	7/18/05 5:28	109.85
B2	1	SR-90	0	4024	4024	1080	7/18/05 5:29	97.79
B2	1	SR-90	0	5419	5419	1110	7/18/05 5:30	90.16
B2	1	SR-90	0	7163	7163	1140	7/18/05 5:31	82.51
B2	1	SR-90	0	9729	9729	1170	7/18/05 5:32	76.96
B2	1	SR-90	0	12326	12326	1200	7/18/05 5:33	55.48
B2	1	SR-90	0	15164	15164	1230	7/18/05 5:34	60.74
B2	1	SR-90	1	19103	19104	1260	7/18/05 5:35	59.25
B2	1	SR-90	2	18849	18851	1290	7/18/05 5:36	46.93
B2	1	SR-90	0	27282	27401	1320	7/18/05 5:38	43.35
B2	1	SR-90	0	30256	30802	1350	7/18/05 5:39	25.49
B2	1	SR-90	0	30549	31038	1380	7/18/05 5:40	20.32
B2	1	SR-90	0	33301	35738	1410	7/18/05 5:41	20.88
B2	1	SR-90	3	33356	37347	1440	7/18/05 5:42	8.29
B2	1	SR-90	64	32627	38201	1470	7/18/05 5:43	2.29
B2	1	SR-90	30794	898	38993	1470	7/18/05 6:00	0.22
B2	1	SR-90	320	30588	38314	1500	7/18/05 5:44	0.12
B2	1	SR-90	969	28177	38462	1530	7/18/05 5:45	2.01
B2	1	SR-90	2020	25189	38721	1560	7/18/05 5:46	1.47
B2	1	SR-90	3433	21399	38861	1590	7/18/05 5:47	1.39
B2	1	SR-90	5132	17260	39281	1620	7/18/05 5:48	0.10
B2	1	SR-90	7461	12507	39037	1650	7/18/05 5:49	-0.66
B2	1	SR-90	10721	7914	39449	1680	7/18/05 5:50	0.11
B2	1	SR-90	14210	4515	38838	1710	7/18/05 5:51	5.74
B2	1	SR-90	19378	2451	38994	1740	7/18/05 5:53	5.65
B2	1	SR-90	25447	1294	39329	1770	7/18/05 5:54	
B3	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
B3	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
B3	1	SR-90	0	0	0	60	7/18/05 4:53	#DIV/0!
B3	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
B3	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
B3	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
B3	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
B3	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
B3	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
B3	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
B3	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
B3	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
B3	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!

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B3	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
B3	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
B3	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
B3	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
B3	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
B3	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
B3	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
B3	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
B3	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
B3	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
B3	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
B3	1	SR-90	0	0	0	720	7/18/05 5:16	#DIV/0!
B3	1	SR-90	0	0	0	750	7/18/05 5:17	#DIV/0!
B3	1	SR-90	0	0	0	780	7/18/05 5:18	333.33
B3	1	SR-90	0	0	0	810	7/18/05 5:19	291.67
B3	1	SR-90	0	0	0	840	7/18/05 5:20	302.47
B3	1	SR-90	0	4	4	870	7/18/05 5:21	288.14
B3	1	SR-90	0	12	12	900	7/18/05 5:23	260.61
B3	1	SR-90	0	92	92	930	7/18/05 5:24	229.00
B3	1	SR-90	0	364	364	960	7/18/05 5:25	190.59
B3	1	SR-90	0	903	903	990	7/18/05 5:26	155.14
B3	1	SR-90	0	1752	1752	1020	7/18/05 5:27	125.47
B3	1	SR-90	0	2748	2748	1050	7/18/05 5:28	107.27
B3	1	SR-90	0	3976	3976	1080	7/18/05 5:29	94.72
B3	1	SR-90	0	5326	5326	1110	7/18/05 5:30	87.75
B3	1	SR-90	0	7232	7232	1140	7/18/05 5:31	81.82
B3	1	SR-90	0	9219	9219	1170	7/18/05 5:32	74.25
B3	1	SR-90	0	11957	11957	1200	7/18/05 5:33	55.05
B3	1	SR-90	0	14901	14901	1230	7/18/05 5:34	56.46
B3	1	SR-90	0	18062	18062	1260	7/18/05 5:35	54.97
B3	1	SR-90	0	18097	18097	1290	7/18/05 5:36	43.63
B3	1	SR-90	0	25246	25323	1320	7/18/05 5:38	40.02
B3	1	SR-90	0	28208	28580	1350	7/18/05 5:39	22.85
B3	1	SR-90	0	27968	28314	1380	7/18/05 5:40	16.51
B3	1	SR-90	0	30578	32553	1410	7/18/05 5:41	17.50
B3	1	SR-90	5	30261	33501	1440	7/18/05 5:42	5.74
B3	1	SR-90	64	29137	33747	1470	7/18/05 5:43	1.63
B3	1	SR-90	29164	670	34629	1470	7/18/05 6:00	0.34
B3	1	SR-90	323	27583	34198	1500	7/18/05 5:44	-0.85
B3	1	SR-90	1099	25236	34123	1530	7/18/05 5:45	0.81
B3	1	SR-90	2111	22644	34350	1560	7/18/05 5:46	0.89
B3	1	SR-90	3321	19097	34115	1590	7/18/05 5:47	0.07
B3	1	SR-90	5082	15510	34618	1620	7/18/05 5:48	-0.04
B3	1	SR-90	7221	10939	34445	1650	7/18/05 5:49	-0.55
B3	1	SR-90	10116	6631	34223	1680	7/18/05 5:50	1.21
B3	1	SR-90	13776	3609	34294	1710	7/18/05 5:51	5.74
B3	1	SR-90	18580	1680	34409	1740	7/18/05 5:53	5.65
B3	1	SR-90	24449	954	34976	1770	7/18/05 5:54	
B4	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
B4	1	SR-90	0	0	0	30	7/18/05 4:51	per 100v
B4	1	SR-90	0	0	0	60	7/18/05 4:53	#DIV/0!
B4	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
B4	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
B4	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
B4	1	SR-90	0	0	0	180	7/18/05 4:57	333.33
B4	1	SR-90	0	0	0	210	7/18/05 4:58	166.67
B4	1	SR-90	0	0	0	240	7/18/05 4:59	0.00
B4	1	SR-90	0	1	1	270	7/18/05 5:00	-166.67
B4	1	SR-90	0	0	0	300	7/18/05 5:01	-333.33
B4	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
B4	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
B4	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
B4	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
B4	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
B4	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
B4	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
B4	1	SR-90	0	0	0	540	7/18/05 5:10	333.33
B4	1	SR-90	0	0	0	570	7/18/05 5:11	166.67
B4	1	SR-90	0	0	0	600	7/18/05 5:12	0.00
B4	1	SR-90	0	1	1	630	7/18/05 5:13	166.67
B4	1	SR-90	0	0	0	660	7/18/05 5:14	0.00
B4	1	SR-90	0	0	0	690	7/18/05 5:15	0.00
B4	1	SR-90	0	2	2	720	7/18/05 5:16	-166.67
B4	1	SR-90	0	0	0	750	7/18/05 5:17	-333.33
B4	1	SR-90	0	0	0	780	7/18/05 5:18	333.33
B4	1	SR-90	0	0	0	810	7/18/05 5:19	325.76

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B4	1	SR-90	0	0	0	840	7/18/05 5:20	304.29
B4	1	SR-90	0	1	1	870	7/18/05 5:21	291.19
B4	1	SR-90	0	21	21	900	7/18/05 5:23	263.12
B4	1	SR-90	0	110	110	930	7/18/05 5:24	232.87
B4	1	SR-90	0	481	481	960	7/18/05 5:25	192.39
B4	1	SR-90	0	1210	1210	990	7/18/05 5:26	155.35
B4	1	SR-90	0	2468	2468	1020	7/18/05 5:27	124.79
B4	1	SR-90	0	3738	3738	1050	7/18/05 5:28	106.00
B4	1	SR-90	0	5426	5426	1080	7/18/05 5:29	94.29
B4	1	SR-90	0	7255	7255	1110	7/18/05 5:30	86.40
B4	1	SR-90	0	9847	9847	1140	7/18/05 5:31	80.78
B4	1	SR-90	1	12489	12490	1170	7/18/05 5:32	74.32
B4	1	SR-90	0	16044	16044	1200	7/18/05 5:33	55.57
B4	1	SR-90	0	20084	20084	1230	7/18/05 5:34	57.05
B4	1	SR-90	0	24563	24563	1260	7/18/05 5:35	54.47
B4	1	SR-90	0	24518	24519	1290	7/18/05 5:36	43.62
B4	1	SR-90	0	34213	34276	1320	7/18/05 5:38	40.67
B4	1	SR-90	0	38029	38409	1350	7/18/05 5:39	23.64
B4	1	SR-90	1	38231	38603	1380	7/18/05 5:40	17.61
B4	1	SR-90	0	41914	44333	1410	7/18/05 5:41	17.96
B4	1	SR-90	5	41699	45581	1440	7/18/05 5:42	6.10
B4	1	SR-90	85	40307	46181	1470	7/18/05 5:43	2.99
B4	1	SR-90	35932	1300	47392	1470	7/18/05 6:00	1.07
B4	1	SR-90	416	38557	46619	1500	7/18/05 5:44	-0.36
B4	1	SR-90	1310	36112	47148	1530	7/18/05 5:45	0.87
B4	1	SR-90	2635	32660	47174	1560	7/18/05 5:46	0.13
B4	1	SR-90	4228	28343	46858	1590	7/18/05 5:47	-0.21
B4	1	SR-90	6328	23614	47377	1620	7/18/05 5:48	0.17
B4	1	SR-90	8936	18156	47138	1650	7/18/05 5:49	-0.12
B4	1	SR-90	12564	12405	46883	1680	7/18/05 5:50	0.81
B4	1	SR-90	16933	7849	47225	1710	7/18/05 5:51	5.74
B4	1	SR-90	22492	4319	47250	1740	7/18/05 5:53	5.65
B4	1	SR-90	29254	2238	47530	1770	7/18/05 5:54	
C1	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
C1	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
C1	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
C1	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
C1	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
C1	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
C1	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
C1	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
C1	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
C1	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
C1	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
C1	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
C1	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
C1	1	SR-90	0	1	0	390	7/18/05 5:04	#DIV/0!
C1	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
C1	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
C1	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
C1	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
C1	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
C1	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
C1	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
C1	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
C1	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
C1	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
C1	1	SR-90	0	0	0	720	7/18/05 5:16	333.33
C1	1	SR-90	0	0	0	750	7/18/05 5:17	166.67
C1	1	SR-90	0	0	0	780	7/18/05 5:18	166.67
C1	1	SR-90	0	1	1	810	7/18/05 5:19	296.30
C1	1	SR-90	0	0	0	840	7/18/05 5:20	306.57
C1	1	SR-90	0	1	1	870	7/18/05 5:21	288.77
C1	1	SR-90	0	16	16	900	7/18/05 5:23	260.13
C1	1	SR-90	0	119	119	930	7/18/05 5:24	223.53
C1	1	SR-90	0	440	440	960	7/18/05 5:25	189.20
C1	1	SR-90	0	1086	1086	990	7/18/05 5:26	153.24
C1	1	SR-90	0	1962	1962	1020	7/18/05 5:27	23.17
C1	1	SR-90	0	3250	3250	1050	7/18/05 5:28	57.72
C1	1	SR-90	0	4545	4545	1080	7/18/05 5:29	107.47
C1	1	SR-90	0	6141	589	1110	7/18/05 5:30	21.31
C1	1	SR-90	0	6149	6149	1140	7/18/05 5:31	107.39
C1	1	SR-90	1	10527	10528	1170	7/18/05 5:32	-30.43
C1	1	SR-90	1	13301	1036	1200	7/18/05 5:33	93.95
C1	1	SR-90	0	13339	13339	1230	7/18/05 5:34	159.85
C1	1	SR-90	0	20180	1749	1260	7/18/05 5:36	13.80

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C1	1	SR-90	0	24622	24623	1290	7/18/05 5:36	79.14
C1	1	SR-90	0	28664	28694	1320	7/18/05 5:38	38.97
C1	1	SR-90	0	31840	2816	1350	7/18/05 5:39	61.14
C1	1	SR-90	2	33849	34611	1380	7/18/05 5:40	82.10
C1	1	SR-90	6	34809	36544	1410	7/18/05 5:41	11.61
C1	1	SR-90	99	34498	37547	1440	7/18/05 5:42	6.35
C1	1	SR-90	418	33707	38229	1470	7/18/05 5:43	2.63
C1	1	SR-90	35597	748	39190	1470	7/18/05 6:00	0.71
C1	1	SR-90	1194	31911	38444	1500	7/18/05 5:44	-0.30
C1	1	SR-90	2365	29938	38776	1530	7/18/05 5:45	0.72
C1	1	SR-90	3866	27093	38964	1560	7/18/05 5:46	0.23
C1	1	SR-90	5767	23187	38758	1590	7/18/05 5:47	0.17
C1	1	SR-90	7953	19132	38872	1620	7/18/05 5:48	0.73
C1	1	SR-90	11354	14224	38959	1650	7/18/05 5:49	1.06
C1	1	SR-90	14964	9421	38964	1680	7/18/05 5:50	0.86
C1	1	SR-90	20003	5448	39138	1710	7/18/05 5:51	5.74
C1	1	SR-90	25521	2697	39401	1740	7/18/05 5:53	5.65
C1	1	SR-90	31217	1407	39244	1770	7/18/05 5:54	
C2	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
C2	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
C2	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
C2	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
C2	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
C2	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
C2	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
C2	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
C2	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
C2	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
C2	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
C2	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
C2	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
C2	1	SR-90	0	0	0	390	7/18/05 5:04	333.33
C2	1	SR-90	0	0	0	420	7/18/05 5:05	166.67
C2	1	SR-90	0	0	0	450	7/18/05 5:06	0.00
C2	1	SR-90	0	2	2	480	7/18/05 5:08	-166.67
C2	1	SR-90	0	0	0	510	7/18/05 5:09	-111.11
C2	1	SR-90	0	0	0	540	7/18/05 5:10	166.67
C2	1	SR-90	0	0	0	570	7/18/05 5:11	0.00
C2	1	SR-90	0	1	1	600	7/18/05 5:12	166.67
C2	1	SR-90	0	0	0	630	7/18/05 5:13	0.00
C2	1	SR-90	0	0	0	660	7/18/05 5:14	0.00
C2	1	SR-90	0	2	2	690	7/18/05 5:15	-166.67
C2	1	SR-90	0	0	0	720	7/18/05 5:16	-333.33
C2	1	SR-90	0	0	0	750	7/18/05 5:17	#DIV/0!
C2	1	SR-90	0	0	0	780	7/18/05 5:18	#DIV/0!
C2	1	SR-90	0	0	0	810	7/18/05 5:19	333.33
C2	1	SR-90	0	0	0	840	7/18/05 5:20	306.45
C2	1	SR-90	0	0	0	870	7/18/05 5:21	293.60
C2	1	SR-90	0	5	5	900	7/18/05 5:23	277.68
C2	1	SR-90	0	26	26	930	7/18/05 5:24	249.04
C2	1	SR-90	0	120	120	960	7/18/05 5:25	215.26
C2	1	SR-90	0	409	409	990	7/18/05 5:26	181.60
C2	1	SR-90	0	917	917	1020	7/18/05 5:27	45.35
C2	1	SR-90	0	1632	1632	1050	7/18/05 5:28	77.39
C2	1	SR-90	0	2603	2604	1080	7/18/05 5:29	124.81
C2	1	SR-90	1	3680	373	1110	7/18/05 5:30	28.06
C2	1	SR-90	0	3685	3685	1140	7/18/05 5:31	106.38
C2	1	SR-90	0	6709	6709	1170	7/18/05 5:32	-29.56
C2	1	SR-90	0	8337	613	1200	7/18/05 5:33	97.63
C2	1	SR-90	0	8138	8138	1230	7/18/05 5:34	165.89
C2	1	SR-90	1	13273	1169	1260	7/18/05 5:36	20.59
C2	1	SR-90	0	15982	15982	1290	7/18/05 5:36	87.57
C2	1	SR-90	0	19066	19074	1320	7/18/05 5:38	50.85
C2	1	SR-90	0	21822	2053	1350	7/18/05 5:39	70.94
C2	1	SR-90	0	24447	24672	1380	7/18/05 5:40	86.40
C2	1	SR-90	2	25981	26678	1410	7/18/05 5:41	20.05
C2	1	SR-90	9	26771	28184	1440	7/18/05 5:42	12.08
C2	1	SR-90	75	26770	28949	1470	7/18/05 5:43	4.37
C2	1	SR-90	23764	1608	30752	1470	7/18/05 6:00	0.62
C2	1	SR-90	407	25935	29443	1500	7/18/05 5:44	-0.80
C2	1	SR-90	1019	24771	29793	1530	7/18/05 5:45	1.72
C2	1	SR-90	1713	23372	30041	1560	7/18/05 5:46	0.82
C2	1	SR-90	2872	21173	30094	1590	7/18/05 5:47	0.06
C2	1	SR-90	4323	18353	30062	1620	7/18/05 5:48	-0.07
C2	1	SR-90	6135	15302	30152	1650	7/18/05 5:49	0.17
C2	1	SR-90	8498	11607	30040	1680	7/18/05 5:50	0.79

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C2	1	SR-90	11514	8217	30072	1710	7/18/05 5:51	5.74
C2	1	SR-90	15123	5264	30180	1740	7/18/05 5:53	5.65
C2	1	SR-90	19642	2946	30438	1770	7/18/05 5:54	
C3	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
C3	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
C3	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
C3	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
C3	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
C3	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
C3	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
C3	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
C3	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
C3	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
C3	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
C3	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
C3	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
C3	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
C3	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
C3	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
C3	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
C3	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
C3	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
C3	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
C3	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
C3	1	SR-90	0	0	0	630	7/18/05 5:13	333.33
C3	1	SR-90	0	0	0	660	7/18/05 5:14	166.67
C3	1	SR-90	0	0	0	690	7/18/05 5:15	0.00
C3	1	SR-90	0	1	1	720	7/18/05 5:16	-166.67
C3	1	SR-90	0	0	0	750	7/18/05 5:17	-333.33
C3	1	SR-90	0	0	0	780	7/18/05 5:18	333.33
C3	1	SR-90	0	0	0	810	7/18/05 5:19	300.00
C3	1	SR-90	0	0	0	840	7/18/05 5:20	270.83
C3	1	SR-90	0	1	1	870	7/18/05 5:21	301.17
C3	1	SR-90	0	4	4	900	7/18/05 5:23	285.91
C3	1	SR-90	0	11	11	930	7/18/05 5:24	261.14
C3	1	SR-90	0	98	98	960	7/18/05 5:25	227.44
C3	1	SR-90	0	364	364	990	7/18/05 5:26	192.69
C3	1	SR-90	0	929	929	1020	7/18/05 5:27	54.20
C3	1	SR-90	0	1738	1738	1050	7/18/05 5:28	79.86
C3	1	SR-90	0	2891	2891	1080	7/18/05 5:29	124.48
C3	1	SR-90	0	3992	413	1110	7/18/05 5:30	28.35
C3	1	SR-90	0	3974	3974	1140	7/18/05 5:31	113.55
C3	1	SR-90	0	7283	7283	1170	7/18/05 5:32	-21.20
C3	1	SR-90	0	9450	759	1200	7/18/05 5:33	103.12
C3	1	SR-90	0	9486	9486	1230	7/18/05 5:34	164.73
C3	1	SR-90	0	15065	1415	1260	7/18/05 5:36	20.28
C3	1	SR-90	0	18555	18555	1290	7/18/05 5:36	89.38
C3	1	SR-90	1	22050	22056	1320	7/18/05 5:38	55.40
C3	1	SR-90	0	26095	2448	1350	7/18/05 5:39	74.07
C3	1	SR-90	0	29012	29232	1380	7/18/05 5:40	86.74
C3	1	SR-90	1	31652	32361	1410	7/18/05 5:41	20.64
C3	1	SR-90	16	32022	33727	1440	7/18/05 5:42	12.13
C3	1	SR-90	111	31880	34663	1470	7/18/05 5:43	4.31
C3	1	SR-90	30410	1336	37005	1470	7/18/05 6:00	1.31
C3	1	SR-90	575	31452	35722	1500	7/18/05 5:44	-0.67
C3	1	SR-90	1322	29662	35508	1530	7/18/05 5:45	2.00
C3	1	SR-90	2461	28171	36500	1560	7/18/05 5:46	1.85
C3	1	SR-90	3943	25189	36254	1590	7/18/05 5:47	0.16
C3	1	SR-90	5821	22079	36429	1620	7/18/05 5:48	0.26
C3	1	SR-90	8333	17952	36549	1650	7/18/05 5:49	0.15
C3	1	SR-90	11084	13497	36440	1680	7/18/05 5:50	0.03
C3	1	SR-90	14964	8982	36391	1710	7/18/05 5:51	5.74
C3	1	SR-90	19558	5289	36592	1740	7/18/05 5:53	5.65
C3	1	SR-90	24903	2640	36489	1770	7/18/05 5:54	
C4	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
C4	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
C4	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
C4	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
C4	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
C4	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
C4	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
C4	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
C4	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
C4	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
C4	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
C4	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!

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C4	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
C4	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
C4	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
C4	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
C4	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
C4	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
C4	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
C4	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
C4	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
C4	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
C4	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
C4	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
C4	1	SR-90	0	0	0	720	7/18/05 5:16	#DIV/0!
C4	1	SR-90	0	0	0	750	7/18/05 5:17	#DIV/0!
C4	1	SR-90	0	0	0	780	7/18/05 5:18	333.33
C4	1	SR-90	0	0	0	810	7/18/05 5:19	166.67
C4	1	SR-90	0	0	0	840	7/18/05 5:20	222.22
C4	1	SR-90	0	1	1	870	7/18/05 5:21	55.56
C4	1	SR-90	0	0	0	900	7/18/05 5:23	0.00
C4	1	SR-90	0	2	2	930	7/18/05 5:24	236.11
C4	1	SR-90	0	0	0	960	7/18/05 5:25	289.95
C4	1	SR-90	0	1	1	990	7/18/05 5:26	286.53
C4	1	SR-90	0	9	9	1020	7/18/05 5:27	162.56
C4	1	SR-90	0	61	61	1050	7/18/05 5:28	214.22
C4	1	SR-90	0	221	221	1080	7/18/05 5:29	246.54
C4	1	SR-90	0	645	73	1110	7/18/05 5:30	108.21
C4	1	SR-90	0	663	663	1140	7/18/05 5:31	148.91
C4	1	SR-90	0	2277	2277	1170	7/18/05 5:32	15.94
C4	1	SR-90	0	3220	250	1200	7/18/05 5:33	133.08
C4	1	SR-90	0	3140	3140	1230	7/18/05 5:34	196.61
C4	1	SR-90	0	5652	561	1260	7/18/05 5:36	55.63
C4	1	SR-90	0	7670	7670	1290	7/18/05 5:36	124.35
C4	1	SR-90	0	11799	11799	1320	7/18/05 5:38	94.42
C4	1	SR-90	1	15438	1666	1350	7/18/05 5:39	96.99
C4	1	SR-90	0	18593	18593	1380	7/18/05 5:40	101.70
C4	1	SR-90	0	21657	21663	1410	7/18/05 5:41	63.85
C4	1	SR-90	0	24568	24584	1440	7/18/05 5:42	41.71
C4	1	SR-90	0	27200	27286	1470	7/18/05 5:43	18.22
C4	1	SR-90	9161	20345	40999	1470	7/18/05 6:00	1.58
C4	1	SR-90	0	29700	29917	1500	7/18/05 5:44	-3.48
C4	1	SR-90	0	32216	32772	1530	7/18/05 5:45	22.06
C4	1	SR-90	1	33784	34876	1560	7/18/05 5:46	17.29
C4	1	SR-90	22	34777	36690	1590	7/18/05 5:47	12.65
C4	1	SR-90	427	35302	39455	1620	7/18/05 5:48	6.91
C4	1	SR-90	1154	34154	40017	1650	7/18/05 5:49	2.25
C4	1	SR-90	2347	32064	40482	1680	7/18/05 5:50	1.61
C4	1	SR-90	3431	29666	40258	1710	7/18/05 5:51	5.74
C4	1	SR-90	4835	27362	40693	1740	7/18/05 5:53	5.65
C4	1	SR-90	6592	24313	40890	1770	7/18/05 5:54	
D1	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
D1	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
D1	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
D1	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
D1	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
D1	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
D1	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
D1	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
D1	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
D1	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
D1	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
D1	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
D1	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
D1	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
D1	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
D1	1	SR-90	0	0	0	450	7/18/05 5:06	#DIV/0!
D1	1	SR-90	0	0	0	480	7/18/05 5:08	#DIV/0!
D1	1	SR-90	0	0	0	510	7/18/05 5:09	#DIV/0!
D1	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
D1	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
D1	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
D1	1	SR-90	0	0	0	630	7/18/05 5:13	333.33
D1	1	SR-90	0	0	0	660	7/18/05 5:14	166.67
D1	1	SR-90	0	0	0	690	7/18/05 5:15	166.67
D1	1	SR-90	0	1	1	720	7/18/05 5:16	0.00
D1	1	SR-90	0	0	0	750	7/18/05 5:17	0.00
D1	1	SR-90	0	1	1	780	7/18/05 5:18	111.11

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D1	1	SR-90	0	0	0	810	7/18/05 5:19	166.67
D1	1	SR-90	0	1	1	840	7/18/05 5:20	300.00
D1	1	SR-90	0	1	1	870	7/18/05 5:21	293.69
D1	1	SR-90	0	4	4	900	7/18/05 5:23	277.71
D1	1	SR-90	0	39	39	930	7/18/05 5:24	250.86
D1	1	SR-90	0	182	182	960	7/18/05 5:25	218.01
D1	1	SR-90	0	601	601	990	7/18/05 5:26	182.29
D1	1	SR-90	0	1391	1393	1020	7/18/05 5:27	45.50
D1	1	SR-90	0	2550	2550	1050	7/18/05 5:28	77.34
D1	1	SR-90	0	3955	3955	1080	7/18/05 5:29	123.53
D1	1	SR-90	0	5667	556	1110	7/18/05 5:30	29.02
D1	1	SR-90	0	5666	5666	1140	7/18/05 5:31	114.29
D1	1	SR-90	0	10186	10186	1170	7/18/05 5:32	-19.20
D1	1	SR-90	0	13598	1000	1200	7/18/05 5:33	103.55
D1	1	SR-90	0	13480	13480	1230	7/18/05 5:34	164.31
D1	1	SR-90	0	21005	2148	1260	7/18/05 5:36	19.82
D1	1	SR-90	0	26022	26026	1290	7/18/05 5:36	86.48
D1	1	SR-90	0	31030	31065	1320	7/18/05 5:38	49.57
D1	1	SR-90	2	35619	3557	1350	7/18/05 5:39	68.74
D1	1	SR-90	0	39252	40071	1380	7/18/05 5:40	84.29
D1	1	SR-90	0	41073	42875	1410	7/18/05 5:41	15.77
D1	1	SR-90	4	41569	44910	1440	7/18/05 5:42	10.50
D1	1	SR-90	80	40872	46001	1470	7/18/05 5:43	4.27
D1	1	SR-90	37471	1061	47168	1470	7/18/05 6:00	-0.20
D1	1	SR-90	402	39458	47028	1500	7/18/05 5:44	-0.62
D1	1	SR-90	1221	36496	46873	1530	7/18/05 5:45	0.44
D1	1	SR-90	2513	32706	46400	1560	7/18/05 5:46	1.17
D1	1	SR-90	4247	28994	47048	1590	7/18/05 5:47	1.76
D1	1	SR-90	6457	24130	47248	1620	7/18/05 5:48	0.54
D1	1	SR-90	9266	18023	47274	1650	7/18/05 5:49	0.14
D1	1	SR-90	13228	12105	47532	1680	7/18/05 5:50	-0.31
D1	1	SR-90	17859	7192	47287	1710	7/18/05 5:51	5.74
D1	1	SR-90	23848	3841	47344	1740	7/18/05 5:53	5.65
D1	1	SR-90	31017	1883	47150	1770	7/18/05 5:54	
D2	1	SR-90	0	1	1	0	7/18/05 4:50	% slope
D2	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
D2	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
D2	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
D2	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
D2	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
D2	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
D2	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
D2	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
D2	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
D2	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
D2	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
D2	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
D2	1	SR-90	0	0	0	390	7/18/05 5:04	#DIV/0!
D2	1	SR-90	0	0	0	420	7/18/05 5:05	#DIV/0!
D2	1	SR-90	0	0	0	450	7/18/05 5:06	333.33
D2	1	SR-90	0	0	0	480	7/18/05 5:08	166.67
D2	1	SR-90	0	0	0	510	7/18/05 5:09	0.00
D2	1	SR-90	0	1	1	540	7/18/05 5:10	-166.67
D2	1	SR-90	0	0	0	570	7/18/05 5:11	-333.33
D2	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
D2	1	SR-90	0	0	0	630	7/18/05 5:13	333.33
D2	1	SR-90	0	0	0	660	7/18/05 5:14	166.67
D2	1	SR-90	0	0	0	690	7/18/05 5:15	0.00
D2	1	SR-90	0	1	1	720	7/18/05 5:16	-166.67
D2	1	SR-90	0	0	0	750	7/18/05 5:17	-333.33
D2	1	SR-90	0	0	0	780	7/18/05 5:18	#DIV/0!
D2	1	SR-90	0	0	0	810	7/18/05 5:19	333.33
D2	1	SR-90	0	0	0	840	7/18/05 5:20	318.71
D2	1	SR-90	0	0	0	870	7/18/05 5:21	291.83
D2	1	SR-90	0	5	5	900	7/18/05 5:23	271.85
D2	1	SR-90	0	52	52	930	7/18/05 5:24	244.90
D2	1	SR-90	0	192	192	960	7/18/05 5:25	204.64
D2	1	SR-90	0	594	594	990	7/18/05 5:26	168.76
D2	1	SR-90	0	1332	1332	1020	7/18/05 5:27	34.85
D2	1	SR-90	0	2109	2109	1050	7/18/05 5:28	62.70
D2	1	SR-90	0	3189	3189	1080	7/18/05 5:29	114.57
D2	1	SR-90	0	4295	470	1110	7/18/05 5:30	23.95
D2	1	SR-90	0	4295	4295	1140	7/18/05 5:31	108.35
D2	1	SR-90	0	7641	7641	1170	7/18/05 5:32	-25.15
D2	1	SR-90	1	9787	780	1200	7/18/05 5:33	95.62
D2	1	SR-90	1	9650	9651	1230	7/18/05 5:34	161.08

Plateau Raw Data

D2	1	SR-90	0	14800	1490	1260	7/18/05 5:36	17.38
D2	1	SR-90	0	18084	18086	1290	7/18/05 5:36	83.65
D2	1	SR-90	0	21404	21410	1320	7/18/05 5:38	45.88
D2	1	SR-90	0	24158	2459	1350	7/18/05 5:39	67.31
D2	1	SR-90	0	26658	26976	1380	7/18/05 5:40	84.40
D2	1	SR-90	0	27801	28746	1410	7/18/05 5:41	17.23
D2	1	SR-90	15	28773	30498	1440	7/18/05 5:42	10.83
D2	1	SR-90	95	28306	30999	1470	7/18/05 5:43	3.03
D2	1	SR-90	23021	2117	32403	1470	7/18/05 6:00	1.04
D2	1	SR-90	358	27703	31579	1500	7/18/05 5:44	0.34
D2	1	SR-90	945	26164	31620	1530	7/18/05 5:45	2.41
D2	1	SR-90	1803	24738	32098	1560	7/18/05 5:46	2.02
D2	1	SR-90	2815	22539	32307	1590	7/18/05 5:47	0.71
D2	1	SR-90	4246	19858	32393	1620	7/18/05 5:48	0.29
D2	1	SR-90	6013	16722	32448	1650	7/18/05 5:49	0.20
D2	1	SR-90	8212	12909	32374	1680	7/18/05 5:50	-0.85
D2	1	SR-90	11185	9277	32456	1710	7/18/05 5:51	5.74
D2	1	SR-90	14467	6294	32488	1740	7/18/05 5:53	5.65
D2	1	SR-90	18478	3684	31980	1770	7/18/05 5:54	
D3	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
D3	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
D3	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
D3	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
D3	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
D3	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
D3	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
D3	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
D3	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
D3	1	SR-90	0	0	0	270	7/18/05 5:00	#DIV/0!
D3	1	SR-90	0	0	0	300	7/18/05 5:01	#DIV/0!
D3	1	SR-90	0	0	0	330	7/18/05 5:02	#DIV/0!
D3	1	SR-90	0	0	0	360	7/18/05 5:03	#DIV/0!
D3	1	SR-90	0	0	0	390	7/18/05 5:04	333.33
D3	1	SR-90	0	0	0	420	7/18/05 5:05	166.67
D3	1	SR-90	0	0	0	450	7/18/05 5:06	0.00
D3	1	SR-90	0	1	1	480	7/18/05 5:08	83.33
D3	1	SR-90	0	0	0	510	7/18/05 5:09	55.56
D3	1	SR-90	0	0	0	540	7/18/05 5:10	83.33
D3	1	SR-90	0	1	1	570	7/18/05 5:11	-83.33
D3	1	SR-90	0	1	1	600	7/18/05 5:12	-250.00
D3	1	SR-90	0	0	0	630	7/18/05 5:13	-333.33
D3	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
D3	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
D3	1	SR-90	0	0	0	720	7/18/05 5:16	#DIV/0!
D3	1	SR-90	0	0	0	750	7/18/05 5:17	333.33
D3	1	SR-90	0	0	0	780	7/18/05 5:18	250.00
D3	1	SR-90	0	0	0	810	7/18/05 5:19	270.83
D3	1	SR-90	0	1	1	840	7/18/05 5:20	298.74
D3	1	SR-90	0	1	1	870	7/18/05 5:21	296.55
D3	1	SR-90	0	6	6	900	7/18/05 5:23	274.87
D3	1	SR-90	0	45	45	930	7/18/05 5:24	244.21
D3	1	SR-90	0	237	237	960	7/18/05 5:25	204.17
D3	1	SR-90	0	706	706	990	7/18/05 5:26	163.59
D3	1	SR-90	0	1510	1510	1020	7/18/05 5:27	31.52
D3	1	SR-90	0	2422	2422	1050	7/18/05 5:28	68.08
D3	1	SR-90	0	3479	3479	1080	7/18/05 5:29	119.58
D3	1	SR-90	0	5047	540	1110	7/18/05 5:30	29.83
D3	1	SR-90	0	5121	5121	1140	7/18/05 5:31	107.58
D3	1	SR-90	0	8965	8965	1170	7/18/05 5:32	-25.76
D3	1	SR-90	0	11420	974	1200	7/18/05 5:33	94.68
D3	1	SR-90	0	11293	11293	1230	7/18/05 5:34	159.28
D3	1	SR-90	0	17501	1783	1260	7/18/05 5:36	16.23
D3	1	SR-90	0	21087	21087	1290	7/18/05 5:36	82.57
D3	1	SR-90	0	24610	24640	1320	7/18/05 5:38	45.78
D3	1	SR-90	1	27881	2868	1350	7/18/05 5:39	66.81
D3	1	SR-90	0	30529	31067	1380	7/18/05 5:40	84.56
D3	1	SR-90	0	32135	33401	1410	7/18/05 5:41	17.77
D3	1	SR-90	18	32463	34780	1440	7/18/05 5:42	11.81
D3	1	SR-90	107	32515	36068	1470	7/18/05 5:43	5.17
D3	1	SR-90	28458	1589	37558	1470	7/18/05 6:00	1.13
D3	1	SR-90	490	31614	36809	1500	7/18/05 5:44	0.47
D3	1	SR-90	1180	29845	36861	1530	7/18/05 5:45	1.71
D3	1	SR-90	2160	27685	37264	1560	7/18/05 5:46	1.93
D3	1	SR-90	3537	24987	37595	1590	7/18/05 5:47	0.69
D3	1	SR-90	5324	21409	37396	1620	7/18/05 5:48	-0.45
D3	1	SR-90	7622	17368	37879	1650	7/18/05 5:49	0.01

Plateau Raw Data

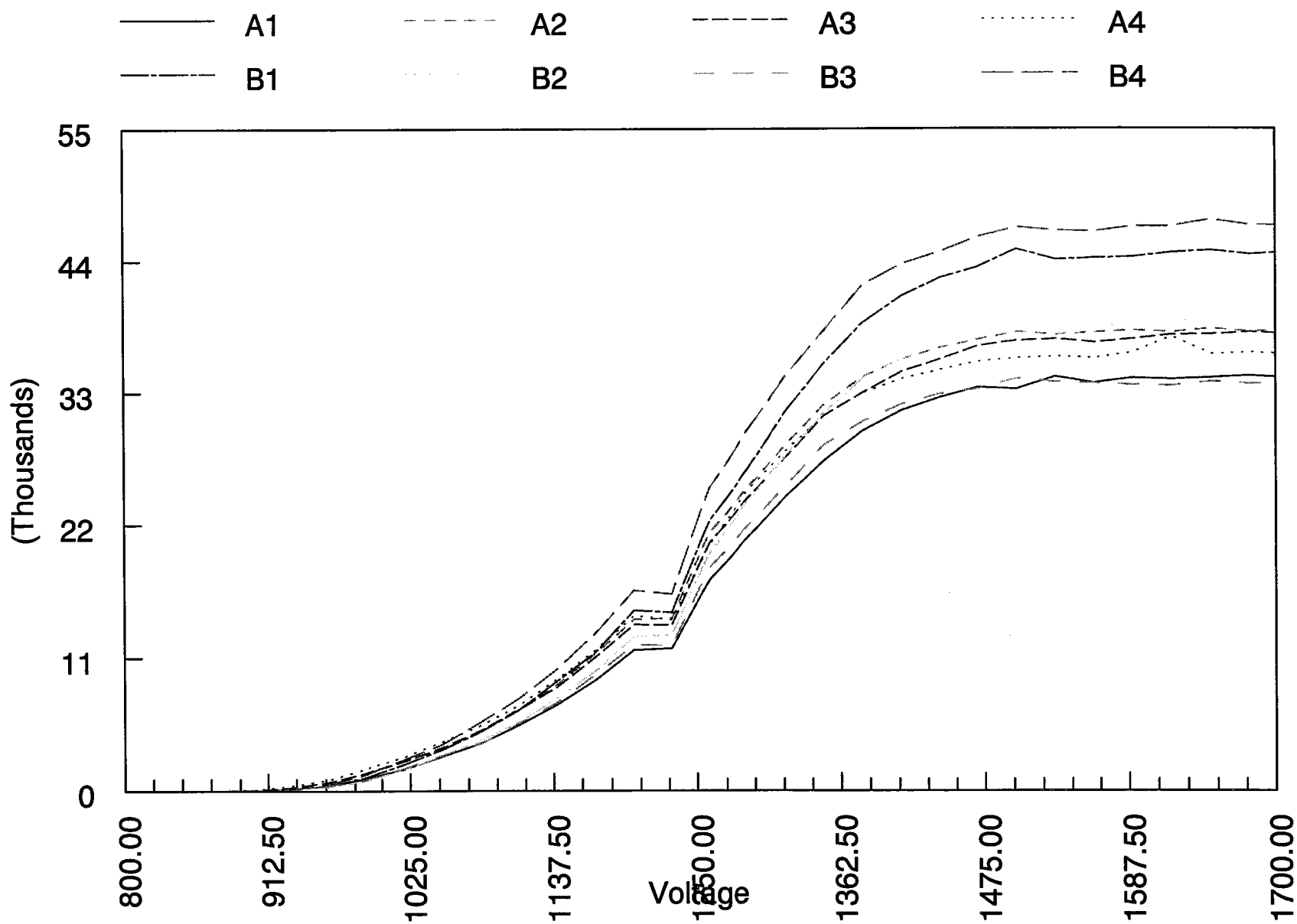
D3	1	SR-90	10311	12938	37510	1680	7/18/05 5:50	0.01
D3	1	SR-90	13699	8804	37285	1710	7/18/05 5:51	5.74
D3	1	SR-90	18401	5528	37696	1740	7/18/05 5:53	5.65
D3	1	SR-90	23565	3118	37794	1770	7/18/05 5:54	
D4	1	SR-90	0	0	0	0	7/18/05 4:50	% slope
D4	1	SR-90	0	0	0	30	7/18/05 4:52	per 100v
D4	1	SR-90	0	0	0	60	7/18/05 4:52	#DIV/0!
D4	1	SR-90	0	0	0	90	7/18/05 4:54	#DIV/0!
D4	1	SR-90	0	0	0	120	7/18/05 4:55	#DIV/0!
D4	1	SR-90	0	0	0	150	7/18/05 4:56	#DIV/0!
D4	1	SR-90	0	0	0	180	7/18/05 4:57	#DIV/0!
D4	1	SR-90	0	0	0	210	7/18/05 4:58	#DIV/0!
D4	1	SR-90	0	0	0	240	7/18/05 4:59	#DIV/0!
D4	1	SR-90	0	0	0	270	7/18/05 5:00	333.33
D4	1	SR-90	0	0	0	300	7/18/05 5:01	166.67
D4	1	SR-90	0	0	0	330	7/18/05 5:02	0.00
D4	1	SR-90	0	0	1	360	7/18/05 5:03	-166.67
D4	1	SR-90	0	0	0	390	7/18/05 5:04	0.00
D4	1	SR-90	0	0	0	420	7/18/05 5:05	166.67
D4	1	SR-90	0	0	0	450	7/18/05 5:06	0.00
D4	1	SR-90	0	0	1	480	7/18/05 5:08	-166.67
D4	1	SR-90	0	0	0	510	7/18/05 5:09	-333.33
D4	1	SR-90	0	0	0	540	7/18/05 5:10	#DIV/0!
D4	1	SR-90	0	0	0	570	7/18/05 5:11	#DIV/0!
D4	1	SR-90	0	0	0	600	7/18/05 5:12	#DIV/0!
D4	1	SR-90	0	0	0	630	7/18/05 5:13	#DIV/0!
D4	1	SR-90	0	0	0	660	7/18/05 5:14	#DIV/0!
D4	1	SR-90	0	0	0	690	7/18/05 5:15	#DIV/0!
D4	1	SR-90	0	0	0	720	7/18/05 5:16	#DIV/0!
D4	1	SR-90	0	0	0	750	7/18/05 5:17	#DIV/0!
D4	1	SR-90	0	0	0	780	7/18/05 5:18	#DIV/0!
D4	1	SR-90	0	0	0	810	7/18/05 5:19	333.33
D4	1	SR-90	0	0	0	840	7/18/05 5:20	312.21
D4	1	SR-90	0	0	0	870	7/18/05 5:21	289.04
D4	1	SR-90	0	0	9	900	7/18/05 5:23	274.32
D4	1	SR-90	0	0	62	930	7/18/05 5:24	244.32
D4	1	SR-90	0	0	230	960	7/18/05 5:25	208.20
D4	1	SR-90	0	0	775	990	7/18/05 5:26	168.22
D4	1	SR-90	0	0	1652	1020	7/18/05 5:27	33.45
D4	1	SR-90	0	0	2795	1050	7/18/05 5:28	65.16
D4	1	SR-90	0	0	3980	1080	7/18/05 5:29	115.01
D4	1	SR-90	0	0	594	1110	7/18/05 5:30	27.49
D4	1	SR-90	0	0	5613	1140	7/18/05 5:31	107.00
D4	1	SR-90	0	0	9860	1170	7/18/05 5:32	-25.60
D4	1	SR-90	0	0	1090	1200	7/18/05 5:33	96.20
D4	1	SR-90	0	0	12317	1230	7/18/05 5:34	160.36
D4	1	SR-90	0	0	2012	1260	7/18/05 5:36	17.53
D4	1	SR-90	0	0	23468	1290	7/18/05 5:36	82.83
D4	1	SR-90	0	0	27406	1320	7/18/05 5:38	45.98
D4	1	SR-90	0	0	3218	1350	7/18/05 5:39	66.26
D4	1	SR-90	0	0	34700	1380	7/18/05 5:40	82.61
D4	1	SR-90	0	0	37199	1410	7/18/05 5:41	14.69
D4	1	SR-90	0	0	38433	1440	7/18/05 5:42	8.79
D4	1	SR-90	0	0	39212	1470	7/18/05 5:43	3.28
D4	1	SR-90	0	0	40826	1470	7/18/05 6:00	-0.09
D4	1	SR-90	0	0	39991	1500	7/18/05 5:44	-0.77
D4	1	SR-90	0	0	39906	1530	7/18/05 5:45	0.59
D4	1	SR-90	0	0	40025	1560	7/18/05 5:46	1.02
D4	1	SR-90	0	0	40344	1590	7/18/05 5:47	1.23
D4	1	SR-90	0	0	40124	1620	7/18/05 5:48	0.38
D4	1	SR-90	0	0	40472	1650	7/18/05 5:49	0.35
D4	1	SR-90	0	0	40706	1680	7/18/05 5:50	-0.05
D4	1	SR-90	0	0	40284	1710	7/18/05 5:51	5.74
D4	1	SR-90	0	0	40428	1740	7/18/05 5:53	5.65
D4	1	SR-90	0	0	40581	1770	7/18/05 5:54	
E1	1	SR-90	0	0	0	0	7/18/05 6:12	% slope
E1	1	SR-90	0	0	0	30	7/18/05 6:13	per 100v
E1	1	SR-90	0	0	0	60	7/18/05 6:14	#DIV/0!
E1	1	SR-90	0	0	0	90	7/18/05 6:15	#DIV/0!
E1	1	SR-90	0	0	0	120	7/18/05 6:16	#DIV/0!
E1	1	SR-90	0	0	0	150	7/18/05 6:17	#DIV/0!
E1	1	SR-90	0	0	0	180	7/18/05 6:19	#DIV/0!
E1	1	SR-90	0	0	0	210	7/18/05 6:20	333.33
E1	1	SR-90	0	0	0	240	7/18/05 6:21	166.67
E1	1	SR-90	0	0	0	270	7/18/05 6:22	0.00
E1	1	SR-90	0	1	1	300	7/18/05 6:23	-166.67

Plateau Raw Data

E1	1	SR-90	0	0	0	330	7/18/05 6:24	-333.33
E1	1	SR-90	0	0	0	360	7/18/05 6:25	#DIV/0!
E1	1	SR-90	0	0	0	390	7/18/05 6:26	#DIV/0!
E1	1	SR-90	0	0	0	420	7/18/05 6:27	#DIV/0!
E1	1	SR-90	0	0	0	450	7/18/05 6:28	333.33

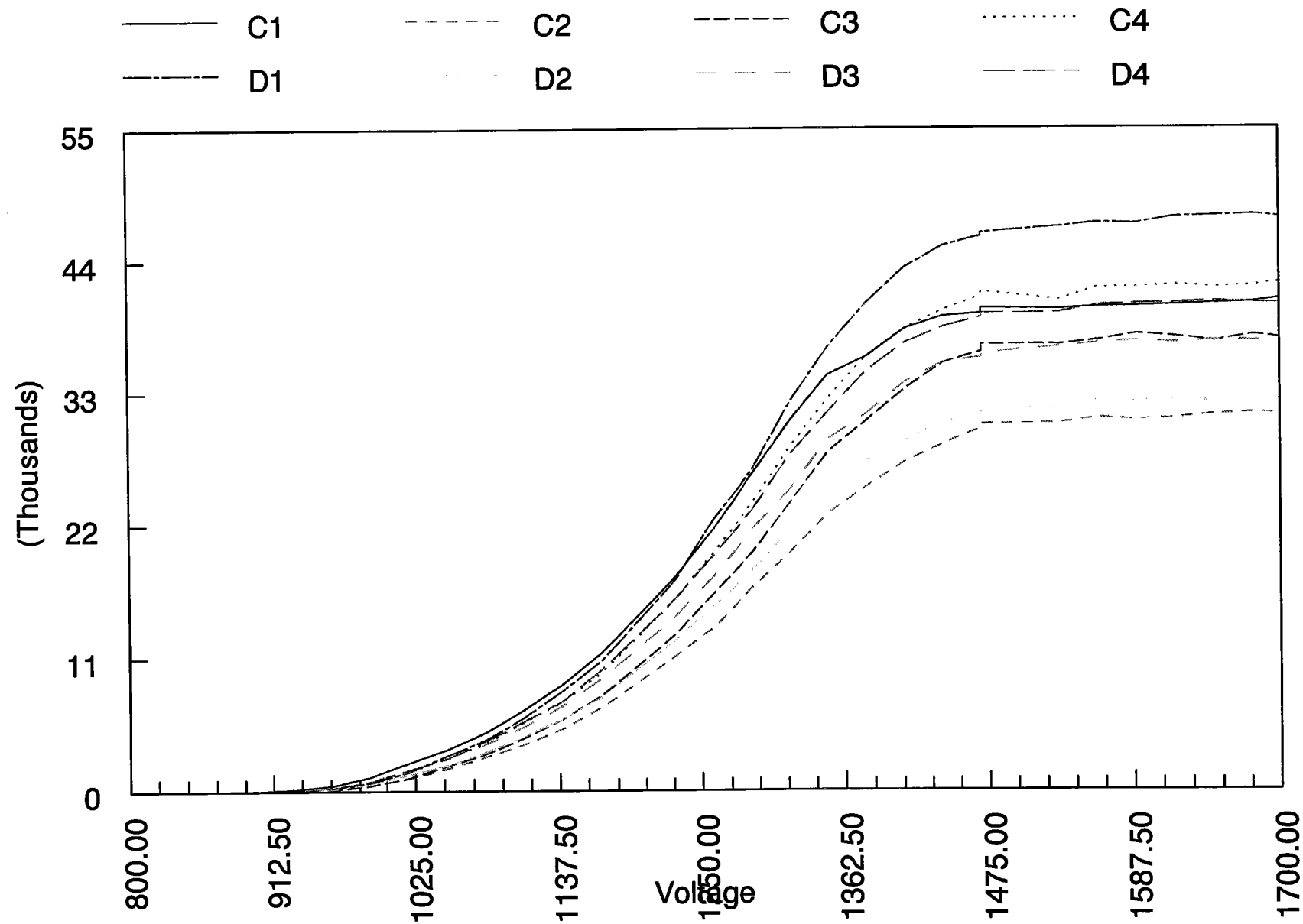
Beta Plateau July, 2005

Drawers A&B



Beta Plateau July, 2005

Drawers C&D



Beta Plateau July, 2005

Drawers E&F

Beta Plateau July, 2005

Drawers G&H

GROSS ALPHA/BETA VERIFICATION

Batch : ver
Analyst : JMJ
Date : 8/26/2005
Required MDA : Alpha 5 PCL
Beta 5 PCL
Bkg Count time : 500 min

Procedure Code : GFCGANBL
Parmname1 : ALPHA
Parmname2 : BETA
Batch Counted on : LB4100

Sample ID	Sample Volume L	Solids Weight mg	Detector I.D.	Alpha Efficiency	Beta Efficiency	Net Alpha CPM	Net Beta CPM	Count Time min	ALPHA MDA pCi/L	BETA MDA pCi/L
1	0.100	0.0	A1	0.2393	0.3778	16413.22	92994.26	5	19.149	30.656
2	0.100	3.7	A2	0.2264	0.3702	12462.59	85370.28	5	21.433	29.977
3	0.100	7.5	A3	0.2243	0.3743	13379.98	84971.21	5	22.571	30.632
~~* 4~~	~~0.100~~	~~15.3~~	~~A4~~	~~0.2597~~	~~0.0000~~	~~12856.84~~	~~80130.84~~	~~5~~	~~17.484~~	~~#DIV/0!~~
5	0.100	19.5	B1	0.2300	0.4038	11687.49	99483.27	5	30.192	39.733
6	0.100	26.5	B2	0.2206	0.3893	13039.26	96301.05	5	30.572	41.383
7	0.100	38.1	B3	0.2078	0.3875	12977.32	96618.98	5	22.051	33.705
8	0.100	45.5	B4	0.1914	0.3839	12409.81	97019.09	5	21.252	28.768
9	0.100	56.7	C1	0.1601	0.3627	10254.39	88623.81	5	40.134	33.555
10	0.100	74.8	C2	0.1385	0.3572	8945.66	90574.42	5	43.871	35.265
11	0.100	95.1	C3	0.1279	0.3535	8091.96	88081.42	5	37.649	32.212
12	0.100	113.5	C4	0.1249	0.3563	7426.77	87717.53	5	37.345	31.792
*1	0.100	0.0	D1	0.2764	0.4246	18845.46	99529.48	5	23.795	42.948
*2	0.100	3.7	D2	0.2678	0.4252	15413.83	99640.67	5	22.693	27.057
*3	0.100	7.5	D3	0.2673	0.4145	15906.56	101219.99	5	15.009	24.973
*4	0.100	15.3	D4	0.2539	0.4208	14938.85	96817.44	5	20.333	28.421

* DETECTOR OUT OF SERVICE 8/30/05

8/30/05

ALPHA RESULT pCi/L	ALPHA ERROR pCi/L	BETA RESULT pCi/L	BETA ERROR pCi/L	Th-230 0159-A nominal conc.	ALPHA % RECOVERY	Sr-90 0133-A nominal conc.	BETA % RECOVERY
308977.693	2131.272	1108807.511	3191.132	283609.46	108.94%	992936.94	111.67%
247926.781	2252.270	1038877.775	3256.886	283609.46	87.42%	992936.94	104.63%
268671.020	2273.375	1022608.655	3220.938	283609.46	94.73%	992936.94	102.99%
~~223001.331~~	~~1963.793~~	~~#DIV/0!~~	~~#DIV/0!~~	~~283609.46~~	~~78.63%~~	~~992936.94~~	~~#DIV/0!~~
228917.083	2217.494	1109691.528	2985.362	283609.46	80.72%	992936.94	111.76%
266286.834	2312.076	1114328.325	3096.898	283609.46	93.89%	992936.94	112.23%
281321.697	2454.278	1123019.632	3110.782	283609.46	99.19%	992936.94	113.10%
292069.498	2664.566	1138245.093	3139.954	283609.46	102.98%	992936.94	114.63%
288567.158	3185.977	1100679.231	3323.955	283609.46	101.75%	992936.94	110.85%
290893.641	3681.523	1142300.933	3375.357	283609.46	102.57%	992936.94	115.04%
284934.515	3986.549	1122415.294	3410.468	283609.46	100.47%	992936.94	113.04%
267926.971	4084.340	1108973.740	3383.605	283609.46	94.47%	992936.94	111.69%
307160.891	1845.291	1056009.586	2839.624	283609.46	108.30%	992936.94	106.35%
259262.959	1904.301	1055632.114	2835.441	283609.46	91.42%	992936.94	106.31%
268023.218	1907.663	1099964.910	2908.421	283609.46	94.50%	992936.94	110.78%
265049.573	2008.702	1036392.253	2864.939	283609.46	93.46%	992936.94	104.38%

* detector out of service 8/30/07

GROSS ALPHA/BETA VERIFICATION

Batch : ver
Analyst : JMJ
Date : 8/26/2005
Required MDA : Alpha 5 PCL
Beta 5 PCL
Bkg Count time : 500 min

Procedure Code : GFCGANBL
Parmname1 : ALPHA
Parmname2 : BETA
Batch Counted on : LB4100

Sample ID	Sample Volume L	Solids Weight mg	Detector I.D.	Alpha Efficiency	Beta Efficiency	Net Alpha CPM	Net Beta CPM	Count Time min	ALPHA MDA pCi/L	BETA MDA pCi
5	0.100	19.5	E1	0.2426	0.4125	12324.00	99547.93	5	27.367	31.258
6	0.100	26.5	E2	0.2245	0.4104	12945.43	98719.20	5	27.602	34.427
7	0.100	38.1	E3	0.2088	0.3871	13073.20	95133.11	5	26.053	30.433
8	0.100	45.5	E4	0.1963	0.4025	12847.71	97727.32	5	27.559	37.859
9	0.100	56.7	F1	0.1743	0.3791	11692.18	92534.69	5	32.189	30.035
10	0.100	74.8	F2	0.1600	0.3936	10552.55	98955.87	5	38.126	31.080
11	0.100	95.1	F3	0.1391	0.3625	8370.70	88507.13	5	45.537	37.200
12	0.100	113.5	F4	0.1398	0.3760	8959.49	93377.05	5	75.632	77.774
1	0.100	0.0	G1	0.2478	0.3861	16921.29	91356.92	5	22.976	38.763
2	0.100	3.7	G2	0.2336	0.4083	13130.30	95421.24	5	22.770	27.526
3	0.100	7.5	G3	0.2256	0.4103	13866.99	96067.88	5	32.364	27.045
4	0.100	15.3	G4	0.2116	0.4055	13104.48	92335.52	5	23.932	27.290
*5	0.100	19.5	H1	0.2366	0.3728	11533.58	90358.76	5	24.402	28.125
*6	0.100	26.5	H2	0.2192	0.3938	12446.53	93894.31	5	29.312	34.626
*7	0.100	38.1	H3	0.2020	0.3914	12094.96	94781.83	5	30.559	30.103
*8	0.100	45.5	H4	0.1819	0.3761	11105.22	92418.46	5	28.739	29.2

ALPHA RESULT pCi/L	ALPHA ERROR pCi/L	BETA RESULT pCi/L	BETA ERROR pCi/L	Th-230 0159-A nominal conc.	ALPHA % RECOVERY	Sr-90 0133-A nominal conc.	BETA % RECOVERY
228811.334	1877.540	**1086994.678**	3021.353	283609.46	**80.68%**	992936.94	**109.47%**
259751.917	2029.110	**1083526.910**	3036.997	283609.46	**91.59%**	992936.94	**109.12%**
282042.847	2181.708	**1106898.356**	3219.455	283609.46	**99.45%**	992936.94	**111.48%**
294810.949	2320.498	**1093774.696**	3096.836	283609.46	**103.95%**	992936.94	**110.16%**
302139.752	2613.218	**1099452.640**	3287.594	283609.46	**106.53%**	992936.94	**110.73%**
297028.142	2846.450	**1132491.701**	3166.648	283609.46	**104.73%**	992936.94	**114.05%**
271046.866	3274.506	**1099802.038**	3438.290	283609.46	**95.57%**	992936.94	**110.76%**
288744.253	3259.067	**1118737.552**	3315.082	283609.46	**101.81%**	992936.94	**112.67%**
307597.437	1838.284	**1065864.919**	3228.249	283609.46	**108.46%**	992936.94	**107.34%**
253167.569	1949.830	**1052828.609**	3052.944	283609.46	**89.27%**	992936.94	**106.03%**
276881.518	2019.181	**1054728.467**	3037.867	283609.46	**97.63%**	992936.94	**106.22%**
279014.624	2153.132	**1025746.784**	3073.814	283609.46	**98.38%**	992936.94	**103.30%**
219577.282	1925.247	**1091904.030**	3343.648	283609.46	**77.42%**	992936.94	**109.97%**
255815.107	2078.458	**1073997.832**	3164.976	283609.46	**90.20%**	992936.94	**108.16%**
269714.566	2255.087	**1090876.827**	3184.615	283609.46	**95.10%**	992936.94	**109.86%**
275079.602	2504.925	**1106750.951**	3313.580	283609.46	**96.99%**	992936.94	**111.46%**

Detector	Sample I.D.	Act. Time	Alpha	Beta	Total	Alpha Bkg.	Beta Bkg.	Voltage	Date/Time
A1	1	5	83414	466141	608167	0.052	0.948	1470	8/26/05 8:42
A2	2	5	63561	427695	550358	0.066	0.85	1470	8/26/05 8:42
A3	3	5	68650	425551	559796	0.078	0.924	1470	8/26/05 8:42
A4	4	5	64710	401532	506545	0.05	3.27	1470	8/26/05 8:42
B1	5	5	59421	498608	612011	0.23	2.1	1470	8/26/05 8:42
B2	6	5	65793	482790	617069	0.21	2.12	1470	8/26/05 8:42
B3	7	5	66448	484161	619459	0.052	1.28	1470	8/26/05 8:42
B4	8	5	62949	486303	604211	0.03	0.84	1470	8/26/05 8:42
C1	9	5	54404	444666	556642	0.18	1.074	1470	8/26/05 8:42
C2	10	5	45275	454094	533565	0.15	1.17	1470	8/26/05 8:42
C3	11	5	40525	441587	523137	0.064	0.908	1470	8/26/05 8:42
C4	12	5	37202	439701	513826	0.056	0.896	1470	8/26/05 8:42
D1	1	5	94900	498468	664446	0.194	2.83	1470	8/26/05 8:51
D2	2	5	78165	499105	617516	0.15	0.932	1470	8/26/05 8:51
D3	3	5	80701	506925	636892	0.028	0.71	1470	8/26/05 8:51
D4	4	5	75107	485005	597869	0.084	1.028	1470	8/26/05 8:51
E1	5	5	66551	498242	642966	0.2	1.24	1470	8/26/05 8:51
E2	6	5	67508	494684	612669	0.16	1.55	1470	8/26/05 8:51
E3	7	5	69951	476766	624188	0.102	0.99	1470	8/26/05 8:51
E4	8	5	67564	490048	614367	0.1	1.858	1470	8/26/05 8:51
F1	9	5	60641	463671	599428	0.114	0.908	1470	8/26/05 8:51
F2	10	5	53967	496327	588059	0.152	1.088	1470	8/26/05 8:51
F3	11	5	42035	443869	515135	0.172	1.384	1470	8/26/05 8:51
F4	12	5	46064	468272	561880	0.75	8.15	1470	8/26/05 8:51
G1	1	5	87617	457760	611313	0.12	1.78	1470	8/26/05 8:58
G2	2	5	67272	478375	572023	0.094	0.878	1470	8/26/05 8:58
G3	3	5	69410	481704	560632	0.268	0.85	1470	8/26/05 8:58
G4	4	5	65602	462699	541764	0.078	0.844	1470	8/26/05 8:58
H1	5	5	77687	453535	612975	0.126	0.734	1522.5	8/26/05 8:58
H2	6	5	74283	470501	611974	0.18	1.422	1522.5	8/26/05 8:58
H3	7	5	75716	475235	611536	0.158	0.99	1522.5	8/26/05 8:58
H4	8	5	69102	462877	590212	0.088	0.834	1522.5	8/26/05 8:58

General Engineering Laboratories
Verification Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-001

Isotope: Th230 | Sr90

Date Standards Prepared: 8/25/05

Cocktail Type Used: N/A

Standard ID: 8/25/05 Th-230 ~~015~~ 0159-A | Sr-90 0133-A

Matrix of Vial/Planchett: Concentric Ring S.S.

Amount Used (g or ml): 0.3 | 0.1

Standard Activity (DPM/g or mL): 209880.23 | 1384260.71

Type of Scintillation Vial: N/A

Reference Date: 9/1/99 | 4/1/96

Pipette ID Used: 1.0-3001383 0.1-1429303 0.5-2440913

Expiration Date: 7/13/06 | 8/16/06

Balance ID Used: 3808004

Residue/Carrier Agent: BaCl2

Quenching Agent: N/A

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)
V1	1	0.0	7.4499	7.4499	0.0
V2	2	0.1	7.4513	7.4550	3.7
V3	3	0.2	7.4126	7.4201	7.5
V4	4	0.4	7.3744	7.3897	15.3
V5	5	0.5	7.3856	7.4051	19.5
V6	6	0.7	7.3604	7.3869	26.5
V7	7	1.0	7.4012	7.4393	38.1
V8	8	1.2	7.4639	7.5094	45.5
V9	9	1.5	7.4240	7.4807	56.7
V10	10	2.0	7.5051	7.5799	74.8
V11	11	2.5	7.3116	7.4067	95.1
V12	12	3.0	7.3674	7.4809	113.5

Prepared By: Amanda L. Lehr Date: 8/25/05

Reviewed By: _____ Date: 8/30/05

Rev 1 RLM 9/10/97

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

0159

Radionuclide	Th-230	Customer:	GENERAL ENGINEERING LABS
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	2507 RD
Catalog No.:	7230	Reference Date:	1 Sep 99 12:00 PST.
Source No.:	678-28-1	Contained Radioactivity:	Th-230: 9.740 μCi (360.4 kBq)

Description of Solution

a. Mass of solution:	4.89252 grams in 5 mL flame sealed ampoule
b. Chemical form:	Thorium nitrate in 0.1M nitric acid
c. Carrier content:	10 μg Th/mL of solution
d. Density:	1.0016 gram/ml @ 20°C.

Radioimpurities

Am-241: See Technical Data Sheet

Radioactive Daughters

Ra-226: See Technical Data Sheet

Radionuclide Concentration

Th-230: 1.991 μCi/gram of solution (73.67 kBq/gram of solution)

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±2.0%
b. Random uncertainty in assay:	±0.8%
c. Random uncertainty in weighing(s):	±0.0%
d. Total uncertainty at the 99% confidence level:	±2.2%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

2. Nuclear data were taken from Table of Radioactive Isotopes (1986), edited by Virginia Shirley.

Daniel James Chan Dalsam
QUALITY CONTROL

26-Aug-99
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818•843•7000 FAX 818•843•6168

pm 7/21/04

RC-5-024-102

pm 8/30/04

0159

ISOTOPE PRODUCTS LABORATORIES

Th-230 TECHNICAL DATA

The Th-230 used to prepare your order was taken from Isotope Products Laboratories Lot #6481 and had the following composition as of December 15, 1994.

NUCLIDE	ATOM%	ACTIVITY%
Th-229	<0.001	$<1.23 \times 10^{-2}$
Th-230	83.71	99.79
Th-232	16.29	1.08×10^{-4}
Ra-226 (daughter Th-230)	----	0.15
Am-241	----	0.05

Isotopic composition provided by Oak Ridge National Laboratory.

No other alpha emitting nuclides were detected.

If you have any questions, please contact Technical Service.

7/21/04

RC-S-024-102A

7/30/04

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0159
Prepared By:	Joe Davis
Carrier Conc:	0.1M HNO3
Reference Date:	09/01/1999
Ampoule Mass (g):	4.89252 g
Uncertainty:	+/- 2.2 %
LogBook No:	RC S 023 102

A Solution Material Info	
Isotope:	Thorium-230
Prepared By:	Joe Davis
Prep Date:	09/21/1999
Verification Date:	07/13/2005
Expiration Date:	07/13/2006
Primary Code:	0159-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.7484 g
Density(g/mL):	0.9992

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.7484 g) * (1.991 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 209880.2297 dpm/mL
(4.7484 g) * (1.991 uCi/g) * (2220000 dpm/uCi) / (0.9992 g/mL) / (100 mL) = 210051.8397 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/29/2001	Angela Albee	.0992	100	0159-H	208.37 dpm/mL	01/29/2001	01/29/2002
02/28/2001	Angela Albee	1.0451	1000	0159-I-102	219.525 dpm/mL	03/06/2002	03/06/2003
02/28/2001	Angela Albee	1.0451	1000	0159-I-202	219.525 dpm/mL	03/12/2002	03/12/2003
09/21/1999	Joe Davis	.1172	100	0159-B	246.18 dpm/mL	09/21/1999	09/21/2000
09/23/1999	Joe Davis	.1016	100	0159-C	213.41 dpm/mL	09/23/1999	09/23/2000
01/10/2000	Joe Davis	.1008	100	0159-D	211.56 dpm/mL	01/10/2000	01/10/2001
02/16/2000	Richard Kinney	.2422	500	0159-E	101.75 dpm/mL	02/16/2000	02/16/2001
03/20/2000	Joe Davis	.0998	100	0159-F	209.63 dpm/mL	03/20/2000	03/20/2001
07/28/2000	Robert Timm	1.0046	1000	0159-G	211.02 dpm/mL	07/28/2000	07/28/2001
05/10/2001	Angela Albee	.0987	1000	0159-J	210.1569 dpm/mL	05/10/2001	05/10/2002
08/31/2001	Lonnie Morris	.0416	100	0159-K	87.31 dpm/mL	09/23/2002	09/23/2003
06/07/2002	Angela Albee	1.0002	1000	0159-L	207.278 dpm/mL	06/07/2002	06/07/2003
01/16/2003	Angela Albee	4.5144	1000	0159-M	947.483 dpm/mL	01/16/2003	01/16/2004
02/27/2003	Angela Albee	1.1079	1000	0159-N	232.526 dpm/mL	02/27/2004	02/27/2005
06/23/2004	Amanda Fehr	1.14	1000	0159-O	239.459 dpm/mL	07/03/2005	07/03/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Th-230 Standard 0159-A

	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass Used	Source DPM/G
A. Fehr 7/13/2005	0159-A N1	17327.9000	0.4000	17327.5000	0.83044467	0.1000	208653.2749
	0159-A N2	18077.7000	0.4000	18077.3000	0.83044467	0.1000	217682.1726
	0159-A N3	17931.6000	0.4000	17931.2000	0.83044467	0.1000	215922.8742
Mean Value (Counting) =	214086.1072		1.020094	**Pass**			
Stdev =	4786.494879		0.0223578	**Rule 3 (Pass/Fail)**			
Certificate Value =	209869						
Lower Limit =	204513.1175						
Upper Limit =	223659.097						
Rule 1 Pass/Fail	**Pass**						
Two sigma =	9572.989758						
10 % of Mean =	21408.61072						
Rule 2 (Pass/Fail)	**Pass**						

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for Th-230 source 0159-A by transferring portions of the standard to tared glass liquid scintillation vials. Ten mL of Ready Safe liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 26 for alpha source standard verification. The alpha efficiency calibration which was used for verification calculations was performed on7/13/05 using NIST source 0695-A (Th-230). Calibration data is recorded in this logbook under Th-230 0695-A. Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Amanda L. Fehr 7/14/05

Th-230

PROTOCOL	: 26 Alpha Std. Ver.
DATE	: 2005/07/13
TIME	: 23:42
ID	: P26AS006

Wallac 1414 WinSpectral v1.40 S/N 4140127

Counting mode	: CPM
Isotope(s)	: Po210
Po210	= 400- 900,Alpha,138.40 d
Protocol name	: Alpha Std. Ver.
Counting time	: 300
Repeats	: 1
Cycles	: 1
Replicates	: 1
2 sigma %	: 0.01
Minimum cpm	: 0.00 Checking time: 10
Advanced modes	: PSA,PAC,Chemilum
PSA level	: low
PAC level	: low
Output to Display	:
POS,CTIME,DATE,TIME,RACKPOS,CPMw1,CPM,SQPI,CPM1	
Additions to Display	: Spectrum,Header,Listing
Spectrum	: Alpha
Window 1	: 1-1024 /Alpha
Window 2	: 1-1024 /Beta
Window 3	: 1-1024 /Beta
Window 4	: 1-1024 /Beta
Window 5	: 1-1024 /Beta
Window 6	: 1-1024 /Beta
FNCT1 = FNCT1	:
FNCT2 = FNCT2	:
FNCT3 = FNCT3	:
FNCT4 = FNCT4	:

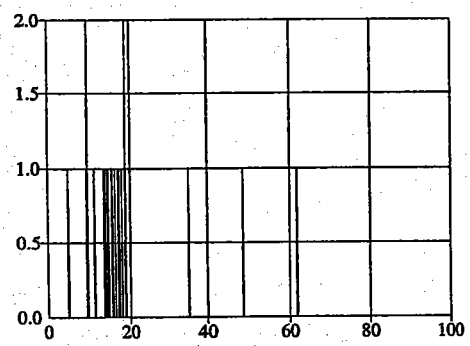
Total count rate:

Po210 54322.1 CPM

AGL 7/14/05

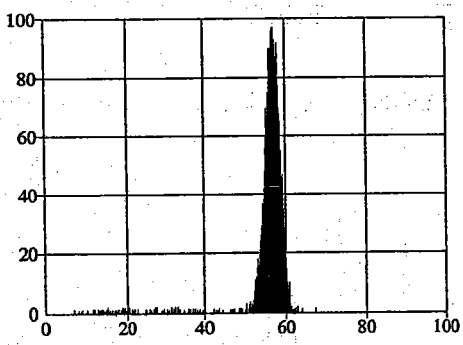
gm 8/30/05

POS	CTIME	DATE	TIME	RACKPOS	CPMW1
1	300	7/13/2005	11:42 PM	1	4.80



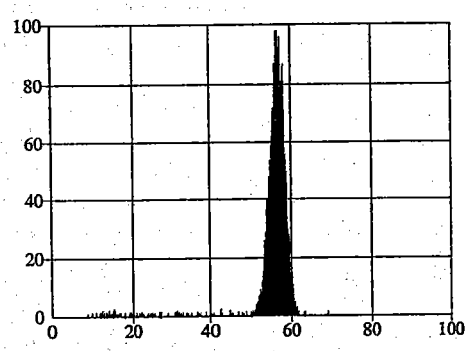
Bkg

2	300	7/13/2005	11:48 PM	2	879.30



0695-A

3	300	7/13/2005	11:53 PM	3	872.90

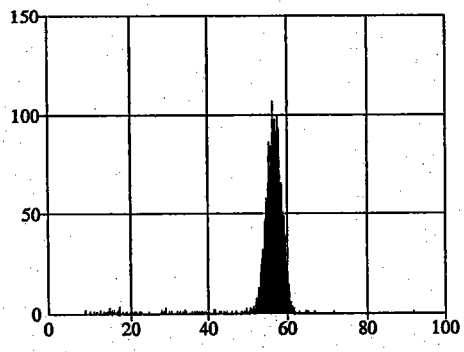


0695-A

ALF 7/14/05

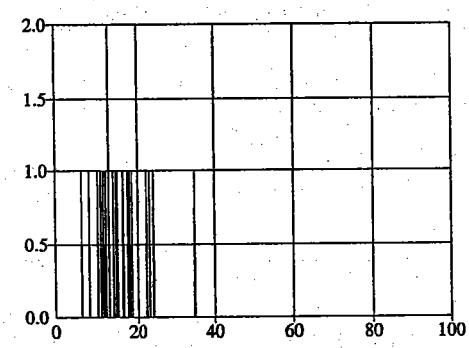
pm 8/30/05

POS	CTIME	DATE	TIME	RACKPOS	CPMW1
4	300	7/13/2005	11:59 PM	4	900.70



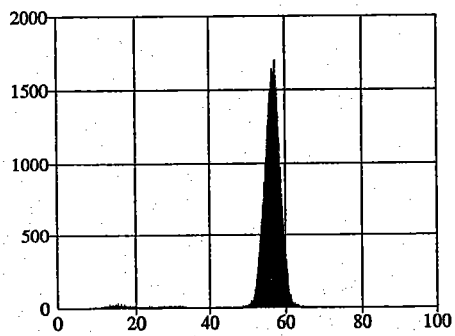
0695-A

POS	CTIME	DATE	TIME	RACKPOS	CPMW1
5	300	7/14/2005	0:04 AM	5	4.80



Bkg

POS	CTIME	DATE	TIME	RACKPOS	CPMW1
6	300	7/14/2005	0:10 AM	6	17327.90

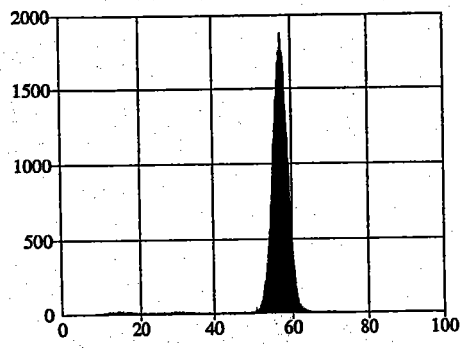


0159-A

AUF 7/14/05

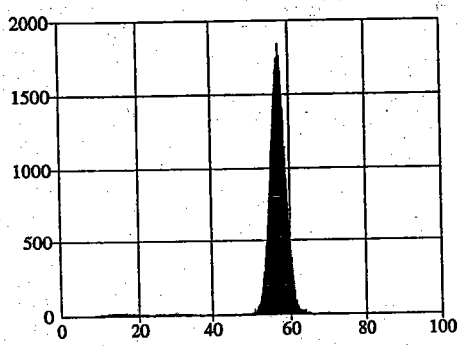
7/30/05

POS	CTIME	DATE	TIME	RACKPOS	CPMW1
7	300	7/14/2005	0:15 AM	7	18077.70



0159-A

8	300	7/14/2005	0:21 AM	8	17931.60



0159-A

AJF 7/14/05

0133

[redacted]

UKAS ACCREDITED CALIBRATION LABORATORY No. 0146

Measurement	Reference time for solution number S6/7/19:	1200 GMT on 1 April 1996	
	Radioactive concentration of strontium-90:	477.1	kilobecquerels per gram of solution
	which is equivalent to:	12.89	microcuries per gram of solution
	Mass of solution:	5.0669	grams
	Total activity of strontium-90:	2.417	megabecquerels
	which is equivalent to:	65.3	microcuries

Method of measurement used (see page 3 of the certificate): K

Calibration dates: 25 March 1996 to 27 March 1996

The calibration date is provided for added information only, and must not be confused with the reference date on pages 1 and 2 of the certificate. It is the reference date that must be used in all calculations relating to the values of activity.

Accuracy Expanded uncertainty in the radioactive concentration quoted above: ± 0.80 %

Combined Type A uncertainty : ± 0.05 %

Combined Type B uncertainty : ± 0.40 %

Radionuclidic purity The estimated activities of any radioactive impurities found by high-resolution gamma ray spectrometry, or in any other examination of the solution, are listed below expressed as percentages of the activity of the principal radionuclide at the reference time.

Other radionuclides 0.0005(3) %

Chemical composition 0.1 M HCl containing 100 micrograms of strontium and 100 micrograms of yttrium per ml.

Physical data Recommended half life: 29.12 ± 0.24 years (1 year = 365.25 days)

Strontium-90: 100% beta particle emission.
Yttrium-90: 100% beta particle emission. Half life 64.1 ± 0.1 hours.

The activity of the yttrium-90 is equal to the activity of the strontium-90.

Remarks This product meets the quality assurance requirements for achieving traceability to NIST as defined in ANSI N42.22-1995.

Tests made over a period of 2 years on standardised solutions of strontium-90 stored in glass ampoules have shown that loss of strontium-90 from solution is negligible other than by radioactive decay.

pm 7/21/04

RC-S-023-000

pm 7/30/04

Nycomed Amersham plc
Amersham Laboratories

[illegible]

NAMAS
CALIBRATION
No. 0146

ISSUED BY:	Nycomed Amersham plc Radiation & Radioactivity Calibration Laboratory Amersham Laboratories White Lion Road Amersham Buckinghamshire HP7 9LL	ISSUED FOR:	AEA Technology plc Isotrak Amersham Laboratories White Lion Road Amersham Buckinghamshire HP7 9LL

Description Principal radionuclide: Strontium-90

Product code: SIZ64
Solution number: S6/7/19

Measurement Reference time: 1200 GMT on 1 April 1996

Nuclear data Nuclear data quoted on this certificate are taken from the Joint European File, Version 2.2.

Expression of uncertainties The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2.00, which for a *t*-distribution with $\nu_{eff} = \infty$ effective degrees of freedom corresponds to a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Unless indicated, all other uncertainties are expressed at the confidence level associated with one standard uncertainty.

The format used for the uncertainties in the values of radionuclidic purity is illustrated by the following examples;

6.5(21)	=	6.5 ± 2.1
6.54(21)	=	6.54 ± 0.21
6.543(21)	=	6.543 ± 0.021

pm 7/21/04

Approved Signatory W. F. Carr

Date of issue 11 May 1999

LC-S-023-0609

Nycomed

UKAS ACCREDITED CALIBRATION LABORATORY No. 0146

Methods of measurement

The measurement techniques listed below are currently in use at Nycomed Amersham for the absolute standardisation of radioactive solutions. The methods used for this standardisation are indicated on page 2 of the certificate.

Using a gas flow proportional counter

A	4 pi beta counting
B	4 pi alpha counting
C	4 pi internal conversion electron counting
D	4 pi coincidence counting
E	4 pi anticoincidence counting
F	4 pi coincidence and anticoincidence counting

Using a liquid scintillation counter

G	4 pi coincidence counting
H	4 pi anticoincidence counting
J	4 pi coincidence and anticoincidence counting
K	4 pi efficiency tracing

SI unit of radioactivity

The S.I. unit of radioactivity is the becquerel

1 becquerel (Bq) = 1 nuclear transformation per second, therefore

1 curie (Ci) = 3.7×10^{10} becquerels exactly

Useful conversion factors are:

1 microcurie (μCi)	=	3.7×10^{4} Bq	=	37 kilobecquerels (kBq)
1 millicurie (mCi)	=	3.7×10^{7} Bq	=	37 megabecquerels (MBq)
1 kilobecquerel (kBq)	=	27.027 nanocuries (nCi)		
1 megabecquerel (MBq)	=	27.027 microcuries (μCi)		

pm 7/21/04

RC-5-023-0603

pm 7/26/04

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0133
Prepared By:	Joe Davis
Carrier Conc:	0.1 M HCL
Reference Date:	04/01/1996
Ampoule Mass (g):	5.0669 g
Uncertainty:	+/- .8 %
LogBook No:	RC S 023 060

A Solution Material Info	
Isotope:	Strontium-90
Prepared By:	Joe Davis
Prep Date:	09/25/1999
Verification Date:	08/16/2005
Expiration Date:	08/16/2006
Primary Code:	0133-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.8374 g
Density(g/mL):	1.0041

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.8374 g) * (12.89 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 1384260.7092 dpm/mL
(4.8374 g) * (12.89 uCi/g) * (2220000 dpm/uCi) / (1.0041 g/mL) / (100 mL) = 1378622.1492 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
09/06/2000	Joe Davis	.0899	1000	0133-F	124.445 dpm/mL	09/06/2000	09/06/2001
12/05/1999	Joe Davis	.9937	100	0133-C	13699.37 dpm/mL	12/05/1999	12/05/2000
12/05/1999	Joe Davis	.0995	100	0133-B	1371.73 dpm/mL	12/05/1999	12/05/2000
02/16/2000	Richard Kinney	.0349	500	0133-D	96.23 dpm/mL	02/16/2000	02/16/2001
03/09/2000	Richard Kinney	.0282	250	0133-E	155.51 dpm/mL	03/09/2000	03/09/2001
10/13/2000	Robert Timm	.3194	1000	0133-G-104	440.332 dpm/mL	10/09/2001	10/09/2002
10/13/2000	Robert Timm	1.0865	100	0133-H	14978.73 dpm/mL	10/09/2002	10/09/2003
10/13/2000	Robert Timm	.3194	1000	0133-G-204	440.332 dpm/mL	10/09/2001	10/09/2002
10/13/2000	Robert Timm	.3194	1000	0133-G-304	440.332 dpm/mL	10/09/2001	10/09/2002
10/13/2000	Robert Timm	.3194	1000	0133-G-404	440.332 dpm/mL	10/09/2001	10/09/2002
05/10/2001	Angela Albee	1.0005	1000	0133-I	1379.311 dpm/mL	05/11/2001	05/11/2002
05/06/2002	Angela Albee	.3738	1000	0133-J	515.329 dpm/mL	05/09/2002	05/09/2003
06/07/2002	Angela Albee	.1816	1000	0133-K	250.358 dpm/mL	06/07/2002	06/07/2003
01/16/2003	Angela Albee	.2964	1000	0133-L	408.624 dpm/mL	01/16/2003	01/16/2004
04/18/2003	Lonnie Morris	.3247	1000	0133-M	447.6386 dpm/mL	04/16/2004	04/16/2005
10/31/2002	Angela Albee	10.11	1000	0133-G		10/31/2002	10/31/2003
05/25/2004	Amanda Fehr	.361	1000	0133-N	497.6826 dpm/mL	05/24/2005	05/24/2006
07/22/2005	Brenda Burke	.098	500	0133-O	270.2099 dpm/mL	08/16/2005	08/16/2006
08/15/2005	Amanda Fehr	.1582	500	0133-P	436.196 dpm/mL	08/15/2005	08/15/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

General Engineering Laboratories
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gas Flow Proportional Counter Calibration Package

Method: Pb-210

	YES	NO	Comments
1) Is all calibration standard information enclosed for:			
primary standard certificate?	✓		
secondard standard(s) documentation?	✓		
standard preparation information?	✓		
standard < 1 Year old or verified?	✓		
2) Are the detector graphs included?			
beta absorption curves?	✓		
beta plateau?	✓		
3) Is the raw count data included for:			
the plateau generation?	✓		
the absorption curve generation?	✓		
the calibration verification?	✓		
the crosstalk calculations?	✓		
4) Are the calibration verification calculations included?	✓		
are verification recoveries 100% +/- 25%	✓		

Prepared By: _____ Date: 7/29/05

Reviewed By: _____ Date: 7/30/05

Effective Date: 7/29/05

Q3576

DEUTSCHER KALIBRIERDIENST DKD

Kalibrierlaboratorium für Meßgrößen der Radioaktivität
Calibration laboratory for measurements of radioactivity

AKKREDITIERT DURCH DIE
PHYSIKALISCH-TECHNISCHE BUNDESANSTALT (PTB)

AEA Technology QSA GmbH
Postfach 58 42 Gieselweg 1
D-38049 Braunschweig D-38110 Braunschweig
Tel. +49 (0) 5307 932-0
Fax +49 (0) 5307 932-194

Source no. FX 248

08640
DKD-K-06501
01-01

Kalibrierzeichen
Calibration mark

Kalibrierschein
Calibration Certificate

Gegenstand *Object*	**Reference Solution**
Hersteller *Manufacturer*	**AEA Technology QSA GmbH**
Typ *Type*	**RBZB44**
Strahler-Nr. *Source number*	**FX 248**
Auftraggeber *Customer*	**AEA TECHNOLOGY QSA, INC. USA-BURLINGTON MA 01803**
Auftragsnummer *Order No.*	**CO 34622**
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	**2**
Referenzdatum *Reference date*	**1 January 2001**

Dieser Kalibrierschein dokumentiert die Rückführung auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem internationalen Einheitensystem (SI).

Der Deutsche Kalibrierdienst ist Unterzeichner des multilateralen Übereinkommens der European co-operation for Accreditation (EA) zur gegenseitigen Anerkennung der Kalibrierscheine.

Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.

This calibration certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units (SI).

The Deutscher Kalibrierdienst is signatory to the multilateral agreement of the European co-operation for (EA) for the mutual recognition of calibration certificates.

The user is obliged to have the object recalibrated at appropriate intervals.

Stempel *Seal*	Datum *Date*	Leiter des Kalibrierlaboratoriums *Head of the calibration laboratory*	Stellvertreter *Deputy*	Bearbeiter *Person in charge*
Deutscher Kalibrierdienst DKD-K-06501	31 January 2001	Dr. Thieme	Schott	Linke / Schott / Schüler

7/29/05

08640
DKD-K-06501
01-01

Reference Solution

Solution no.	FX 248
Drawing	VZ-2058/1
Nuclide	Lead-210
Radioactive concentration	34.2 kBq/g
Reference date	1 January 20001 at 12.00 GMT
Mass of solution	(5.182 ± 0.001) g
Volume of solution	approx. 5 ml
Contamination test	Wipe test according to ISO 9978.
Date of wipe test	30 January 2001
Chemical composition	Solution in 1.2 M HNO3; Carrier: Pb(NO3)2, Bi(NO3)3; each 20 mg/l of the corresponding element.
Measuring method	The activity was determined by comparison with a reference solution by measurement with a Ge-detector with MCA.
Traceability	Additional to the direct traceability to the PTB through the DKD this product complies with the requirements for traceability to NIST specified in the American National Standard "Traceability of Radioactive Sources to the NIST and Associated Instrument Quality Control (ANSI N42.22-1995)". As a requirement of the ANSI N42.22-1995 AEA Technology QSA GmbH participates in the NEI/NIST Measurements Assurance Program of the Nuclear Power Industry.
Uncertainty	The relative uncertainty of the activity is 3 %. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 %. (Ref. NIST Technical Note 1297/"Guide to the Expression of Uncertainty in Measurement" ISO Guide, 1995)
Radioactive impurities	Related to Pb-210 (equal 100 %) the following radioactive impurities were detected: Ra-226: 0.003 %
Quality assurance system	The quality assurance system of AEA Technology QSA GmbH was certified by Lloyd's Register Quality Assurance (LRQA) according to ISO 9001, issue 1994. Isotrak products meet the requirements of 10CFR50 Appendix B in the USA.
Remark	

pm 7/29/02

Explanations for Certificates (Page 2 of Certificates)

Overall uncertainty

The reported uncertainty is based on standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 %. (ISO Guide, 1995)

Traceability

This certificate documents the traceability of measurement results to national standards, standard measuring equipment and methods for the realisation of physical units of measurement according to the International System of Units (SI).
Traceability is defined as 'the property of a result of a measurement whereby it can be related to appropriate standards, generally international or national standards, through an unbroken chain of comparisons'.

AEA Technology QSA GmbH has been accredited as DKD (Deutscher Kalibrierdienst) calibration laboratory by the Physikalisch-Technische Bundesanstalt (PTB) and is authorized to issue reference sources which are traceable to national standards held at the PTB in Germany.
Because of the European co-operation for Accreditation (EA) mutual recognition agreement the certificates are also accepted by all EA-members (e. g. NAMAS, UK).

This product complies with the requirements for traceability to NIST specified in the American National Standard "Traceability of Radioactive Sources to the NIST and Associated Instrument Quality Control (ANSI N42.22-1995)".
As a requirement for the ANSI N42.22-1995 AEA Technology QSA participates in the NEI/NIST Measurements Assurance Program of the Nuclear Power Industry.

Leakage and contamination tests

Stringent tests for leakage are an essential feature of radioactive sources production. They are based on ISO 9978. Some standard methods used for testing radiation sources are listed below.

Wipe test I

The source is wiped with a swab or tissue, moistened with ethanol or water, the activity removed is measured.
Limit: 185 Bq

Immersion test II

The source is immersed in a suitable liquid at 50 °C for at least 4 hours and the activity removed is measured.
Limit: 185 Bq

Bubble test III

The source is immersed in water or a suitable liquid and the pressure in the vessel reduced to 13 kPa (100 mm Hg). No bubbles must be observed.
(This test conforms to ISO 9978 except that for some sources, the 100 mm^3 free volume requirement is not met.)

Emanation test IV

The source is placed in a gas tight enclosure with activated carbon as absorber and is left there for at least 3 h. The source is considered leak tight when not more than 185 Bq Radon related to a collection time of 12 h can be measured afterwards.

ISO classification

The International Organization for Standardization (ISO) has proposed a system of classification of sealed radioactive sources based on safety requirements for typical uses (see ISO 2919). This system provides a manufacturer of sealed radioactive sources with a set of tests to evaluate the safety of his products. It also assists a user of such sealed sources to select types which suit the application he has in mind. The tests to which specimen sources are subjected are listed in the following table.

Classification of sealed source performance standard according to ISO 2919

	Class 1	2	3	4	5	6
Temperature	No test	- 40 °C (20 min) + 80 °C (1 h)	- 40 °C (20 min) + 180 °C (1 h)	- 40 °C (20 min) + 400 °C (1 h) and thermal shock 400 °C to 20 °C	- 40 °C (20 min) + 600 °C (1 h) and thermal shock 600 °C to 20 °C	- 40 °C (20 min) + 800 °C (1 h) and thermal shock 800 °C to 20 °C
External Perssure	No test	25 kPa absolute	25 kPa absolute to 2 MPa absolute	25 kPa absolute to 7 MPa absolute	25 kPa absolute to 70 MPa absolute	25 kPa absolute to 170 MPa absolute
Impact	No test	50 g from 1 m	200 g from 1 m	2 kg from 1 m	5 kg from 1 m	20 kg from 1 m
Vibration	No test	3 x 10 min 25 - 500 Hz at 5 g peak amplitude	3 x 10 min 25 - 50 Hz at 5 g peak amplitude and 50 - 90 Hz at 0.635 mm amplitude peak to peak and 90 - 500 Hz at 10 g peak amplitude	3 x 30 min 25 - 80 Hz at 1.5 mm amplitude peak to peak and 80 - 2000 Hz at 20 g peak amplitude		
Puncture	No test	1 g from 1 m	10 g from 1 m	50 g from 1 m	300 g from 1 m	1 kg from 1 m

Special applications

No test programme can cover all possible combinations of environments to which a source may be exposed.
Users should therefore consult our experts before using sources in potentially adverse environments.

IAEA Special Form

'Special Form' is a test specification for sealed sources given in the IAEA transport regulations (IAEA Safety Series No. 6, 1985, revised edition).
It is used in determining the maximum acceptable activities for various types of transport containers.

Quality assurance system

The quality assurance system of AEA Technology QSA GmbH was certified by Lloyd's Register Quality Assurance (LRQA) according to ISO 9001, issue 1994. Isotrak products meet the requirements of 10CFR50 Appendix B.

AEA TECHNOLOGY

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0356
Prepared By:	Angela Albee
Carrier Conc:	1.2M HNO3
Reference Date:	01/01/2001
Ampoule Mass (g):	5.182 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 034 16b

A Solution Material Info	
Isotope:	Lead-210
Prepared By:	Angela Albee
Prep Date:	04/03/2001
Verification Date:	07/12/2005
Expiration Date:	07/12/2006
Primary Code:	0356-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.275 g
Density(g/mL):	1.0290

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.275 g) * (34.2 kBq/g) * (60000 dpm/kBq) / (100 mL) = 87723.0000 dpm/mL
(4.275 g) * (34.2 kBq/g) * (60000 dpm/kBq) / (1.0290 g/mL) / (100 mL) = 85250.5630 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Pb-210 Standard 0356-A

A.Fehr	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (mL)	Source DPM/mL
7/12/2005	0356-A N1	20294.0000	21.7000	20294.0000	2.66846554	0.1000	76051.19747
	0356-A N2	20276.6000	21.7000	20276.6000	2.66846554	0.1000	75985.99146
	0356-A N3	20079.7000	21.7000	20079.7000	2.66846554	0.1000	75248.11421
						Average =	75761.76771

Mean Value (Counting) =	75761.76771	dpm/g	**99.4402909**	**Pass**
Stdev =	446.03015	dpm/g	0.00588727	**Rule 3 (Pass/Fail)**
Certificate Value =	76188.2	dpm/g		
Lower Limit =	74869.70741	dpm/g		
Upper Limit =	76653.82801	dpm/g		
Rule 1 Pass/Fail	**Pass**			
Two sigma =	892.0603001			
10 % of Mean =	7576.176771			
Rule 2 (Pass/Fail)	**Pass**			

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three calibration sources for source 0356-A by transferring portions of the standard to tared glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The calibration vials and background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 31 for Pb-210 standard verification. The efficiency calibration which was used for verification calculations was performed on 7/12/05 using source ET491-A (Pb-210). Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Angela L. Johnson 7/29/05

PROTOCOL : 31 Pb-210 Verification
DATE : 2005/07/12
TIME : 05:29
ID : P31AS005

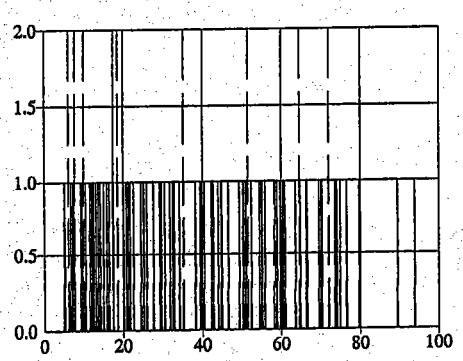
Wallac 1414 WinSpectral v1.40 S/N 4140127
Counting mode : CPM
Isotope(s) : Pb210
Pb210 = 5- 520,21.00 y
Protocol name : Pb-210 Verification
Counting time : 300
Repeats : 1
Cycles : 1
Replicates : 1
2 sigma % : 0.01
Minimum cpm : 0.00 Checking time: 10
Advanced modes : Chemilum,PSA
PSA level : 35
Output to Display :
POS,CTIME,DATE,TIME,RACKPOS,CPMw1,CPM,SQPI,CPM1
Additions to Display : Spectrum,Header,Listing
Spectrum : Alpha,Beta
Window 1 : 685- 745 /Alpha
Window 2 : 1-1024 /Beta
Window 3 : 1-1024 /Beta
Window 4 : 1-1024 /Beta
Window 5 : 1-1024 /Beta
Window 6 : 1-1024 /Beta
FNCT1 = FNCT1 :
FNCT2 = FNCT2 :
FNCT3 = FNCT3 :
FNCT4 = FNCT4 :

Total count rate:
Pb210 72372.3 CPM

pu 7/29/05
ASA 7/12/05

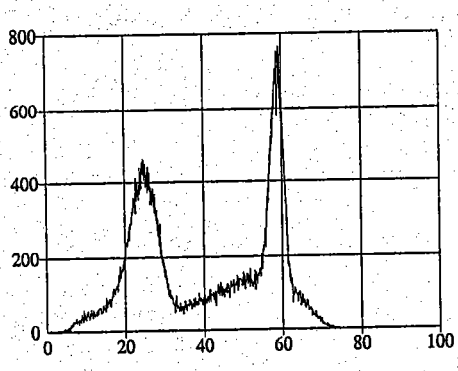
AAQ 7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
1	300	7/12/2005	5:29 AM	1	20.20



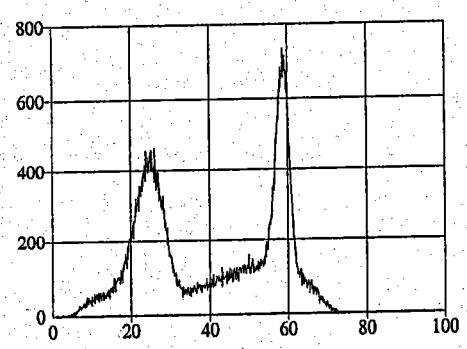
Bkg

2	300	7/12/2005	5:35 AM	2	22785.60



ET491-A

3	300	7/12/2005	5:41 AM	3	22178.60



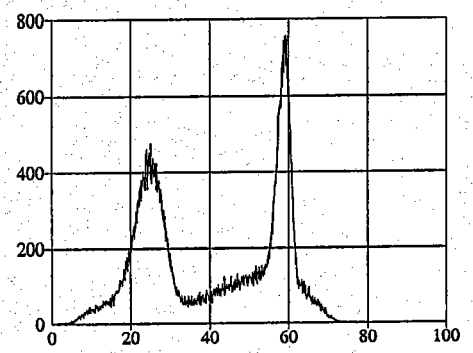
ET491-A

pm 7/29/05

QCF 7/12/05

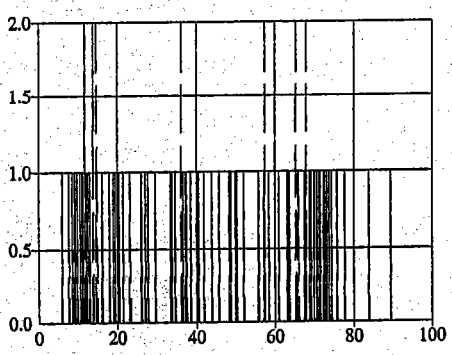
ADQ 7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
4	300	7/12/2005	5:46 AM	4	22065.70



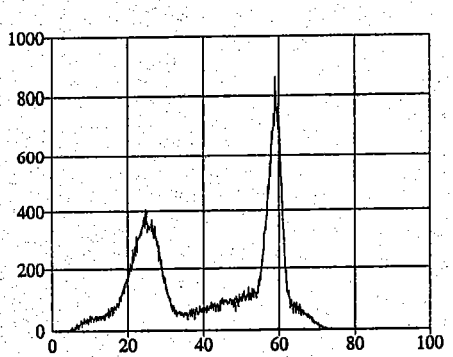
ET491-A

5	300	7/12/2005	5:52 AM	5	21.70



Bkg

6	300	7/12/2005	5:58 AM	6	20294.00



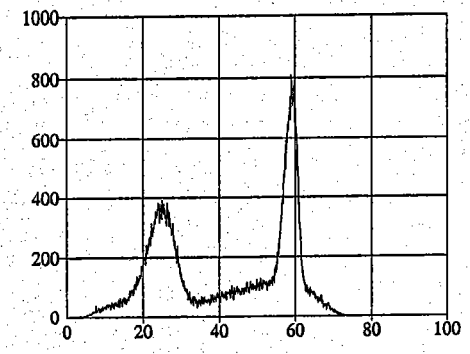
0356-A

pg 7/12/05

ALF 7/12/05

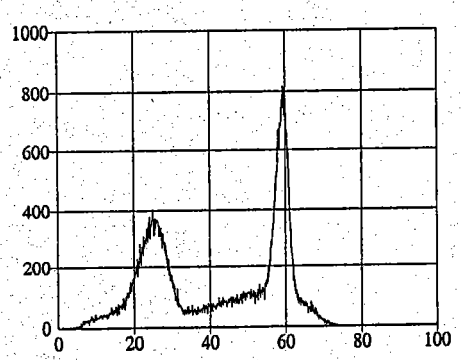
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
7	300	7/12/2005	6:04 AM	7	20276.60



0356-A

8	300	7/12/2005	6:09 AM	8	20079.70



0356-A

pm, hq/or

ALF 7/12/05

7/29/05

General Engineering Laboratories
Calibration Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-018 | Isotope: Pb-210

Date Standards Prepared: 7/14/05 | Cocktail Type Used: NA

Standard ID: 0356-A | Matrix of Vial/Planchett: Lead chromate precipitate on Tuffryn filter

Amount Used (g or (ml)): 0.5

Standard Activity (DPM/g or (mL)): 87723 | Type of Scintillation Vial: N/A

Reference Date: 1/1/05 | Pipette ID Used: 2440913

Expiration Date: 7/12/06 | Balance ID Used: [illegible]

Residue/Carrier Agent: Lead Carrier 14.65 mg/mL | Quenching Agent: N/A

Separation Date / Time: 7/14/05 0800

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)		
	C1	0.1	0.0849	~~0.0850~~	~~0.6~~	0.0854	1.0
	C2	0.2	0.0851	~~0.0865~~	~~1.4~~	0.0875	2.4
	C3	0.3	0.0845	0.0880	3.5		
	C4	0.4	0.0849	0.0913	6.4		
	C5	0.5	0.0847	0.0926	7.9		
	C6	0.6	0.0874	0.0975	10.1		
	C7	0.7	0.0860	0.0950	9.0		
	C8	0.8	0.0879	0.1000	12.1		
	C9	0.9	0.0846	0.0966	12.0		
	C10	1.0	0.0852	0.1000	14.8		
	C11	1.1	0.0841	0.1010	16.9		
	C12	1.3	0.0865	~~0.1033~~ 7/13/05	18.8		
			0.0850	0.1053			
			0 7/13/05				

Prepared By: [signature] Date: 7/14/05

Reviewed By: [signature] Date: 7/14/05

Rev 1 RLM 9/10/97

Det.	Sample ID	Count Time	Alpha Counts	Beta Counts	Bkg CPM	Pb mg	Target mg	Rec (%)	Voltage	Count Date/Time	Dpm Added	CPM	Rec. Corr. CPM	Bi-210 Seperation	Bi-210 Ing. Days	Bi-210 Ing. Factor	Ing. Corr. CPM	Pb-210 Efficiency
Instrument 1 - A	1	2	84	22018	0.362	1	1.5	68.3%	1575	7/28/2005 7:55	38089.65	11008.64	16127.65	7/14/2005 8:00	13.997	0.8557	18848.12	0.4948
Instrument 1 - A	2	2	84	22854	0.362	2.4	2.9	81.9%	1575	7/28/2005 8:20	38089.65	11426.64	13950.02	7/14/2005 8:00	14.014	0.8560	16296.61	0.4278
Instrument 1 - A	3	2	102	20935	0.362	3.5	4.4	79.6%	1575	7/28/2005 8:05	38089.65	10467.14	13143.73	7/14/2005 8:00	14.004	0.8558	15358.20	0.4032
Instrument 1 - A	4	2	99	22720	0.362	6.4	5.9	109.2%	1575	7/28/2005 8:01	38089.65	11359.64	10401.17	7/14/2005 8:00	14.001	0.8558	12154.42	0.3191
Instrument 1 - A	5	2	95	22892	0.362	7.9	7.3	107.8%	1575	7/28/2005 10:09	38089.65	11445.64	10612.57	7/14/2005 8:00	14.090	0.8575	12375.96	0.3249
Instrument 1 - A	6	2	83	23217	0.362	10.1	8.8	114.9%	1575	7/28/2005 10:25	38089.65	11608.14	10102.53	7/14/2005 8:00	14.101	0.8577	11778.26	0.3092
Instrument 1 - A	7	2	63	19193	0.362	9	10.3	87.8%	1575	7/28/2005 10:20	38089.65	9596.14	10934.27	7/14/2005 8:00	14.098	0.8577	12748.81	0.3347
Instrument 1 - A	8	2	78	20620	0.362	12.1	11.7	103.2%	1575	7/28/2005 10:16	38089.65	10309.64	9985.86	7/14/2005 8:00	14.095	0.8576	11643.85	0.3057
Instrument 1 - A	9	2	65	18730	0.362	12	13.2	91.0%	1575	7/28/2005 9:35	38089.65	9364.64	10289.40	7/14/2005 8:00	14.066	0.8570	12005.70	0.3152
Instrument 1 - A	10	2	73	20335	0.362	14.8	14.7	101.0%	1575	7/28/2005 10:06	38089.65	10167.14	10064.09	7/14/2005 8:00	14.087	0.8575	11737.03	0.3081
Instrument 1 - A	11	2	81	19694	0.362	16.9	16.1	104.9%	1575	7/28/2005 10:02	38089.65	9846.64	9389.26	7/14/2005 8:00	14.085	0.8574	10950.66	0.2875
Instrument 1 - A	12	2	89	20801	0.362	18.8	19.0	98.7%	1575	7/28/2005 9:43	38089.65	10400.14	10535.67	7/14/2005 8:00	14.072	0.8572	12291.42	0.3227
Instrument 1 - B	1	2	56	21763	0.296	1	1.5	68.3%	1575	7/28/2005 8:01	38089.65	10881.20	15940.96	7/14/2005 8:00	14.001	0.8558	18627.99	0.4891
Instrument 1 - B	2	2	78	22474	0.296	2.4	2.9	81.9%	1575	7/28/2005 7:55	38089.65	11236.70	13718.14	7/14/2005 8:00	13.997	0.8557	16032.10	0.4209
Instrument 1 - B	3	2	73	20359	0.296	3.5	4.4	79.6%	1575	7/28/2005 8:20	38089.65	10179.20	12782.17	7/14/2005 8:00	14.014	0.8560	14932.28	0.3920
Instrument 1 - B	4	2	58	22111	0.296	6.4	5.9	109.2%	1575	7/28/2005 8:05	38089.65	11055.20	10122.42	7/14/2005 8:00	14.004	0.8558	11827.84	0.3105
Instrument 1 - B	5	2	71	23056	0.296	7.9	7.3	107.8%	1575	7/28/2005 10:16	38089.65	11527.70	10688.66	7/14/2005 8:00	14.095	0.8576	12463.31	0.3272
Instrument 1 - B	6	2	72	22905	0.296	10.1	8.8	114.9%	1575	7/28/2005 10:09	38089.65	11452.20	9966.82	7/14/2005 8:00	14.090	0.8575	11622.90	0.3051
Instrument 1 - B	7	2	62	18664	0.296	9	10.3	87.8%	1575	7/28/2005 10:25	38089.65	9331.70	10632.96	7/14/2005 8:00	14.101	0.8577	12396.64	0.3255
Instrument 1 - B	8	2	56	20619	0.296	12.1	11.7	103.2%	1575	7/28/2005 10:21	38089.65	10309.20	9985.44	7/14/2005 8:00	14.098	0.8577	11642.51	0.3057
Instrument 1 - B	9	2	62	18705	0.296	12	13.2	91.0%	1575	7/28/2005 9:43	38089.65	9352.20	10275.73	7/14/2005 8:00	14.072	0.8572	11988.15	0.3147
Instrument 1 - B	10	2	45	19770	0.296	14.8	14.7	101.0%	1575	7/28/2005 9:35	38089.65	9884.70	9784.52	7/14/2005 8:00	14.066	0.8570	11416.59	0.2997
Instrument 1 - B	11	2	42	19125	0.296	16.9	16.1	104.9%	1575	7/28/2005 10:06	38089.65	9562.20	9118.04	7/14/2005 8:00	14.088	0.8575	10633.70	0.2792
Instrument 1 - B	12	2	56	20230	0.296	18.8	19.0	98.7%	1575	7/28/2005 10:02	38089.65	10114.70	10246.52	7/14/2005 8:00	14.085	0.8574	11950.46	0.3137
Instrument 1 - C	1	2	132	22038	0.36	1	1.5	68.3%	1575	7/28/2005 8:06	38089.65	11018.64	16142.31	7/14/2005 8:00	14.004	0.8558	18861.93	0.4952
Instrument 1 - C	2	2	151	22700	0.36	2.4	2.9	81.9%	1575	7/28/2005 8:01	38089.65	11349.64	13856.02	7/14/2005 8:00	14.001	0.8558	16191.57	0.4251
Instrument 1 - C	3	2	161	20552	0.36	3.5	4.4	79.6%	1575	7/28/2005 7:55	38089.65	10275.64	12903.27	7/14/2005 8:00	13.997	0.8557	15079.77	0.3959
Instrument 1 - C	4	2	179	22690	0.36	6.4	5.9	109.2%	1575	7/28/2005 8:20	38089.65	11344.64	10387.44	7/14/2005 8:00	14.014	0.8560	12134.71	0.3186
Instrument 1 - C	5	2	149	23030	0.36	7.9	7.3	107.8%	1575	7/28/2005 10:21	38089.65	11514.64	10676.55	7/14/2005 8:00	14.098	0.8577	12448.29	0.3268
Instrument 1 - C	6	2	163	22975	0.36	10.1	8.8	114.9%	1575	7/28/2005 10:16	38089.65	11487.14	9997.22	7/14/2005 8:00	14.095	0.8576	11657.06	0.3060
Instrument 1 - C	7	2	137	19131	0.36	9	10.3	87.8%	1575	7/28/2005 10:09	38089.65	9565.14	10898.95	7/14/2005 8:00	14.090	0.8575	12709.87	0.3337
Instrument 1 - C	8	2	136	20712	0.36	12.1	11.7	103.2%	1575	7/28/2005 10:25	38089.65	10355.64	10030.42	7/14/2005 8:00	14.101	0.8577	11694.15	0.3070
Instrument 1 - C	9	2	132	19007	0.36	12	13.2	91.0%	1575	7/28/2005 10:02	38089.65	9503.14	10441.58	7/14/2005 8:00	14.085	0.8574	12177.92	0.3197
Instrument 1 - C	10	2	129	20055	0.36	14.8	14.7	101.0%	1575	7/28/2005 9:43	38089.65	10027.14	9925.51	7/14/2005 8:00	14.072	0.8572	11579.53	0.3040
Instrument 1 - C	11	2	110	19004	0.36	16.9	16.1	104.9%	1575	7/28/2005 9:35	38089.65	9501.64	9060.29	7/14/2005 8:00	14.066	0.8570	10571.55	0.2775
Instrument 1 - C	12	2	125	20586	0.36	18.8	19.0	98.7%	1575	7/28/2005 10:06	38089.65	10292.64	10426.77	7/14/2005 8:00	14.088	0.8575	12159.96	0.3192
Instrument 1 - D	1	2	314	21985	0.338	1	1.5	68.3%	1575	7/28/2005 8:20	38089.65	10992.16	16103.52	7/14/2005 8:00	14.014	0.8560	18812.29	0.4939
Instrument 1 - D	2	2	339	22577	0.338	2.4	2.9	81.9%	1575	7/28/2005 8:06	38089.65	11288.16	13780.96	7/14/2005 8:00	14.004	0.8558	16102.73	0.4228
Instrument 1 - D	3	2	302	20759	0.338	3.5	4.4	79.6%	1575	7/28/2005 8:01	38089.65	10379.16	13033.26	7/14/2005 8:00	14.001	0.8558	15230.12	0.3998
Instrument 1 - D	4	2	337	22777	0.338	6.4	5.9	109.2%	1575	7/28/2005 7:55	38089.65	11388.16	10427.29	7/14/2005 8:00	13.997	0.8557	12186.14	0.3199
Instrument 1 - D	5	2	299	23052	0.338	7.9	7.3	107.8%	1575	7/28/2005 10:25	38089.65	11525.66	10686.77	7/14/2005 8:00	14.101	0.8577	12459.35	0.3271
Instrument 1 - D	6	2	273	22954	0.338	10.1	8.8	114.9%	1575	7/28/2005 10:21	38089.65	11476.66	9988.10	7/14/2005 8:00	14.098	0.8577	11645.59	0.3057
Instrument 1 - D	7	2	234	19018	0.338	9	10.3	87.8%	1575	7/28/2005 10:16	38089.65	9508.66	10834.59	7/14/2005 8:00	14.095	0.8576	12633.40	0.3317
Instrument 1 - D	8	2	275	20545	0.338	12.1	11.7	103.2%	1575	7/28/2005 10:09	38089.65	10272.16	9949.57	7/14/2005 8:00	14.090	0.8575	11602.73	0.3046
Instrument 1 - D	9	2	253	18798	0.338	12	13.2	91.0%	1575	7/28/2005 10:06	38089.65	9398.66	10326.78	7/14/2005 8:00	14.088	0.8575	12043.34	0.3162
Instrument 1 - D	10	2	272	20117	0.338	14.8	14.7	101.0%	1575	7/28/2005 10:02	38089.65	10058.16	9956.22	7/14/2005 8:00	14.085	0.8574	11611.84	0.3048
Instrument 1 - D	11	2	259	19117	0.338	16.9	16.1	104.9%	1575	7/28/2005 9:43	38089.65	9558.16	9114.19	7/14/2005 8:00	14.072	0.8572	10633.00	0.2792
Instrument 1 - D	12	2	229	20856	0.338	18.8	19.0	98.7%	1575	7/28/2005 9:35	38089.65	10427.66	10563.55	7/14/2005 8:00	14.066	0.8570	12325.53	0.3236
Instrument 2 - A	1	2	225	21853	0.348	1	1.5	68.3%	1575	7/28/2005 8:42	38089.65	10926.15	16006.81	7/14/2005 8:00	14.029	0.8563	18692.72	0.4908
Instrument 2 - A	2	2	264	22781	0.348	2.4	2.9	81.9%	1575	7/28/2005 9:21	38089.65	11390.15	13905.48	7/14/2005 8:00	14.056	0.8568	16228.60	0.4261
Instrument 2 - A	3	2	246	20682	0.348	3.5	4.4	79.6%	1575	7/28/2005 8:52	38089.65	10340.65	12984.90	7/14/2005 8:00	14.037	0.8565	15161.12	0.3980
Instrument 2 - A	4	2	230	22878	0.348	6.4	5.9	109.2%	1575	7/28/2005 8:49	38089.65	11438.65	10473.52	7/14/2005 8:00	14.034	0.8564	12229.49	0.3211
Instrument 2 - A	5	2	266	23137	0.348	7.9	7.3	107.8%	1575	7/28/2005 7:55	38089.65	11568.15	10726.17	7/14/2005 8:00	13.997	0.8557	12535.41	0.3291
Instrument 2 - A	6	2	231	23217	0.348	10.1	8.8	114.9%	1575	7/28/2005 8:20	38089.65	11608.15	10102.54	7/14/2005 8:00	14.014	0.8560	11801.88	0.3098
Instrument 2 - A	7	2	172	19166	0.348	9	10.3	87.8%	1575	7/28/2005 8:06	38089.65	9582.65	10918.90	7/14/2005 8:00	14.004	0.8558	12758.47	0.3350
Instrument 2 - A	8	2	193	20672	0.348	12.1	11.7	103.2%	1575	7/28/2005 8:01	38089.65	10335.65	10011.06	7/14/2005 8:00	14.001	0.8558	11698.50	0.3071
Instrument 2 - A	9	2	201	19025	0.348	12	13.2	91.0%	1575	7/28/2005 10:09	38089.65	9512.15	10451.48	7/14/2005 8:00	14.090	0.8575	12188.03	0.3200
Instrument 2 - A	10	2	188	20237	0.348	14.8	14.7	101.0%	1575	7/28/2005 10:25	38089.65	10118.15	10015.60	7/14/2005 8:00	14.101	0.8577	11676.83	0.3066
Instrument 2 - A	11	2	194	19477	0.348	16.9	16.1	104.9%	1575	7/28/2005 10:21	38089.65	9738.15	9285.82	7/14/2005 8:00	14.098	0.8577	10826.74	0.2842
Instrument 2 - A	12	2	193	20724	0.348	18.8	19.0	98.7%	1575	7/28/2005 10:17	38089.65	10361.65	10496.68	7/14/2005 8:00	14.095	0.8576	12239.37	0.3213
Instrument 2 - B	1	2	9	22048	0.386	1	1.5	68.3%	1575	7/28/2005 8:49	38089.65	11023.61	16149.59	7/14/2005 8:00	14.034	0.8564	18857.20	0.4951
Instrument 2 - B	2	2	15	23045	0.386	2.4	2.9	81.9%	1575	7/28/2005 8:42	38089.65	11522.11	14066.58	7/14/2005 8:00	14.029	0.8563	16426.90	0.4313
Instrument 2 - B	3	2	16	20750	0.386	3.5	4.4	79.6%	1575	7/28/2005 9:21	38089.65	10374.61	13027.55	7/14/2005 8:00	14.056	0.8569	15203.99	0.3992
Instrument 2 - B	4	2	9	22958	0.386	6.4	5.9	109.2%	1575	7/28/2005 8:52	38089.65	11478.61	10510.11	7/14/2005 8:00	14.037	0.8565	12271.54	0.3222
Instrument 2 - B	5	2	12	23347	0.386	7.9	7.3	107.8%	1575	7/28/2005 8:01	38089.65	11673.11	10823.49	7/14/2005 8:00	14.001	0.8558	12647.86	0.3321
Instrument 2 - B	6	2	12	22888	0.386	10.1	8.8	114.9%	1575	7/28/2005 7:55	38089.65	11443.61	9959.34	7/14/2005 8:00	13.997	0.8557	11639.22	0.3056
Instrument 2 - B	7	2	12	19018	0.386	9	10.3	87.8%	1575	7/28/2005 8:20	38089.65	9508.61	10834.54	7/14/2005 8:00	14.014	0.8560	12656.99	0.3323
Instrument 2 - B	8	2	9	20774	0.386	12.1	11.7	103.2%	1575	7/28/2005 8:06	38089.65	10386.61	10060.42	7/14/2005 8:00	14.004	0.8558	11755.35	0.3086
Instrument 2 - B	9	2	12	18915	0.386	12	13.2	91.0%	1575	7/28/2005 10:17	38089.65	9457.11	10391.00	7/14/2005 8:00	14.095	0.8576	12116.13	0.3181
Instrument 2 - B	10	2	10	20157	0.386	14.8	14.7	101.0%	1575	7/28/2005 10:10	38089.65	10078.11	9975.97	7/14/2005 8:00	14.090	0.8575	11633.50	0.3054

Instrument 2 - B	11	2	14	19263	0.386	16.9	16.1	104.9%	1575	7/28/2005 10:25	38089.65	9631.11	9183.75	7/14/2005 8:00	14.101	0.8577	10706.99	0.2811
Instrument 2 - B	12	2	8	20483	0.386	18.8	19.0	98.7%	1575	7/28/2005 10:21	38089.65	10241.11	10374.58	7/14/2005 8:00	14.098	0.8577	12096.15	0.3176
Instrument 2 - C	1	2	280	21996	0.42	1	1.5	68.3%	1575	7/28/2005 8:52	38089.65	10997.58	16111.45	7/14/2005 8:00	14.037	0.8565	18811.64	0.4939
Instrument 2 - C	2	2	292	22508	0.42	2.4	2.9	81.9%	1575	7/28/2005 8:49	38089.65	11253.58	13736.75	7/14/2005 8:00	14.035	0.8564	16042.09	0.4212
Instrument 2 - C	3	2	244	20689	0.42	3.5	4.4	79.6%	1575	7/28/2005 8:42	38089.65	10344.08	12989.21	7/14/2005 8:00	14.029	0.8563	15168.74	0.3982
Instrument 2 - C	4	2	283	22518	0.42	6.4	5.9	109.2%	1575	7/28/2005 9:21	38089.65	11258.58	10308.64	7/14/2005 8:00	14.056	0.8569	12030.83	0.3159
Instrument 2 - C	5	2	264	23133	0.42	7.9	7.3	107.8%	1575	7/28/2005 8:06	38089.65	11566.08	10724.25	7/14/2005 8:00	14.004	0.8558	12530.99	0.3290
Instrument 2 - C	6	2	268	22568	0.42	10.1	8.8	114.9%	1575	7/28/2005 8:01	38089.65	11283.58	9820.07	7/14/2005 8:00	14.001	0.8558	11475.29	0.3013
Instrument 2 - C	7	2	240	18943	0.42	9	10.3	87.8%	1575	7/28/2005 7:55	38089.65	9471.08	10791.77	7/14/2005 8:00	13.997	0.8557	12612.03	0.3311
Instrument 2 - C	8	2	239	20584	0.42	12.1	11.7	103.2%	1575	7/28/2005 8:20	38089.65	10291.58	9968.37	7/14/2005 8:00	14.014	0.8560	11645.11	0.3057
Instrument 2 - C	9	2	222	18740	0.42	12	13.2	91.0%	1575	7/28/2005 10:21	38089.65	9369.58	10294.83	7/14/2005 8:00	14.098	0.8577	12003.14	0.3151
Instrument 2 - C	10	2	222	19943	0.42	14.8	14.7	101.0%	1575	7/28/2005 10:17	38089.65	9971.08	9870.02	7/14/2005 8:00	14.095	0.8576	11508.63	0.3021
Instrument 2 - C	11	2	221	19199	0.42	16.9	16.1	104.9%	1575	7/28/2005 10:10	38089.65	9599.08	9153.21	7/14/2005 8:00	14.090	0.8575	10674.02	0.2802
Instrument 2 - C	12	2	234	20523	0.42	18.8	19.0	98.7%	1575	7/28/2005 10:25	38089.65	10261.08	10394.80	7/14/2005 8:00	14.101	0.8577	12118.89	0.3182
Instrument 2 - D	1	2	280	22194	0.414	1	1.5	68.3%	1575	7/28/2005 9:21	38089.65	11096.59	16256.50	7/14/2005 8:00	14.056	0.8569	18972.33	0.4981
Instrument 2 - D	2	2	338	23021	0.414	2.4	2.9	81.9%	1575	7/28/2005 8:53	38089.65	11510.09	14051.90	7/14/2005 8:00	14.037	0.8565	16406.89	0.4307
Instrument 2 - D	3	2	288	20861	0.414	3.5	4.4	79.6%	1575	7/28/2005 8:49	38089.65	10430.09	13097.21	7/14/2005 8:00	14.035	0.8564	15292.99	0.4015
Instrument 2 - D	4	2	282	22714	0.414	6.4	5.9	109.2%	1575	7/28/2005 8:42	38089.65	11356.59	10398.37	7/14/2005 8:00	14.029	0.8563	12143.17	0.3188
Instrument 2 - D	5	2	254	23276	0.414	7.9	7.3	107.8%	1575	7/28/2005 8:20	38089.65	11637.59	10790.55	7/14/2005 8:00	14.014	0.8560	12605.57	0.3309
Instrument 2 - D	6	2	282	23097	0.414	10.1	8.8	114.9%	1575	7/28/2005 8:06	38089.65	11548.09	10050.26	7/14/2005 8:00	14.004	0.8558	11743.44	0.3083
Instrument 2 - D	7	2	232	19264	0.414	9	10.3	87.8%	1575	7/28/2005 8:02	38089.65	9631.59	10974.66	7/14/2005 8:00	14.001	0.8558	12824.47	0.3367
Instrument 2 - D	8	2	274	21105	0.414	12.1	11.7	103.2%	1575	7/28/2005 7:55	38089.65	10552.09	10220.70	7/14/2005 8:00	13.997	0.8557	11944.61	0.3136
Instrument 2 - D	9	2	221	19341	0.414	12	13.2	91.0%	1575	7/28/2005 10:25	38089.65	9670.09	10625.01	7/14/2005 8:00	14.101	0.8577	12387.25	0.3252
Instrument 2 - D	10	2	250	20334	0.414	14.8	14.7	101.0%	1575	7/28/2005 10:21	38089.65	10166.59	10063.55	7/14/2005 8:00	14.098	0.8577	11733.47	0.3080
Instrument 2 - D	11	2	210	19513	0.414	16.9	16.1	104.9%	1575	7/28/2005 10:17	38089.65	9756.09	9302.92	7/14/2005 8:00	14.095	0.8576	10847.36	0.2848
Instrument 2 - D	12	2	241	20672	0.414	18.8	19.0	98.7%	1575	7/28/2005 10:10	38089.65	10335.59	10470.28	7/14/2005 8:00	14.090	0.8575	12209.90	0.3206
Instrument 3 - A	1	2	151	21669	0.32	1	1.5	68.3%	1575	7/28/2005 9:34	38089.65	10834.18	15872.07	7/14/2005 8:00	14.066	0.8570	18519.74	0.4862
Instrument 3 - A	2	2	140	21967	0.32	2.4	2.9	81.9%	1575	7/28/2005 10:05	38089.65	10983.18	13408.63	7/14/2005 8:00	14.087	0.8575	15637.72	0.4106
Instrument 3 - A	3	2	151	20088	0.32	3.5	4.4	79.6%	1575	7/28/2005 10:01	38089.65	10043.68	12611.99	7/14/2005 8:00	14.084	0.8574	14709.56	0.3862
Instrument 3 - A	4	2	162	21796	0.32	6.4	5.9	109.2%	1575	7/28/2005 9:42	38089.65	10897.68	9978.19	7/14/2005 8:00	14.071	0.8571	11641.14	0.3056
Instrument 3 - A	5	2	165	22294	0.32	7.9	7.3	107.8%	1575	7/28/2005 8:42	38089.65	11146.68	10335.37	7/14/2005 8:00	14.029	0.8563	12069.58	0.3169
Instrument 3 - A	6	2	180	22353	0.32	10.1	8.8	114.9%	1575	7/28/2005 9:21	38089.65	11176.18	9726.60	7/14/2005 8:00	14.057	0.8569	11351.52	0.2980
Instrument 3 - A	7	2	95	18346	0.32	9	10.3	87.8%	1575	7/28/2005 8:53	38089.65	9172.68	10451.76	7/14/2005 8:00	14.037	0.8565	12203.38	0.3204
Instrument 3 - A	8	2	136	19841	0.32	12.1	11.7	103.2%	1575	7/28/2005 8:49	38089.65	9920.18	9608.64	7/14/2005 8:00	14.035	0.8564	11219.55	0.2946
Instrument 3 - A	9	2	104	18127	0.32	12	13.2	91.0%	1575	7/28/2005 7:56	38089.65	9063.18	9958.17	7/14/2005 8:00	13.997	0.8557	11637.78	0.3055
Instrument 3 - A	10	2	176	19341	0.32	14.8	14.7	101.0%	1575	7/28/2005 8:20	38089.65	9670.18	9572.17	7/14/2005 8:00	14.014	0.8560	11182.24	0.2936
Instrument 3 - A	11	2	120	18537	0.32	16.9	16.1	104.9%	1575	7/28/2005 8:06	38089.65	9268.18	8637.68	7/14/2005 8:00	14.005	0.8558	10326.55	0.2711
Instrument 3 - A	12	2	142	20233	0.32	18.8	19.0	98.7%	1575	7/28/2005 8:02	38089.65	10116.18	10248.01	7/14/2005 8:00	14.001	0.8558	11975.34	0.3144
Instrument 3 - B	1	2	236	21613	0.366	1	1.5	68.3%	1575	7/28/2005 9:42	38089.65	10806.13	15830.99	7/14/2005 8:00	14.071	0.8571	18469.34	0.4849
Instrument 3 - B	2	2	219	22011	0.366	2.4	2.9	81.9%	1575	7/28/2005 9:34	38089.65	11005.13	13435.43	7/14/2005 8:00	14.066	0.8570	15676.62	0.4116
Instrument 3 - B	3	2	220	20493	0.366	3.5	4.4	79.6%	1575	7/28/2005 10:05	38089.65	10246.13	12866.22	7/14/2005 8:00	14.087	0.8575	15005.11	0.3939
Instrument 3 - B	4	2	235	22109	0.366	6.4	5.9	109.2%	1575	7/28/2005 10:01	38089.65	11054.13	10121.44	7/14/2005 8:00	14.084	0.8574	11804.78	0.3099
Instrument 3 - B	5	2	244	22536	0.366	7.9	7.3	107.8%	1575	7/28/2005 8:49	38089.65	11267.63	10447.52	7/14/2005 8:00	14.035	0.8564	12199.07	0.3203
Instrument 3 - B	6	2	221	22658	0.366	10.1	8.8	114.9%	1575	7/28/2005 8:42	38089.65	11328.63	9859.28	7/14/2005 8:00	14.029	0.8563	11513.58	0.3023
Instrument 3 - B	7	2	207	18626	0.366	9	10.3	87.8%	1575	7/28/2005 9:21	38089.65	9312.63	10611.23	7/14/2005 8:00	14.057	0.8569	12383.92	0.3251
Instrument 3 - B	8	2	216	20102	0.366	12.1	11.7	103.2%	1575	7/28/2005 8:53	38089.65	10050.63	9734.99	7/14/2005 8:00	14.037	0.8565	11366.48	0.2984
Instrument 3 - B	9	2	188	18433	0.366	12	13.2	91.0%	1575	7/28/2005 8:02	38089.65	9216.13	10126.23	7/14/2005 8:00	14.002	0.8558	11833.00	0.3107
Instrument 3 - B	10	2	228	19517	0.366	14.8	14.7	101.0%	1575	7/28/2005 7:56	38089.65	9758.13	9659.23	7/14/2005 8:00	13.997	0.8557	11288.41	0.2961
Instrument 3 - B	11	2	189	19126	0.366	16.9	16.1	104.9%	1575	7/28/2005 8:20	38089.65	9562.63	9118.45	7/14/2005 8:00	14.014	0.8560	10652.20	0.2797
Instrument 3 - B	12	2	205	20505	0.366	18.8	19.0	98.7%	1575	7/28/2005 8:06	38089.65	10252.13	10385.74	7/14/2005 8:00	14.005	0.8558	12135.41	0.3186
Instrument 3 - C	1	2	322	21556	0.402	1	1.5	68.3%	1575	7/28/2005 10:01	38089.65	10777.60	15789.18	7/14/2005 8:00	14.084	0.8574	18415.11	0.4835
Instrument 3 - C	2	2	360	22173	0.402	2.4	2.9	81.9%	1575	7/28/2005 9:43	38089.65	11086.10	13534.28	7/14/2005 8:00	14.072	0.8572	15789.85	0.4145
Instrument 3 - C	3	2	329	20388	0.402	3.5	4.4	79.6%	1575	7/28/2005 9:34	38089.65	10193.60	12800.25	7/14/2005 8:00	14.066	0.8570	14935.46	0.3921
Instrument 3 - C	4	2	326	22168	0.402	6.4	5.9	109.2%	1575	7/28/2005 10:05	38089.65	11083.60	10148.42	7/14/2005 8:00	14.087	0.8575	11835.48	0.3107
Instrument 3 - C	5	2	338	23046	0.402	7.9	7.3	107.8%	1575	7/28/2005 8:53	38089.65	11522.60	10683.93	7/14/2005 8:00	14.037	0.8565	12474.43	0.3275
Instrument 3 - C	6	2	378	22957	0.402	10.1	8.8	114.9%	1575	7/28/2005 8:49	38089.65	11478.10	9989.35	7/14/2005 8:00	14.035	0.8564	11664.08	0.3062
Instrument 3 - C	7	2	283	18866	0.402	9	10.3	87.8%	1575	7/28/2005 8:42	38089.65	9432.60	10747.92	7/14/2005 8:00	14.030	0.8563	12551.32	0.3295
Instrument 3 - C	8	2	308	20233	0.402	12.1	11.7	103.2%	1575	7/28/2005 9:21	38089.65	10116.10	9798.40	7/14/2005 8:00	14.057	0.8569	11435.30	0.3002

INSTR_ID	SAMPLE_ID	CNT_TIME	A	B	TIME	USER2	BATCH_ID
Instrument 1 - A	1	2	84	22018	7/28/2005 7:55	1575	PbCal705
Instrument 1 - A	2	2	84	22854	7/28/2005 8:20	1575	PbCal705
Instrument 1 - A	3	2	102	20935	7/28/2005 8:05	1575	PbCal705
Instrument 1 - A	4	2	99	22720	7/28/2005 8:01	1575	PbCal705
Instrument 1 - A	5	2	95	22892	7/28/2005 10:09	1575	PbCal705
Instrument 1 - A	6	2	83	23217	7/28/2005 10:25	1575	PbCal705
Instrument 1 - A	7	2	63	19193	7/28/2005 10:20	1575	PbCal705
Instrument 1 - A	8	2	78	20620	7/28/2005 10:16	1575	PbCal705
Instrument 1 - A	9	2	65	18730	7/28/2005 9:35	1575	PbCal705
Instrument 1 - A	10	2	73	20335	7/28/2005 10:06	1575	PbCal705
Instrument 1 - A	11	2	81	19694	7/28/2005 10:02	1575	PbCal705
Instrument 1 - A	12	2	89	20801	7/28/2005 9:43	1575	PbCal705
Instrument 1 - B	1	2	56	21763	7/28/2005 8:01	1575	PbCal705
Instrument 1 - B	2	2	78	22474	7/28/2005 7:55	1575	PbCal705
Instrument 1 - B	3	2	73	20359	7/28/2005 8:20	1575	PbCal705
Instrument 1 - B	4	2	58	22111	7/28/2005 8:05	1575	PbCal705
Instrument 1 - B	5	2	71	23056	7/28/2005 10:16	1575	PbCal705
Instrument 1 - B	6	2	72	22905	7/28/2005 10:09	1575	PbCal705
Instrument 1 - B	7	2	62	18664	7/28/2005 10:25	1575	PbCal705
Instrument 1 - B	8	2	56	20619	7/28/2005 10:21	1575	PbCal705
Instrument 1 - B	9	2	62	18705	7/28/2005 9:43	1575	PbCal705
Instrument 1 - B	10	2	45	19770	7/28/2005 9:35	1575	PbCal705
Instrument 1 - B	11	2	42	19125	7/28/2005 10:06	1575	PbCal705
Instrument 1 - B	12	2	56	20230	7/28/2005 10:02	1575	PbCal705
Instrument 1 - C	1	2	132	22038	7/28/2005 8:06	1575	PbCal705
Instrument 1 - C	2	2	151	22700	7/28/2005 8:01	1575	PbCal705
Instrument 1 - C	3	2	161	20552	7/28/2005 7:55	1575	PbCal705
Instrument 1 - C	4	2	179	22690	7/28/2005 8:20	1575	PbCal705
Instrument 1 - C	5	2	149	23030	7/28/2005 10:21	1575	PbCal705
Instrument 1 - C	6	2	163	22975	7/28/2005 10:16	1575	PbCal705
Instrument 1 - C	7	2	137	19131	7/28/2005 10:09	1575	PbCal705
Instrument 1 - C	8	2	136	20712	7/28/2005 10:25	1575	PbCal705
Instrument 1 - C	9	2	132	19007	7/28/2005 10:02	1575	PbCal705
Instrument 1 - C	10	2	129	20055	7/28/2005 9:43	1575	PbCal705
Instrument 1 - C	11	2	110	19004	7/28/2005 9:35	1575	PbCal705
Instrument 1 - C	12	2	125	20586	7/28/2005 10:06	1575	PbCal705
Instrument 1 - D	1	2	314	21985	7/28/2005 8:20	1575	PbCal705
Instrument 1 - D	2	2	339	22577	7/28/2005 8:06	1575	PbCal705
Instrument 1 - D	3	2	302	20759	7/28/2005 8:01	1575	PbCal705
Instrument 1 - D	4	2	337	22777	7/28/2005 7:55	1575	PbCal705
Instrument 1 - D	5	2	299	23052	7/28/2005 10:25	1575	PbCal705
Instrument 1 - D	6	2	273	22954	7/28/2005 10:21	1575	PbCal705
Instrument 1 - D	7	2	234	19018	7/28/2005 10:16	1575	PbCal705
Instrument 1 - D	8	2	275	20545	7/28/2005 10:09	1575	PbCal705
Instrument 1 - D	9	2	253	18798	7/28/2005 10:06	1575	PbCal705
Instrument 1 - D	10	2	272	20117	7/28/2005 10:02	1575	PbCal705
Instrument 1 - D	11	2	259	19117	7/28/2005 9:43	1575	PbCal705
Instrument 1 - D	12	2	229	20856	7/28/2005 9:35	1575	PbCal705
Instrument 2 - A	1	2	225	21853	7/28/2005 8:42	1575	PbCal705
Instrument 2 - A	2	2	264	22781	7/28/2005 9:21	1575	PbCal705
Instrument 2 - A	3	2	246	20682	7/28/2005 8:52	1575	PbCal705

Instrument 2 - A	4	2	230	22878	7/28/2005 8:49	1575	PbCal705
Instrument 2 - A	5	2	266	23137	7/28/2005 7:55	1575	PbCal705
Instrument 2 - A	6	2	231	23217	7/28/2005 8:20	1575	PbCal705
Instrument 2 - A	7	2	172	19166	7/28/2005 8:06	1575	PbCal705
Instrument 2 - A	8	2	193	20672	7/28/2005 8:01	1575	PbCal705
Instrument 2 - A	9	2	201	19025	7/28/2005 10:09	1575	PbCal705
Instrument 2 - A	10	2	188	20237	7/28/2005 10:25	1575	PbCal705
Instrument 2 - A	11	2	194	19477	7/28/2005 10:21	1575	PbCal705
Instrument 2 - A	12	2	193	20724	7/28/2005 10:17	1575	PbCal705
Instrument 2 - B	1	2	9	22048	7/28/2005 8:49	1575	PbCal705
Instrument 2 - B	2	2	15	23045	7/28/2005 8:42	1575	PbCal705
Instrument 2 - B	3	2	16	20750	7/28/2005 9:21	1575	PbCal705
Instrument 2 - B	4	2	9	22958	7/28/2005 8:52	1575	PbCal705
Instrument 2 - B	5	2	12	23347	7/28/2005 8:01	1575	PbCal705
Instrument 2 - B	6	2	12	22888	7/28/2005 7:55	1575	PbCal705
Instrument 2 - B	7	2	12	19018	7/28/2005 8:20	1575	PbCal705
Instrument 2 - B	8	2	9	20774	7/28/2005 8:06	1575	PbCal705
Instrument 2 - B	9	2	12	18915	7/28/2005 10:17	1575	PbCal705
Instrument 2 - B	10	2	10	20157	7/28/2005 10:10	1575	PbCal705
Instrument 2 - B	11	2	14	19263	7/28/2005 10:25	1575	PbCal705
Instrument 2 - B	12	2	8	20483	7/28/2005 10:21	1575	PbCal705
Instrument 2 - C	1	2	280	21996	7/28/2005 8:52	1575	PbCal705
Instrument 2 - C	2	2	292	22508	7/28/2005 8:49	1575	PbCal705
Instrument 2 - C	3	2	244	20689	7/28/2005 8:42	1575	PbCal705
Instrument 2 - C	4	2	283	22518	7/28/2005 9:21	1575	PbCal705
Instrument 2 - C	5	2	264	23133	7/28/2005 8:06	1575	PbCal705
Instrument 2 - C	6	2	268	22568	7/28/2005 8:01	1575	PbCal705
Instrument 2 - C	7	2	240	18943	7/28/2005 7:55	1575	PbCal705
Instrument 2 - C	8	2	239	20584	7/28/2005 8:20	1575	PbCal705
Instrument 2 - C	9	2	222	18740	7/28/2005 10:21	1575	PbCal705
Instrument 2 - C	10	2	222	19943	7/28/2005 10:17	1575	PbCal705
Instrument 2 - C	11	2	221	19199	7/28/2005 10:10	1575	PbCal705
Instrument 2 - C	12	2	234	20523	7/28/2005 10:25	1575	PbCal705
Instrument 2 - D	1	2	280	22194	7/28/2005 9:21	1575	PbCal705
Instrument 2 - D	2	2	338	23021	7/28/2005 8:53	1575	PbCal705
Instrument 2 - D	3	2	288	20861	7/28/2005 8:49	1575	PbCal705
Instrument 2 - D	4	2	282	22714	7/28/2005 8:42	1575	PbCal705
Instrument 2 - D	5	2	254	23276	7/28/2005 8:20	1575	PbCal705
Instrument 2 - D	6	2	282	23097	7/28/2005 8:06	1575	PbCal705
Instrument 2 - D	7	2	232	19264	7/28/2005 8:02	1575	PbCal705
Instrument 2 - D	8	2	274	21105	7/28/2005 7:55	1575	PbCal705
Instrument 2 - D	9	2	221	19341	7/28/2005 10:25	1575	PbCal705
Instrument 2 - D	10	2	250	20334	7/28/2005 10:21	1575	PbCal705
Instrument 2 - D	11	2	210	19513	7/28/2005 10:17	1575	PbCal705
Instrument 2 - D	12	2	241	20672	7/28/2005 10:10	1575	PbCal705
Instrument 3 - A	1	2	151	21669	7/28/2005 9:34	1575	PbCal705
Instrument 3 - A	2	2	140	21967	7/28/2005 10:05	1575	PbCal705
Instrument 3 - A	3	2	151	20088	7/28/2005 10:01	1575	PbCal705
Instrument 3 - A	4	2	162	21796	7/28/2005 9:42	1575	PbCal705
Instrument 3 - A	5	2	165	22294	7/28/2005 8:42	1575	PbCal705
Instrument 3 - A	6	2	180	22353	7/28/2005 9:21	1575	PbCal705
Instrument 3 - A	7	2	95	18346	7/28/2005 8:53	1575	PbCal705

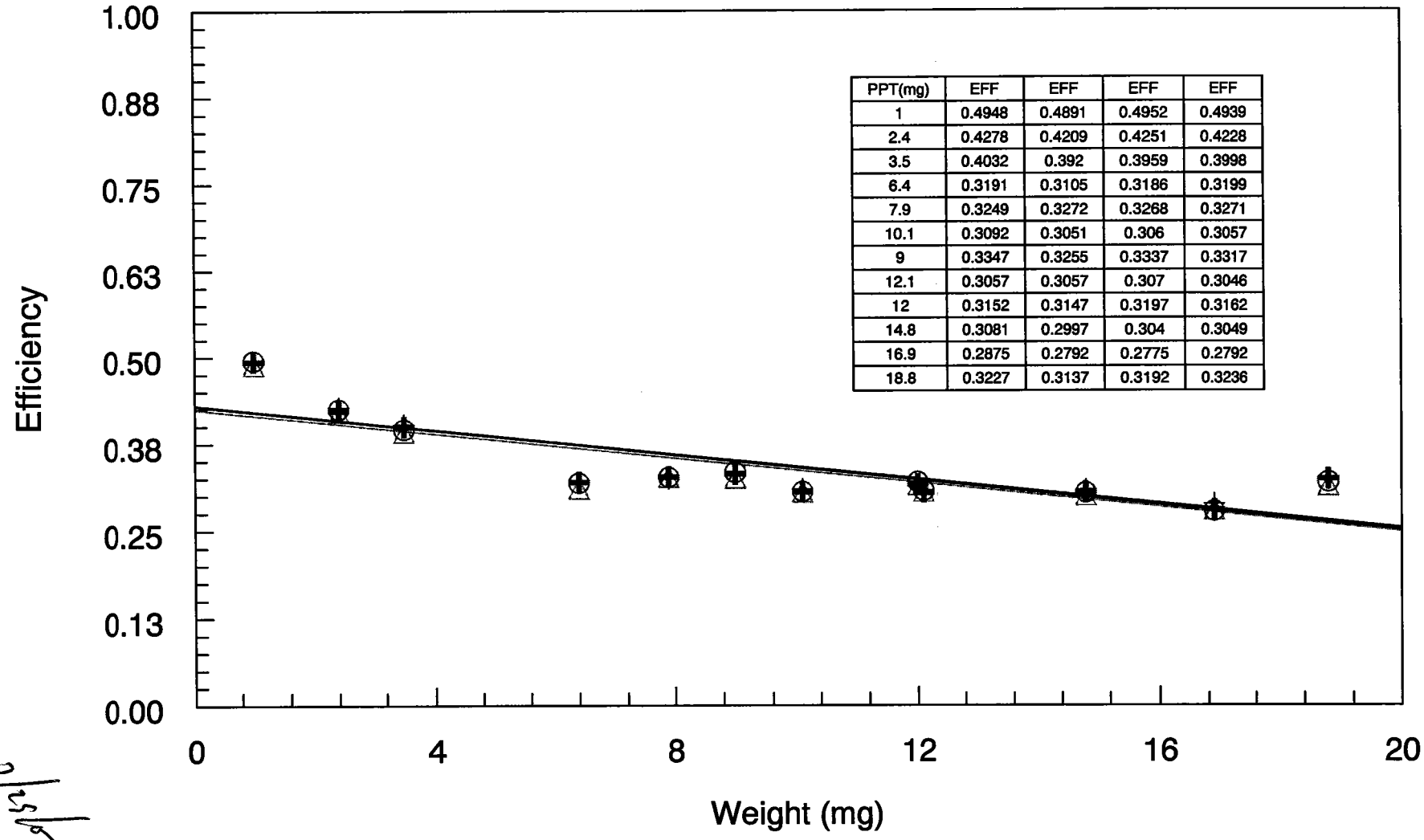
Instrument 3 - A	8	2	136	19841	7/28/2005 8:49	1575	PbCal705
Instrument 3 - A	9	2	104	18127	7/28/2005 7:56	1575	PbCal705
Instrument 3 - A	10	2	176	19341	7/28/2005 8:20	1575	PbCal705
Instrument 3 - A	11	2	120	18537	7/28/2005 8:06	1575	PbCal705
Instrument 3 - A	12	2	142	20233	7/28/2005 8:02	1575	PbCal705
Instrument 3 - B	1	2	236	21613	7/28/2005 9:42	1575	PbCal705
Instrument 3 - B	2	2	219	22011	7/28/2005 9:34	1575	PbCal705
Instrument 3 - B	3	2	220	20493	7/28/2005 10:05	1575	PbCal705
Instrument 3 - B	4	2	235	22109	7/28/2005 10:01	1575	PbCal705
Instrument 3 - B	5	2	244	22536	7/28/2005 8:49	1575	PbCal705
Instrument 3 - B	6	2	221	22658	7/28/2005 8:42	1575	PbCal705
Instrument 3 - B	7	2	207	18626	7/28/2005 9:21	1575	PbCal705
Instrument 3 - B	8	2	216	20102	7/28/2005 8:53	1575	PbCal705
Instrument 3 - B	9	2	188	18433	7/28/2005 8:02	1575	PbCal705
Instrument 3 - B	10	2	228	19517	7/28/2005 7:56	1575	PbCal705
Instrument 3 - B	11	2	189	19126	7/28/2005 8:20	1575	PbCal705
Instrument 3 - B	12	2	205	20505	7/28/2005 8:06	1575	PbCal705
Instrument 3 - C	1	2	322	21556	7/28/2005 10:01	1575	PbCal705
Instrument 3 - C	2	2	360	22173	7/28/2005 9:43	1575	PbCal705
Instrument 3 - C	3	2	329	20388	7/28/2005 9:34	1575	PbCal705
Instrument 3 - C	4	2	326	22168	7/28/2005 10:05	1575	PbCal705
Instrument 3 - C	5	2	338	23046	7/28/2005 8:53	1575	PbCal705
Instrument 3 - C	6	2	378	22957	7/28/2005 8:49	1575	PbCal705
Instrument 3 - C	7	2	283	18866	7/28/2005 8:42	1575	PbCal705
Instrument 3 - C	8	2	308	20233	7/28/2005 9:21	1575	PbCal705
Instrument 3 - C	9	2	291	18650	7/28/2005 8:06	1575	PbCal705
Instrument 3 - C	10	2	305	19515	7/28/2005 8:02	1575	PbCal705
Instrument 3 - C	11	2	290	19302	7/28/2005 7:56	1575	PbCal705
Instrument 3 - C	12	2	318	20119	7/28/2005 8:20	1575	PbCal705
Instrument 3 - D	1	2	244	21693	7/28/2005 10:05	1575	PbCal705
Instrument 3 - D	2	2	239	22623	7/28/2005 10:01	1575	PbCal705
Instrument 3 - D	3	2	241	20563	7/28/2005 9:43	1575	PbCal705
Instrument 3 - D	4	2	244	22484	7/28/2005 9:34	1575	PbCal705
Instrument 3 - D	5	2	258	23049	7/28/2005 9:21	1575	PbCal705
Instrument 3 - D	6	2	262	22650	7/28/2005 8:53	1575	PbCal705
Instrument 3 - D	7	2	196	19014	7/28/2005 8:50	1575	PbCal705
Instrument 3 - D	8	2	234	20041	7/28/2005 8:42	1575	PbCal705
Instrument 3 - D	9	2	213	18822	7/28/2005 8:20	1575	PbCal705
Instrument 3 - D	10	2	239	19800	7/28/2005 8:06	1575	PbCal705
Instrument 3 - D	11	2	221	18990	7/28/2005 8:02	1575	PbCal705
Instrument 3 - D	12	2	234	20049	7/28/2005 7:56	1575	PbCal705
Instrument 4 - A	1	2	179	22048	7/28/2005 10:09	1575	PbCal705
Instrument 4 - A	2	2	167	22217	7/28/2005 10:24	1575	PbCal705
Instrument 4 - A	3	2	149	20830	7/28/2005 10:20	1575	PbCal705
Instrument 4 - A	4	2	133	22551	7/28/2005 10:16	1575	PbCal705
Instrument 4 - A	5	2	137	23240	7/28/2005 9:34	1575	PbCal705
Instrument 4 - A	6	2	164	22718	7/28/2005 10:05	1575	PbCal705
Instrument 4 - A	7	2	130	19096	7/28/2005 10:01	1575	PbCal705
Instrument 4 - A	8	2	139	20375	7/28/2005 9:43	1575	PbCal705
Instrument 4 - A	9	2	126	18833	7/28/2005 8:42	1575	PbCal705
Instrument 4 - A	10	2	128	20217	7/28/2005 9:21	1575	PbCal705
Instrument 4 - A	11	2	149	19209	7/28/2005 8:53	1575	PbCal705

Instrument 4 - A	12	2	141	20634	7/28/2005 8:50	1575	PbCal705
Instrument 4 - B	1	2	19	22035	7/28/2005 10:16	1575	PbCal705
Instrument 4 - B	2	2	17	22750	7/28/2005 10:09	1575	PbCal705
Instrument 4 - B	3	2	21	21081	7/28/2005 10:24	1575	PbCal705
Instrument 4 - B	4	2	19	22859	7/28/2005 10:20	1575	PbCal705
Instrument 4 - B	5	2	19	23403	7/28/2005 9:43	1575	PbCal705
Instrument 4 - B	6	2	24	23177	7/28/2005 9:34	1575	PbCal705
Instrument 4 - B	7	2	13	19259	7/28/2005 10:05	1575	PbCal705
Instrument 4 - B	8	2	16	20883	7/28/2005 10:01	1575	PbCal705
Instrument 4 - B	9	2	12	19153	7/28/2005 8:50	1575	PbCal705
Instrument 4 - B	10	2	15	20262	7/28/2005 8:42	1575	PbCal705
Instrument 4 - B	11	2	23	19727	7/28/2005 9:21	1575	PbCal705
Instrument 4 - B	12	2	23	20878	7/28/2005 8:53	1575	PbCal705
Instrument 4 - C	1	2	249	22116	7/28/2005 10:20	1575	PbCal705
Instrument 4 - C	2	2	278	22252	7/28/2005 10:16	1575	PbCal705
Instrument 4 - C	3	2	254	20864	7/28/2005 10:09	1575	PbCal705
Instrument 4 - C	4	2	272	22535	7/28/2005 10:24	1575	PbCal705
Instrument 4 - C	5	2	272	23428	7/28/2005 10:02	1575	PbCal705
Instrument 4 - C	6	2	262	23097	7/28/2005 9:43	1575	PbCal705
Instrument 4 - C	7	2	208	19113	7/28/2005 9:35	1575	PbCal705
Instrument 4 - C	8	2	217	20633	7/28/2005 10:05	1575	PbCal705
Instrument 4 - C	9	2	233	18843	7/28/2005 8:53	1575	PbCal705
Instrument 4 - C	10	2	209	20281	7/28/2005 8:50	1575	PbCal705
Instrument 4 - C	11	2	244	19412	7/28/2005 8:43	1575	PbCal705
Instrument 4 - C	12	2	239	20691	7/28/2005 9:21	1575	PbCal705
Instrument 4 - D	1	2	522	21545	7/28/2005 10:25	1575	PbCal705
Instrument 4 - D	2	2	521	22295	7/28/2005 10:20	1575	PbCal705
Instrument 4 - D	3	2	520	20598	7/28/2005 10:16	1575	PbCal705
Instrument 4 - D	4	2	528	22522	7/28/2005 10:09	1575	PbCal705
Instrument 4 - D	5	2	519	23125	7/28/2005 10:05	1575	PbCal705
Instrument 4 - D	6	2	539	23225	7/28/2005 10:02	1575	PbCal705
Instrument 4 - D	7	2	422	18621	7/28/2005 9:43	1575	PbCal705
Instrument 4 - D	8	2	490	20410	7/28/2005 9:35	1575	PbCal705
Instrument 4 - D	9	2	450	18857	7/28/2005 9:21	1575	PbCal705
Instrument 4 - D	10	2	477	20057	7/28/2005 8:53	1575	PbCal705
Instrument 4 - D	11	2	424	19123	7/28/2005 8:50	1575	PbCal705
Instrument 4 - D	12	2	484	20501	7/28/2005 8:43	1575	PbCal705

Pb-210 Efficiency Curve 7/05

Instrument 1

+ 1-A △ 1-B ○ 1-C ✚ 1-D

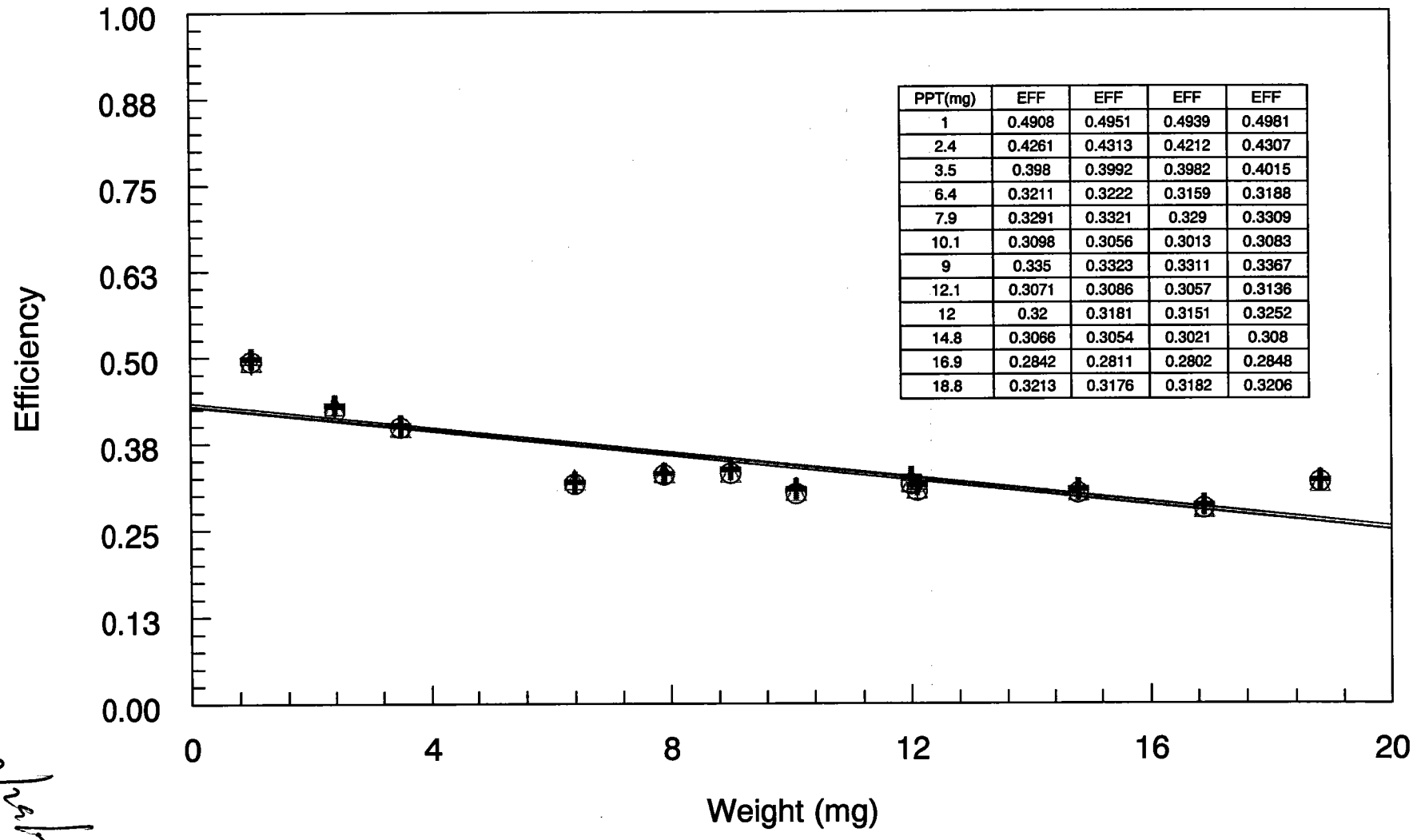


PPT(mg)	EFF	EFF	EFF	EFF
1	0.4948	0.4891	0.4952	0.4939
2.4	0.4278	0.4209	0.4251	0.4228
3.5	0.4032	0.392	0.3959	0.3998
6.4	0.3191	0.3105	0.3186	0.3199
7.9	0.3249	0.3272	0.3268	0.3271
10.1	0.3092	0.3051	0.306	0.3057
9	0.3347	0.3255	0.3337	0.3317
12.1	0.3057	0.3057	0.307	0.3046
12	0.3152	0.3147	0.3197	0.3162
14.8	0.3081	0.2997	0.304	0.3049
16.9	0.2875	0.2792	0.2775	0.2792
18.8	0.3227	0.3137	0.3192	0.3236

Pb-210 Efficiency Curve 7/05

Instrument 2

+ 2-A △ 2-B ○ 2-C ✚ 2-D

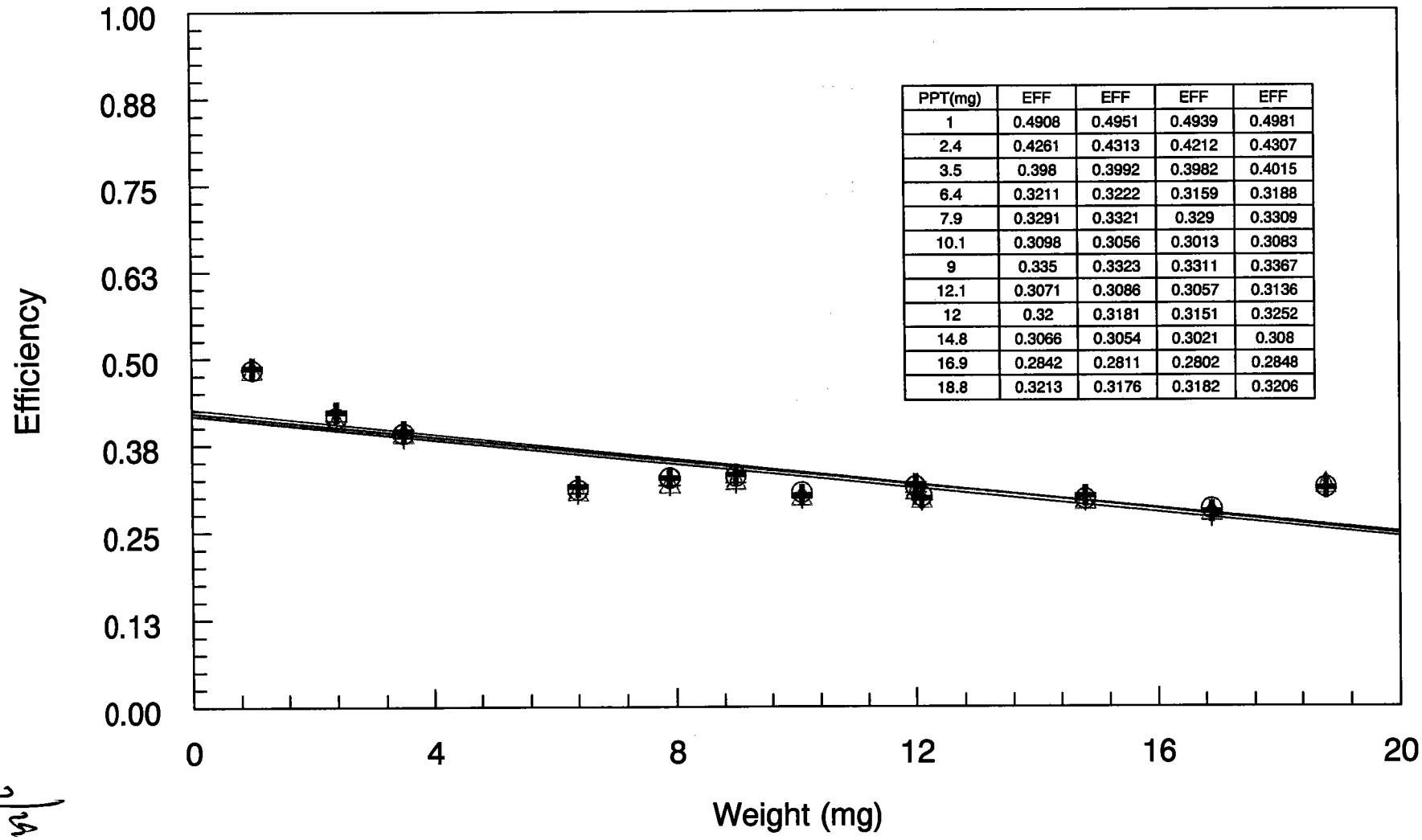


PPT(mg)	EFF	EFF	EFF	EFF
1	0.4908	0.4951	0.4939	0.4981
2.4	0.4261	0.4313	0.4212	0.4307
3.5	0.398	0.3992	0.3982	0.4015
6.4	0.3211	0.3222	0.3159	0.3188
7.9	0.3291	0.3321	0.329	0.3309
10.1	0.3098	0.3056	0.3013	0.3083
9	0.335	0.3323	0.3311	0.3367
12.1	0.3071	0.3086	0.3057	0.3136
12	0.32	0.3181	0.3151	0.3252
14.8	0.3066	0.3054	0.3021	0.308
16.9	0.2842	0.2811	0.2802	0.2848
18.8	0.3213	0.3176	0.3182	0.3206

Pb-210 Efficiency Curve 7/05

Instrument 3

+ 3-A △ 3-B ○ 3-C ✚ 3-D

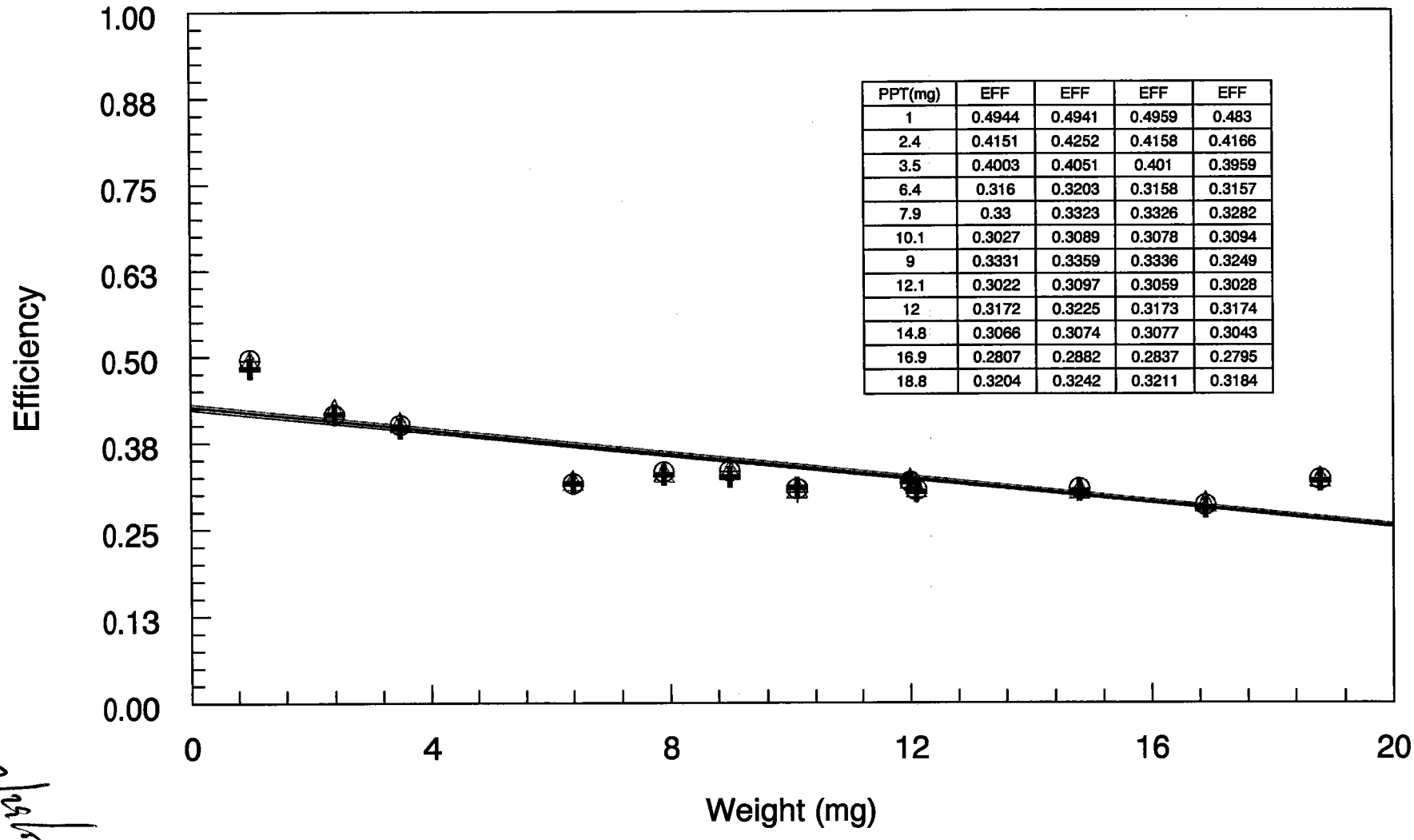


PPT(mg)	EFF	EFF	EFF	EFF
1	0.4908	0.4951	0.4939	0.4981
2.4	0.4261	0.4313	0.4212	0.4307
3.5	0.398	0.3992	0.3982	0.4015
6.4	0.3211	0.3222	0.3159	0.3188
7.9	0.3291	0.3321	0.329	0.3309
10.1	0.3098	0.3056	0.3013	0.3083
9	0.335	0.3323	0.3311	0.3367
12.1	0.3071	0.3086	0.3057	0.3136
12	0.32	0.3181	0.3151	0.3252
14.8	0.3066	0.3054	0.3021	0.308
16.9	0.2842	0.2811	0.2802	0.2848
18.8	0.3213	0.3176	0.3182	0.3206

Pb-210 Efficiency Curve 7/05

Instrument 4

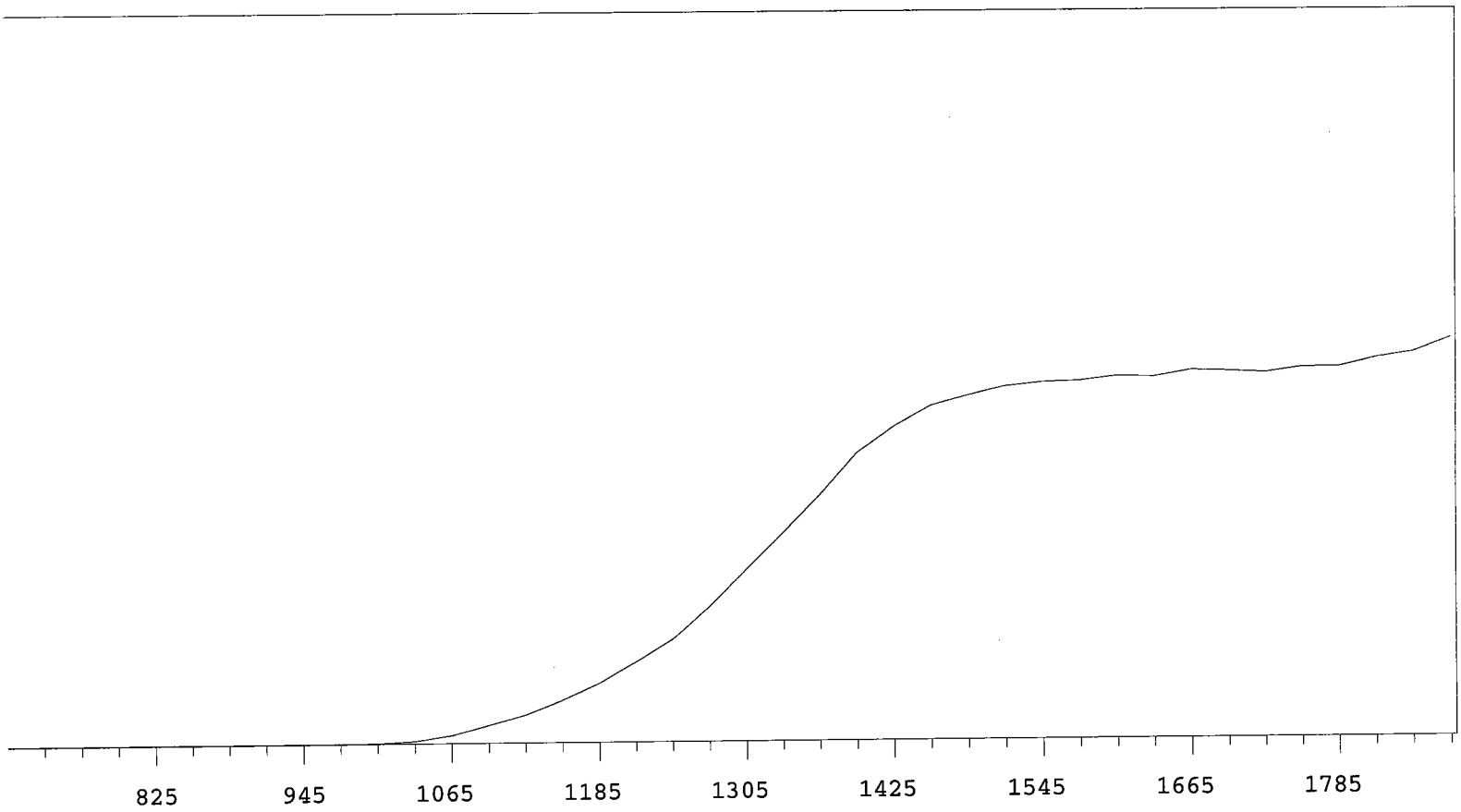
+ 4-A △ 4-B ○ 4-C ✚ 4-D



PPT(mg)	EFF	EFF	EFF	EFF
1	0.4944	0.4941	0.4959	0.483
2.4	0.4151	0.4252	0.4158	0.4166
3.5	0.4003	0.4051	0.401	0.3959
6.4	0.316	0.3203	0.3158	0.3157
7.9	0.33	0.3323	0.3326	0.3282
10.1	0.3027	0.3089	0.3078	0.3094
9	0.3331	0.3359	0.3336	0.3249
12.1	0.3022	0.3097	0.3059	0.3028
12	0.3172	0.3225	0.3173	0.3174
14.8	0.3066	0.3074	0.3077	0.3043
16.9	0.2807	0.2882	0.2837	0.2795
18.8	0.3204	0.3242	0.3211	0.3184

Plateau 07/18/05 Instrument 1 MPC 9604 Detector A 7/18/2005

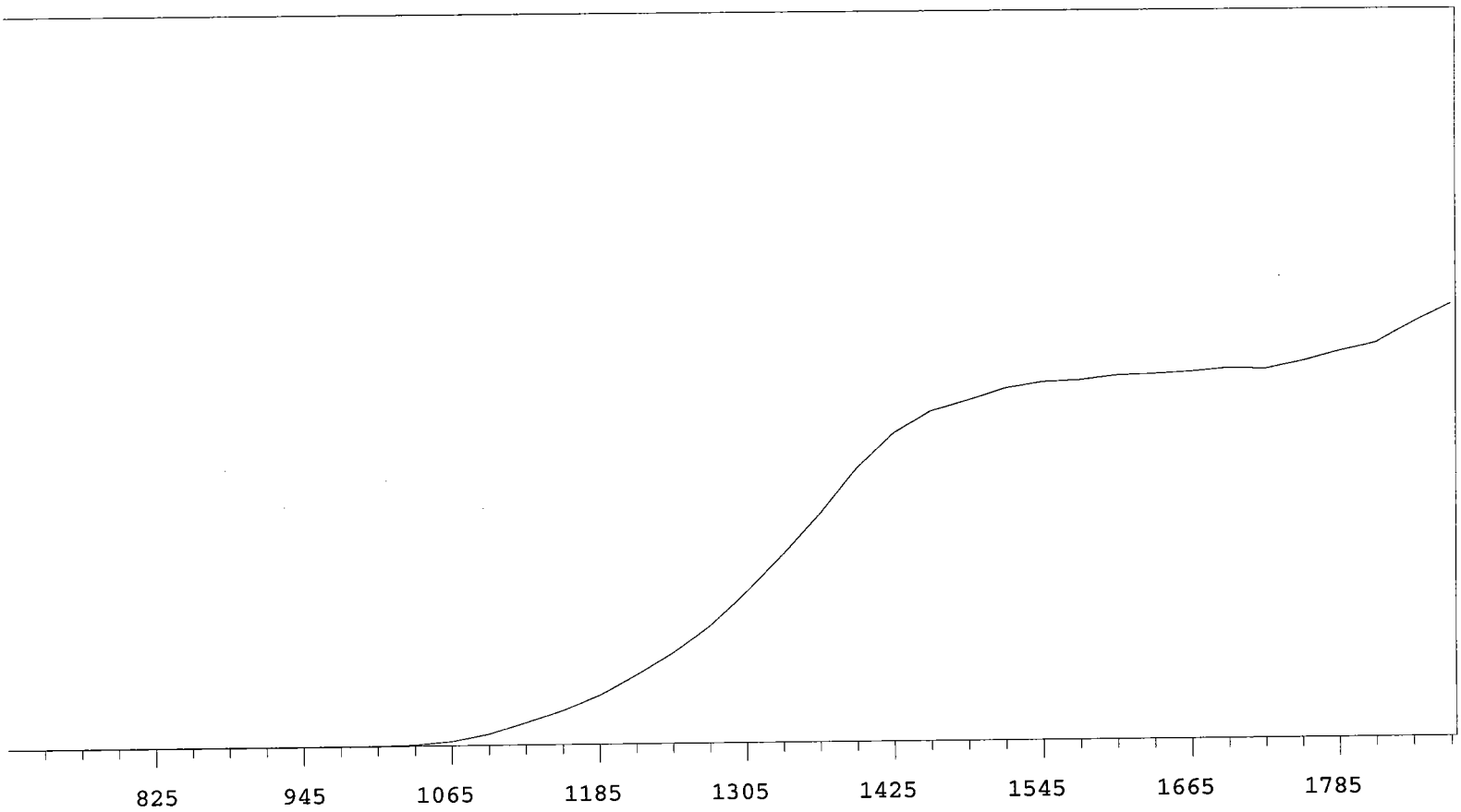
Alpha Volts: 1575 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	3	
735	1	
765	1	-18.52
795	2	>100
825	2	+76.92
855	6	+0.00
885	2	+0.00
915	2	+0.00
945	4	>100
975	5	>100
1005	45	>100
1035	260	>100
1065	800	>100
1095	1706	>100
1125	2681	>100
1155	4043	>100
1185	5606	+98.69
1215	7546	+90.11
1245	9680	+84.91
1275	12706	+78.21
1305	16206	+70.03
1335	19739	+60.77
1365	23317	+49.57
1395	27238	+38.47
1425	29745	+26.87
1455	31733	+16.81
1485	32738	+10.51
1515	33561	+5.83
1545	33929	+3.90
1575	34042	+2.13
1605	34473	+2.40
1635	34376	+2.14
1665	34998	+0.99
1695	34891	+1.35
1725	34732	+0.78
1755	35214	+2.68
1785	35247	+4.20
1815	36051	+6.12
1845	36556	
1875	37879	

Plateau 07/18/05 Instrument 1 MPC 9604 Detector B 7/18/2005

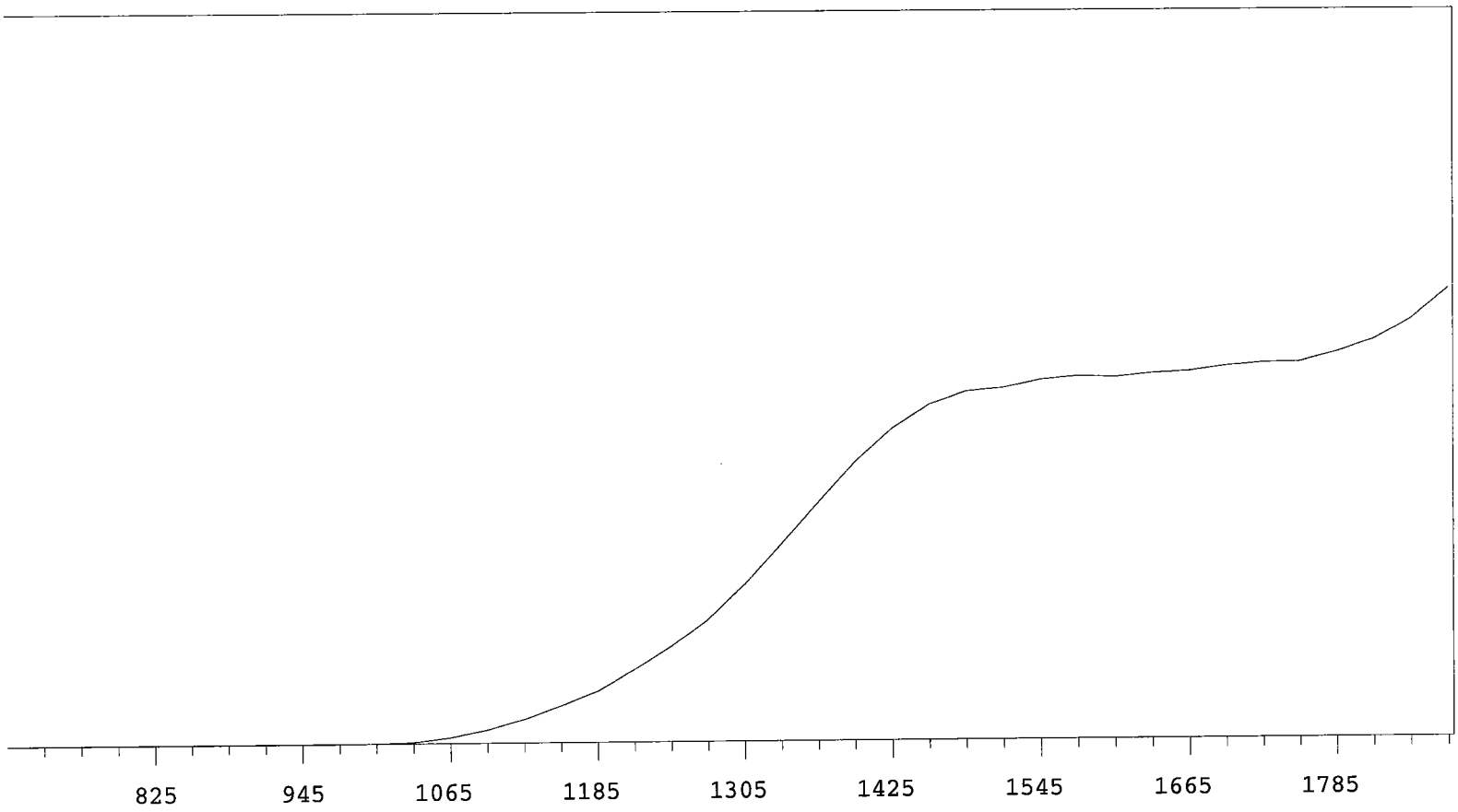
Alpha Volts: 1575 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	1	
735	2	
765	3	+33.33
795	2	-15.15
825	2	-30.30
855	2	+0.00
885	2	+55.56
915	2	+71.43
945	4	>100
975	4	>100
1005	7	>100
1035	115	>100
1065	458	>100
1095	1190	>100
1125	2315	>100
1155	3550	>100
1185	5136	>100
1215	7197	+97.45
1245	9511	+89.47
1275	12416	+81.91
1305	16022	+74.49
1335	19934	+67.06
1365	24065	+57.27
1395	28750	+45.17
1425	32437	+31.43
1455	34703	+19.63
1485	35773	+11.94
1515	37013	+7.34
1545	37643	+5.08
1575	37795	+2.85
1605	38223	+2.11
1635	38341	+2.22
1665	38578	+1.47
1695	38896	+2.28
1725	38794	+3.94
1755	39562	+5.68
1785	40569	+9.25
1815	41402	+11.70
1845	43531	
1875	45470	

Plateau 07/18/05 Instrument 1 MPC 9604 Detector C 7/18/2005

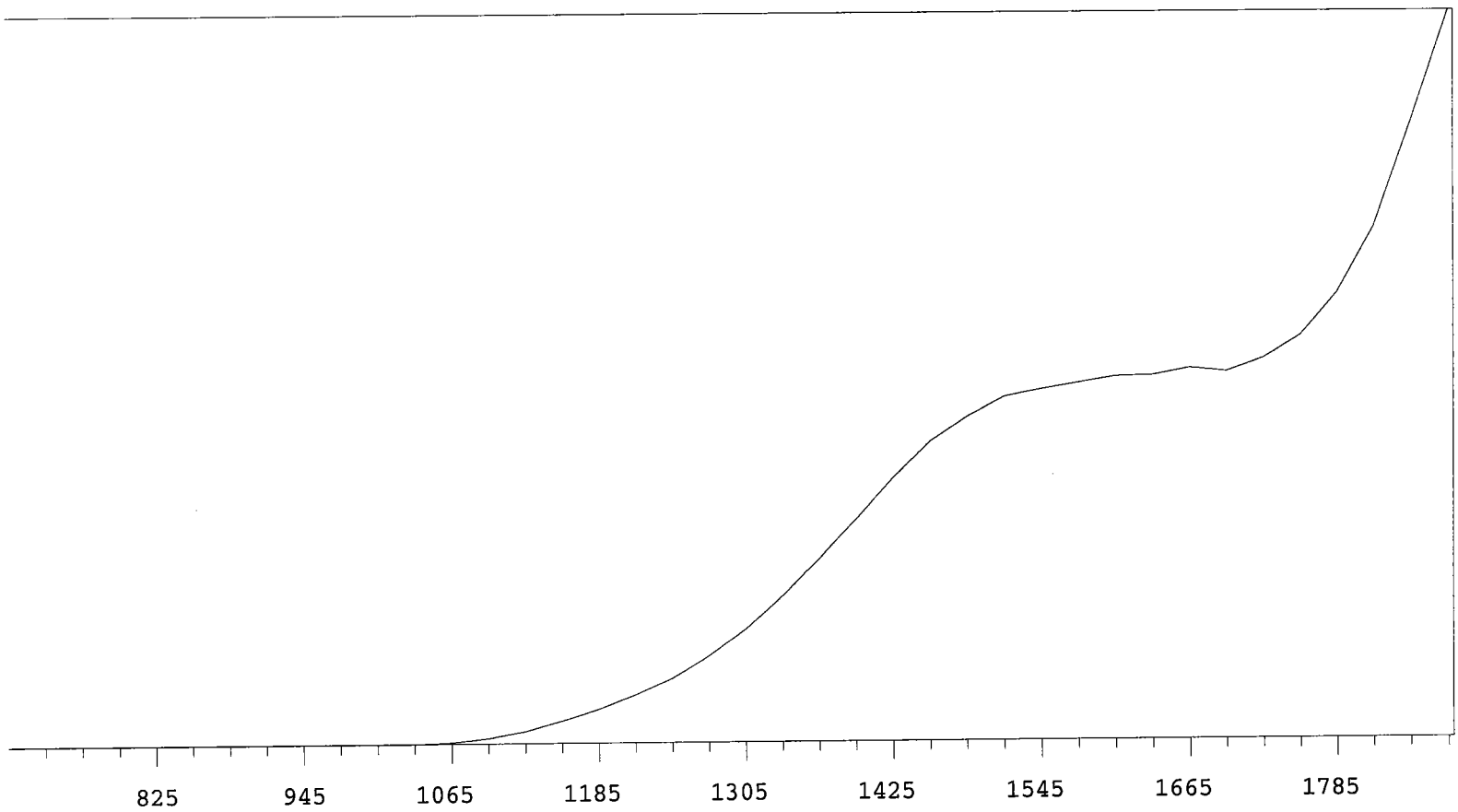
Alpha Volts: 1575 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	0	
735	0	
765	0	
795	1	>100
825	0	>100
855	2	+95.24
885	2	>100
915	2	+64.10
945	3	>100
975	4	>100
1005	17	>100
1035	154	>100
1065	602	>100
1095	1390	>100
1125	2520	>100
1155	3909	>100
1185	5395	>100
1215	7579	+92.75
1245	9892	+86.09
1275	12623	+79.89
1305	16230	+74.23
1335	20402	+66.21
1365	24668	+55.06
1395	28808	+42.90
1425	32235	+30.71
1455	34745	+19.08
1485	36123	+11.26
1515	36502	+6.50
1545	37333	+3.68
1575	37699	+2.82
1605	37570	+1.69
1635	37966	+2.25
1665	38158	+3.13
1695	38687	+2.67
1725	39009	+3.61
1755	39083	+5.36
1785	40069	+9.12
1815	41344	+14.50
1845	43429	
1875	46557	

Plateau 07/18/05 Instrument 1 MPC 9604 Detector D 7/18/2005

Alpha Volts: 1575 Beta Volts: 1575



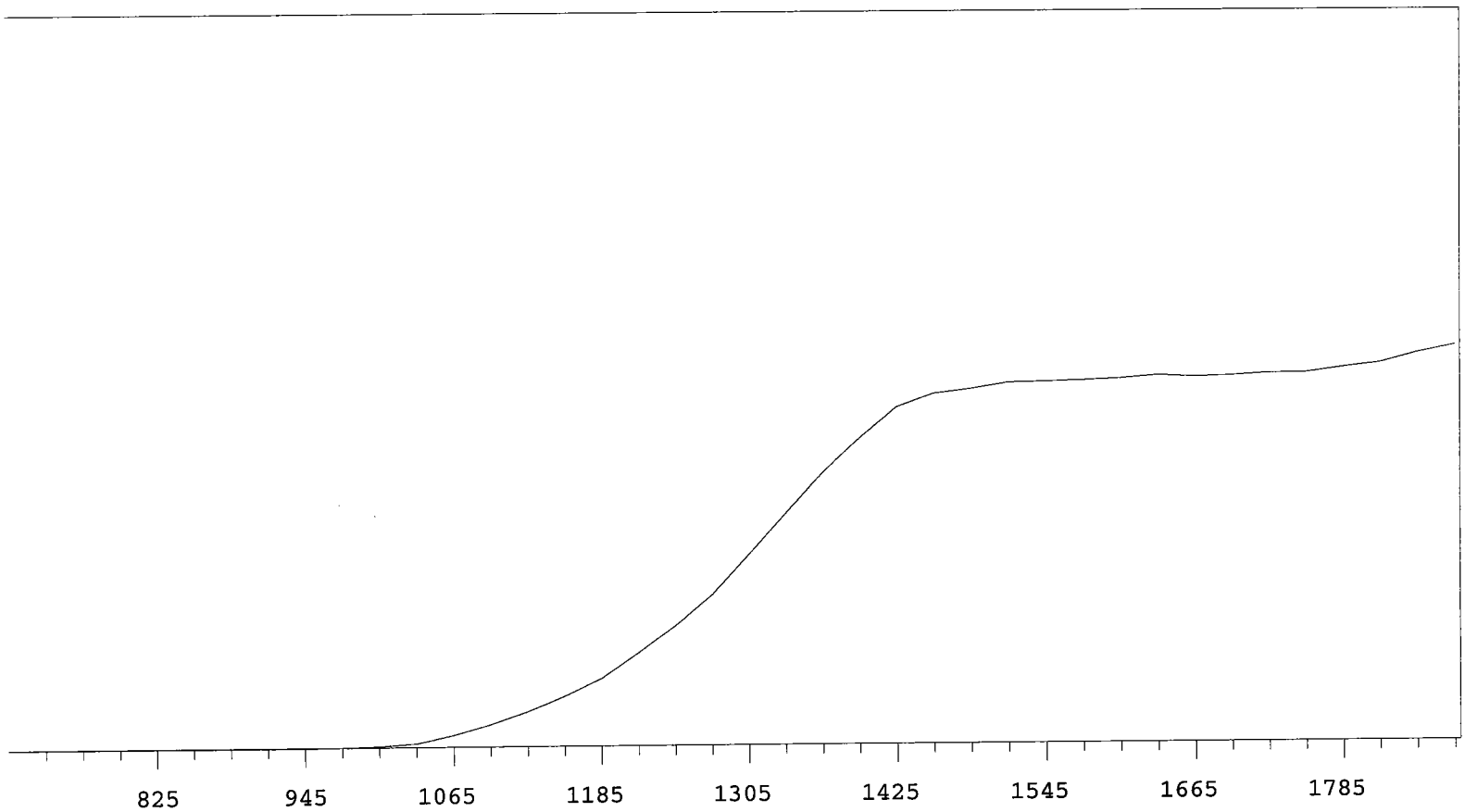
VOLTS	COUNTS	%/100 Volts
705	0	
735	1	
765	2	+0.00
795	1	-66.67
825	0	>100
855	1	+0.00
885	0	+0.00
915	1	+83.33
945	0	>100
975	2	>100
1005	1	>100
1035	13	>100
1065	134	>100
1095	511	>100
1125	1129	>100
1155	2134	>100
1185	3197	>100
1215	4542	>100
1245	6086	+97.20
1275	8291	+90.92

VOLTS	COUNTS	%/100 Volts
1305	10971	+84.34
1335	14097	+75.14
1365	17622	+66.59
1395	21247	+57.12
1425	25202	+45.74
1455	28604	+34.50
1485	30899	+22.78
1515	32756	+13.99
1545	33437	+8.81
1575	34038	+5.07
1605	34638	+4.42
1635	34735	+2.60
1665	35372	+3.37
1695	35026	+7.70
1725	36274	+15.84
1755	38436	+28.19
1785	42586	+41.27
1815	48885	+52.29
1845	58919	
1875	71030	

7/19/06

Plateau 07/18/05 Instrument 2 MPC 9604 Detector A 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

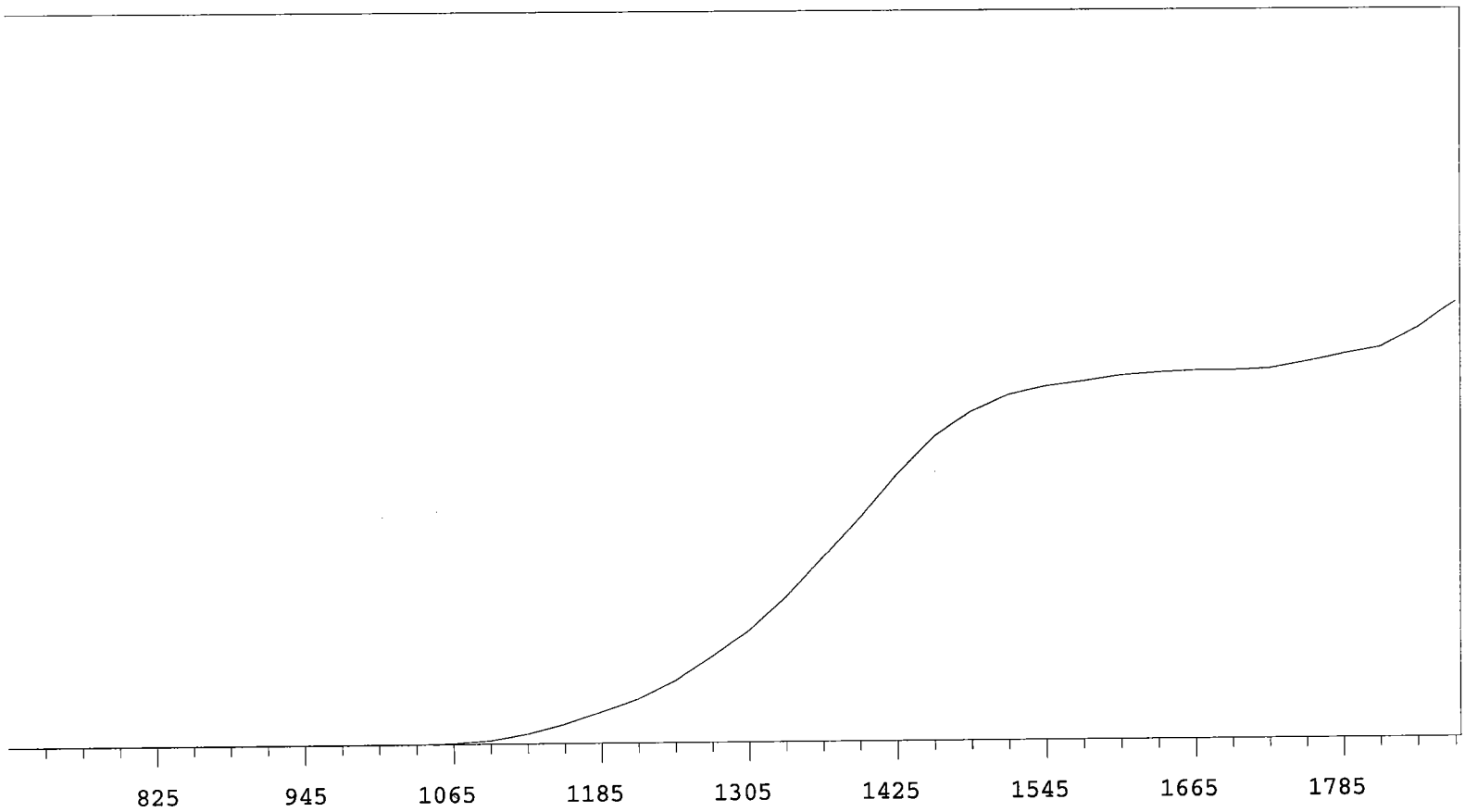


VOLTS	COUNTS	%/100 Volts
705	0	
735	0	
765	0	
795	0	>100
825	0	>100
855	0	>100
885	4	+33.33
915	1	>100
945	0	>100
975	25	>100
1005	123	>100
1035	462	>100
1065	1382	>100
1095	2620	>100
1125	4094	>100
1155	5833	>100
1185	7915	+97.20
1215	10844	+88.32
1245	14050	+81.59
1275	17692	+73.63

VOLTS	COUNTS	%/100 Volts
1305	22314	+66.02
1335	27016	+56.65
1365	31730	+46.09
1395	35861	+34.20
1425	39521	+21.96
1455	41096	+12.55
1485	41618	+5.70
1515	42360	+2.97
1545	42428	+1.93
1575	42562	+1.42
1605	42743	+1.15
1635	43108	+0.84
1665	42891	+0.79
1695	43031	+0.67
1725	43288	+1.82
1755	43345	+2.62
1785	43916	+4.27
1815	44430	+5.91
1845	45569	
1875	46488	

Plateau 07/18/05 Instrument 2 MPC 9604 Detector B 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

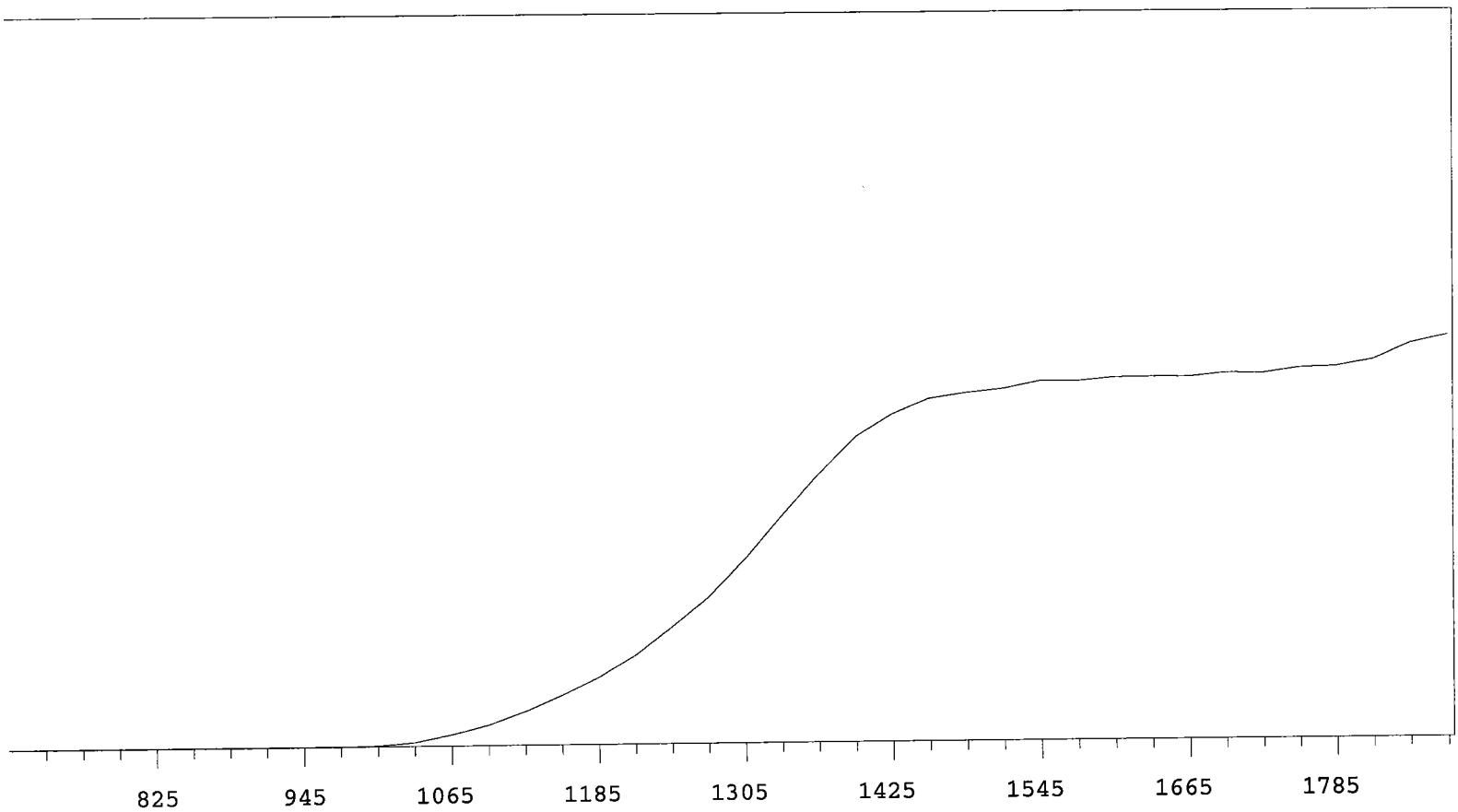


VOLTS	COUNTS	%/100 Volts
705	0	
735	1	
765	2	+66.67
795	1	-27.78
825	1	+0.00
855	1	>100
885	2	+74.07
915	3	+0.00
945	2	+51.28
975	1	>100
1005	5	>100
1035	11	>100
1065	76	>100
1095	354	>100
1125	989	>100
1155	1937	>100
1185	3197	>100
1215	4514	>100
1245	6395	>100
1275	8812	+93.25

VOLTS	COUNTS	%/100 Volts
1305	11504	+85.43
1335	14849	+76.81
1365	18861	+68.80
1395	22846	+58.63
1425	27157	+46.27
1455	30851	+34.04
1485	33326	+22.12
1515	34995	+13.15
1545	35846	+7.97
1575	36351	+4.94
1605	36888	+3.44
1635	37159	+2.18
1665	37334	+1.21
1695	37337	+1.96
1725	37477	+3.64
1755	38192	+5.29
1785	38972	+8.13
1815	39629	+11.94
1845	41535	
1875	44161	

Plateau 07/18/05 Instrument 2 MPC 9604 Detector C 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

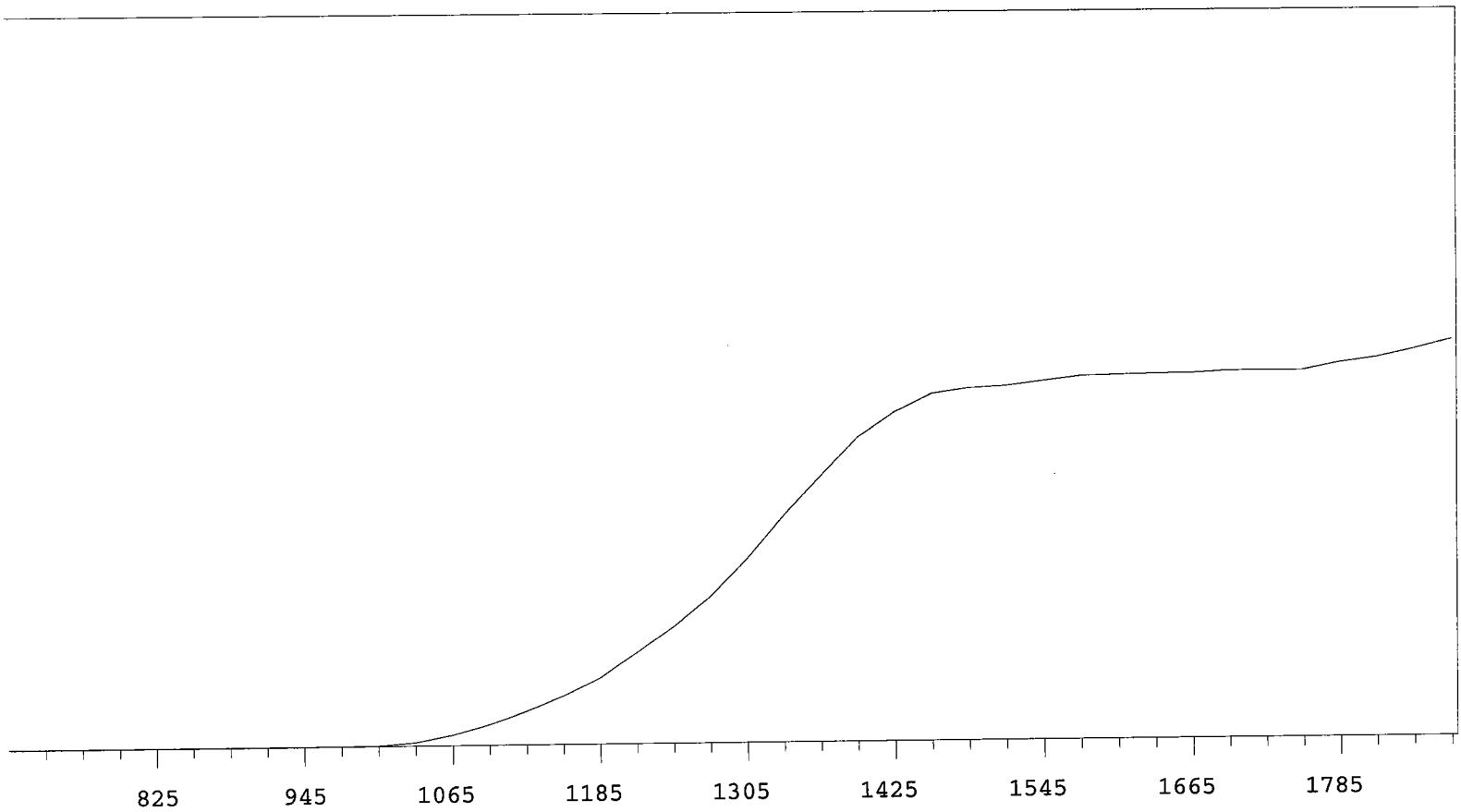


VOLTS	COUNTS	%/100 Volts
705	2	
735	6	
765	3	-20.83
795	2	-58.82
825	3	-41.67
855	3	-66.67
885	1	-30.30
915	1	>100
945	3	>100
975	9	>100
1005	87	>100
1035	349	>100
1065	1009	>100
1095	1793	>100
1125	2982	>100
1155	4367	>100
1185	5942	+97.04
1215	7886	+87.16
1245	10422	+80.66
1275	13013	+74.57
1305	16352	+67.34
1335	20077	+59.09
1365	23789	+46.51
1395	27076	+33.20
1425	29091	+20.71
1455	30421	+11.33
1485	30894	+6.95
1515	31231	+4.14
1545	31889	+3.39
1575	31864	+2.37
1605	32186	+0.96
1635	32217	+1.30
1665	32174	+0.81
1695	32499	+1.72
1725	32437	+2.17
1755	32922	+2.82
1785	33023	+5.92
1815	33599	+7.59
1845	35066	
1875	35778	

pm 7/29/05

Plateau 07/18/05 Instrument 2 MPC 9604 Detector D 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

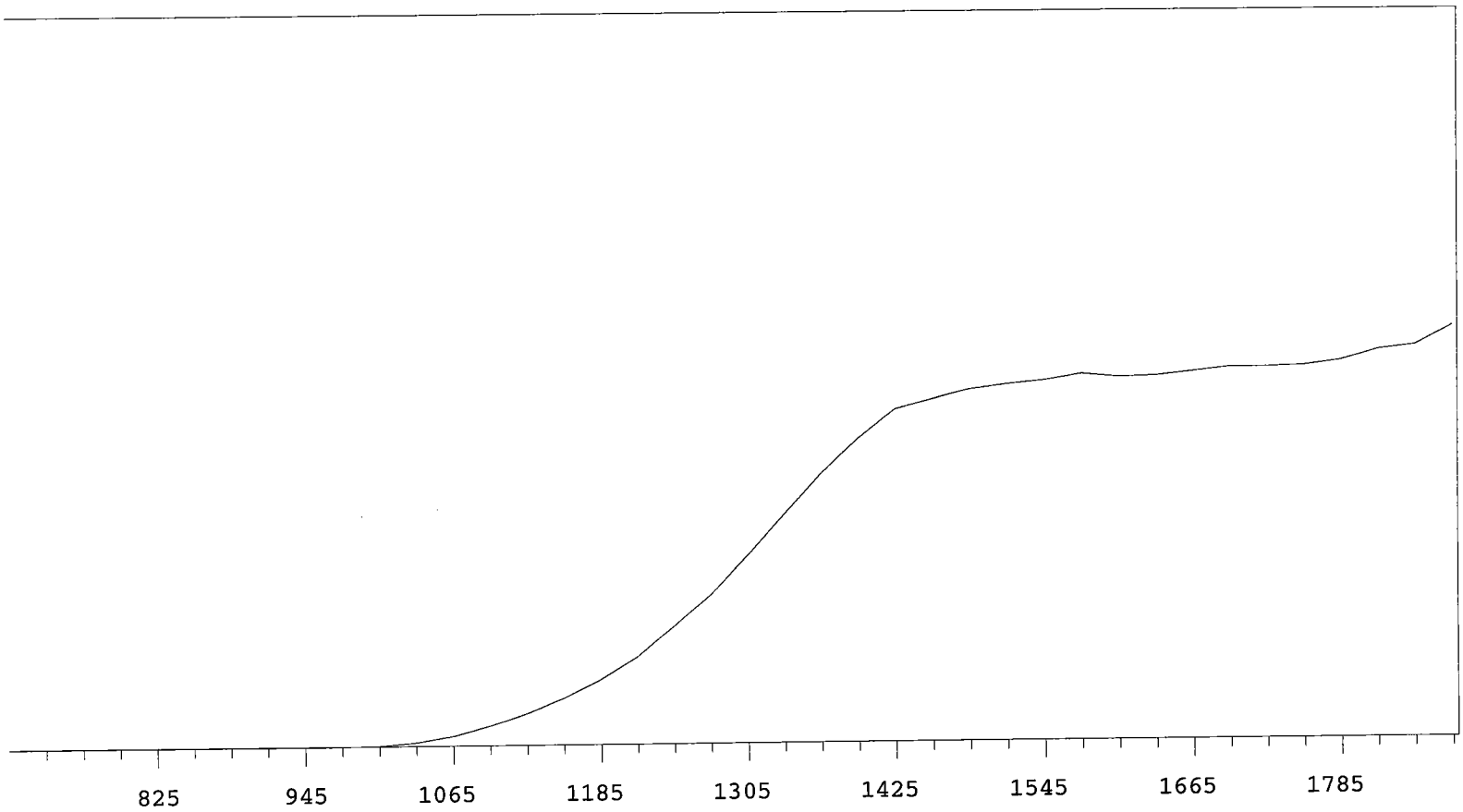


VOLTS	COUNTS	%/100 Volts
705	3	
735	1	
765	3	-55.56
795	0	-23.81
825	2	>100
855	1	>100
885	0	+66.67
915	5	>100
945	2	>100
975	19	>100
1005	86	>100
1035	451	>100
1065	1295	>100
1095	2525	>100
1125	4114	>100
1155	5953	>100
1185	8113	+98.45
1215	11136	+88.70
1245	14448	+81.12
1275	18173	+74.07

VOLTS	COUNTS	%/100 Volts
1305	22754	+66.54
1335	27979	+58.16
1365	32713	+46.35
1395	37461	+34.14
1425	40450	+22.38
1455	42675	+12.11
1485	43308	+6.46
1515	43568	+3.76
1545	44157	+3.14
1575	44714	+2.51
1605	44814	+1.32
1635	44910	+0.82
1665	44945	+0.82
1695	45204	+0.66
1725	45222	+1.70
1755	45215	+2.80
1785	46095	+4.67
1815	46688	+6.29
1845	47723	
1875	48829	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector A 7/18/2005

Alpha Volts: 705 Beta Volts: 1575

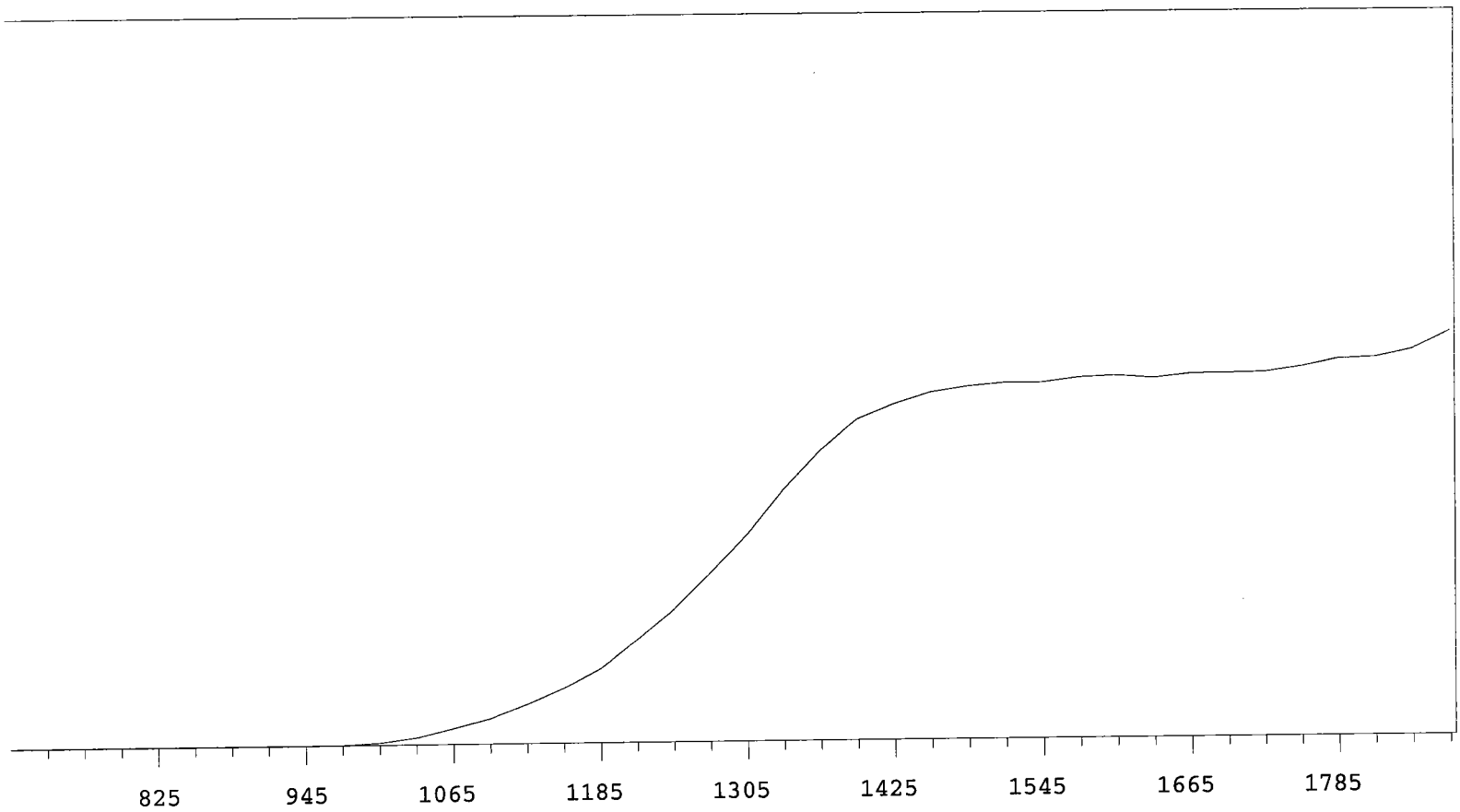


VOLTS	COUNTS	%/100 Volts
705	4	
735	4	
765	0	
795	0	+18.52
825	1	>100
855	4	+100.00
885	3	-30.30
915	2	+20.83
945	1	>100
975	6	>100
1005	71	>100
1035	402	>100
1065	1048	>100
1095	2130	>100
1125	3384	>100
1155	4976	>100
1185	6855	>100
1215	9208	+92.12
1245	12454	+85.04
1275	15798	+76.70

VOLTS	COUNTS	%/100 Volts
1305	19958	+67.03
1335	24246	+57.28
1365	28539	+46.21
1395	32266	+33.26
1425	35414	+21.60
1455	36466	+12.52
1485	37462	+6.66
1515	37985	+5.29
1545	38363	+3.02
1575	39020	+1.64
1605	38677	+1.19
1635	38778	+1.48
1665	39179	+2.33
1695	39636	+2.03
1725	39616	+1.90
1755	39758	+3.40
1785	40252	+4.91
1815	41367	+7.87
1845	41801	
1875	43872	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector B 7/18/2005

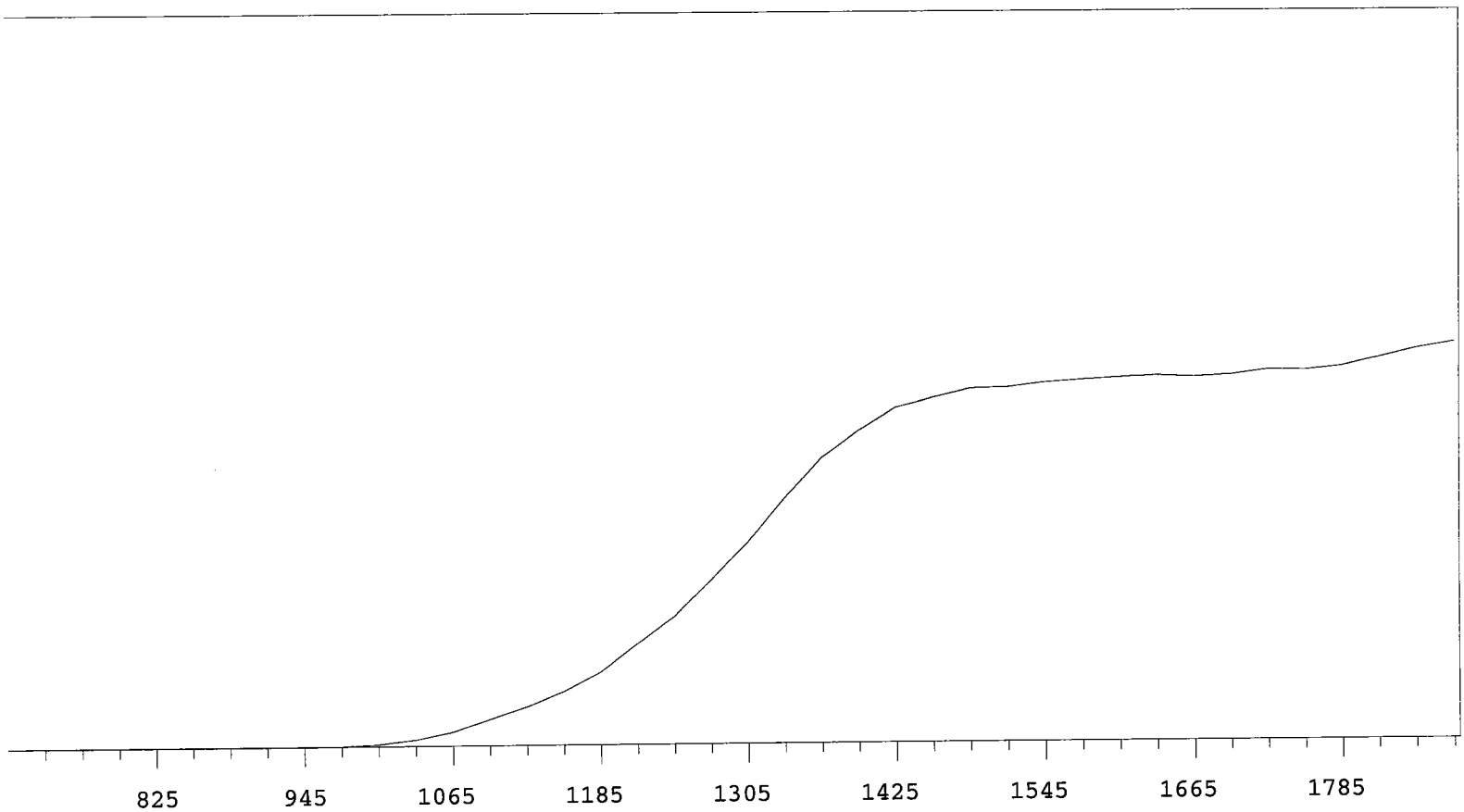
Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	1	
735	0	
765	1	
795	2	>100
825	3	+0.00
855	2	-33.33
885	1	-33.33
915	2	>100
945	2	>100
975	23	>100
1005	188	>100
1035	628	>100
1065	1402	>100
1095	2202	>100
1125	3405	>100
1155	4734	>100
1185	6329	+95.04
1215	8730	+88.10
1245	11220	+79.46
1275	14252	+70.70
1305	17371	+61.82
1335	21059	+51.03
1365	24146	+38.17
1395	26716	+25.34
1425	27972	+15.55
1455	28941	+8.73
1485	29433	+4.91
1515	29724	+2.97
1545	29727	+2.22
1575	30112	+1.21
1605	30235	+1.21
1635	30012	+0.64
1665	30324	+0.75
1695	30358	+1.95
1725	30404	+3.02
1755	30862	+3.77
1785	31464	+4.62
1815	31575	+6.76
1845	32217	
1875	33728	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector C 7/18/2005

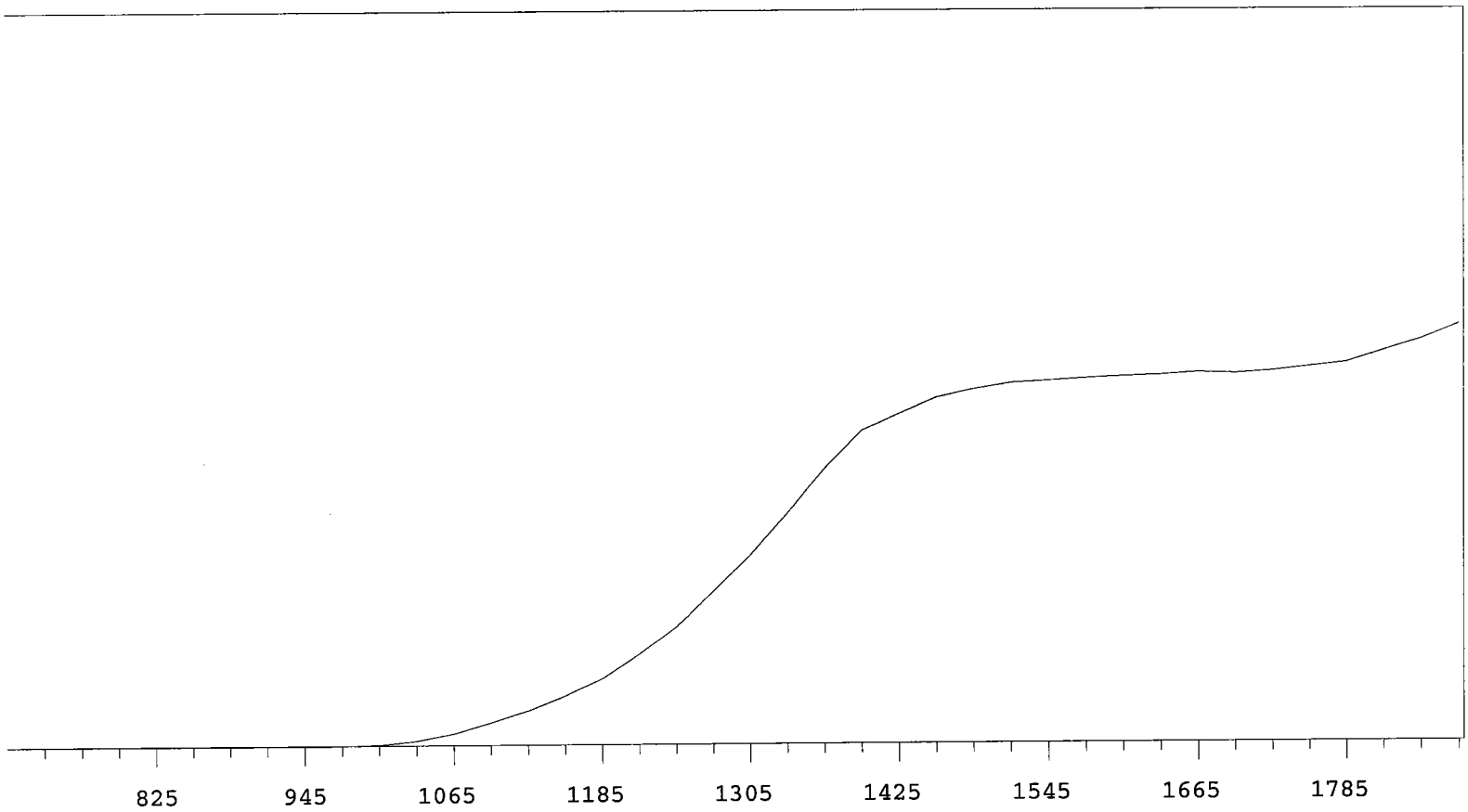
Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	0	
735	1	
765	2	-55.56
795	0	-83.33
825	0	>100
855	1	>100
885	0	>100
915	1	>100
945	7	>100
975	26	>100
1005	201	>100
1035	622	>100
1065	1395	>100
1095	2589	>100
1125	3807	>100
1155	5311	>100
1185	7258	+96.60
1215	10100	+88.77
1245	12793	+79.49
1275	16338	+71.46

VOLTS	COUNTS	%/100 Volts
1305	19992	+64.10
1335	24434	+52.32
1365	28341	+40.24
1395	31016	+27.00
1425	33244	+17.26
1455	34234	+10.11
1485	35116	+5.57
1515	35198	+3.72
1545	35658	+2.57
1575	35928	+2.43
1605	36121	+1.20
1635	36271	+0.67
1665	36135	+1.26
1695	36285	+1.47
1725	36799	+2.20
1755	36745	+3.29
1785	37112	+4.71
1815	37953	+6.34
1845	38842	
1875	39499	

Plateau 07/18/05 Instrument 3 MPC 9604 Detector D 7/18/2005
Alpha Volts: 705 Beta Volts: 1575



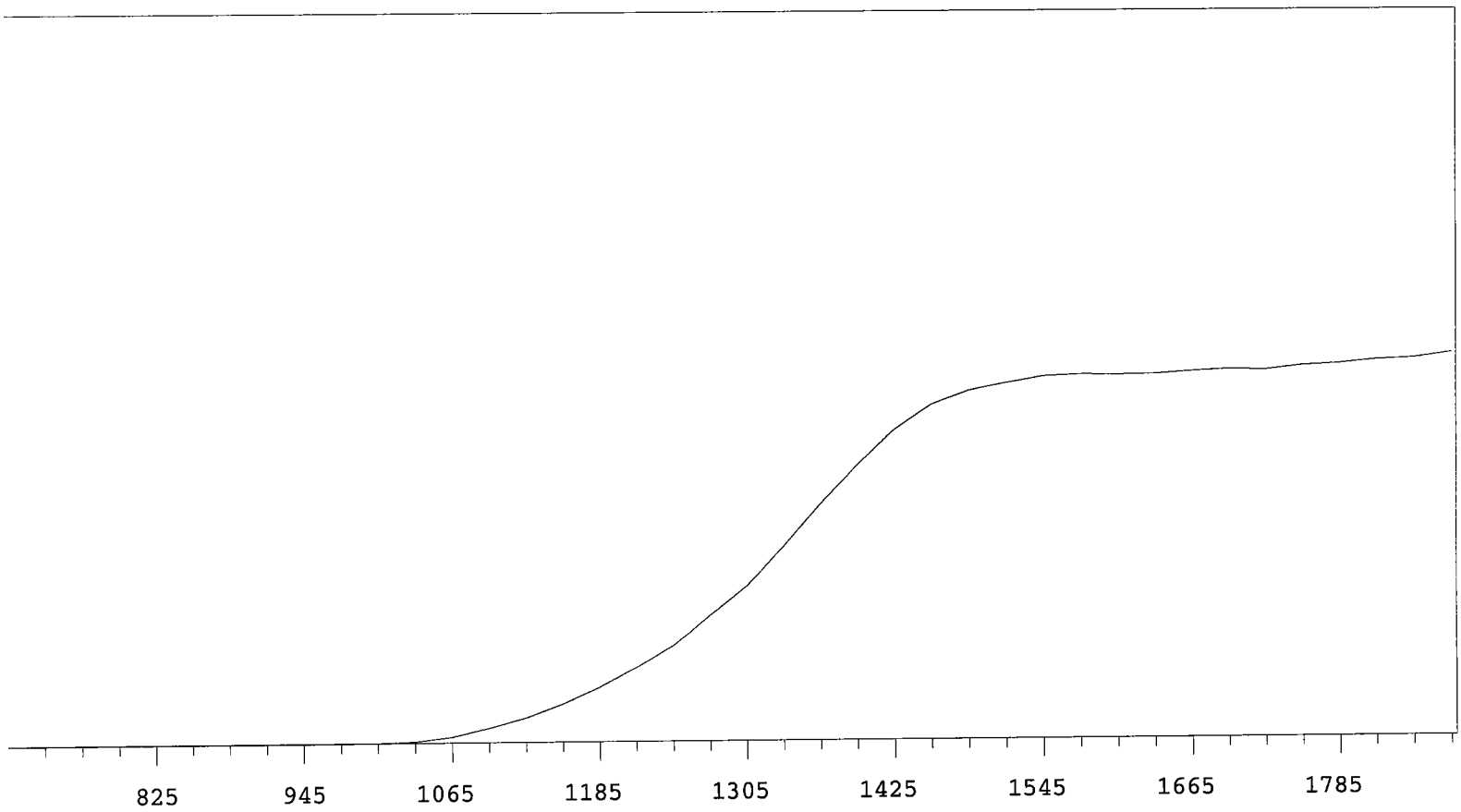
VOLTS	COUNTS	%/100 Volts
705	3	
735	0	
765	0	-27.78
795	1	>100
825	2	+41.67
855	0	+27.78
885	1	+0.00
915	2	>100
945	1	>100
975	12	>100
1005	101	>100
1035	505	>100
1065	1271	>100
1095	2435	>100
1125	3717	>100
1155	5349	>100
1185	7264	+98.50
1215	9948	+91.79
1245	13035	+83.57
1275	16927	+74.29

VOLTS	COUNTS	%/100 Volts
1305	20823	+66.52
1335	25209	+57.37
1365	30058	+44.75
1395	34207	+31.58
1425	35961	+19.48
1455	37712	+11.46
1485	38621	+7.54
1515	39266	+4.27
1545	39505	+2.69
1575	39765	+1.77
1605	39960	+1.71
1635	40095	+1.10
1665	40363	+0.99
1695	40227	+1.48
1725	40494	+2.25
1755	40925	+4.61
1785	41387	+6.78
1815	42624	+9.20
1845	43902	
1875	45583	

7/25/05

Plateau 07/18/05 Instrument 4 MPC 9604 Detector A 7/18/2005

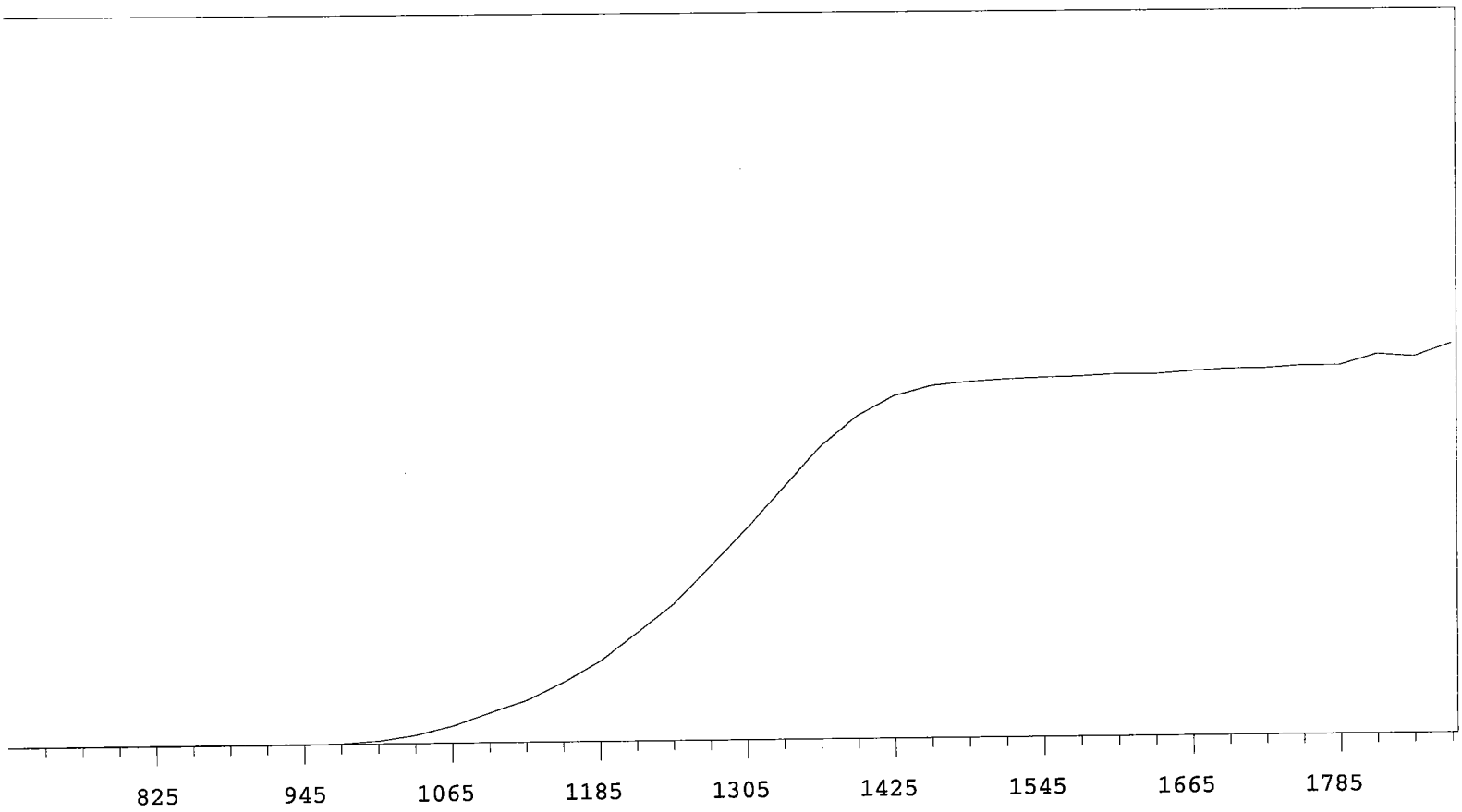
Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	2	
735	0	
765	0	+66.67
795	0	>100
825	3	+83.33
855	0	-83.33
885	1	>100
915	0	>100
945	1	>100
975	3	>100
1005	34	>100
1035	190	>100
1065	725	>100
1095	1724	>100
1125	2937	>100
1155	4543	>100
1185	6429	>100
1215	8789	+94.33
1245	11443	+85.00
1275	15155	+78.33
1305	18669	+72.76
1335	23370	+64.55
1365	28550	+55.91
1395	33260	+43.78
1425	37418	+31.11
1455	40334	+20.16
1485	41951	+12.02
1515	42838	+6.74
1545	43602	+3.50
1575	43809	+1.61
1605	43735	+0.82
1635	43823	+1.13
1665	44134	+1.17
1695	44358	+1.41
1725	44239	+1.42
1755	44705	+1.95
1785	44909	+2.35
1815	45328	+2.52
1845	45509	
1875	46116	

Plateau 07/18/05 Instrument 4 MPC 9604 Detector B 7/18/2005

Alpha Volts: 705 Beta Volts: 1575



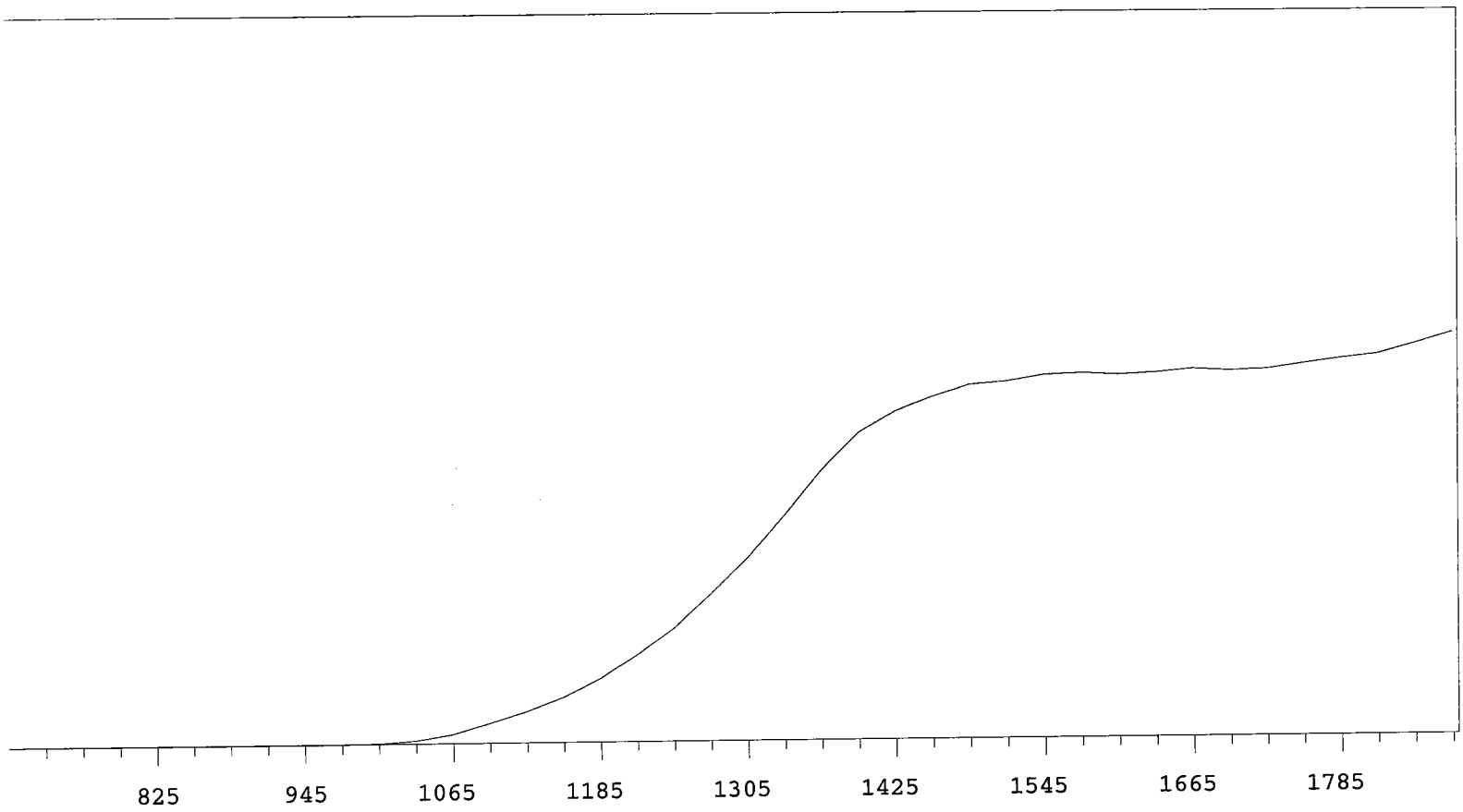
VOLTS	COUNTS	%/100 Volts
705	3	
735	2	
765	1	-66.67
795	4	+45.45
825	0	+30.30
855	4	+0.00
885	2	>100
915	3	>100
945	6	>100
975	42	>100
1005	244	>100
1035	697	>100
1065	1429	>100
1095	2487	>100
1125	3483	>100
1155	4980	>100
1185	6683	+92.69
1215	8988	+84.24
1245	11345	+76.74
1275	14366	+68.74

VOLTS	COUNTS	%/100 Volts
1305	17564	+61.34
1335	20983	+50.92
1365	24340	+39.30
1395	26885	+26.88
1425	28563	+15.81
1455	29365	+8.25
1485	29683	+3.89
1515	29898	+2.00
1545	30019	+1.51
1575	30093	+1.01
1605	30263	+1.18
1635	30232	+1.46
1665	30485	+1.36
1695	30648	+1.63
1725	30678	+1.10
1755	30883	+2.70
1785	30876	+2.89
1815	31805	+4.51
1845	31569	
1875	32673	

7/29/05

Plateau 07/18/05 Instrument 4 MPC 9604 Detector C 7/18/2005

Alpha Volts: 705 Beta Volts: 1575



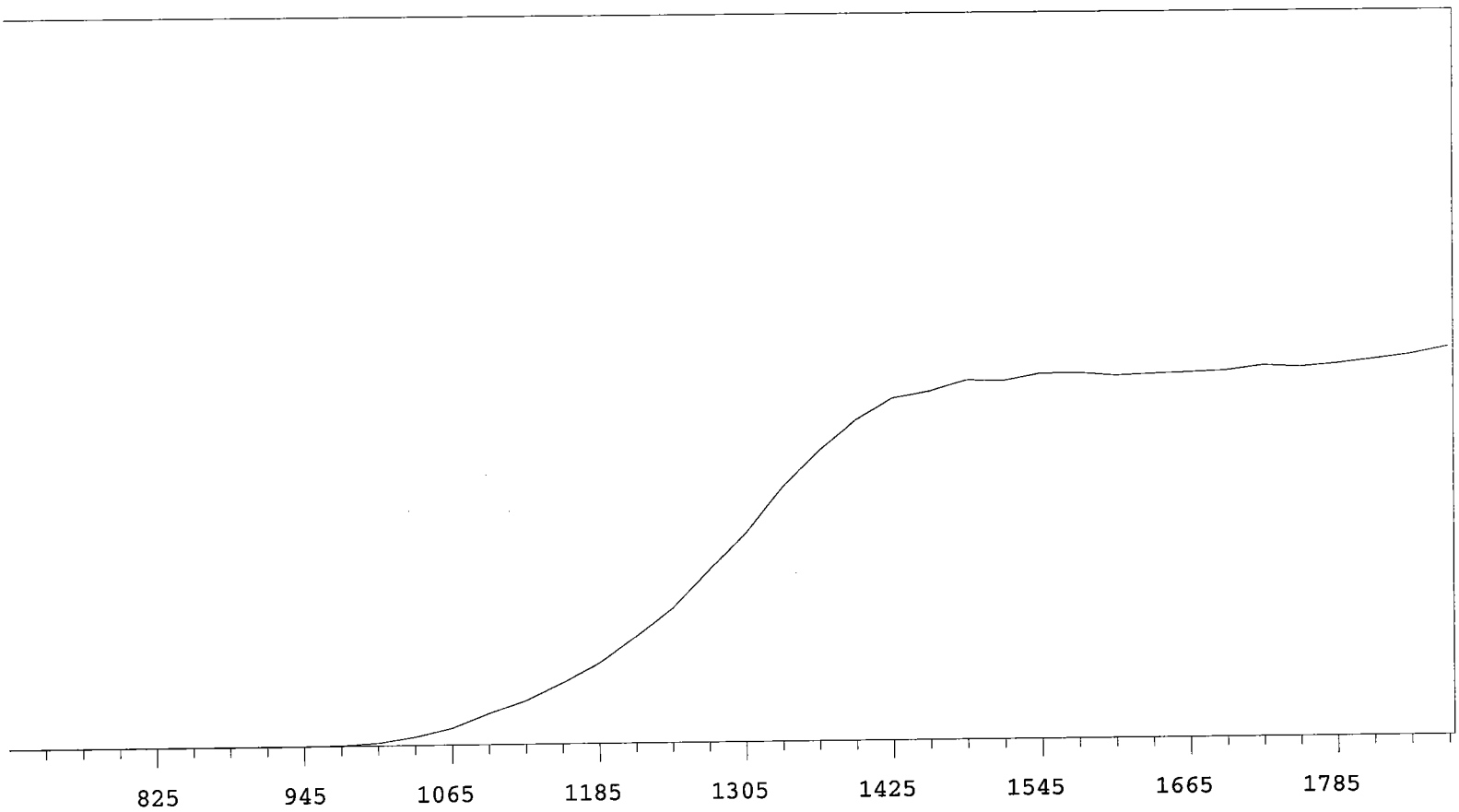
VOLTS	COUNTS	%/100 Volts
705	1	
735	0	
765	0	
795	0	>100
825	2	>100
855	0	+100.00
885	1	>100
915	2	>100
945	4	>100
975	10	>100
1005	53	>100
1035	327	>100
1065	902	>100
1095	1970	>100
1125	3079	>100
1155	4435	>100
1185	6202	+99.16
1215	8385	+91.20
1245	10930	+83.12
1275	14132	+75.94

VOLTS	COUNTS	%/100 Volts
1305	17606	+68.88
1335	21599	+59.41
1365	25809	+47.05
1395	29372	+33.37
1425	31486	+21.76
1455	32894	+12.91
1485	34077	+8.33
1515	34357	+5.14
1545	34948	+2.35
1575	35100	+1.39
1605	34930	+0.94
1635	35093	+0.78
1665	35444	+1.03
1695	35257	+1.49
1725	35393	+2.34
1755	35908	+3.77
1785	36373	+5.15
1815	36800	+6.47
1845	37764	
1875	38815	

7/29/05

Plateau 07/18/05 Instrument 4 MPC 9604 Detector D 7/18/2005

Alpha Volts: 705 Beta Volts: 1575



VOLTS	COUNTS	%/100 Volts
705	4	
735	3	
765	1	
795	1	>100
825	0	>100
855	1	>100
885	5	>100
915	3	>100
945	14	>100
975	77	>100
1005	298	>100
1035	932	>100
1065	1829	>100
1095	3311	>100
1125	4603	>100
1155	6424	+96.24
1185	8451	+88.86
1215	11201	+83.16
1245	14170	+76.31
1275	18128	+69.83

VOLTS	COUNTS	%/100 Volts
1305	21893	+61.23
1335	26615	+50.22
1365	30345	+39.18
1395	33570	+25.90
1425	35845	+16.79
1455	36520	+8.95
1485	37628	+5.26
1515	37539	+3.72
1545	38268	+1.30
1575	38301	+0.80
1605	37985	-0.13
1635	38135	+0.48
1665	38276	+1.84
1695	38429	+1.51
1725	38899	+1.48
1755	38695	+1.85
1785	39003	+2.37
1815	39457	+4.14
1845	39914	
1875	40696	

Pb-210 WATER

Batch : CALVER
Analyst : JMJ
Date : 7/28/2005
Required MDA : 5.00 pCi/L
Bkg Count Time : 500 min

Procedure Code : GFC__PBL
Parmname : Lead-210
Batch Counted On : PIC
Lead Carrier Weight : 14.65 mg/mL

Sample ID	Sample Aliquot L	Sample Date/Time	Prep Date	Carrier Weight mg	Bi-210 Start Time	Bi-210 Ingrowth Factor	Detector Number#	Count Time min
V1	1.000	7/14/2005 0:00	7/14/2005	1.30	7/14/2005 8:00	0.858	1A	10
V2	1.000	7/14/2005 0:00	7/14/2005	2.10	7/14/2005 8:00	0.858	1B	10
V3	1.000	7/14/2005 0:00	7/14/2005	3.60	7/14/2005 8:00	0.858	1C	10
V4	1.000	7/14/2005 0:00	7/14/2005	5.00	7/14/2005 8:00	0.858	1D	10
V5	1.000	7/14/2005 0:00	7/14/2005	7.00	7/14/2005 8:00	0.858	2A	10
V6	1.000	7/14/2005 0:00	7/14/2005	8.80	7/14/2005 8:00	0.858	2B	10
V7	1.000	7/14/2005 0:00	7/14/2005	11.70	7/14/2005 8:00	0.858	2C	10
V8	1.000	7/14/2005 0:00	7/14/2005	13.40	7/14/2005 8:00	0.858	2D	10
V9	1.000	7/14/2005 0:00	7/14/2005	12.90	7/14/2005 8:00	0.858	3A	10
V10	1.000	7/14/2005 0:00	7/14/2005	15.30	7/14/2005 8:00	0.858	3B	10
V11	1.000	7/14/2005 0:00	7/14/2005	15.70	7/14/2005 8:00	0.858	3C	10
V12	1.000	7/14/2005 0:00	7/14/2005	19.80	7/14/2005 8:00	0.858	3D	10
V1	1.000	7/14/2005 0:00	7/14/2005	1.30	7/14/2005 8:00	0.858	4A	10
V2	1.000	7/14/2005 0:00	7/14/2005	2.10	7/14/2005 8:00	0.858	4B	10
V3	1.000	7/14/2005 0:00	7/14/2005	3.60	7/14/2005 8:00	0.858	4C	10
V4	1.000	7/14/2005 0:00	7/14/2005	5.00	7/14/2005 8:00	0.858	4D	10

Pb-210	0.1	ML
ET491-A	**80900.6**	DPM
	3644.17	pCi/L

Total Beta Counts	Raw cpm	Detector Efficiency dec	BKG cpm	Counted Time	Sample Decay Factor	Test Rec. dec	Pb-210 MDA pCi/L	**Pb-210 RESULT pCi/L**	Pb-210 Recovery (%)
22806	2280.60	0.4191	0.362	7/28/2005 10:51	0.999	0.8874	1.636	3223.022	**88.44%**
23555	2355.50	0.4061	0.296	7/28/2005 10:51	0.999	0.7167	1.937	4252.948	**116.71%**
25567	2556.70	0.3977	0.36	7/28/2005 10:51	0.999	0.8191	1.864	4124.728	**113.19%**
23587	2358.70	0.3846	0.338	7/28/2005 10:51	0.999	0.8532	1.806	3777.228	**103.65%**
26230	2623.00	0.3682	0.348	7/28/2005 10:52	0.999	0.9556	1.703	3917.583	**107.50%**
25997	2599.70	0.3528	0.386	7/28/2005 10:52	0.999	1.0011	1.766	3868.023	**106.14%**
26435	2643.50	0.3237	0.42	7/28/2005 10:52	0.999	1.1409	1.745	3762.025	**103.23%**
26101	2610.10	0.3139	0.414	7/28/2005 10:52	0.999	1.1433	1.786	3822.424	**104.89%**
22288	2228.80	0.3046	0.32	7/28/2005 10:52	0.999	0.9784	1.948	3930.475	**107.86%**
24112	2411.20	0.2889	0.366	7/28/2005 10:52	0.999	1.0444	2.025	4199.302	**115.23%**
22831	2283.10	0.2864	0.402	7/28/2005 10:52	0.999	0.9742	2.271	4300.541	**118.01%**
21369	2136.90	0.2483	0.384	7/28/2005 10:53	0.999	1.0396	2.411	4349.436	**119.35%**
22530	2253.00	0.4156	0.334	7/28/2005 11:09	0.999	0.8874	1.600	3210.006	**88.09%**
24318	2431.80	0.4129	0.32	7/28/2005 11:09	0.999	0.7167	1.961	4317.153	**118.47%**
25689	2568.90	0.3967	0.35	7/28/2005 11:09	0.999	0.8191	1.848	4153.294	**113.97%**
23412	2341.20	0.3802	0.394	7/28/2005 11:09	0.999	0.8532	1.937	3791.786	**104.05%**

INSTR_ID	SAMPLE_ID	CNT_TIME	A	B	TIME	USER2
Instrument 1 - A	1	10	112	22806	7/28/2005 10:51	1575
Instrument 1 - B	2	10	88	23555	7/28/2005 10:51	1575
Instrument 1 - C	3	10	212	25567	7/28/2005 10:51	1575
Instrument 1 - D	4	10	331	23587	7/28/2005 10:51	1575
Instrument 2 - A	5	10	310	26230	7/28/2005 10:52	1575
Instrument 2 - B	6	10	14	25997	7/28/2005 10:52	1575
Instrument 2 - C	7	10	357	26435	7/28/2005 10:52	1575
Instrument 2 - D	8	10	314	26101	7/28/2005 10:52	1575
Instrument 3 - A	9	10	192	22288	7/28/2005 10:52	1575
Instrument 3 - B	10	10	240	24112	7/28/2005 10:52	1575
Instrument 3 - C	11	10	308	22831	7/28/2005 10:52	1575
Instrument 3 - D	12	10	276	21369	7/28/2005 10:53	1575
Instrument 4 - A	1	10	183	22530	7/28/2005 11:09	1575
Instrument 4 - B	2	10	30	24318	7/28/2005 11:09	1575
Instrument 4 - C	3	10	273	25689	7/28/2005 11:09	1575
Instrument 4 - D	4	10	602	23412	7/28/2005 11:09	1575

General Engineering Laboratories
Verification Source Preparation Sheet

Applicable SOP Number: GL-RAD-A-018

Isotope: Pb-210

Date Standards Prepared: 7/14/05

Cocktail Type Used: N/A

Standard ID: ET491-A

Matrix of Vial/Planchett: Lead chromate precipitate on Tuffryn filter

Amount Used (g or ml): 0.1

Standard Activity (DPM/g or mL): 112301.8

Type of Scintillation Vial: N/A

Reference Date: 1/1/95

Pipette ID Used: 1429303

Expiration Date: 1/1/05

Balance ID Used: n/a

Residue/Carrier Agent: Lead Carrier 14.65 mg/mL

Quenching Agent: N/A

Separation Date/Time: 7/14/05 0800

	Standard Number	Quenching Vol (uL)/ Residue Volume(mL)	Initial Wt. (g)	Final Wt. (g)	Net Wt. (mg)	
	V1	0.1	0.0839	~~0.0843~~	~~0.4~~ 0.0852	1.3
	V2	0.2	0.0841	~~0.0856~~	~~1.5~~ 0.0862	2.1
	V3	0.3	0.0840	0.0876	3.6	
	V4	0.4	0.0856	0.0906	5.0	
	V5	0.5	0.0846	0.0916	7.0	
	V6	0.6	0.0844	0.0932	8.8	
	V7	0.7	0.0839	0.0956	11.7	
	V8	0.8	0.0859	0.0993	13.4	
	V9	0.9	0.0879	0.1008	12.9	
	V10	1.0	0.0844	0.0997	15.3	
	V11	1.1	0.0867	0.1024	13.7	
	V12	1.3	0.0840	0.1038	19.8	

Prepared By: _____ Date: 7/28/05

Reviewed By: _____ Date: 7/30/05

Rev 1 RLM 9/10/97

DEUTSCHER KALIBRIERDIENST (DKD)

Kalibrierlaboratorium für Meßgrößen der Radioaktivität
Calibration laboratory for measurements of radioactivity
AKKREDITIERT DURCH DIE PHYSIKALISCH-TECHNISCHE BUNDESANSTALT (PTB)

Amersham Buchler GmbH & Co KG
Postfach 11 49 Gieselweg 1
D-38001 Braunschweig D-38110 Braunschweig

Telefon (05307) 930-0
Telefax (05307) 930-293
Telefax-Zentrale 930-237

02628
DKD-K-06501
95-10

Kalibrierschein
Calibration Certificate

Kalibrierzeichen
Calibration mark

Gegenstand *Object*	Radioactive Reference Solution
Hersteller *Manufacturer*	Amersham Buchler GmbH & Co KG Postfach 11 49 Gieselweg 1 D-38001 Braunschweig D-38110 Braunschweig
Typ *Type*	RBZB44
Strahler-Nr. *Source number*	ET 491
Auftraggeber *Customer*	Amersham Corporation 2636 S. Clearbrook Drive Arlington Heights, IL 60005 USA-Arlington Heights, IL
Auftragsnummer *Work order number*	112116
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	2
Referenzdatum *Reference date*	1 January 1995

Der Deutsche Kalibrierdienst ist Unterzeichner des multilateralen Übereinkommens der Western European Calibration Cooperation (WECC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Die Kalibrierung erfolgt auf der Grundlage des zwischen der Physikalisch-Technischen Bundesanstalt und dem Träger abgeschlossenen Vertrages.
Dieser Kalibrierschein dokumentiert die Rückführbarkeit auf nationale Normale zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
The Deutscher Kalibrierdienst is signatory to the multilateral agreement of the Western European Calibration Cooperation (WECC) for the mutual recognition of calibration certificates.
The calibration is performed according to the stipulations of the contract between the Physikalisch-Technische Bundesanstalt and the holder of the calibration laboratory.
This calibration certificate documents the traceability to national standards, which realize the physical units of measurement according to the International System of Units (SI).
The user is obliged to have the object recalibrated at appropriate intervals.

Stempel Seal	Datum Date	Leiter des Kalibrierlaboratoriums Head of the calibration laboratory	Stellvertreter Deputy	Bearbeiter Person responsible
Deutscher Kalibrierdienst DKD-K-06501	18 October 1995	Dr. Dornhöfer	Dr. Thieme	E. Schuler

PC-5-013-4

Amersham

DEUTSCHER KALIBRIERDIENST (DKD)

02628
DKD-K-06501
95-10

Radioactive Reference Solution

Solution No.:	ET 491
Drawing No.:	VZ-2058
Nuclide:	Lead-210
Radioactive concentration:	38.1 kBq/g
Reference date:	1 January 1995 at 12.00 GMT
Mass of solution:	(5.182 ± 0.001) g
Volume of solution:	approx. 5 ml
Chemical composition:	Solution in 1.2 M HNO3 Carrier: Pb (NO3)2, Bi (NO3)3; each 20 mg/l of the corresponding element.
Measuring method:	The activity was determined by comparision with a reference solution by measurement with a Ge-detector with MCA.
Traceability:	Additional to the direct traceability to the PTB through the DKD this product satisfies the quality assurance requirements of USNRC Regulatory Guide 4.15 Revision 1, February 1979, for achieving NIST traceability through Amersham's participation in the NEI-NIST Measurements Assurance Program of the Nuclear Power Industry.
Uncertainty:	The relative uncertainty of the activity is ± 3 %. The declared uncertainty U is an expanded uncertainty $U = k * u_c$ with a coverage factor of $k = 3$. The combined uncertainty u_c is the sum of all uncertainties which can be evaluated by statistical means (uncertainty type A, u_A) and all other uncertainties (uncertainty type B, u_B) whereby $u_c^2 = u_A^2 + u_B^2$. (Ref.: NIST Technical Note 1297 / WECC-Doc. 19-1990)
Radioactive impurities:	Related to Pb-210 (equal 100 %) the following radioactive impurities were detected: Ra-226: 0.003 %

Deutscher DKD-K-06501 Kalibrierdienst

LC-5-013-47

Amersham
The Health Science Group

Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005
tel (708) 593-6300
fax (708) 593-8091

Amersham

TRACEABILITY TO NIST

Traceability is the ability to relate the accuracy of measurement of radionuclides to the National Institute of Standards and Technology (NIST). Traceability is achieved by participation in a Measurements Assurance Program linked to NIST and production of certified materials in accordance with a quality assurance program.

Amersham participates in measurement assurance programs conducted by NIST in cooperation with the Nuclear Energy Institute (NEI, formerly USCEA). Additionally, our production facilities and measurement laboratories operate under routinely audited quality assurance programs.

Therefore, Amersham certified standardized products meet or exceed, the NRC requirements for measurements traceable to NIST.

278004C

7/22/96

RC-5-013-4B

Standard Traceability Log Rad

Source Material Info	
Parent Code:	ET491
Prepared By:	Garret Ray
Carrier Conc:	1.2M HNO3
Reference Date:	01/01/1995
Ampoule Mass (g):	5.182 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 014 004

A Solution Material Info	
Isotope:	Lead-210
Prepared By:	Garret Ray
Prep Date:	03/01/1996
Verification Date:	07/12/2005
Expiration Date:	07/12/2006
Primary Code:	ET491-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.0547 g
Density(g/mL):	1.0000

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (100 mL) = 115550.4420 dpm/mL
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (1.0000 g/mL) / (100 mL) = 115550.4420 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
10/20/1997	Richard Kinney	.467	100	ET491-B	524.45 dpm/ml	03/01/1997	03/01/1998
10/29/1997	Richard Kinney	3.0992	500	ET491-C	696.09 dpm/mL	10/29/1998	10/29/1999
04/03/2001	Angela Albee	.5184	100	ET491-D	582.17 dpm/mL	04/16/2003	04/16/2004
09/15/2003	Angela Albee	.5132	100	ET491-E	576.33 dpm/mL	11/11/2004	11/11/2005

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

7/29/05

Verification for Pb-210 Standard ET491-A

A. Fehr
7/12/2005

	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (g)	Source DPM/~~mL~~ g
	ET491-E N1	22785.6000	20.2000	22785.6000	2.63365	0.1038	83349.97114
	ET491-E N2	22178.6000	20.2000	22178.6000	2.63365	0.1033	81522.24763
	ET491-E N3	22065.7000	20.2000	22065.7000	2.63365	0.1031	81264.5963
						Average =	82045.60502
Mean Value (Counting) =	82045.60502		**101.400909**	**Pass**			
Stdev =	1136.936355		0.01385737	**Rule 3 (Pass/Fail)**			
Certificate Value =	80912.1						
Lower Limit =	79771.73231						
Upper Limit =	84319.47773						
Rule 1 Pass/Fail	**Pass**						
Two sigma =	2273.872711						
10 % of Mean =	8204.560502						
Rule 2 (Pass/Fail)	**Pass**						

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three calibration sources for source ET491-A by transferring 0.1 mL portions of the standard to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The calibration vials and background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 31 for Pb-210 standard verification. The efficiency calibration which was used for verification calculations was performed on 7/12/05 using source 0356-A (Pb-210). Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Reference RAD SOP M-001

7/29/05

Angela A. Johnson 7/29/05

PROTOCOL	: 31 Pb-210 Verification
DATE	: 2005/07/12
TIME	: 05:29
ID	: P31AS005

Wallac 1414 WinSpectral v1.40 S/N 4140127

Counting mode	: CPM
Isotope(s)	: Pb210
Pb210 =	5- 520,21.00 y
Protocol name	: Pb-210 Verification
Counting time	: 300
Repeats	: 1
Cycles	: 1
Replicates	: 1
2 sigma %	: 0.01
Minimum cpm	: 0.00 Checking time: 10
Advanced modes	: Chemilum,PSA
PSA level	: 35
Output to Display	:
POS,CTIME,DATE,TIME,RACKPOS,CPMw1,CPM,SQPI,CPM1	
Additions to Display	: Spectrum,Header,Listing
Spectrum	: Alpha,Beta
Window 1	: 685- 745 /Alpha
Window 2	: 1-1024 /Beta
Window 3	: 1-1024 /Beta
Window 4	: 1-1024 /Beta
Window 5	: 1-1024 /Beta
Window 6	: 1-1024 /Beta
FNCT1 = FNCT1	:
FNCT2 = FNCT2	:
FNCT3 = FNCT3	:
FNCT4 = FNCT4	:

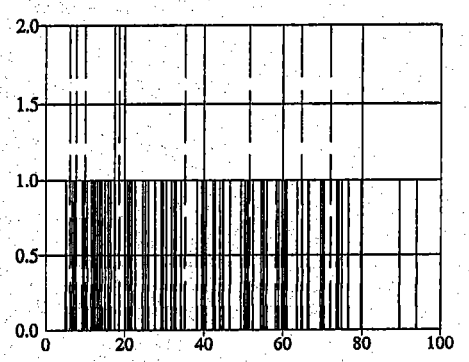
Total count rate:

Pb210 72372.3 CPM

7/12/05

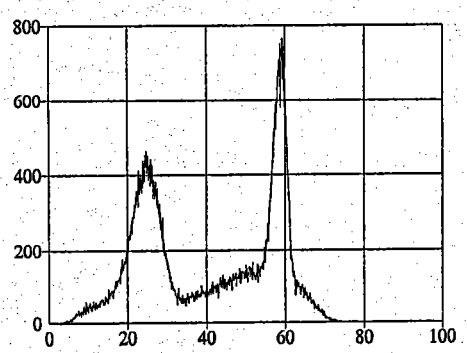
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
1	300	7/12/2005	5:29 AM	1	20.20



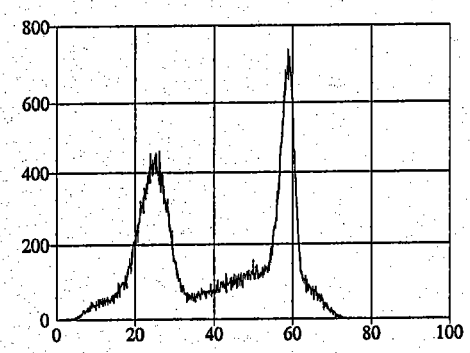
Bkg

2	300	7/12/2005	5:35 AM	2	22785.60



ET491-A

3	300	7/12/2005	5:41 AM	3	22178.60

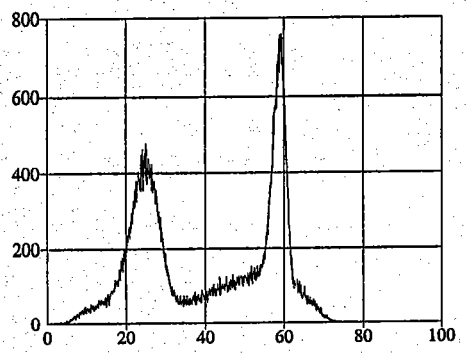


ET491-A

ALF 7/12/05

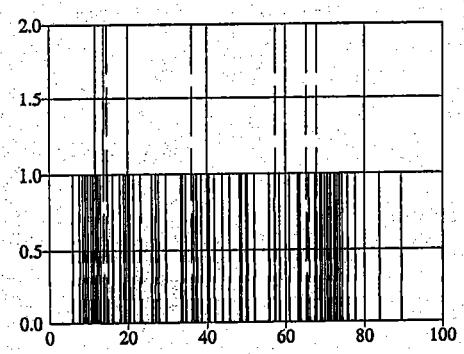
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
4	300	7/12/2005	5:46 AM	4	22065.70



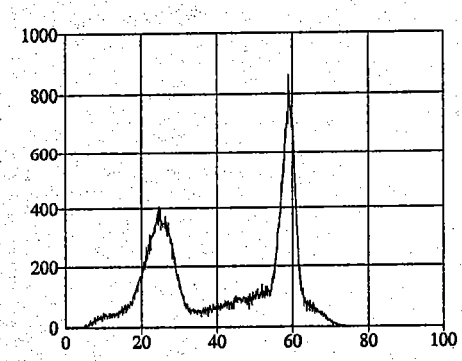
ET491-A

5	300	7/12/2005	5:52 AM	5	21.70



Bkg

6	300	7/12/2005	5:58 AM	6	20294.00

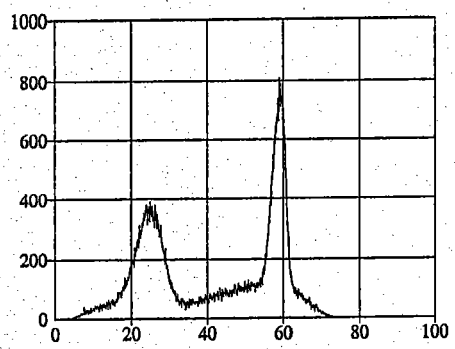


0356-A

AUF7112105

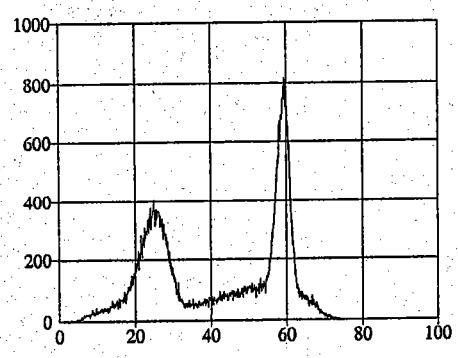
7/29/05

POS	CTIME	DATE	TIME	RACKPOS	CPM
7	300	7/12/2005	6:04 AM	7	20276.60



0356-A

8	300	7/12/2005	6:09 AM	8	20079.70



0356-A

ALF 7/12/05

7/14

AD 7/29/05

Alpha Spectroscopy Calibration Sources

The following is a summary of the procedure performed for preparing mixed alpha calibration standards:

A calibration stock solution was prepared by combining the following in a volumetric flask and diluting to 50 ml (51.4561 grams). These individual standards were first verified by direct precipitation of small aliquots of each standard (as described in Attachment I).

Isotope	Serial #	amount used (g)	dpm (note 1)
Gd-148	64445-278	0.2471	212.159287
Np-237	4341	1.8075	204.438594
Cm-244	4320A	7.2704	240.144737

Note 1: Dpm values are decay corrected to 2/7/2003.

Forty one weighted aliquots were then directly precipitated using Neodymium Flouride /HF system. The sources were then mounted on 0.1Poly-proplyene filters and taped securely to 1 inch stainless steel planchettes for counting in an Alpha Spectroscopy system. The liquid fraction that passes through the filter is collected, traced with Am-241 and prepared for counting using the identical procedure. These samples are counted to ensure there is no more than 1% loss in the filtering processes. All sources pass this requirement. The DPM information for each source is listed in attachment II.

Certificate files were then created on the Alpha system used for acquisition and processing of data. Each source is assigned a name (AESS-001 through AESS-041). The information for the source activities is entered into the certificate files appropriate for the detector being used.
For example: If source AESS-001 is used for calibrating detector 25, the source data is entered into the certificate file name [env_alpha.cer]U025.cer.
The computer software uses these certificate files to calculate an energy calibration and determine the efficiency of the detector after counting the source.

4/1/03

2002 Alpha Eff Source Stock Verification

Curium-244

Isotope	Value pCi/g		
SSTOCK2002A2_AM	106.000		
SSTOCK2002B2_AM	106.000		
SSTOCK2002C2_AM	106.000		
Mean Value (Counting) =	106.000	98.04%	
Stdev =	0		
Target =	108.1230	pCi/g	
Lower Limit =	106		
Upper Limit =	106		
Rule 1 Pass/Fail	Pass	Pass	① ~~Fail~~ PASS RS 2/12/03
Two sigma =	0		
10 % of Mean =	10.6		
Rule 2 (Pass/Fail)	Pass		

Neptunium-237

Isotope	Value pCi/g		
SSTOCK2002A2_AM	90.100		
SSTOCK2002B2_AM	87.200		
SSTOCK2002C2_AM	93.500		
Mean Value (Counting) =	90.267	98.02%	
Stdev =	3.153305144		
Target =	92.0900	pCi/g	
Lower Limit =	83.96005638		
Upper Limit =	96.57327696		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	6.306610289		
10 % of Mean =	9.026666667		
Rule 2 (Pass/Fail)	Pass		

Gadolinium-148

Isotope	Value pCi/g		
SSTOCK2002A2_AM	96.080		
SSTOCK2002B2_AM	93.750		
SSTOCK2002C2_AM	96.560		
Mean Value (Counting) =	95.463	99.81%	
Stdev =	1.503074627		
Target =	95.6460	pCi/g	
Lower Limit =	92.45718408		
Upper Limit =	98.46948259		
Rule 1 Pass/Fail	Pass	Pass	Pass
Two sigma =	3.006149253		
10 % of Mean =	9.546333333		
Rule 2 (Pass/Fail)	Pass		

The analyst prepared three standard verification sources for the mixed alpha stock standard using 0.1030 g for source #1, 0.1035 g for source #2 and 0.1028 g for source #3. Each standard was combined with 1.0 mL of Am-243 standard 0454-A and 0.1 mL of Nd carrier in a disposable centrifuge tube. Four mL of 2 M HCl was added to each standard and then diluted with 4 mL of DI water. 5 mL of ascorbic acid was added to each sample then one mL of 48% HF was added to precipitate Nd(and Curium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. pCi/L values for the Mixed Alpha Stock were calculated and compared to Am-243 certified values.

① The rule failed because the 3 results from 3 sources were the same. Therefore, the std dev was zero. The intent of this rule is to ensure an appropriate amount of counts are achieved for proper determination. ~~Fo~~ For each standard the # of counts achieved was just under 10000 which has a counting error of nearly 1%. Because the standard's bias is < 2% from the known value the standard is acceptable.

021203

Attachment II

Mixed alpha	Reference date =	2/7/2003					
Isotope	Source	Stock Dpm/g	Reference date	Half-life (years)	amount used for mixed	Dpm/g mixed	Decay corr dpm/g
Gd-148	64445-278 (0502)	44354.59289	9/5/2002	74.60	0.2471	212.9974853	212.159287
Np-237	Srm 4341 (0493)	5820	3/1/1992	2.14E+06	1.8075	204.4393182	204.438594
Cm-244	SRM 4320a (0490)	2223.6	2/1/1996	18.1	7.2704	314.1796879	240.144737

Source	Amount of standard used	dpm Gd-148	dpm Np-237	dpm Cm-244	dps Gd-148	dps Np-237	dps Cm-244
AESS-001	1.0362	219.839	211.839	248.838	3.664	3.531	4.147
AESS-002	1.0344	219.458	211.471	248.406	3.658	3.525	4.140
AESS-003	1.034	219.373	211.390	248.310	3.656	3.523	4.138
AESS-004	1.0331	219.182	211.206	248.094	3.653	3.520	4.135
AESS-005	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-006	1.0331	219.182	211.206	248.094	3.653	3.520	4.135
AESS-007	1.0348	219.542	211.553	248.502	3.659	3.526	4.142
AESS-008	1.0363	219.861	211.860	248.862	3.664	3.531	4.148
AESS-009	1.0352	219.627	211.635	248.598	3.660	3.527	4.143
AESS-010	1.0346	219.500	211.512	248.454	3.658	3.525	4.141
AESS-011	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-012	1.0367	219.946	211.941	248.958	3.666	3.532	4.149
AESS-013	1.0396	220.561	212.534	249.654	3.676	3.542	4.161
AESS-014	1.0368	219.967	211.962	248.982	3.666	3.533	4.150
AESS-015	1.0363	219.861	211.860	248.862	3.664	3.531	4.148
AESS-016	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-017	1.0356	219.712	211.717	248.694	3.662	3.529	4.145
AESS-018	1.0359	219.776	211.778	248.766	3.663	3.530	4.146
AESS-019	1.0349	219.564	211.574	248.526	3.659	3.526	4.142
AESS-020	1.0361	219.818	211.819	248.814	3.664	3.530	4.147
AESS-021	1.0348	219.542	211.553	248.502	3.659	3.526	4.142
AESS-022	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-023	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-024	1.0343	219.436	211.451	248.382	3.657	3.524	4.140
AESS-025	1.0364	219.882	211.880	248.886	3.665	3.531	4.148
AESS-026	1.0336	219.288	211.308	248.214	3.655	3.522	4.137
AESS-027	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-028	1.0366	219.924	211.921	248.934	3.665	3.532	4.149

AESS-029	1.0355	219.691	211.696	248.670	3.662	3.528	4.144
AESS-030	1.0349	219.564	211.574	248.526	3.659	3.526	4.142
AESS-031	1.0343	219.436	211.451	248.382	3.657	3.524	4.140
AESS-032	1.0326	219.076	211.103	247.973	3.651	3.518	4.133
AESS-033	1.0308	218.694	210.735	247.541	3.645	3.512	4.126
AESS-034	1.0314	218.821	210.858	247.685	3.647	3.514	4.128
AESS-035	1.0303	218.588	210.633	247.421	3.643	3.511	4.124
AESS-036	1.0343	219.436	211.451	248.382	3.657	3.524	4.140
AESS-037	1.0353	219.649	211.655	248.622	3.661	3.528	4.144
AESS-038	1.0373	220.073	212.064	249.102	3.668	3.534	4.152
AESS-039	1.0334	219.245	211.267	248.166	3.654	3.521	4.136
AESS-040	1.0346	219.500	211.512	248.454	3.658	3.525	4.141
AESS-041	1.0352	219.627	211.635	248.598	3.660	3.527	4.143

0490
0491

National Institute of Standards & Technology

Certificate

Standard Reference Material 4320A
Curium-244 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive curium-244 nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains curium-244 with a total activity of approximately 200 Bq. Curium-244 decays by alpha-particle emission to plutonium-240, which also decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 40 keV to 1100 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains nitric acid (HNO_3) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least February 2006.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
February 1996 (Text only revised November 1997)

Thomas E. Gills, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 and 6

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4320A
(Certified values are shown in bold type)

Source identification number	NIST SRM 4320A		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.030 ± 0.002) g·mL^{-1} at 22.8 °C** [b]*		
Solution mass	Approximately 5.15 g		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O HNO_3 HCl $^{244}Cm^{+3}$	54 1.0 <0.001 5×10^{-11}	0.94 0.06 $<4 \times 10^{-5}$ 1×10^{-11}
Radiological Properties:			
Radionuclide	**Curium-244**		
Reference time	**1200 EST, 1 February 1996** [c]		
Massic activity of the solution [d]	**37.06 Bq·g^{-1}** 74.12 Bq·g^{-1}		
Relative expanded uncertainty (k=2)	**0.68%** [e] [f]		
Alpha-particle-emitting daughters Alpha-particle-emitting impurities	Plutonium-240: (0.22 ± 0.11) Bq·g^{-1} [b] [c] Curium-243: (0.005 ± 0.004) Bq·g^{-1} [b] [g]		
Photon-emitting impurities	None detected [h]		
Half lives used in the decay corrections	Curium-244: (18.10 ± 0.02) a [i] Plutonium-240: (6563 ± 7) a [i]		
Calibration method	Two 4πα liquid-scintillation counting systems		

37.06 x 2 2004

6

*Notes and references are on pages 5 and 6.

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[i] The stated uncertainty is the standard uncertainty. See reference [5].

[j] Relative standard uncertainty of the input quantity x_i.

[k] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[m] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[n] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[p] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t|$

[q] The live time is determined by counting the pulses from a gated oscillator.

[r] The standard uncertainty given is for the detected Cm-243 impurity. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Cm-244)}·{(Bq of impurity)/(Bq of Cm-244)}.

[s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i$ = 100%. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Cm-244)}·{(Bq of impurity)/(Bq of Cm-244)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

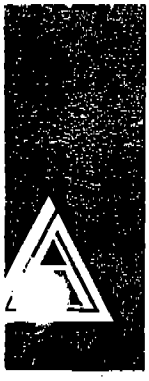
[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] Evaluated Nuclear Structure Data File (ENSDF), February 1996.

RC-5-035-00



ANALYTICS

0502

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

64445-278

Gd-148 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ISOTOPE:	Gd-148
ACTIVITY (dps):	3.759 E3
HALF-LIFE:	74.6 years
CALIBRATION DATE:	September 5, 2002 12:00 EST
TOTAL UNCERTAINTY*:	2.7%
SYSTEMATIC:	1.9%
RANDOM:	0.8%

99% confidence level.

5.08493 grams 0.1M HCl solution.

P O NUMBER 3207RD, Item 1

SOURCE PREPARED BY: M.D. Currie

M.D. Currie, Radiochemist

Q A APPROVED: 9-6-02

0493

National Institute of Standards & Technology

Certificate

Standard Reference Material 4341
Radioactivity Standard

Radionuclide	Neptunium-237
Source identification	SRM 4341
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule (1)*
Solution mass	Approximately 5 grams
Solution composition	Neptunium-237 in 2 $mol \cdot L^{-1}$ nitric acid
Reference time	March 1992
Radioactivity concentration	97.0 $Bq \cdot g^{-1}$
Overall uncertainty	1.28 percent (2)
Photon-emitting impurities	None detected (3)
Alpha-particle-emitting impurities	None detected (4)
Half life	$(2.14 \pm 0.11) \times 10^6$ years (5)
Measuring instrument	NIST "$0.8\pi\alpha$ defined-solid-angle counter with scintillation detector

This standard reference material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M. Robin Hutchinson, Acting Group Leader.

Gaithersburg, MD
January 1993

William P. Reed, Chief
Standard Reference Materials Program

*Notes on back

NOTES

(1) Approximately five milliliters of solution. Ampoule specifications:

body diameter	16.5 ± 0.5 mm
wall thickness	0.60 ± 0.04 mm
barium content	less than 2.5 percent
lead oxide content	less than 0.02 percent
other heavy elements	trace quantities

(2) The overall uncertainty was formed by taking three times the quadratic combination of the standard deviations of the mean, or approximations thereof, for the following:

a) alpha-particle-emission-rate measurements	0.34 percent
b) background	0.01 percent
c) livetime	0.10 percent
d) detection efficiency	0.16 percent
e) count-rate-vs-energy extrapolation to zero energy	0.10 percent
f) half life	0.00 percent
g) gravimetric measurements	0.10 percent
h) alpha-emitting impurities	0.10 percent

(3) The protactinium-233 daughter of neptunium-237 is approximately in equilibrium. The limit of detection for photon-emitting impurities is

0.19 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 30 and 307 keV and
0.01 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 317 and 1750 keV,

provided that the impurity photons are separated in energy by 5 keV or more from photons emitted in the decay of neptunium-237 and progeny.

(4) The limit of detection for alpha-particle-emitting impurities is

0.10 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies between 1.0 and 4.3 MeV and
0.05 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies between 4.9 and 10 MeV.

(5) Evaluated Nuclear Structure Data File (ENSDF), February 1990.

For further information please contact Dr. J.M. Robin Hutchinson at NIST.
Telephone: (301) 975-5532
FAX: (301) 926-7416

Subsection 1: Energy Calibration

The Energy Calibration energy=Cal_Zero+(e1*C)+(e2*C^2)

where : Cal_Zero = Energy Calibration Zero
e1 = Energy Calibration Slope
e2 = Energy Calibration Quadratic
C = Channel

Instrument : CHAMBER 001
Detector : 33088
Calibration Date/Time : 3-APR-2006 16:30:52
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.589
NP-237	4341	2/28/06	4768.800	4768.498
CM-244	4320A	2/28/06	5795.020	5794.859

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.447
Energy Calibration Slope : 4.976289
Energy Calibration Quadratic : 2.7050270E-04
Energy Calibration Range : 7774.000

Instrument : CHAMBER 003
Detector : 20659
Calibration Date/Time : 3-APR-2006 16:32:34
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.813
NP-237	4341	2/28/06	4768.800	4768.688
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2371.253
Energy Calibration Slope : 5.028544
Energy Calibration Quadratic : 2.5955989E-04
Energy Calibration Range : 7793.000

Instrument : CHAMBER 004
Detector : 33077
Calibration Date/Time : 3-APR-2006 16:32:51
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.835
NP-237	4341	2/28/06	4768.800	4768.419
CM-244	4320A	2/28/06	5795.020	5794.571

Energy/Channel Equation : see above
Energy Calibration Zero : 2409.653
Energy Calibration Slope : 4.949907
Energy Calibration Quadratic : 2.7518670E-04
Energy Calibration Range : 7767.000

Instrument : CHAMBER 005
Detector : 28642
Calibration Date/Time : 3-APR-2006 16:33:05
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5794.893

Energy/Channel Equation : see above
Energy Calibration Zero : 2356.725
Energy Calibration Slope : 4.952652
Energy Calibration Quadratic : 3.0983411E-04
Energy Calibration Range : 7753.000

Instrument : CHAMBER 007
Detector : 30416
Calibration Date/Time : 3-APR-2006 16:35:21
Calibration Source Id : AESS-007

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.624
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2382.813
Energy Calibration Slope : 4.944474
Energy Calibration Quadratic : 3.1966669E-04
Energy Calibration Range : 7781.000

Instrument : CHAMBER 009
Detector : 13285
Calibration Date/Time : 3-APR-2006 16:39:51
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.700
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5794.917

Energy/Channel Equation : see above
Energy Calibration Zero : 2406.029
Energy Calibration Slope : 4.889740
Energy Calibration Quadratic : 3.3907106E-04
Energy Calibration Range : 7769.000

Instrument : CHAMBER 010
Detector : 33083
Calibration Date/Time : 3-APR-2006 16:40:04
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.328
NP-237	4341	2/28/06	4768.800	4768.118
CM-244	4320A	2/28/06	5795.020	5795.011

Energy/Channel Equation : see above
Energy Calibration Zero : 2382.230
Energy Calibration Slope : 4.964393
Energy Calibration Quadratic : 2.9206229E-04
Energy Calibration Range : 7772.000

Instrument : CHAMBER 011
Detector : 9537
Calibration Date/Time : 3-APR-2006 16:40:58
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.722
NP-237	4341	2/28/06	4768.800	4768.758
CM-244	4320A	2/28/06	5795.020	5794.941

Energy/Channel Equation : see above
Energy Calibration Zero : 2401.574
Energy Calibration Slope : 4.894418
Energy Calibration Quadratic : 3.3610439E-04
Energy Calibration Range : 7766.000

Instrument : CHAMBER 012
Detector : 33085
Calibration Date/Time : 3-APR-2006 16:41:13
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.403
CM-244	4320A	2/28/06	5795.020	5794.958

Energy/Channel Equation : see above
Energy Calibration Zero : 2403.072
Energy Calibration Slope : 4.959775
Energy Calibration Quadratic : 2.8419620E-04
Energy Calibration Range : 7780.000

Instrument : CHAMBER 013
Detector : 21084
Calibration Date/Time : 3-APR-2006 16:41:26
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.603
NP-237	4341	2/28/06	4768.800	4769.678
CM-244	4320A	2/28/06	5795.020	5795.297

Energy/Channel Equation : see above
Energy Calibration Zero : 2372.215
Energy Calibration Slope : 4.879492
Energy Calibration Quadratic : 3.3235765E-04
Energy Calibration Range : 7717.000

Instrument : CHAMBER 016
Detector : 21086
Calibration Date/Time : 3-APR-2006 16:45:33
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.993
NP-237	4341	2/28/06	4768.800	4768.792
CM-244	4320A	2/28/06	5795.020	5794.887

Energy/Channel Equation : see above
Energy Calibration Zero : 2373.788
Energy Calibration Slope : 4.866085
Energy Calibration Quadratic : 3.4461656E-04
Energy Calibration Range : 7718.000

Instrument : CHAMBER 017
Detector : 33203
Calibration Date/Time : 3-APR-2006 16:45:52
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.753
NP-237	4341	2/28/06	4768.800	4768.686
CM-244	4320A	2/28/06	5795.020	5795.002

Energy/Channel Equation : see above
Energy Calibration Zero : 2381.283
Energy Calibration Slope : 4.983909
Energy Calibration Quadratic : 2.9758285E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 018
Detector : 21063
Calibration Date/Time : 3-APR-2006 16:46:43
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.678
NP-237	4341	2/28/06	4768.800	4768.731
CM-244	4320A	2/28/06	5795.020	5795.019

Energy/Channel Equation : see above
Energy Calibration Zero : 2340.789
Energy Calibration Slope : 4.900531
Energy Calibration Quadratic : 3.0987556E-04
Energy Calibration Range : 7684.000

Instrument : CHAMBER 019
Detector : 23882
Calibration Date/Time : 3-APR-2006 16:46:59
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.344
NP-237	4341	2/28/06	4768.800	4769.286
CM-244	4320A	2/28/06	5795.020	5795.346

Energy/Channel Equation : see above
Energy Calibration Zero : 2328.678
Energy Calibration Slope : 5.011906
Energy Calibration Quadratic : 2.4903595E-04
Energy Calibration Range : 7722.000

Instrument : CHAMBER 020
Detector : 33093
Calibration Date/Time : 3-APR-2006 16:47:46
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.523
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2351.189
Energy Calibration Slope : 4.985672
Energy Calibration Quadratic : 2.7204608E-04
Energy Calibration Range : 7742.000

Instrument : CHAMBER 021
Detector : 33893
Calibration Date/Time : 3-APR-2006 16:48:06
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.276
NP-237	4341	2/28/06	4768.800	4768.355
CM-244	4320A	2/28/06	5795.020	5794.907

Energy/Channel Equation : see above
Energy Calibration Zero : 2374.427
Energy Calibration Slope : 4.951159
Energy Calibration Quadratic : 3.0070700E-04
Energy Calibration Range : 7760.000

Instrument : CHAMBER 023
Detector : 22873
Calibration Date/Time : 3-APR-2006 16:49:38
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3180.453
NP-237	4341	2/28/06	4768.800	4764.511
CM-244	4320A	2/28/06	5795.020	5793.157

Energy/Channel Equation : see above
Energy Calibration Zero : 2403.611
Energy Calibration Slope : 4.972397
Energy Calibration Quadratic : 2.1793865E-04
Energy Calibration Range : 7724.000

Instrument : CHAMBER 026
Detector : 34427
Calibration Date/Time : 4-APR-2006 12:02:00
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.743
NP-237	4341	2/28/06	4768.800	4768.458
CM-244	4320A	2/28/06	5795.020	5794.860

Energy/Channel Equation : see above
Energy Calibration Zero : 2367.357
Energy Calibration Slope : 4.926605
Energy Calibration Quadratic : 3.3364003E-04
Energy Calibration Range : 7762.000

Instrument : CHAMBER 027
Detector : 31436
Calibration Date/Time : 4-APR-2006 12:02:17
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.368
NP-237	4341	2/28/06	4768.800	4769.435
CM-244	4320A	2/28/06	5795.020	5795.142

Energy/Channel Equation : see above
Energy Calibration Zero : 2385.802
Energy Calibration Slope : 4.966618
Energy Calibration Quadratic : 2.6491811E-04
Energy Calibration Range : 7749.000

Instrument : CHAMBER 028
Detector : 21056
Calibration Date/Time : 4-APR-2006 12:02:41
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.801
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2320.544
Energy Calibration Slope : 4.935237
Energy Calibration Quadratic : 2.7769944E-04
Energy Calibration Range : 7665.000

Instrument : CHAMBER 029
Detector : 30419
Calibration Date/Time : 4-APR-2006 12:02:56
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.690
NP-237	4341	2/28/06	4768.800	4770.051
CM-244	4320A	2/28/06	5795.020	5795.380

Energy/Channel Equation : see above
Energy Calibration Zero : 2360.631
Energy Calibration Slope : 4.932264
Energy Calibration Quadratic : 2.8612607E-04
Energy Calibration Range : 7711.000

Instrument : CHAMBER 030
Detector : 30420
Calibration Date/Time : 4-APR-2006 12:03:11
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.638
CM-244	4320A	2/28/06	5795.020	5794.905

Energy/Channel Equation : see above
Energy Calibration Zero : 2379.492
Energy Calibration Slope : 4.942307
Energy Calibration Quadratic : 3.2948688E-04
Energy Calibration Range : 7786.000

Instrument : CHAMBER 032
Detector : 33207
Calibration Date/Time : 4-APR-2006 12:04:09
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.162
NP-237	4341	2/28/06	4768.800	4769.075
CM-244	4320A	2/28/06	5795.020	5795.066

Energy/Channel Equation : see above
Energy Calibration Zero : 2332.264
Energy Calibration Slope : 4.962142
Energy Calibration Quadratic : 2.9673061E-04
Energy Calibration Range : 7725.000

Instrument : CHAMBER 033
Detector : 28647
Calibration Date/Time : 4-APR-2006 12:04:20
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.737
CM-244	4320A	2/28/06	5795.020	5794.927

Energy/Channel Equation : see above
Energy Calibration Zero : 2371.926
Energy Calibration Slope : 4.915609
Energy Calibration Quadratic : 3.0408576E-04
Energy Calibration Range : 7724.000

Instrument : CHAMBER 034
Detector : 32697
Calibration Date/Time : 4-APR-2006 12:04:32
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.670
NP-237	4341	2/28/06	4768.800	4768.840
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2340.410
Energy Calibration Slope : 4.974835
Energy Calibration Quadratic : 3.3510773E-04
Energy Calibration Range : 7786.000

Instrument : CHAMBER 035
Detector : 29271
Calibration Date/Time : 4-APR-2006 12:04:44
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2347.646
Energy Calibration Slope : 4.986292
Energy Calibration Quadratic : 2.8726328E-04
Energy Calibration Range : 7755.000

Instrument : CHAMBER 036
Detector : 29275
Calibration Date/Time : 4-APR-2006 12:04:58
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.797
NP-237	4341	2/28/06	4768.800	4767.041
CM-244	4320A	2/28/06	5795.020	5793.387

Energy/Channel Equation : see above
Energy Calibration Zero : 2388.490
Energy Calibration Slope : 5.017391
Energy Calibration Quadratic : 3.2070087E-04
Energy Calibration Range : 7863.000

Instrument : CHAMBER 037
Detector : 32690
Calibration Date/Time : 4-APR-2006 12:05:37
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.312
CM-244	4320A	2/28/06	5795.020	5794.990

Energy/Channel Equation : see above
Energy Calibration Zero : 2422.263
Energy Calibration Slope : 4.994318
Energy Calibration Quadratic : 2.9049869E-04
Energy Calibration Range : 7841.000

Instrument : CHAMBER 038
Detector : 19323
Calibration Date/Time : 4-APR-2006 12:05:48
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.338
NP-237	4341	2/28/06	4768.800	4769.033
CM-244	4320A	2/28/06	5795.020	5795.267

Energy/Channel Equation : see above
Energy Calibration Zero : 2386.917
Energy Calibration Slope : 4.961154
Energy Calibration Quadratic : 3.4057652E-04
Energy Calibration Range : 7824.000

Instrument : CHAMBER 040
Detector : 30446
Calibration Date/Time : 4-APR-2006 12:06:33
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.744
NP-237	4341	2/28/06	4768.800	4768.729
CM-244	4320A	2/28/06	5795.020	5794.990

Energy/Channel Equation : see above
Energy Calibration Zero : 2361.522
Energy Calibration Slope : 4.912026
Energy Calibration Quadratic : 3.2777814E-04
Energy Calibration Range : 7735.000

Instrument : CHAMBER 041
Detector : 22834
Calibration Date/Time : 4-APR-2006 12:06:46
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.004
CM-244	4320A	2/28/06	5795.020	5795.141

Energy/Channel Equation : see above
Energy Calibration Zero : 2357.184
Energy Calibration Slope : 4.881192
Energy Calibration Quadratic : 3.4815943E-04
Energy Calibration Range : 7721.000

Instrument : CHAMBER 042
Detector : 32695
Calibration Date/Time : 4-APR-2006 12:07:02
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.104
CM-244	4320A	2/28/06	5795.020	5795.107

Energy/Channel Equation : see above
Energy Calibration Zero : 2418.706
Energy Calibration Slope : 4.890110
Energy Calibration Quadratic : 3.4867792E-04
Energy Calibration Range : 7792.000

Instrument : CHAMBER 043
Detector : 42470
Calibration Date/Time : 4-APR-2006 12:07:20
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.388
CM-244	4320A	2/28/06	5795.020	5795.759

Energy/Channel Equation : see above
Energy Calibration Zero : 2363.161
Energy Calibration Slope : 5.010756
Energy Calibration Quadratic : 2.3886505E-04
Energy Calibration Range : 7745.000

Instrument : CHAMBER 044
Detector : 34433
Calibration Date/Time : 4-APR-2006 12:07:31
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2381.287
Energy Calibration Slope : 4.986757
Energy Calibration Quadratic : 2.9497029E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 045
Detector : 34430
Calibration Date/Time : 4-APR-2006 12:07:49
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2396.370
Energy Calibration Slope : 4.975925
Energy Calibration Quadratic : 2.7766536E-04
Energy Calibration Range : 7783.000

Instrument : CHAMBER 046
Detector : 42471
Calibration Date/Time : 4-APR-2006 12:08:03
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.981
NP-237	4341	2/28/06	4768.800	4768.475
CM-244	4320A	2/28/06	5795.020	5794.831

Energy/Channel Equation : see above
Energy Calibration Zero : 2370.690
Energy Calibration Slope : 4.938850
Energy Calibration Quadratic : 3.0132200E-04
Energy Calibration Range : 7744.000

Instrument : CHAMBER 047
Detector : 30449
Calibration Date/Time : 4-APR-2006 12:08:14
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.801
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2367.885
Energy Calibration Slope : 4.977801
Energy Calibration Quadratic : 2.7243813E-04
Energy Calibration Range : 7751.000

Instrument : CHAMBER 048
Detector : 42483
Calibration Date/Time : 4-APR-2006 12:08:24
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2379.919
Energy Calibration Slope : 5.011742
Energy Calibration Quadratic : 2.4467456E-04
Energy Calibration Range : 7769.000

Instrument : CHAMBER 065
Detector : 21087
Calibration Date/Time : 3-APR-2006 12:05:24
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.701
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2381.709
Energy Calibration Slope : 4.966328
Energy Calibration Quadratic : 3.2913609E-04
Energy Calibration Range : 7812.000

Instrument : CHAMBER 066
Detector : 38159
Calibration Date/Time : 3-APR-2006 12:05:41
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.194
NP-237	4341	2/28/06	4768.800	4769.460
CM-244	4320A	2/28/06	5795.020	5795.202

Energy/Channel Equation : see above
Energy Calibration Zero : 2361.937
Energy Calibration Slope : 4.956664
Energy Calibration Quadratic : 3.0704346E-04
Energy Calibration Range : 7760.000

Instrument : CHAMBER 068
Detector : 33204
Calibration Date/Time : 3-APR-2006 12:06:11
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.734
NP-237	4341	2/28/06	4768.800	4768.288
CM-244	4320A	2/28/06	5795.020	5794.885

Energy/Channel Equation : see above
Energy Calibration Zero : 2340.602
Energy Calibration Slope : 4.952214
Energy Calibration Quadratic : 2.9989655E-04
Energy Calibration Range : 7726.000

Instrument : CHAMBER 069
Detector : 39172
Calibration Date/Time : 3-APR-2006 12:06:22
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.678
NP-237	4341	2/28/06	4768.800	4768.439
CM-244	4320A	2/28/06	5795.020	5794.953

Energy/Channel Equation : see above
Energy Calibration Zero : 2383.433
Energy Calibration Slope : 4.992626
Energy Calibration Quadratic : 3.0025930E-04
Energy Calibration Range : 7811.000

Instrument : CHAMBER 070
Detector : 33207
Calibration Date/Time : 3-APR-2006 12:06:32
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.583
NP-237	4341	2/28/06	4768.800	4768.687
CM-244	4320A	2/28/06	5795.020	5794.788

Energy/Channel Equation : see above
Energy Calibration Zero : 2397.668
Energy Calibration Slope : 4.915377
Energy Calibration Quadratic : 3.6479929E-04
Energy Calibration Range : 7814.000

Instrument : CHAMBER 072
Detector : 33210
Calibration Date/Time : 3-APR-2006 12:07:20
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3185.797
NP-237	4341	2/28/06	4768.800	4771.520
CM-244	4320A	2/28/06	5795.020	5795.709

Energy/Channel Equation : see above
Energy Calibration Zero : 2429.633
Energy Calibration Slope : 4.970463
Energy Calibration Quadratic : 2.6446831E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 073
Detector : 33211
Calibration Date/Time : 3-APR-2006 12:07:31
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.651
NP-237	4341	2/28/06	4768.800	4768.479
CM-244	4320A	2/28/06	5795.020	5794.623

Energy/Channel Equation : see above
Energy Calibration Zero : 2374.705
Energy Calibration Slope : 4.961344
Energy Calibration Quadratic : 3.4754534E-04
Energy Calibration Range : 7820.000

Instrument : CHAMBER 075
Detector : 29976
Calibration Date/Time : 3-APR-2006 12:07:53
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.693
NP-237	4341	2/28/06	4768.800	4768.668
CM-244	4320A	2/28/06	5795.020	5794.923

Energy/Channel Equation : see above
Energy Calibration Zero : 2362.553
Energy Calibration Slope : 4.960943
Energy Calibration Quadratic : 3.2853242E-04
Energy Calibration Range : 7787.000

Instrument : CHAMBER 076
Detector : 33213
Calibration Date/Time : 3-APR-2006 12:08:02
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.644
NP-237	4341	2/28/06	4768.800	4768.760
CM-244	4320A	2/28/06	5795.020	5794.972

Energy/Channel Equation : see above
Energy Calibration Zero : 2372.898
Energy Calibration Slope : 4.983890
Energy Calibration Quadratic : 3.3487112E-04
Energy Calibration Range : 7828.000

Instrument : CHAMBER 077
Detector : 28239
Calibration Date/Time : 3-APR-2006 12:08:16
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.346
NP-237	4341	2/28/06	4768.800	4769.262
CM-244	4320A	2/28/06	5795.020	5795.317

Energy/Channel Equation : see above
Energy Calibration Zero : 2368.874
Energy Calibration Slope : 4.931313
Energy Calibration Quadratic : 3.2203639E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 078
Detector : 34425
Calibration Date/Time : 3-APR-2006 12:08:26
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.993
NP-237	4341	2/28/06	4768.800	4768.645
CM-244	4320A	2/28/06	5795.020	5794.911

Energy/Channel Equation : see above
Energy Calibration Zero : 2393.754
Energy Calibration Slope : 4.904502
Energy Calibration Quadratic : 3.5731806E-04
Energy Calibration Range : 7791.000

Instrument : CHAMBER 079
Detector : 28408
Calibration Date/Time : 3-APR-2006 12:08:37
Calibration Source Id : AESS-015

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.266
NP-237	4341	2/28/06	4768.800	4768.567
CM-244	4320A	2/28/06	5795.020	5794.887

Energy/Channel Equation : see above
Energy Calibration Zero : 2383.558
Energy Calibration Slope : 4.929332
Energy Calibration Quadratic : 3.0991141E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 080
Detector : 29269
Calibration Date/Time : 3-APR-2006 12:08:46
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.363
NP-237	4341	2/28/06	4768.800	4768.345
CM-244	4320A	2/28/06	5795.020	5794.711

Energy/Channel Equation : see above
Energy Calibration Zero : 2360.141
Energy Calibration Slope : 5.008783
Energy Calibration Quadratic : 2.6339359E-04
Energy Calibration Range : 7765.000

Instrument : CHAMBER 081
Detector : 28243
Calibration Date/Time : 5-APR-2006 14:20:00
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.124
CM-244	4320A	2/28/06	5795.020	5795.316

Energy/Channel Equation : see above
Energy Calibration Zero : 2423.205
Energy Calibration Slope : 4.974538
Energy Calibration Quadratic : 2.3569762E-04
Energy Calibration Range : 7764.000

Instrument : CHAMBER 083
Detector : 34436
Calibration Date/Time : 3-APR-2006 12:09:35
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.144
CM-244	4320A	2/28/06	5795.020	5794.581

Energy/Channel Equation : see above
Energy Calibration Zero : 2370.701
Energy Calibration Slope : 5.018431
Energy Calibration Quadratic : 2.5893620E-04
Energy Calibration Range : 7781.000

Instrument : CHAMBER 084
Detector : 29953
Calibration Date/Time : 3-APR-2006 12:09:48
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.067
NP-237	4341	2/28/06	4768.800	4768.425
CM-244	4320A	2/28/06	5795.020	5794.511

Energy/Channel Equation : see above
Energy Calibration Zero : 2368.562
Energy Calibration Slope : 5.005028
Energy Calibration Quadratic : 3.0593007E-04
Energy Calibration Range : 7815.000

Instrument : CHAMBER 085
Detector : 30451
Calibration Date/Time : 3-APR-2006 12:10:02
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.503
NP-237	4341	2/28/06	4768.800	4768.802
CM-244	4320A	2/28/06	5795.020	5795.019

Energy/Channel Equation : see above
Energy Calibration Zero : 2385.228
Energy Calibration Slope : 4.990182
Energy Calibration Quadratic : 3.0125739E-04
Energy Calibration Range : 7811.000

Instrument : CHAMBER 086
Detector : 29278
Calibration Date/Time : 3-APR-2006 12:10:24
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.313
CM-244	4320A	2/28/06	5795.020	5794.889

Energy/Channel Equation : see above
Energy Calibration Zero : 2367.011
Energy Calibration Slope : 5.001186
Energy Calibration Quadratic : 2.4593988E-04
Energy Calibration Range : 7746.000

Instrument : CHAMBER 087
Detector : 34430
Calibration Date/Time : 3-APR-2006 12:10:36
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.326
NP-237	4341	2/28/06	4768.800	4768.556
CM-244	4320A	2/28/06	5795.020	5794.574

Energy/Channel Equation : see above
Energy Calibration Zero : 2363.815
Energy Calibration Slope : 5.009631
Energy Calibration Quadratic : 2.4977388E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 088
Detector : 30434
Calibration Date/Time : 3-APR-2006 12:10:54
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.313
NP-237	4341	2/28/06	4768.800	4767.746
CM-244	4320A	2/28/06	5795.020	5794.659

Energy/Channel Equation : see above
Energy Calibration Zero : 2334.709
Energy Calibration Slope : 4.874549
Energy Calibration Quadratic : 2.1355411E-04
Energy Calibration Range : 7550.000

Instrument : CHAMBER 089
Detector : 21087
Calibration Date/Time : 3-APR-2006 23:05:32
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.451
NP-237	4341	2/28/06	4768.800	4768.626
CM-244	4320A	2/28/06	5795.020	5794.917

Energy/Channel Equation : see above
Energy Calibration Zero : 2349.260
Energy Calibration Slope : 4.948930
Energy Calibration Quadratic : 3.2322409E-04
Energy Calibration Range : 7756.000

Instrument : CHAMBER 090
Detector : 38159
Calibration Date/Time : 3-APR-2006 23:06:16
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5794.866

Energy/Channel Equation : see above
Energy Calibration Zero : 2386.311
Energy Calibration Slope : 4.986774
Energy Calibration Quadratic : 3.3244080E-04
Energy Calibration Range : 7841.000

Instrument : CHAMBER 091
Detector : 33205
Calibration Date/Time : 4-APR-2006 21:06:36
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.391
NP-237	4341	2/28/06	4768.800	4769.357
CM-244	4320A	2/28/06	5795.020	5795.305

Energy/Channel Equation : see above
Energy Calibration Zero : 2363.386
Energy Calibration Slope : 4.961743
Energy Calibration Quadratic : 3.2066394E-04
Energy Calibration Range : 7780.000

Instrument : CHAMBER 092
Detector : 33204
Calibration Date/Time : 3-APR-2006 23:08:02
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.867
CM-244	4320A	2/28/06	5795.020	5795.175

Energy/Channel Equation : see above
Energy Calibration Zero : 2358.222
Energy Calibration Slope : 4.950097
Energy Calibration Quadratic : 3.0710385E-04
Energy Calibration Range : 7749.000

Instrument : CHAMBER 093
Detector : 33206
Calibration Date/Time : 3-APR-2006 23:08:14
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.063
CM-244	4320A	2/28/06	5795.020	5795.298

Energy/Channel Equation : see above
Energy Calibration Zero : 2375.739
Energy Calibration Slope : 4.926612
Energy Calibration Quadratic : 3.1170124E-04
Energy Calibration Range : 7747.000

Instrument : CHAMBER 094
Detector : 33207
Calibration Date/Time : 3-APR-2006 23:08:34
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.993
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2369.583
Energy Calibration Slope : 4.936423
Energy Calibration Quadratic : 3.2235958E-04
Energy Calibration Range : 7762.000

Instrument : CHAMBER 096
Detector : 30429
Calibration Date/Time : 3-APR-2006 23:09:48
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.677
NP-237	4341	2/28/06	4768.800	4768.561
CM-244	4320A	2/28/06	5795.020	5794.869

Energy/Channel Equation : see above
Energy Calibration Zero : 2346.092
Energy Calibration Slope : 4.863141
Energy Calibration Quadratic : 3.1486651E-04
Energy Calibration Range : 7656.000

Instrument : CHAMBER 098
Detector : 30431
Calibration Date/Time : 3-APR-2006 23:10:26
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.647
NP-237	4341	2/28/06	4768.800	4768.514
CM-244	4320A	2/28/06	5795.020	5794.903

Energy/Channel Equation : see above
Energy Calibration Zero : 2380.759
Energy Calibration Slope : 4.922705
Energy Calibration Quadratic : 3.2662629E-04
Energy Calibration Range : 7764.000

Instrument : CHAMBER 099
Detector : 30432
Calibration Date/Time : 4-APR-2006 21:07:16
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.171
CM-244	4320A	2/28/06	5795.020	5795.241

Energy/Channel Equation : see above
Energy Calibration Zero : 2411.170
Energy Calibration Slope : 4.859684
Energy Calibration Quadratic : 3.3678240E-04
Energy Calibration Range : 7741.000

Instrument : CHAMBER 101
Detector : 31696
Calibration Date/Time : 3-APR-2006 23:11:17
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.759
NP-237	4341	2/28/06	4768.800	4767.478
CM-244	4320A	2/28/06	5795.020	5793.923

Energy/Channel Equation : see above
Energy Calibration Zero : 2397.165
Energy Calibration Slope : 4.939373
Energy Calibration Quadratic : 2.7448736E-04
Energy Calibration Range : 7743.000

Instrument : CHAMBER 102
Detector : 30438
Calibration Date/Time : 3-APR-2006 23:11:38
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2390.065
Energy Calibration Slope : 4.967123
Energy Calibration Quadratic : 3.3759646E-04
Energy Calibration Range : 7830.000

Instrument : CHAMBER 103
Detector : 30437
Calibration Date/Time : 3-APR-2006 23:11:50
Calibration Source Id : AESS-015

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.632
NP-237	4341	2/28/06	4768.800	4768.780
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2378.634
Energy Calibration Slope : 4.949142
Energy Calibration Quadratic : 3.4029011E-04
Energy Calibration Range : 7803.000

Instrument : CHAMBER 104
Detector : 30436
Calibration Date/Time : 3-APR-2006 23:12:05
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.656
NP-237	4341	2/28/06	4768.800	4768.710
CM-244	4320A	2/28/06	5795.020	5794.893

Energy/Channel Equation : see above
Energy Calibration Zero : 2402.033
Energy Calibration Slope : 4.941638
Energy Calibration Quadratic : 3.3733863E-04
Energy Calibration Range : 7816.000

Instrument : CHAMBER 106
Detector : 45382
Calibration Date/Time : 3-APR-2006 23:13:35
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.390
NP-237	4341	2/28/06	4768.800	4768.938
CM-244	4320A	2/28/06	5795.020	5795.081

Energy/Channel Equation : see above
Energy Calibration Zero : 2377.948
Energy Calibration Slope : 4.942991
Energy Calibration Quadratic : 3.4093895E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 107
Detector : 31697
Calibration Date/Time : 3-APR-2006 23:13:46
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2398.373
Energy Calibration Slope : 4.985534
Energy Calibration Quadratic : 2.7872290E-04
Energy Calibration Range : 7796.000

Instrument : CHAMBER 109
Detector : 31693
Calibration Date/Time : 3-APR-2006 23:14:12
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4769.000
CM-244	4320A	2/28/06	5795.020	5795.208

Energy/Channel Equation : see above
Energy Calibration Zero : 2387.754
Energy Calibration Slope : 4.924148
Energy Calibration Quadratic : 3.0788378E-04
Energy Calibration Range : 7753.000

Instrument : CHAMBER 110
Detector : 30447
Calibration Date/Time : 4-APR-2006 21:08:36
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.635
NP-237	4341	2/28/06	4768.800	4768.800
CM-244	4320A	2/28/06	5795.020	5795.020

Energy/Channel Equation : see above
Energy Calibration Zero : 2419.221
Energy Calibration Slope : 4.999035
Energy Calibration Quadratic : 2.2320703E-04
Energy Calibration Range : 7772.000

Instrument : CHAMBER 111
Detector : 30448
Calibration Date/Time : 3-APR-2006 23:15:36
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.627
NP-237	4341	2/28/06	4768.800	4768.799
CM-244	4320A	2/28/06	5795.020	5795.021

Energy/Channel Equation : see above
Energy Calibration Zero : 2388.052
Energy Calibration Slope : 4.962283
Energy Calibration Quadratic : 2.9634466E-04
Energy Calibration Range : 7780.000

Instrument : CHAMBER 112
Detector : 30449
Calibration Date/Time : 3-APR-2006 23:15:47
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.664
CM-244	4320A	2/28/06	5795.020	5795.019

Energy/Channel Equation : see above
Energy Calibration Zero : 2375.519
Energy Calibration Slope : 4.935473
Energy Calibration Quadratic : 2.8306872E-04
Energy Calibration Range : 7726.000

Instrument : CHAMBER 113
Detector : 45-111B4
Calibration Date/Time : 4-APR-2006 17:02:58
Calibration Source Id : AESS-001

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3182.303
NP-237	4341	2/28/06	4768.800	4767.615
CM-244	4320A	2/28/06	5795.020	5794.404

Energy/Channel Equation : see above
Energy Calibration Zero : 2393.614
Energy Calibration Slope : 4.990646
Energy Calibration Quadratic : 3.0610454E-04
Energy Calibration Range : 7825.000

Instrument : CHAMBER 114
Detector : 45-111B5
Calibration Date/Time : 4-APR-2006 17:03:22
Calibration Source Id : AESS-007

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.771
NP-237	4341	2/28/06	4768.800	4767.996
CM-244	4320A	2/28/06	5795.020	5794.695

Energy/Channel Equation : see above
Energy Calibration Zero : 2391.292
Energy Calibration Slope : 4.957956
Energy Calibration Quadratic : 3.2139214E-04
Energy Calibration Range : 7805.000

Instrument : CHAMBER 115
Detector : 45-132EE5
Calibration Date/Time : 4-APR-2006 17:03:37
Calibration Source Id : AESS-002

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3183.000
NP-237	4341	2/28/06	4768.800	4768.468
CM-244	4320A	2/28/06	5795.020	5794.664

Energy/Channel Equation : see above
Energy Calibration Zero : 2372.417
Energy Calibration Slope : 4.988519
Energy Calibration Quadratic : 2.9488039E-04
Energy Calibration Range : 7790.000

Instrument : CHAMBER 116
Detector : 45-132FF2
Calibration Date/Time : 4-APR-2006 17:03:51
Calibration Source Id : AESS-008

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.985
NP-237	4341	2/28/06	4768.800	4767.986
CM-244	4320A	2/28/06	5795.020	5794.612

Energy/Channel Equation : see above
Energy Calibration Zero : 2377.594
Energy Calibration Slope : 4.965635
Energy Calibration Quadratic : 3.1974592E-04
Energy Calibration Range : 7798.000

Instrument : CHAMBER 117
Detector : 45-132FF3
Calibration Date/Time : 4-APR-2006 17:04:04
Calibration Source Id : AESS-003

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.825
NP-237	4341	2/28/06	4768.800	4767.294
CM-244	4320A	2/28/06	5795.020	5794.289

Energy/Channel Equation : see above
Energy Calibration Zero : 2399.138
Energy Calibration Slope : 4.995797
Energy Calibration Quadratic : 2.8692893E-04
Energy Calibration Range : 7816.000

Instrument : CHAMBER 118
Detector : 45-132FF4
Calibration Date/Time : 4-APR-2006 17:04:21
Calibration Source Id : AESS-009

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.738
NP-237	4341	2/28/06	4768.800	4767.705
CM-244	4320A	2/28/06	5795.020	5794.733

Energy/Channel Equation : see above
Energy Calibration Zero : 2382.726
Energy Calibration Slope : 4.977871
Energy Calibration Quadratic : 3.1087140E-04
Energy Calibration Range : 7806.000

Instrument : CHAMBER 119
Detector : 45-132FF5
Calibration Date/Time : 4-APR-2006 17:04:33
Calibration Source Id : AESS-004

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.725
NP-237	4341	2/28/06	4768.800	4768.406
CM-244	4320A	2/28/06	5795.020	5794.422

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.460
Energy Calibration Slope : 4.945233
Energy Calibration Quadratic : 3.2115451E-04
Energy Calibration Range : 7795.000

Instrument : CHAMBER 120
Detector : 45-142F1
Calibration Date/Time : 4-APR-2006 17:05:08
Calibration Source Id : AESS-010

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.702
NP-237	4341	2/28/06	4768.800	4767.716
CM-244	4320A	2/28/06	5795.020	5794.385

Energy/Channel Equation : see above
Energy Calibration Zero : 2370.954
Energy Calibration Slope : 4.969444
Energy Calibration Quadratic : 2.9560321E-04
Energy Calibration Range : 7770.000

Instrument : CHAMBER 121
Detector : 45-142J4
Calibration Date/Time : 4-APR-2006 17:05:19
Calibration Source Id : AESS-005

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.854
NP-237	4341	2/28/06	4768.800	4767.926
CM-244	4320A	2/28/06	5795.020	5794.359

Energy/Channel Equation : see above
Energy Calibration Zero : 2388.517
Energy Calibration Slope : 4.957601
Energy Calibration Quadratic : 3.2604721E-04
Energy Calibration Range : 7807.000

Instrument : CHAMBER 122
Detector : 45-142J5
Calibration Date/Time : 4-APR-2006 17:05:33
Calibration Source Id : AESS-011

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.708
NP-237	4341	2/28/06	4768.800	4767.643
CM-244	4320A	2/28/06	5795.020	5794.644

Energy/Channel Equation : see above
Energy Calibration Zero : 2379.562
Energy Calibration Slope : 4.966173
Energy Calibration Quadratic : 3.1077259E-04
Energy Calibration Range : 7791.000

Instrument : CHAMBER 123
Detector : 45-142V1
Calibration Date/Time : 4-APR-2006 17:05:57
Calibration Source Id : AESS-006

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3180.927
NP-237	4341	2/28/06	4768.800	4767.132
CM-244	4320A	2/28/06	5795.020	5794.117

Energy/Channel Equation : see above
Energy Calibration Zero : 2393.486
Energy Calibration Slope : 4.981727
Energy Calibration Quadratic : 2.8783656E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 124
Detector : 45-142V2
Calibration Date/Time : 4-APR-2006 17:06:12
Calibration Source Id : AESS-012

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.329
NP-237	4341	2/28/06	4768.800	4767.124
CM-244	4320A	2/28/06	5795.020	5794.622

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.312
Energy Calibration Slope : 4.963425
Energy Calibration Quadratic : 3.1662040E-04
Energy Calibration Range : 7809.000

Instrument : CHAMBER 125
Detector : 45-142V3
Calibration Date/Time : 4-APR-2006 17:06:28
Calibration Source Id : AESS-013

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.749
NP-237	4341	2/28/06	4768.800	4766.709
CM-244	4320A	2/28/06	5795.020	5794.138

Energy/Channel Equation : see above
Energy Calibration Zero : 2389.743
Energy Calibration Slope : 4.991052
Energy Calibration Quadratic : 2.6156937E-04
Energy Calibration Range : 7775.000

Instrument : CHAMBER 126
Detector : 45-142V5
Calibration Date/Time : 4-APR-2006 17:06:44
Calibration Source Id : AESS-019

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.536
NP-237	4341	2/28/06	4768.800	4766.676
CM-244	4320A	2/28/06	5795.020	5794.299

Energy/Channel Equation : see above
Energy Calibration Zero : 2392.589
Energy Calibration Slope : 5.019009
Energy Calibration Quadratic : 2.5404955E-04
Energy Calibration Range : 7798.000

Instrument : CHAMBER 127
Detector : 45-142W1
Calibration Date/Time : 4-APR-2006 17:07:12
Calibration Source Id : AESS-014

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.047
NP-237	4341	2/28/06	4768.800	4767.379
CM-244	4320A	2/28/06	5795.020	5794.462

Energy/Channel Equation : see above
Energy Calibration Zero : 2390.982
Energy Calibration Slope : 4.949072
Energy Calibration Quadratic : 3.2237647E-04
Energy Calibration Range : 7797.000

Instrument : CHAMBER 128
Detector : 45-142W2
Calibration Date/Time : 4-APR-2006 17:07:27
Calibration Source Id : AESS-020

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.794
NP-237	4341	2/28/06	4768.800	4767.351
CM-244	4320A	2/28/06	5795.020	5794.426

Energy/Channel Equation : see above
Energy Calibration Zero : 2376.436
Energy Calibration Slope : 4.990520
Energy Calibration Quadratic : 2.8923506E-04
Energy Calibration Range : 7790.000

Instrument : CHAMBER 129
Detector : 45-142W3
Calibration Date/Time : 4-APR-2006 17:07:43
Calibration Source Id : AESS-015

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.920
NP-237	4341	2/28/06	4768.800	4767.431
CM-244	4320A	2/28/06	5795.020	5794.286

Energy/Channel Equation : see above
Energy Calibration Zero : 2397.947
Energy Calibration Slope : 4.950837
Energy Calibration Quadratic : 3.2286491E-04
Energy Calibration Range : 7806.000

Instrument : CHAMBER 130
Detector : 45-142W5
Calibration Date/Time : 4-APR-2006 17:07:58
Calibration Source Id : AESS-021

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.779
NP-237	4341	2/28/06	4768.800	4767.779
CM-244	4320A	2/28/06	5795.020	5794.289

Energy/Channel Equation : see above
Energy Calibration Zero : 2390.948
Energy Calibration Slope : 5.005381
Energy Calibration Quadratic : 2.9957382E-04
Energy Calibration Range : 7831.000

Instrument : CHAMBER 131
Detector : 45-145K1
Calibration Date/Time : 4-APR-2006 17:08:16
Calibration Source Id : AESS-016

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.832
NP-237	4341	2/28/06	4768.800	4767.927
CM-244	4320A	2/28/06	5795.020	5794.474

Energy/Channel Equation : see above
Energy Calibration Zero : 2383.200
Energy Calibration Slope : 4.971618
Energy Calibration Quadratic : 3.1435001E-04
Energy Calibration Range : 7804.000

Instrument : CHAMBER 132
Detector : 45-145K2
Calibration Date/Time : 4-APR-2006 17:08:32
Calibration Source Id : AESS-022

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.897
NP-237	4341	2/28/06	4768.800	4767.248
CM-244	4320A	2/28/06	5795.020	5794.594

Energy/Channel Equation : see above
Energy Calibration Zero : 2374.090
Energy Calibration Slope : 5.015432
Energy Calibration Quadratic : 2.7181130E-04
Energy Calibration Range : 7795.000

Instrument : CHAMBER 133
Detector : 45-145K3
Calibration Date/Time : 4-APR-2006 17:09:47
Calibration Source Id : AESS-017

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.967
NP-237	4341	2/28/06	4768.800	4767.767
CM-244	4320A	2/28/06	5795.020	5794.419

Energy/Channel Equation : see above
Energy Calibration Zero : 2364.883
Energy Calibration Slope : 4.958282
Energy Calibration Quadratic : 2.8459914E-04
Energy Calibration Range : 7741.000

Instrument : CHAMBER 134
Detector : 45-145K4
Calibration Date/Time : 4-APR-2006 17:11:02
Calibration Source Id : AESS-023

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.715
NP-237	4341	2/28/06	4768.800	4767.525
CM-244	4320A	2/28/06	5795.020	5794.621

Energy/Channel Equation : see above
Energy Calibration Zero : 2384.888
Energy Calibration Slope : 4.989409
Energy Calibration Quadratic : 2.7175582E-04
Energy Calibration Range : 7779.000

Instrument : CHAMBER 135
Detector : 45-145K5
Calibration Date/Time : 4-APR-2006 17:11:53
Calibration Source Id : AESS-018

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.833
NP-237	4341	2/28/06	4768.800	4768.171
CM-244	4320A	2/28/06	5795.020	5794.435

Energy/Channel Equation : see above
Energy Calibration Zero : 2394.605
Energy Calibration Slope : 4.968740
Energy Calibration Quadratic : 2.9795556E-04
Energy Calibration Range : 7795.000

Instrument : CHAMBER 136
Detector : 45-145L1
Calibration Date/Time : 4-APR-2006 17:12:12
Calibration Source Id : AESS-024

Cal. Isotopes	Source Id	Expiration Date	Standard Energy	Actual Energy
GD-148	6445-278	2/28/06	3183.000	3181.493
NP-237	4341	2/28/06	4768.800	4767.151
CM-244	4320A	2/28/06	5795.020	5794.044

Energy/Channel Equation : see above
Energy Calibration Zero : 2384.309
Energy Calibration Slope : 5.003936
Energy Calibration Quadratic : 2.5798104E-04
Energy Calibration Range : 7779.000

Subsection 2: Background Calibration

Instrument : CHAMBER 001
Detector : 33088
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.456	3298.943	2.000000	0.4799997	70.71068	95.00000
NP-237	4433.436	4903.018	13.00000	3.119998	27.73501	95.00000
CM-244	5530.638	5887.374	28.00000	6.719995	18.89822	95.00000

Instrument : CHAMBER 003
Detector : 20659
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.599	3300.169	5.000000	1.199999	44.72136	95.00000
NP-237	4434.674	4902.844	22.00000	5.279996	21.32007	95.00000
CM-244	5535.248	5883.783	33.00000	7.919994	17.40777	95.00000

Instrument : CHAMBER 004
Detector : 33077
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.545	3299.456	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4433.646	4906.400	4.000000	0.9599993	50.00000	95.00000
CM-244	5531.494	5886.867	18.00000	4.319997	23.57022	95.00000

Instrument : CHAMBER 005
Detector : 28642
Background Analysis Date/Time : 2-APR-2006 11:38:32
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.709	3298.775	3.000000	0.7199995	57.73503	95.00000
NP-237	4434.190	4905.248	19.00000	4.559997	22.94157	95.00000
CM-244	5530.463	5883.921	31.00000	7.439995	17.96053	95.00000

Instrument : CHAMBER 007
Detector : 30416
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.797	3298.358	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.556	4903.394	25.00000	5.999996	20.00000	95.00000
CM-244	5533.897	5887.491	49.00000	11.75999	14.28572	95.00000

Instrument : CHAMBER 009
Detector : 13285
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.740	3302.180	3.000000	0.7199995	57.73503	95.00000
NP-237	4436.826	4904.306	10.00000	2.399998	31.62278	95.00000
CM-244	5530.853	5882.488	30.00000	7.199995	18.25742	95.00000

Instrument : CHAMBER 010
Detector : 33083
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.233	3300.495	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.514	4905.914	11.00000	2.639998	30.15113	95.00000
CM-244	5535.151	5882.345	27.00000	6.479995	19.24501	95.00000

Instrument : CHAMBER 011
Detector : 9537
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.769	3298.475	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.776	4901.438	2.000000	0.4799997	70.71068	95.00000
CM-244	5533.457	5885.193	35.00000	8.399994	16.90309	95.00000

Instrument : CHAMBER 012
Detector : 33085
Background Analysis Date/Time : 2-APR-2006 11:38:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.283	3299.978	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.454	4901.598	3.000000	0.7199995	57.73503	95.00000
CM-244	5534.285	5885.751	13.00000	3.119998	27.73501	95.00000

Instrument : CHAMBER 013
Detector : 21084
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.308	3301.307	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.829	4905.476	4.000000	0.9599993	50.00000	95.00000
CM-244	5530.551	5886.625	27.00000	6.479995	19.24501	95.00000

Instrument : CHAMBER 016
Detector : 21086
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.386	3300.792	3.000000	0.7199995	57.73503	95.00000
NP-237	4437.111	4903.407	9.000000	2.159998	33.33334	95.00000
CM-244	5533.819	5884.776	38.00000	9.119993	16.22214	95.00000

Instrument : CHAMBER 017
Detector : 33203
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.693	3298.212	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.905	4905.400	9.000000	2.159998	33.33334	95.00000
CM-244	5532.198	5886.394	44.00000	10.55999	15.07557	95.00000

Instrument : CHAMBER 018
Detector : 21063
Background Analysis Date/Time : 2-APR-2006 11:38:34
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.076	3298.134	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.036	4905.011	4.000000	0.9599993	50.00000	95.00000
CM-244	5535.243	5885.674	34.00000	8.159994	17.14986	95.00000

Instrument : CHAMBER 019
Detector : 23882
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.511	3300.144	16916.00	4059.841	0.7688669	95.00000
NP-237	4435.855	4902.151	5184.000	1244.160	1.388889	95.00000
CM-244	5531.789	5884.041	1897.000	455.2801	2.295970	95.00000

Instrument : CHAMBER 020
Detector : 33093
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.758	3298.111	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.838	4901.523	7.000000	1.680000	37.79645	95.00000
CM-244	5530.915	5883.311	45.00000	10.80000	14.90712	95.00000

Instrument : CHAMBER 021
Detector : 33893
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.969	3300.683	1.000000	0.2400001	100.0000	95.00000
NP-237	4434.165	4904.181	5.000000	1.200000	44.72136	95.00000
CM-244	5533.125	5885.623	21.00000	5.040001	21.82179	95.00000

Instrument : CHAMBER 023
Detector : 22873
Background Analysis Date/Time : 2-APR-2006 11:38:35
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.365	3300.653	2.000000	0.4800001	70.71068	95.00000
NP-237	4432.587	4902.786	9.000000	2.160001	33.33334	95.00000
CM-244	5533.585	5885.616	41.00000	9.840002	15.61738	95.00000

Instrument : CHAMBER 026
Detector : 34427
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.396	3300.299	1.000000	0.2400001	100.0000	95.00000
NP-237	4432.951	4903.551	14.00000	3.360001	26.72612	95.00000
CM-244	5534.085	5882.486	27.00000	6.480001	19.24501	95.00000

Instrument : CHAMBER 027
Detector : 31436
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.641	3298.501	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.554	4903.960	9.000000	2.160001	33.33334	95.00000
CM-244	5535.178	5885.600	13.00000	3.120001	27.73501	95.00000

Instrument : CHAMBER 028
Detector : 21056
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.862	3298.519	1.000000	0.2400001	100.0000	95.00000
NP-237	4437.162	4904.527	5.000000	1.200000	44.72136	95.00000
CM-244	5534.678	5884.670	3.000000	0.7200001	57.73503	95.00000

Instrument : CHAMBER 029
Detector : 30419
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.643	3298.009	4.000000	0.9600002	50.00000	95.00000
NP-237	4436.124	4903.513	4.000000	0.9600002	50.00000	95.00000
CM-244	5533.909	5884.139	20.00000	4.800001	22.36068	95.00000

Instrument : CHAMBER 030
Detector : 30420
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.381	3300.032	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.171	4901.399	1.000000	0.2400001	100.0000	95.00000
CM-244	5532.938	5887.226	28.00000	6.720002	18.89822	95.00000

Instrument : CHAMBER 032
Detector : 33207
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.438	3301.011	4.000000	0.9599994	50.00000	95.00000
NP-237	4437.450	4903.298	8.000000	1.919999	35.35534	95.00000
CM-244	5533.518	5886.674	40.00000	9.599994	15.81139	95.00000

Instrument : CHAMBER 033
Detector : 28647
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.128	3301.778	10.00000	2.399998	31.62278	95.00000
NP-237	4433.277	4905.752	9.000000	2.159999	33.33334	95.00000
CM-244	5531.202	5887.135	39.00000	9.359994	16.01282	95.00000

Instrument : CHAMBER 034
Detector : 32697
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.740	3297.727	18.00000	4.319997	23.57022	95.00000
NP-237	4436.424	4906.295	31.00000	7.439995	17.96053	95.00000
CM-244	5532.067	5883.683	33.00000	7.919995	17.40777	95.00000

Instrument : CHAMBER 035
Detector : 29271
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.597	3300.316	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.093	4902.062	25.00000	5.999996	20.00000	95.00000
CM-244	5533.546	5887.289	24.00000	5.759996	20.41241	95.00000

Instrument : CHAMBER 036
Detector : 29275
Background Analysis Date/Time : 2-APR-2006 11:38:36
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.101	3302.011	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4436.212	4902.690	21.00000	5.039997	21.82179	95.00000
CM-244	5530.586	5883.211	28.00000	6.719995	18.89822	95.00000

Instrument : CHAMBER 037
Detector : 32690
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.331	3300.070	3.000000	0.7200001	57.73503	95.00000
NP-237	4435.120	4902.289	15.00000	3.600001	25.81989	95.00000
CM-244	5534.121	5882.713	34.00000	8.160002	17.14986	95.00000

Instrument : CHAMBER 038
Detector : 19323
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.203	3301.129	4.000000	0.9600002	50.00000	95.00000
NP-237	4436.340	4904.950	11.00000	2.640001	30.15113	95.00000
CM-244	5534.574	5885.451	22.00000	5.280001	21.32007	95.00000

Instrument : CHAMBER 040
Detector : 30446
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.636	3301.603	3.000000	0.7200001	57.73503	95.00000
NP-237	4435.733	4904.719	11.00000	2.640001	30.15113	95.00000
CM-244	5532.976	5885.423	19.00000	4.560001	22.94157	95.00000

Instrument : CHAMBER 041
Detector : 22834
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.681	3302.193	2.000000	0.4800001	70.71068	95.00000
NP-237	4432.502	4905.743	8.000000	1.920000	35.35534	95.00000
CM-244	5533.298	5885.604	23.00000	5.520001	20.85144	95.00000

Instrument : CHAMBER 042
Detector : 32695
Background Analysis Date/Time : 2-APR-2006 11:38:37
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.651	3300.194	4.000000	0.9600002	50.00000	95.00000
NP-237	4435.708	4903.810	19.00000	4.560001	22.94157	95.00000
CM-244	5531.417	5883.758	26.00000	6.240001	19.61161	95.00000

Instrument : CHAMBER 043
Detector : 42470
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.168	3298.326	1.000000	0.2399998	100.0000	95.00000
NP-237	4436.901	4902.013	2.000000	0.4799997	70.71068	95.00000
CM-244	5535.121	5886.262	19.00000	4.559997	22.94157	95.00000

Instrument : CHAMBER 044
Detector : 34433
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.004	3298.648	28.00000	6.719995	18.89822	95.00000
NP-237	4433.632	4906.174	35.00000	8.399995	16.90309	95.00000
CM-244	5532.967	5887.129	38.00000	9.119994	16.22214	95.00000

Instrument : CHAMBER 045
Detector : 34430
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.438	3301.033	4.000000	0.9599994	50.00000	95.00000
NP-237	4436.365	4906.490	17.00000	4.079998	24.25356	95.00000
CM-244	5535.004	5886.982	17.00000	4.079998	24.25356	95.00000

Instrument : CHAMBER 046
Detector : 42471
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.741	3299.741	14.00000	3.359998	26.72612	95.00000
NP-237	4435.900	4904.967	49.00000	11.75999	14.28572	95.00000
CM-244	5532.671	5884.488	25.00000	5.999996	20.00000	95.00000

Instrument : CHAMBER 047
Detector : 30449
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.322	3298.103	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4433.780	4903.899	14.00000	3.359998	26.72612	95.00000
CM-244	5532.276	5884.114	29.00000	6.959996	18.56953	95.00000

Instrument : CHAMBER 048
Detector : 42483
Background Analysis Date/Time : 2-APR-2006 11:38:38
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.922	3300.161	1.000000	0.2399998	100.0000	95.00000
NP-237	4434.180	4904.923	20.00000	4.799997	22.36068	95.00000
CM-244	5533.436	5885.010	24.00000	5.759996	20.41241	95.00000

Instrument : CHAMBER 065
Detector : 21087
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.500	3301.569	5.000000	1.199999	44.72136	95.00000
NP-237	4436.593	4904.814	10.00000	2.399998	31.62278	95.00000
CM-244	5533.641	5883.942	18.00000	4.319997	23.57022	95.00000

Instrument : CHAMBER 066
Detector : 38159
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.351	3299.570	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.367	4906.503	12.00000	2.879998	28.86751	95.00000
CM-244	5531.751	5885.195	19.00000	4.559997	22.94157	95.00000

Instrument : CHAMBER 068
Detector : 33204
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.458	3302.482	2.000000	0.4799997	70.71068	95.00000
NP-237	4437.019	4902.188	5.000000	1.199999	44.72136	95.00000
CM-244	5531.579	5884.315	15.00000	3.599998	25.81989	95.00000

Instrument : CHAMBER 069
Detector : 39172
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.937	3302.037	1.000000	0.2399998	100.0000	95.00000
NP-237	4433.758	4901.912	5.000000	1.199999	44.72136	95.00000
CM-244	5535.302	5884.863	13.00000	3.119998	27.73501	95.00000

Instrument : CHAMBER 070
Detector : 33207
Background Analysis Date/Time : 2-APR-2006 11:38:39
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.764	3299.302	3.000000	0.7199996	57.73503	95.00000
NP-237	4432.603	4904.338	13.00000	3.119998	27.73501	95.00000
CM-244	5531.790	5887.167	12.00000	2.879998	28.86751	95.00000

Instrument : CHAMBER 072
Detector : 33210
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.642	3302.500	4.000000	0.9599994	50.00000	95.00000
NP-237	4434.229	4902.517	7.000000	1.679999	37.79645	95.00000
CM-244	5533.565	5883.889	14.00000	3.359998	26.72612	95.00000

Instrument : CHAMBER 073
Detector : 33211
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.209	3299.359	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.813	4905.119	6.000000	1.439999	40.82483	95.00000
CM-244	5530.447	5887.394	15.00000	3.599998	25.81989	95.00000

Instrument : CHAMBER 075
Detector : 29976
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.804	3301.738	1.000000	0.2399998	100.0000	95.00000
NP-237	4436.078	4904.005	18.00000	4.319997	23.57022	95.00000
CM-244	5532.428	5882.500	16.00000	3.839998	25.00000	95.00000

Instrument : CHAMBER 076
Detector : 33213
Background Analysis Date/Time : 2-APR-2006 11:38:40
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.982	3301.271	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.792	4906.032	9.000000	2.159999	33.33334	95.00000
CM-244	5532.284	5884.164	16.00000	3.839998	25.00000	95.00000

Instrument : CHAMBER 077
Detector : 28239
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.320	3302.291	3.000000	0.7200001	57.73503	95.00000
NP-237	4434.458	4904.534	18.00000	4.320001	23.57022	95.00000
CM-244	5534.090	5887.188	14.00000	3.360001	26.72612	95.00000

Instrument : CHAMBER 078
Detector : 34425
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.430	3298.209	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.493	4903.776	8.000000	1.920000	35.35534	95.00000
CM-244	5534.483	5883.260	14.00000	3.360001	26.72612	95.00000

Instrument : CHAMBER 079
Detector : 28408
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.549	3301.048	4.000000	0.9600002	50.00000	95.00000
NP-237	4435.951	4904.750	7.000000	1.680000	37.79645	95.00000
CM-244	5532.313	5884.158	23.00000	5.520001	20.85144	95.00000

Instrument : CHAMBER 080
Detector : 29269
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.355	3300.887	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4437.124	4904.027	11.00000	2.640001	30.15113	95.00000
CM-244	5534.833	5882.541	24.00000	5.760001	20.41241	95.00000

Instrument : CHAMBER 081
Detector : 28243
Background Analysis Date/Time : 2-APR-2006 11:38:41
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.337	3300.967	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.244	4901.705	5.000000	1.199999	44.72136	95.00000
CM-244	5534.853	5883.115	9.000000	2.159999	33.33334	95.00000

Instrument : CHAMBER 083
Detector : 34436
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.885	3297.745	2.000000	0.4799997	70.71068	95.00000
NP-237	4435.182	4902.448	13.00000	3.119998	27.73501	95.00000
CM-244	5533.629	5886.856	19.00000	4.559997	22.94157	95.00000

Instrument : CHAMBER 084
Detector : 29953
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.809	3299.845	2.000000	0.4799997	70.71068	95.00000
NP-237	4435.274	4905.090	36.00000	8.639995	16.66667	95.00000
CM-244	5535.465	5886.345	11.00000	2.639998	30.15113	95.00000

Instrument : CHAMBER 085
Detector : 30451
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.388	3298.321	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.734	4902.750	2.000000	0.4799997	70.71068	95.00000
CM-244	5530.623	5885.465	16.00000	3.839998	25.00000	95.00000

Instrument : CHAMBER 086
Detector : 29278
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.939	3300.647	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4432.832	4902.859	8.000000	1.919999	35.35534	95.00000
CM-244	5530.458	5886.876	7.000000	1.679999	37.79645	95.00000

Instrument : CHAMBER 087
Detector : 34430
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.850	3299.145	8.000000	1.919999	35.35534	95.00000
NP-237	4433.685	4904.783	101.0000	24.23998	9.950372	95.00000
CM-244	5533.892	5885.860	3.000000	0.7199996	57.73503	95.00000

Instrument : CHAMBER 088
Detector : 30434
Background Analysis Date/Time : 2-APR-2006 11:38:42
Background Count Time : 59999.99

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.733	3298.324	1.000000	0.2399998	100.0000	95.00000
NP-237	4434.854	4901.741	3.000000	0.7199996	57.73503	95.00000
CM-244	5531.597	5882.583	6.000000	1.439999	40.82483	95.00000

Instrument : CHAMBER 089
Detector : 21087
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.018	3301.225	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4432.655	4904.531	3.000000	0.7199995	57.73503	95.00000
CM-244	5531.146	5885.550	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 090
Detector : 38159
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.511	3299.809	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.211	4904.337	4.000000	0.9599993	50.00000	95.00000
CM-244	5530.381	5887.548	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 091
Detector : 33205
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.614	3302.446	1.000000	0.2399998	100.0000	95.00000
NP-237	4435.933	4903.299	6.000000	1.439999	40.82483	95.00000
CM-244	5530.786	5885.646	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 092
Detector : 33204
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.837	3299.694	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.184	4904.789	3.000000	0.7199995	57.73503	95.00000
CM-244	5534.672	5882.398	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 093
Detector : 33206
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.432	3297.831	1.000000	0.2399998	100.0000	95.00000
NP-237	4432.503	4906.496	4.000000	0.9599993	50.00000	95.00000
CM-244	5534.120	5886.021	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 094
Detector : 33207
Background Analysis Date/Time : 2-APR-2006 11:38:43
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.673	3298.910	1.000000	0.2399998	100.0000	95.00000
NP-237	4437.305	4902.611	3.000000	0.7199995	57.73503	95.00000
CM-244	5532.741	5886.161	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 096
Detector : 30429
Background Analysis Date/Time : 2-APR-2006 11:38:44
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.567	3301.392	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.899	4903.007	4.000000	0.9600002	50.00000	95.00000
CM-244	5534.841	5883.364	8.000000	1.920000	35.35534	95.00000

Instrument : CHAMBER 098
Detector : 30431
Background Analysis Date/Time : 2-APR-2006 11:38:44
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.193	3297.595	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.217	4902.776	10.00000	2.400000	31.62278	95.00000
CM-244	5531.761	5884.598	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 099
Detector : 30432
Background Analysis Date/Time : 2-APR-2006 11:38:44
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.302	3301.806	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.583	4904.427	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5532.529	5887.439	1.000000	0.2399998	100.0000	95.00000

Instrument : CHAMBER 101
Detector : 31696
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.838	3300.184	2.000000	0.4800001	70.71068	95.00000
NP-237	4437.473	4904.200	4.000000	0.9600002	50.00000	95.00000
CM-244	5533.420	5882.862	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 102
Detector : 30438
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.981	3300.175	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4436.167	4905.013	14.00000	3.360001	26.72612	95.00000
CM-244	5534.874	5885.847	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 103
Detector : 30437
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.494	3300.797	2.000000	0.4800001	70.71068	95.00000
NP-237	4433.628	4906.553	4.000000	0.9600002	50.00000	95.00000
CM-244	5534.963	5885.168	3.000000	0.7200001	57.73503	95.00000

Instrument : CHAMBER 104
Detector : 30436
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.844	3302.458	1.000000	0.2400000	100.0000	95.00000
NP-237	4432.663	4904.432	2.000000	0.4800001	70.71068	95.00000
CM-244	5531.252	5885.942	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 106
Detector : 45382
Background Analysis Date/Time : 2-APR-2006 11:38:45
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.094	3299.001	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.781	4902.986	7.000000	1.680000	37.79645	95.00000
CM-244	5530.755	5886.020	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 107
Detector : 31697
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.547	3299.714	1.000000	0.2400000	100.0000	95.00000
NP-237	4437.183	4902.948	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.612	5885.240	6.000000	1.440000	40.82483	95.00000

Instrument : CHAMBER 109
Detector : 31693
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.084	3299.184	3.000000	0.7200001	57.73503	95.00000
NP-237	4432.535	4905.875	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.554	5883.883	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 110
Detector : 30447
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.012	3300.888	1.000000	0.2400000	100.0000	95.00000
NP-237	4433.842	4901.474	1.000000	0.2400000	100.0000	95.00000
CM-244	5530.607	5884.669	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 111
Detector : 30448
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.793	3301.004	3.000000	0.7200001	57.73503	95.00000
NP-237	4435.981	4906.484	6.000000	1.440000	40.82483	95.00000
CM-244	5530.639	5883.341	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 112
Detector : 30449
Background Analysis Date/Time : 2-APR-2006 11:38:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.870	3298.269	1.000000	0.2400000	100.0000	95.00000
NP-237	4436.313	4903.586	3.000000	0.7200001	57.73503	95.00000
CM-244	5533.752	5883.818	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 113
Detector : 45-111B4
Background Analysis Date/Time : 2-APR-2006 10:57:16
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.835	3301.848	1.000000	0.2400000	100.0000	95.00000
NP-237	4433.613	4901.946	2.000000	0.4800001	70.71068	95.00000
CM-244	5530.358	5885.560	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 114
Detector : 45-111B5
Background Analysis Date/Time : 2-APR-2006 10:57:20
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.875	3299.211	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4436.329	4903.130	1.000000	0.2400000	100.0000	95.00000
CM-244	5535.235	5884.346	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 115
Detector : 45-132EE5
Background Analysis Date/Time : 2-APR-2006 10:57:23
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.466	3300.287	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.908	4903.427	1.000000	0.2400000	100.0000	95.00000
CM-244	5530.487	5884.796	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 116
Detector : 45-132FF2
Background Analysis Date/Time : 2-APR-2006 10:57:26
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.161	3302.097	1.000000	0.2400000	100.0000	95.00000
NP-237	4435.898	4903.366	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5530.965	5885.878	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 117
Detector : 45-132FF3
Background Analysis Date/Time : 2-APR-2006 10:57:29
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.574	3297.481	2.000000	0.4800001	70.71068	95.00000
NP-237	4432.916	4905.417	3.000000	0.7200001	57.73503	95.00000
CM-244	5531.962	5885.886	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 118
Detector : 45-132FF4
Background Analysis Date/Time : 2-APR-2006 10:57:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.600	3298.996	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.069	4901.807	2.000000	0.4800001	70.71068	95.00000
CM-244	5534.903	5884.430	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 119
Detector : 45-132FF5
Background Analysis Date/Time : 2-APR-2006 10:57:36
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.490	3300.068	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.344	4905.254	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5530.554	5884.197	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 120
Detector : 45-142F1
Background Analysis Date/Time : 2-APR-2006 10:57:39
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.710	3300.418	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4437.274	4903.259	1.000000	0.2400000	100.0000	95.00000
CM-244	5533.634	5886.862	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 121
Detector : 45-142J4
Background Analysis Date/Time : 2-APR-2006 10:57:42
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.124	3301.600	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.163	4906.581	1.000000	0.2400000	100.0000	95.00000
CM-244	5533.976	5883.453	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 122
Detector : 45-142J5
Background Analysis Date/Time : 2-APR-2006 10:57:46
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.061	3298.780	1.000000	0.2400000	100.0000	95.00000
NP-237	4436.620	4903.419	1.000000	0.2400000	100.0000	95.00000
CM-244	5535.258	5884.098	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 123
Detector : 45-142V1
Background Analysis Date/Time : 2-APR-2006 10:57:49
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.387	3299.522	2.000000	0.4800001	70.71068	95.00000
NP-237	4437.442	4903.641	1.000000	0.2400000	100.0000	95.00000
CM-244	5534.110	5887.297	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 124
Detector : 45-142V2
Background Analysis Date/Time : 2-APR-2006 10:57:52
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.443	3297.987	2.000000	0.4800001	70.71068	95.00000
NP-237	4435.559	4902.411	2.000000	0.4800001	70.71068	95.00000
CM-244	5534.467	5883.494	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 125
Detector : 45-142V3
Background Analysis Date/Time : 2-APR-2006 10:57:55
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2992.436	3301.693	1.000000	0.2400000	100.0000	95.00000
NP-237	4433.216	4903.410	2.000000	0.4800001	70.71068	95.00000
CM-244	5531.615	5883.226	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 126
Detector : 45-142V5
Background Analysis Date/Time : 2-APR-2006 10:57:59
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.369	3299.131	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.618	4902.366	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.732	5885.449	3.000000	0.7200001	57.73503	95.00000

Instrument : CHAMBER 127
Detector : 45-142W1
Background Analysis Date/Time : 2-APR-2006 10:58:02
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.513	3302.392	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4432.606	4903.961	1.000000	0.2400000	100.0000	95.00000
CM-244	5535.216	5883.874	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 128
Detector : 45-142W2
Background Analysis Date/Time : 2-APR-2006 10:58:05
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.584	3299.388	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.590	4901.786	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5533.622	5887.583	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 129
Detector : 45-142W3
Background Analysis Date/Time : 2-APR-2006 10:58:09
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2991.668	3299.558	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.149	4901.376	2.000000	0.4800001	70.71068	95.00000
CM-244	5532.751	5886.867	2.000000	0.4800001	70.71068	95.00000

Instrument : CHAMBER 130
Detector : 45-142W5
Background Analysis Date/Time : 2-APR-2006 10:58:13
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.831	3301.623	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.787	4904.916	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5534.223	5884.439	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 131
Detector : 45-145K1
Background Analysis Date/Time : 2-APR-2006 10:58:17
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.369	3298.448	1.000000	0.2400000	100.0000	95.00000
NP-237	4432.591	4905.330	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5532.857	5887.665	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 132
Detector : 45-145K2
Background Analysis Date/Time : 2-APR-2006 10:58:20
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.018	3301.016	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4434.219	4902.195	2.000000	0.4800001	70.71068	95.00000
CM-244	5534.644	5883.351	4.000000	0.9600002	50.00000	95.00000

Instrument : CHAMBER 133
Detector : 45-145K3
Background Analysis Date/Time : 2-APR-2006 10:58:23
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2989.115	3302.033	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4435.237	4904.688	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5532.486	5884.151	1.000000	0.2400000	100.0000	95.00000

Instrument : CHAMBER 134
Detector : 45-145K4
Background Analysis Date/Time : 2-APR-2006 10:58:26
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2987.530	3301.962	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.547	4905.459	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5534.869	5887.271	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 135
Detector : 45-145K5
Background Analysis Date/Time : 2-APR-2006 10:58:30
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2990.104	3298.632	1.000000	0.2400000	100.0000	95.00000
NP-237	4434.981	4906.088	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
CM-244	5531.074	5884.261	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Instrument : CHAMBER 136
Detector : 45-145L1
Background Analysis Date/Time : 2-APR-2006 10:58:33
Background Count Time : 60000.00

Cal. Isotopes	Start Energy	End Energy	Counts in 1000 min	Counts during Cal	% Error	Confidence
GD-148	2988.496	3298.473	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000
NP-237	4437.582	4903.436	1.000000	0.2400000	100.0000	95.00000
CM-244	5532.704	5884.860	0.0000000E+00	0.0000000E+00	0.0000000E+00	95.00000

Subsection 3: Efficiency Calibration

Instrument : CHAMBER 001
Detector : 33088
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:30:52
Average Efficiency : 0.2781914
Average Efficiency Error : 7.6626688E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2990.456	3298.943	14076.00	0.2746735	1.1824497E-02	65.35928
NP-237	211.8600	28-FEB-2006	4433.436	4903.018	14340.00	0.2819934	1.4295015E-02	71.99430
CM-244	248.8200	28-FEB-2006	5530.638	5887.374	14794.00	0.2795064	1.4163047E-02	64.69388

Instrument : CHAMBER 003
Detector : 20659
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:32:34
Average Efficiency : 0.2880620
Average Efficiency Error : 7.9304650E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2988.599	3300.169	14554.00	0.2846224	1.2245077E-02	49.78555
NP-237	211.3800	28-FEB-2006	4434.674	4902.844	14694.00	0.2895928	1.4675476E-02	61.61686
CM-244	248.2800	28-FEB-2006	5535.248	5883.783	15396.00	0.2915129	1.4763834E-02	53.23063

Instrument : CHAMBER 004
Detector : 33077
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:32:51
Average Efficiency : 0.3098668
Average Efficiency Error : 8.5239913E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2987.545	3299.456	15401.00	0.3014340	1.2955099E-02	59.94693
NP-237	211.2000	28-FEB-2006	4433.646	4906.400	15919.00	0.3140544	1.5898786E-02	66.99142
CM-244	248.1000	28-FEB-2006	5531.494	5886.867	16816.00	0.3186174	1.6119311E-02	64.44215

Instrument : CHAMBER 005
Detector : 28642
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:33:05
Average Efficiency : 0.3158097
Average Efficiency Error : 8.6822659E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.709	3298.775	16078.00	0.3139968	1.3485039E-02	54.11107
NP-237	211.6800	28-FEB-2006	4434.190	4905.248	16264.00	0.3200765	1.6199514E-02	58.77632
CM-244	248.6400	28-FEB-2006	5530.463	5883.921	16620.00	0.3142197	1.5898999E-02	55.82949

Instrument : CHAMBER 007
Detector : 30416
Standard ID : AESS-007
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:35:21
Average Efficiency : 0.3047189
Average Efficiency Error : 8.3812820E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.797	3298.358	15695.00	0.3066845	1.3176420E-02	50.85197
NP-237	211.5600	28-FEB-2006	4432.556	4903.394	15403.00	0.3033007	1.5360770E-02	59.57014
CM-244	248.5200	28-FEB-2006	5533.897	5887.491	16043.00	0.3034657	1.5361345E-02	53.08852

Instrument : CHAMBER 009
Detector : 13285
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:39:51
Average Efficiency : 0.3341929
Average Efficiency Error : 9.1806399E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2987.740	3302.180	16955.00	0.3312147	1.4212075E-02	53.77267
NP-237	211.6200	28-FEB-2006	4436.826	4904.306	17080.00	0.3362575	1.7008657E-02	68.28894
CM-244	248.5800	28-FEB-2006	5530.853	5882.488	17788.00	0.3363935	1.7007809E-02	56.00669

Instrument : CHAMBER 010
Detector : 33083
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:40:04
Average Efficiency : 0.3340436
Average Efficiency Error : 9.1786785E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2992.233	3300.495	16676.00	0.3259426	1.3989601E-02	68.92194
NP-237	211.5000	28-FEB-2006	4435.514	4905.914	17301.00	0.3408116	1.7236479E-02	78.65460
CM-244	248.4600	28-FEB-2006	5535.151	5882.345	17946.00	0.3395274	1.7164614E-02	63.81354

Instrument : CHAMBER 011
Detector : 9537
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:40:58
Average Efficiency : 0.3105724
Average Efficiency Error : 8.5400529E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.769	3298.475	15819.00	0.3089387	1.3271471E-02	48.37308
NP-237	211.6800	28-FEB-2006	4433.776	4901.438	15834.00	0.3116739	1.5779305E-02	60.99158
CM-244	248.6400	28-FEB-2006	5533.457	5885.193	16490.00	0.3117799	1.5776988E-02	49.82006

Instrument : CHAMBER 012
Detector : 33085
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:16
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:41:13
Average Efficiency : 0.2681623
Average Efficiency Error : 7.3903115E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2992.283	3299.978	13668.00	0.2665664	1.1482058E-02	61.90531
NP-237	211.9200	28-FEB-2006	4432.454	4901.598	13787.00	0.2710549	1.3747970E-02	71.13239
CM-244	248.9400	28-FEB-2006	5534.285	5885.751	14169.00	0.2675734	1.3566247E-02	62.43946

Instrument : CHAMBER 013
Detector : 21084
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:41:26
Average Efficiency : 0.3412675
Average Efficiency Error : 9.3716113E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2992.308	3301.307	17507.00	0.3405094	1.4603521E-02	45.62738
NP-237	212.5200	28-FEB-2006	4433.829	4905.476	17346.00	0.3400816	1.7199026E-02	62.98444
CM-244	249.6600	28-FEB-2006	5530.551	5886.625	18245.00	0.3435482	1.7364752E-02	51.62660

Instrument : CHAMBER 016
Detector : 21086
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:45:33
Average Efficiency : 0.3303408
Average Efficiency Error : 9.0769110E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2992.386	3300.792	16669.00	0.3255388	1.3972365E-02	50.42868
NP-237	211.6800	28-FEB-2006	4437.111	4903.407	16820.00	0.3310585	1.6748626E-02	58.68690
CM-244	248.6400	28-FEB-2006	5533.819	5884.776	17810.00	0.3367283	1.7024504E-02	54.94007

Instrument : CHAMBER 017
Detector : 33203
Standard ID : AESS-017
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:45:52
Average Efficiency : 0.2902693
Average Efficiency Error : 7.9895537E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2988.693	3298.212	15015.00	0.2931568	1.2605052E-02	49.49680
NP-237	211.7400	28-FEB-2006	4432.905	4905.400	14650.00	0.2882629	1.4608623E-02	61.60561
CM-244	248.7000	28-FEB-2006	5532.198	5886.394	15257.00	0.2883977	1.4607739E-02	50.89099

Instrument : CHAMBER 018
Detector : 21063
Standard ID : AESS-018
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:17
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 16:46:43
Average Efficiency : 0.2559204
Average Efficiency Error : 7.0582652E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2988.076	3298.134	13144.00	0.2565568	1.1059588E-02	50.10976
NP-237	211.8000	28-FEB-2006	4433.036	4905.011	12933.00	0.2544221	1.2916340E-02	58.60687
CM-244	248.7600	28-FEB-2006	5535.243	5885.674	13576.00	0.2565605	1.3015677E-02	54.43167

Instrument : CHAMBER 019
Detector : 23882
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:46:59
Average Efficiency : 0.2848921
Average Efficiency Error : 7.8617986E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2989.511	3300.144	15017.00	0.2934360	1.2617028E-02	46.50811
NP-237	211.5600	28-FEB-2006	4435.855	4902.151	15150.00	0.2626681	1.3361575E-02	61.07557
CM-244	248.5200	28-FEB-2006	5531.789	5884.041	15932.00	0.3013749	1.5256786E-02	50.77583

Instrument : CHAMBER 020
Detector : 33093
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:47:46
Average Efficiency : 0.3374673
Average Efficiency Error : 9.2702135E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.758	3298.111	16991.00	0.3315554	1.4226208E-02	58.22562
NP-237	211.8000	28-FEB-2006	4435.838	4901.523	17420.00	0.3426790	1.7329575E-02	71.40521
CM-244	248.8200	28-FEB-2006	5530.915	5883.311	18048.00	0.3409902	1.7237470E-02	64.18688

Instrument : CHAMBER 021
Detector : 33893
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:48:06
Average Efficiency : 0.3097920
Average Efficiency Error : 8.5189342E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2987.969	3300.683	16019.00	0.3130153	1.3443721E-02	48.52213
NP-237	211.5600	28-FEB-2006	4434.165	4904.181	15665.00	0.3085031	1.5620876E-02	57.03367
CM-244	248.5200	28-FEB-2006	5533.125	5885.623	16217.00	0.3067660	1.5526365E-02	49.52942

Instrument : CHAMBER 023
Detector : 22873
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 12:02:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 16:49:38
Average Efficiency : 0.2765626
Average Efficiency Error : 7.6345578E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.365	3300.653	13199.00	0.2577709	1.1110976E-02	64.03100
NP-237	211.6800	28-FEB-2006	4432.587	4902.786	15014.00	0.2955187	1.4971492E-02	68.68533
CM-244	248.6400	28-FEB-2006	5533.585	5885.616	15406.00	0.2912842	1.4752124E-02	67.86546

Instrument : CHAMBER 026
Detector : 34427
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:00
Average Efficiency : 0.3111628
Average Efficiency Error : 5.9400578E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2988.396	3300.299	15946.00	0.3116805	7.0337788E-03	55.54451
NP-237	211.5000	28-FEB-2006	4432.951	4903.551	15774.00	0.3107190	1.5731754E-02	60.78556
CM-244	248.4000	28-FEB-2006	5534.085	5882.486	16328.00	0.3090416	1.5640259E-02	54.94981

Instrument : CHAMBER 027
Detector : 31436
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:17
Average Efficiency : 0.2851310
Average Efficiency Error : 5.4681562E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2990.641	3298.501	14516.00	0.2838850	6.4452491E-03	62.80336
NP-237	211.3800	28-FEB-2006	4435.554	4903.960	14590.00	0.2875520	1.4573419E-02	61.53238
CM-244	248.2800	28-FEB-2006	5535.178	5885.600	15268.00	0.2891185	1.4644115E-02	66.27240

Instrument : CHAMBER 028
Detector : 21056
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:41
Average Efficiency : 0.2688177
Average Efficiency Error : 5.1718531E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2991.862	3298.519	13660.00	0.2673638	6.0955230E-03	60.48663
NP-237	211.2000	28-FEB-2006	4437.162	4904.527	13850.00	0.2732216	1.3856977E-02	78.59827
CM-244	248.1000	28-FEB-2006	5534.678	5884.670	14348.00	0.2718943	1.3782959E-02	69.00627

Instrument : CHAMBER 029
Detector : 30419
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:02:56
Average Efficiency : 0.2803768
Average Efficiency Error : 5.3804033E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2991.643	3298.009	14347.00	0.2801967	6.3665169E-03	50.13651
NP-237	211.6800	28-FEB-2006	4436.124	4903.513	14180.00	0.2791024	1.4150602E-02	62.17907
CM-244	248.6400	28-FEB-2006	5533.909	5884.139	14945.00	0.2825924	1.4317507E-02	55.61591

Instrument : CHAMBER 030
Detector : 30420
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:51
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:03:11
Average Efficiency : 0.3032622
Average Efficiency Error : 5.7966388E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2992.381	3300.032	15532.00	0.3040040	6.8717906E-03	53.70943
NP-237	211.2000	28-FEB-2006	4435.171	4901.399	15235.00	0.3005646	1.5224237E-02	63.92149
CM-244	248.1000	28-FEB-2006	5532.938	5887.226	15953.00	0.3023090	1.5303830E-02	56.83110

Instrument : CHAMBER 032
Detector : 33207
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:09
Average Efficiency : 0.3210600
Average Efficiency Error : 9.3805837E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2992.438	3301.011	16394.00	0.3199127	1.6193897E-02	48.92264
NP-237	211.8600	28-FEB-2006	4437.450	4903.298	16174.00	0.3180676	1.6098870E-02	62.34297
CM-244	248.8800	28-FEB-2006	5533.518	5886.674	17224.00	0.3253718	1.6456470E-02	58.56594

Instrument : CHAMBER 033
Detector : 28647
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:20
Average Efficiency : 0.3189350
Average Efficiency Error : 9.3192765E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2991.128	3301.778	16210.00	0.3166678	1.6031807E-02	50.20483
NP-237	211.6200	28-FEB-2006	4433.277	4905.752	16119.00	0.3173501	1.6063211E-02	65.81153
CM-244	248.5800	28-FEB-2006	5531.202	5887.135	17074.00	0.3229274	1.6334468E-02	56.14278

Instrument : CHAMBER 034
Detector : 32697
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:32
Average Efficiency : 0.3285644
Average Efficiency Error : 9.5973080E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2987.740	3297.727	16717.00	0.3267508	1.6536236E-02	46.19645
NP-237	211.5000	28-FEB-2006	4436.424	4906.295	16590.00	0.3267619	1.6533978E-02	65.57603
CM-244	248.4600	28-FEB-2006	5532.067	5883.683	17561.00	0.3322987	1.6803153E-02	52.60378

Instrument : CHAMBER 035
Detector : 29271
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:44
Average Efficiency : 0.3070081
Average Efficiency Error : 8.9746779E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.597	3300.316	15823.00	0.3090232	1.5649391E-02	58.07399
NP-237	211.6800	28-FEB-2006	4435.093	4902.062	15491.00	0.3048278	1.5437050E-02	77.73704
CM-244	248.6400	28-FEB-2006	5533.546	5887.289	16248.00	0.3072308	1.5549533E-02	61.23973

Instrument : CHAMBER 036
Detector : 29275
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:53
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:04:58
Average Efficiency : 0.3204660
Average Efficiency Error : 9.3638916E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2990.101	3302.011	16111.00	0.3142187	1.5908994E-02	70.87608
NP-237	211.9200	28-FEB-2006	4436.212	4902.690	16497.00	0.3243046	1.6410707E-02	86.38094
CM-244	248.9400	28-FEB-2006	5530.586	5883.211	17117.00	0.3232544	1.6350558E-02	83.27386

Instrument : CHAMBER 037
Detector : 32690
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:55
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:05:37
Average Efficiency : 0.3298278
Average Efficiency Error : 6.2852711E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2990.331	3300.070	16648.00	0.3238085	7.2884769E-03	65.32179
NP-237	212.5200	28-FEB-2006	4435.120	4902.289	17586.00	0.3447773	1.7433835E-02	73.49030
CM-244	249.6600	28-FEB-2006	5534.121	5882.713	18584.00	0.3498755	1.7681209E-02	65.58303

Instrument : CHAMBER 038
Detector : 19323
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:55
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:05:48
Average Efficiency : 0.3550652
Average Efficiency Error : 6.7386958E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2992.203	3301.129	18140.00	0.3537907	7.9244133E-03	44.64486
NP-237	211.9800	28-FEB-2006	4436.340	4904.950	18294.00	0.3595673	1.8173877E-02	68.25054
CM-244	249.0000	28-FEB-2006	5534.574	5885.451	18924.00	0.3572362	1.8049749E-02	49.98671

Instrument : CHAMBER 040
Detector : 30446
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:55
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 12:06:33
Average Efficiency : 0.3232525
Average Efficiency Error : 6.1597549E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.636	3301.603	16579.00	0.3237876	7.2898054E-03	47.52289
NP-237	211.6800	28-FEB-2006	4435.733	4904.719	16163.00	0.3181213	1.6101720E-02	60.46703
CM-244	248.6400	28-FEB-2006	5532.976	5885.423	17235.00	0.3258936	1.6482741E-02	51.53939

Instrument	CHAMBER 041
Detector	22834
Standard ID	AESS-017
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 07:45:55
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 12:06:46
Average Efficiency	0.3322699
Average Efficiency Error	6.3254358E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2987.681	3302.193	16913.00	0.3302204	7.4258945E-03	49.34238
NP-237	211.7400	28-FEB-2006	4432.502	4905.743	17206.00	0.3385508	1.7123217E-02	64.06297
CM-244	248.7000	28-FEB-2006	5533.298	5885.604	17818.00	0.3368361	1.7029859E-02	51.09551

Instrument	CHAMBER 042
Detector	32695
Standard ID	AESS-018
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 07:45:55
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 12:07:02
Average Efficiency	0.3361240
Average Efficiency Error	6.3955071E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2990.651	3300.194	17115.00	0.3340732	7.5073489E-03	62.01425
NP-237	211.8000	28-FEB-2006	4435.708	4903.810	17181.00	0.3379442	1.7092843E-02	71.83335
CM-244	248.7600	28-FEB-2006	5531.417	5883.758	18276.00	0.3453112	1.7453661E-02	58.83952

Instrument	CHAMBER 043
Detector	42470
Standard ID	AESS-019
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 07:45:57
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	4-APR-2006 12:07:20
Average Efficiency	0.3229622
Average Efficiency Error	6.1558355E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.168	3298.326	16460.00	0.3216395	7.2445576E-03	53.07267
NP-237	211.5600	28-FEB-2006	4436.901	4902.013	16611.00	0.3271490	1.6553231E-02	63.02407
CM-244	248.5200	28-FEB-2006	5535.121	5886.262	17214.00	0.3256539	1.6470846E-02	50.82504

Instrument : CHAMBER 044
Detector : 34433
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:07:31
Average Efficiency : 0.3240791
Average Efficiency Error : 6.1765807E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.004	3298.648	16495.00	0.3218836	7.2491337E-03	50.22718
NP-237	211.8000	28-FEB-2006	4433.632	4906.174	16705.00	0.3285425	1.6622754E-02	66.23325
CM-244	248.8200	28-FEB-2006	5532.967	5887.129	17532.00	0.3312699	1.6751442E-02	56.69666

Instrument : CHAMBER 045
Detector : 34430
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:07:49
Average Efficiency : 0.2941546
Average Efficiency Error : 5.6320531E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2992.438	3301.033	14988.00	0.2928756	6.6353632E-03	49.71279
NP-237	211.5600	28-FEB-2006	4436.365	4906.490	15086.00	0.2970952	1.5050440E-02	64.58119
CM-244	248.5200	28-FEB-2006	5535.004	5886.982	15743.00	0.2978074	1.5078431E-02	59.00225

Instrument : CHAMBER 046
Detector : 42471
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:08:03
Average Efficiency : 0.3344716
Average Efficiency Error : 6.3659614E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.741	3299.741	16999.00	0.3319905	7.4634906E-03	48.96851
NP-237	211.6800	28-FEB-2006	4435.900	4904.967	17273.00	0.3399139	1.7191468E-02	65.78371
CM-244	248.6400	28-FEB-2006	5532.671	5884.488	18104.00	0.3422939	1.7302830E-02	53.33138

Instrument : CHAMBER 047
Detector : 30449
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:08:14
Average Efficiency : 0.2966904
Average Efficiency Error : 5.6765815E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.322	3298.103	15222.00	0.2972857	6.7285444E-03	49.84683
NP-237	211.6800	28-FEB-2006	4433.780	4903.899	15016.00	0.2955441	1.4972775E-02	59.65280
CM-244	248.6400	28-FEB-2006	5532.276	5884.114	15597.00	0.2948985	1.4932883E-02	51.68388

Instrument : CHAMBER 048
Detector : 42483
Standard ID : AESS-024
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 07:45:57
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 12:08:24
Average Efficiency : 0.3119769
Average Efficiency Error : 5.9553082E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2989.922	3300.161	15954.00	0.3119224	7.0390208E-03	55.83012
NP-237	211.4400	28-FEB-2006	4434.180	4904.923	15787.00	0.3110589	1.5748808E-02	72.44879
CM-244	248.4000	28-FEB-2006	5533.436	5885.010	16547.00	0.3131823	1.5847316E-02	61.06746

Instrument : CHAMBER 065
Detector : 21087
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:05:24
Average Efficiency : 0.3027465
Average Efficiency Error : 5.7869283E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2992.500	3301.569	15511.00	0.3026739	6.8422910E-03	49.27271
NP-237	211.8600	28-FEB-2006	4436.593	4904.814	15341.00	0.3016613	1.5278513E-02	63.47648
CM-244	248.8200	28-FEB-2006	5533.641	5883.942	16102.00	0.3042169	1.5398668E-02	52.45229

Instrument : CHAMBER 066
Detector : 38159
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:05:41
Average Efficiency : 0.2898386
Average Efficiency Error : 5.5523221E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2991.351	3299.570	14848.00	0.2902116	6.5790205E-03	54.22055
NP-237	211.5000	28-FEB-2006	4435.367	4906.503	14731.00	0.2901337	1.4702437E-02	64.20898
CM-244	248.4000	28-FEB-2006	5531.751	5885.195	15203.00	0.2877176	1.4573953E-02	57.41096

Instrument : CHAMBER 068
Detector : 33204
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:06:11
Average Efficiency : 0.2982503
Average Efficiency Error : 5.7051168E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2989.458	3302.482	15312.00	0.2996904	6.7803976E-03	66.72219
NP-237	211.2000	28-FEB-2006	4437.019	4902.188	15036.00	0.2966104	1.5026535E-02	82.73407
CM-244	248.1000	28-FEB-2006	5531.579	5884.315	15461.00	0.2929541	1.4836024E-02	72.39137

Instrument : CHAMBER 069
Detector : 39172
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:06:22
Average Efficiency : 0.2872442
Average Efficiency Error : 5.5063334E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2991.937	3302.037	14638.00	0.2858726	6.4867456E-03	52.69576
NP-237	211.6800	28-FEB-2006	4433.758	4901.912	14877.00	0.2928176	1.4836427E-02	60.78927
CM-244	248.6400	28-FEB-2006	5535.302	5884.863	15275.00	0.2888012	1.4627955E-02	53.21272

Instrument : CHAMBER 070
Detector : 33207
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:10
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:06:32
Average Efficiency : 0.3410026
Average Efficiency Error : 6.4845588E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2987.764	3299.302	17333.00	0.3392459	7.6180245E-03	53.32024
NP-237	211.2000	28-FEB-2006	4432.603	4904.338	17596.00	0.3470635	1.7549409E-02	63.32718
CM-244	248.1000	28-FEB-2006	5531.790	5887.167	18166.00	0.3442082	1.7398918E-02	55.68260

Instrument : CHAMBER 072
Detector : 33210
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:11
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:07:20
Average Efficiency : 0.2718624
Average Efficiency Error : 5.2260533E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.642	3302.500	13882.00	0.2708864	6.1688591E-03	78.20691
NP-237	211.8600	28-FEB-2006	4434.229	4902.517	13764.00	0.2706604	1.3728318E-02	68.85778
CM-244	248.8800	28-FEB-2006	5533.565	5883.889	14730.00	0.2782284	1.4099089E-02	58.98390

Instrument : CHAMBER 073
Detector : 33211
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:11
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:07:31
Average Efficiency : 0.3248378
Average Efficiency Error : 6.1892127E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2990.209	3299.359	16628.00	0.3248250	7.3118629E-03	52.98417
NP-237	211.6200	28-FEB-2006	4435.813	4905.119	16178.00	0.3184740	1.6119437E-02	62.15504
CM-244	248.5800	28-FEB-2006	5530.447	5887.394	17545.00	0.3317996	1.6778087E-02	56.17911

Instrument : CHAMBER 075
Detector : 29976
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:11
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:07:53
Average Efficiency : 0.3238373
Average Efficiency Error : 6.1713755E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.804	3301.738	16526.00	0.3227443	7.2676861E-03	50.99773
NP-237	211.6800	28-FEB-2006	4436.078	4904.005	16602.00	0.3267108	1.6531264E-02	64.22369
CM-244	248.6400	28-FEB-2006	5532.428	5882.500	17275.00	0.3266147	1.6518781E-02	59.07774

Instrument : CHAMBER 076
Detector : 33213
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:11
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:08:02
Average Efficiency : 0.3136021
Average Efficiency Error : 5.9847333E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2990.982	3301.271	16036.00	0.3127477	7.0554069E-03	52.31974
NP-237	211.9200	28-FEB-2006	4435.792	4906.032	16070.00	0.3159233	1.5991600E-02	63.89199
CM-244	248.9400	28-FEB-2006	5532.284	5884.164	16716.00	0.3156649	1.5971025E-02	56.41280

Instrument : CHAMBER 077
Detector : 28239
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:16
Average Efficiency : 0.3282876
Average Efficiency Error : 6.2494567E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2990.320	3302.291	16964.00	0.3299461	7.4184034E-03	49.98071
NP-237	212.5200	28-FEB-2006	4434.458	4904.534	16485.00	0.3231252	1.6351206E-02	66.72607
CM-244	249.6600	28-FEB-2006	5534.090	5887.188	17279.00	0.3253554	1.6455045E-02	48.65668

Instrument : CHAMBER 078
Detector : 34425
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:26
Average Efficiency : 0.3266231
Average Efficiency Error : 6.2230360E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2992.430	3298.209	16615.00	0.3240396	7.2945217E-03	49.76765
NP-237	211.9800	28-FEB-2006	4433.493	4903.776	16900.00	0.3321434	1.6802609E-02	62.23470
CM-244	249.0000	28-FEB-2006	5534.483	5883.260	17741.00	0.3349401	1.6934805E-02	53.02275

Instrument : CHAMBER 079
Detector : 28408
Standard ID : AESS-015
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:37
Average Efficiency : 0.3381511
Average Efficiency Error : 6.4334050E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.549	3301.048	17162.00	0.3348904	7.5245029E-03	58.89482
NP-237	211.8600	28-FEB-2006	4435.951	4904.750	17588.00	0.3458672	1.7488951E-02	69.24126
CM-244	248.8800	28-FEB-2006	5532.313	5884.158	18433.00	0.3481725	1.7596556E-02	62.07035

Instrument : CHAMBER 080
Detector : 29269
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:12
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 12:08:46
Average Efficiency : 0.3413618
Average Efficiency Error : 6.4887921E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.355	3300.887	17518.00	0.3421173	7.6778606E-03	54.84035
NP-237	211.6800	28-FEB-2006	4437.124	4904.027	17076.00	0.3360595	1.6998719E-02	70.53491
CM-244	248.6400	28-FEB-2006	5534.833	5882.541	18143.00	0.3430255	1.7339373E-02	59.19316

Instrument : CHAMBER 081
Detector : 28243
Standard ID : AESS-017
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 5-APR-2006 09:52:15
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 5-APR-2006 14:20:00
Average Efficiency : 0.2709154
Average Efficiency Error : 5.2182535E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2988.337	3300.967	13526.00	0.2640979	6.0252789E-03	74.73094
NP-237	211.7400	28-FEB-2006	4435.244	4901.705	14659.00	0.2884400	1.4617478E-02	76.53771
CM-244	248.7000	28-FEB-2006	5534.853	5883.115	15575.00	0.2944268	1.4909291E-02	67.72768

Instrument : CHAMBER 083
Detector : 34436
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:09:35
Average Efficiency : 0.3063384
Average Efficiency Error : 5.8566006E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2991.885	3297.745	15476.00	0.3024036	6.8371557E-03	53.97715
NP-237	211.5600	28-FEB-2006	4435.182	4902.448	16168.00	0.3183721	1.6114395E-02	65.19810
CM-244	248.5200	28-FEB-2006	5533.629	5886.856	16706.00	0.3160093	1.5988560E-02	59.26429

Instrument : CHAMBER 084
Detector : 29953
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:09:48
Average Efficiency : 0.3377420
Average Efficiency Error : 6.4240936E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.809	3299.845	17241.00	0.3364322	7.5571463E-03	45.28139
NP-237	211.8000	28-FEB-2006	4435.274	4905.090	17241.00	0.3390163	1.7146526E-02	64.38337
CM-244	248.8200	28-FEB-2006	5535.465	5886.345	18173.00	0.3433445	1.7355187E-02	52.99788

Instrument : CHAMBER 085
Detector : 30451
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:02
Average Efficiency : 0.2997026
Average Efficiency Error : 5.7319975E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.388	3298.321	15330.00	0.2995507	6.7767296E-03	51.54943
NP-237	211.5600	28-FEB-2006	4434.734	4902.750	15266.00	0.3006592	1.5228639E-02	59.35664
CM-244	248.5200	28-FEB-2006	5530.623	5885.465	15834.00	0.2995146	1.5163762E-02	54.82895

Instrument : CHAMBER 086
Detector : 29278
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:24
Average Efficiency : 0.2629639
Average Efficiency Error : 5.0652758E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.939	3300.647	13365.00	0.2610116	5.9599294E-03	51.29673
NP-237	211.6800	28-FEB-2006	4432.832	4902.859	13621.00	0.2680805	1.3599468E-02	59.09101
CM-244	248.6400	28-FEB-2006	5530.458	5886.876	14175.00	0.2680037	1.3587984E-02	51.32809

Instrument : CHAMBER 087
Detector : 34430
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:36
Average Efficiency : 0.2783446
Average Efficiency Error : 5.3436500E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.850	3299.145	14228.00	0.2778656	6.3170986E-03	45.75569
NP-237	211.6800	28-FEB-2006	4433.685	4904.783	14271.00	0.2804829	1.4219985E-02	56.29552
CM-244	248.6400	28-FEB-2006	5533.892	5885.860	14737.00	0.2786293	1.4119316E-02	52.11374

Instrument : CHAMBER 088
Detector : 30434
Standard ID : AESS-024
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 06:54:13
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 12:10:54
Average Efficiency : 0.2708718
Average Efficiency Error : 5.2093272E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2991.733	3298.324	13762.00	0.2690588	6.1309491E-03	70.44978
NP-237	211.4400	28-FEB-2006	4434.854	4901.741	13876.00	0.2734241	1.3866881E-02	84.52332
CM-244	248.4000	28-FEB-2006	5531.597	5882.583	14679.00	0.2778009	1.4078071E-02	70.46585

Instrument : CHAMBER 089
Detector : 21087
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:05:32
Average Efficiency : 0.2906057
Average Efficiency Error : 8.5010817E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.018	3301.225	14810.00	0.2889985	1.4647639E-02	48.13472
NP-237	211.8600	28-FEB-2006	4432.655	4904.531	14711.00	0.2893088	1.4660804E-02	59.05686
CM-244	248.8200	28-FEB-2006	5531.146	5885.550	15539.00	0.2935953	1.4867556E-02	51.89399

Instrument : CHAMBER 090
Detector : 38159
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:06:16
Average Efficiency : 0.3262078
Average Efficiency Error : 9.5290253E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2989.511	3299.809	16611.00	0.3246745	1.6432377E-02	43.47319
NP-237	211.5000	28-FEB-2006	4434.211	4904.337	16570.00	0.3264199	1.6516838E-02	66.74939
CM-244	248.4000	28-FEB-2006	5530.381	5887.548	17307.00	0.3275529	1.6565884E-02	47.20604

Instrument	CHAMBER 091
Detector	33205
Standard ID	AESS-003
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 16:38:39
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	4-APR-2006 21:06:36
Average Efficiency	0.3295136
Average Efficiency Error	9.6244970E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2988.614	3302.446	16877.00	0.3300617	1.6701948E-02	49.16127
NP-237	211.3800	28-FEB-2006	4435.933	4903.299	16753.00	0.3302219	1.6707057E-02	67.62949
CM-244	248.2800	28-FEB-2006	5530.786	5885.646	17335.00	0.3282727	1.6601983E-02	54.15368

Instrument	CHAMBER 092
Detector	33204
Standard ID	AESS-004
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 18:48:42
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	3-APR-2006 23:08:02
Average Efficiency	0.3230760
Average Efficiency Error	9.4387615E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2991.837	3299.694	16466.00	0.3222808	1.6312918E-02	54.19599
NP-237	211.2000	28-FEB-2006	4434.184	4904.789	16328.00	0.3221140	1.6301801E-02	61.31636
CM-244	248.1000	28-FEB-2006	5534.672	5882.398	17144.00	0.3248603	1.6431469E-02	53.39663

Instrument	CHAMBER 093
Detector	33206
Standard ID	AESS-005
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	3-APR-2006 18:48:42
Calibration Count Time	239.9998
Efficiency Calibration Date/Time	3-APR-2006 23:08:14
Average Efficiency	0.3278230
Average Efficiency Error	9.5757600E-03
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2991.432	3297.831	16618.00	0.3245451	1.6425749E-02	53.44844
NP-237	211.6800	28-FEB-2006	4432.503	4906.496	16789.00	0.3304530	1.6718345E-02	71.37048
CM-244	248.6400	28-FEB-2006	5534.120	5886.021	17378.00	0.3285792	1.6617021E-02	55.20338

Instrument : CHAMBER 094
Detector : 33207
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:42
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 3-APR-2006 23:08:34
Average Efficiency : 0.3064194
Average Efficiency Error : 8.9583928E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2991.673	3298.910	15769.00	0.3086388	1.5630580E-02	47.47134
NP-237	211.2000	28-FEB-2006	4437.305	4902.611	15693.00	0.3095863	1.5675372E-02	59.32807
CM-244	248.1000	28-FEB-2006	5532.741	5886.161	15901.00	0.3013068	1.5253706E-02	48.40099

Instrument : CHAMBER 096
Detector : 30429
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:43
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:09:48
Average Efficiency : 0.3211957
Average Efficiency Error : 9.3840715E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.567	3301.392	16420.00	0.3204154	1.6219035E-02	48.33763
NP-237	211.8600	28-FEB-2006	4433.899	4903.007	16366.00	0.3218482	1.6287910E-02	62.84891
CM-244	248.8800	28-FEB-2006	5534.841	5883.364	17011.00	0.3213297	1.6254338E-02	53.34020

Instrument : CHAMBER 098
Detector : 30431
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:43
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:10:26
Average Efficiency : 0.3423861
Average Efficiency Error : 9.9960957E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2991.193	3297.595	17461.00	0.3412881	1.7263338E-02	48.27054
NP-237	211.5000	28-FEB-2006	4433.217	4902.776	17377.00	0.3422896	1.7310398E-02	71.89059
CM-244	248.4600	28-FEB-2006	5531.761	5884.598	18159.00	0.3435947	1.7367978E-02	56.75472

Instrument : CHAMBER 099
Detector : 30432
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 16:38:43
Calibration Count Time : 239.9998
Efficiency Calibration Date/Time : 4-APR-2006 21:07:16
Average Efficiency : 0.3424250
Average Efficiency Error : 9.9976454E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.302	3301.806	17277.00	0.3374230	1.7069872E-02	61.73035
NP-237	211.6800	28-FEB-2006	4434.583	4904.427	17554.00	0.3455301	1.7472234E-02	70.83485
CM-244	248.6400	28-FEB-2006	5532.529	5887.439	18221.00	0.3445468	1.7415471E-02	58.75341

Instrument : CHAMBER 101
Detector : 31696
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:11:17
Average Efficiency : 0.3289411
Average Efficiency Error : 6.2637404E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2988.838	3300.184	16815.00	0.3270522	7.3571443E-03	74.97670
NP-237	212.5200	28-FEB-2006	4437.473	4904.200	16905.00	0.3314256	1.6766205E-02	82.64299
CM-244	249.6600	28-FEB-2006	5533.420	5882.862	17869.00	0.3364823	1.7011438E-02	82.36337

Instrument : CHAMBER 102
Detector : 30438
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:11:38
Average Efficiency : 0.3398052
Average Efficiency Error : 6.4618774E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2990.981	3300.175	17329.00	0.3379689	7.5894571E-03	50.78636
NP-237	211.9800	28-FEB-2006	4436.167	4905.013	17442.00	0.3427780	1.7334390E-02	60.55743
CM-244	249.0000	28-FEB-2006	5534.874	5885.847	18355.00	0.3465500	1.7515350E-02	55.09371

Instrument : CHAMBER 103
Detector : 30437
Standard ID : AESS-015
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:11:50
Average Efficiency : 0.3428698
Average Efficiency Error : 6.5169050E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2987.494	3300.797	17526.00	0.3419976	7.6749846E-03	52.55986
NP-237	211.8600	28-FEB-2006	4433.628	4906.553	17575.00	0.3456304	1.7477097E-02	70.84139
CM-244	248.8800	28-FEB-2006	5534.963	5885.168	18244.00	0.3446204	1.7418953E-02	56.82663

Instrument : CHAMBER 104
Detector : 30436
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:12:05
Average Efficiency : 0.3178734
Average Efficiency Error : 6.0614208E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.844	3302.458	16342.00	0.3191546	7.1916869E-03	48.79966
NP-237	211.6800	28-FEB-2006	4432.663	4904.432	16000.00	0.3149317	1.5942214E-02	61.83171
CM-244	248.6400	28-FEB-2006	5531.252	5885.942	16635.00	0.3145305	1.5914533E-02	54.39241

Instrument : CHAMBER 106
Detector : 45382
Standard ID : AESS-018
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:13:35
Average Efficiency : 0.3366815
Average Efficiency Error : 6.4043794E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2991.094	3299.001	17214.00	0.3360010	7.5481492E-03	67.49383
NP-237	211.8000	28-FEB-2006	4435.781	4902.986	17151.00	0.3373776	1.7064495E-02	78.07959
CM-244	248.7600	28-FEB-2006	5530.755	5886.020	17964.00	0.3394951	1.7162759E-02	66.37016

Instrument : CHAMBER 107
Detector : 31697
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:45
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:13:46
Average Efficiency : 0.3279476
Average Efficiency Error : 6.2480466E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.547	3299.714	16632.00	0.3249958	7.3156110E-03	56.35443
NP-237	211.5600	28-FEB-2006	4437.183	4902.948	17025.00	0.3353024	1.6960930E-02	65.36469
CM-244	248.5200	28-FEB-2006	5532.612	5885.240	17789.00	0.3365124	1.7013798E-02	57.27279

Instrument : CHAMBER 109
Detector : 31693
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:45
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:14:12
Average Efficiency : 0.3172656
Average Efficiency Error : 6.0536368E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.084	3299.184	16099.00	0.3145808	7.0950659E-03	55.32108
NP-237	211.5600	28-FEB-2006	4432.535	4905.875	16551.00	0.3259623	1.6493894E-02	66.04156
CM-244	248.5200	28-FEB-2006	5532.554	5883.883	17073.00	0.3229679	1.6336529E-02	53.16661

Instrument : CHAMBER 110
Detector : 30447
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 16:38:46
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 21:08:36
Average Efficiency : 0.2903691
Average Efficiency Error : 5.5707125E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2992.012	3300.888	14540.00	0.2839686	6.4464426E-03	65.21424
NP-237	211.6800	28-FEB-2006	4433.842	4901.474	15514.00	0.3053748	1.5464325E-02	67.45113
CM-244	248.6400	28-FEB-2006	5530.607	5884.669	16569.00	0.3133079	1.5853422E-02	61.19852

Instrument : CHAMBER 111
Detector : 30448
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:45
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:15:36
Average Efficiency : 0.3388006
Average Efficiency Error : 6.4431382E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.793	3301.004	17314.00	0.3381375	7.5936201E-03	56.34806
NP-237	211.6800	28-FEB-2006	4435.981	4906.484	17500.00	0.3444386	1.7417673E-02	71.36749
CM-244	248.6400	28-FEB-2006	5530.639	5883.341	17810.00	0.3367471	1.7025441E-02	55.06728

Instrument : CHAMBER 112
Detector : 30449
Standard ID : AESS-024
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 3-APR-2006 18:48:45
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 3-APR-2006 23:15:47
Average Efficiency : 0.3139323
Average Efficiency Error : 5.9938701E-03
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2991.870	3298.269	15891.00	0.3106862	7.0128250E-03	50.73674
NP-237	211.4400	28-FEB-2006	4436.313	4903.586	16308.00	0.3213587	1.6263809E-02	62.04948
CM-244	248.4000	28-FEB-2006	5533.752	5883.818	17126.00	0.3241271	1.6394578E-02	52.78824

Instrument : CHAMBER 113
Detector : 45-111B4
Standard ID : AESS-001
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:36
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:02:58
Average Efficiency : 0.3703099
Average Efficiency Error : 1.0161426E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2991.835	3301.848	18597.00	0.3629034	1.5549773E-02	64.50990
NP-237	211.8600	28-FEB-2006	4433.613	4901.946	18886.00	0.3714283	1.8767057E-02	90.91785
CM-244	248.8200	28-FEB-2006	5530.358	5885.560	20134.00	0.3804419	1.9210188E-02	71.11305

Instrument : CHAMBER 114
Detector : 45-111B5
Standard ID : AESS-007
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:40
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:03:22
Average Efficiency : 0.3901447
Average Efficiency Error : 1.0698882E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.875	3299.211	19570.00	0.3824124	1.6373768E-02	64.95810
NP-237	211.5600	28-FEB-2006	4436.329	4903.130	20139.00	0.3966328	2.0027624E-02	80.48977
CM-244	248.5200	28-FEB-2006	5535.235	5884.346	20889.00	0.3951845	1.9947579E-02	69.68978

Instrument : CHAMBER 115
Detector : 45-132EE5
Standard ID : AESS-002
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:44
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:03:37
Average Efficiency : 0.3799683
Average Efficiency Error : 1.0422695E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2990.466	3300.287	19152.00	0.3743467	1.6033292E-02	67.16986
NP-237	211.5000	28-FEB-2006	4435.908	4903.427	19268.00	0.3795908	1.9175535E-02	85.64700
CM-244	248.4000	28-FEB-2006	5530.487	5884.796	20541.00	0.3887886	1.9627862E-02	69.09605

Instrument : CHAMBER 116
Detector : 45-132FF2
Standard ID : AESS-008
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:47
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:03:51
Average Efficiency : 0.3906634
Average Efficiency Error : 1.0711731E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2988.161	3302.097	19763.00	0.3856568	1.6510434E-02	61.93254
NP-237	211.8600	28-FEB-2006	4435.898	4903.366	20060.00	0.3945222	1.9921809E-02	83.61416
CM-244	248.8800	28-FEB-2006	5530.965	5885.878	20861.00	0.3940839	1.9892277E-02	67.87167

Instrument : CHAMBER 117
Detector : 45-132FF3
Standard ID : AESS-003
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:52
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:04:04
Average Efficiency : 0.3838457
Average Efficiency Error : 1.0529065E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.3600	28-FEB-2006	2987.574	3297.481	19157.00	0.3746493	1.6046192E-02	69.46350
NP-237	211.3800	28-FEB-2006	4432.916	4905.417	19746.00	0.3892191	1.9657088E-02	87.03203
CM-244	248.2800	28-FEB-2006	5531.962	5885.886	20722.00	0.3924041	1.9808734E-02	73.89016

Instrument : CHAMBER 118
Detector : 45-132FF4
Standard ID : AESS-009
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:56
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:04:21
Average Efficiency : 0.3946549
Average Efficiency Error : 1.0820382E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6000	28-FEB-2006	2989.600	3298.996	19935.00	0.3894384	1.6670343E-02	63.05709
NP-237	211.6200	28-FEB-2006	4434.069	4901.807	20060.00	0.3949601	1.9943934E-02	82.03598
CM-244	248.5800	28-FEB-2006	5534.903	5884.430	21258.00	0.4020683	2.0291740E-02	65.29355

Instrument : CHAMBER 119
Detector : 45-132FF5
Standard ID : AESS-004
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:00:59
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:04:33
Average Efficiency : 0.3958072
Average Efficiency Error : 1.0851006E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2987.490	3300.068	20085.00	0.3931205	1.6826242E-02	64.97130
NP-237	211.2000	28-FEB-2006	4434.344	4905.254	20104.00	0.3966229	2.0027457E-02	79.50690
CM-244	248.1000	28-FEB-2006	5530.554	5884.197	21046.00	0.3988287	2.0130115E-02	68.84389

Instrument : CHAMBER 120
Detector : 45-142F1
Standard ID : AESS-010
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:03
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:08
Average Efficiency : 0.3892356
Average Efficiency Error : 1.0674394E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4800	28-FEB-2006	2991.710	3300.418	19511.00	0.3813637	1.6329555E-02	65.80540
NP-237	211.5000	28-FEB-2006	4437.274	4903.259	19969.00	0.3933960	1.9865829E-02	87.35593
CM-244	248.4600	28-FEB-2006	5533.634	5886.862	20972.00	0.3968505	2.0030931E-02	68.58372

Instrument : CHAMBER 121
Detector : 45-142J4
Standard ID : AESS-005
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:07
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:19
Average Efficiency : 0.3879517
Average Efficiency Error : 1.0639026E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2988.124	3301.600	19515.00	0.3811294	1.6319472E-02	66.81467
NP-237	211.6800	28-FEB-2006	4434.163	4906.581	19891.00	0.3915263	1.9772179E-02	83.76527
CM-244	248.6400	28-FEB-2006	5533.976	5883.453	20862.00	0.3944832	1.9912424E-02	67.69315

Instrument : CHAMBER 122
Detector : 45-142J5
Standard ID : AESS-011
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:10
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:33
Average Efficiency : 0.3964319
Average Efficiency Error : 1.0868002E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.061	3298.780	20106.00	0.3926716	1.6806791E-02	65.77823
NP-237	211.6800	28-FEB-2006	4436.620	4903.419	20147.00	0.3965701	2.0024376E-02	83.48605
CM-244	248.6400	28-FEB-2006	5535.258	5884.098	21247.00	0.4017632	2.0276442E-02	70.88770

Instrument : CHAMBER 123
Detector : 45-142V1
Standard ID : AESS-006
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:15
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:05:57
Average Efficiency : 0.3805304
Average Efficiency Error : 1.0439763E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.1800	28-FEB-2006	2990.387	3299.522	18959.00	0.3710815	1.5895747E-02	68.66263
NP-237	211.2000	28-FEB-2006	4437.442	4903.641	19446.00	0.3836367	1.9378122E-02	86.99185
CM-244	248.1000	28-FEB-2006	5534.110	5887.297	20682.00	0.3919307	1.9785201E-02	66.84405

Instrument : CHAMBER 124
Detector : 45-142V2
Standard ID : AESS-012
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:18
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:06:12
Average Efficiency : 0.3873872
Average Efficiency Error : 1.0623961E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2989.443	3297.987	19472.00	0.3797709	1.6261807E-02	64.41782
NP-237	211.9200	28-FEB-2006	4435.559	4902.411	19887.00	0.3909993	1.9745609E-02	86.15575
CM-244	248.9400	28-FEB-2006	5534.467	5883.494	20923.00	0.3951599	1.9946033E-02	70.30408

Instrument : CHAMBER 125
Detector : 45-142V3
Standard ID : AESS-013
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:21
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:06:28
Average Efficiency : 0.3867655
Average Efficiency Error : 1.0609177E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	220.5600	28-FEB-2006	2992.436	3301.693	19282.00	0.3750422	1.6061539E-02	55.83823
NP-237	212.5200	28-FEB-2006	4433.216	4903.410	20074.00	0.3935665	1.9873424E-02	88.64875
CM-244	249.6600	28-FEB-2006	5531.615	5883.226	21143.00	0.3981633	2.0095672E-02	68.92764

Instrument : CHAMBER 126
Detector : 45-142V5
Standard ID : AESS-019
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:25
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:06:44
Average Efficiency : 0.3776715
Average Efficiency Error : 1.0360188E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2988.369	3299.131	19021.00	0.3716846	1.5920833E-02	61.61137
NP-237	211.5600	28-FEB-2006	4435.618	4902.366	19293.00	0.3799706	1.9194474E-02	87.82700
CM-244	248.5200	28-FEB-2006	5532.732	5885.449	20309.00	0.3842119	1.9398922E-02	63.11655

Instrument : CHAMBER 127
Detector : 45-142W1
Standard ID : AESS-014
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:29
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:12
Average Efficiency : 0.3934290
Average Efficiency Error : 1.0787830E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.9600	28-FEB-2006	2989.513	3302.392	19757.00	0.3853294	1.6496489E-02	64.47871
NP-237	211.9800	28-FEB-2006	4432.606	4903.961	20292.00	0.3988588	2.0138543E-02	84.68309
CM-244	249.0000	28-FEB-2006	5535.216	5883.874	21190.00	0.4001061	2.0193312E-02	70.60645

Instrument : CHAMBER 128
Detector : 45-142W2
Standard ID : AESS-020
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:34
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:27
Average Efficiency : 0.3859246
Average Efficiency Error : 1.0586893E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2989.584	3299.388	19162.00	0.3739288	1.6015276E-02	59.93734
NP-237	211.8000	28-FEB-2006	4434.590	4901.786	20058.00	0.3945944	1.9925477E-02	79.19832
CM-244	248.8200	28-FEB-2006	5533.622	5887.583	20951.00	0.3958796	1.9982109E-02	66.89229

Instrument : CHAMBER 129
Detector : 45-142W3
Standard ID : AESS-015
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:38
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:43
Average Efficiency : 0.3895081
Average Efficiency Error : 1.0681822E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.8400	28-FEB-2006	2991.668	3299.558	19525.00	0.3810124	1.6314350E-02	61.82140
NP-237	211.8600	28-FEB-2006	4435.149	4901.376	20156.00	0.3964100	2.0016206E-02	81.45658
CM-244	248.8800	28-FEB-2006	5532.751	5886.867	20929.00	0.3953595	1.9956063E-02	71.15770

Instrument : CHAMBER 130
Detector : 45-142W5
Standard ID : AESS-021
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:42
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:07:58
Average Efficiency : 0.3877107
Average Efficiency Error : 1.0633443E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.5400	28-FEB-2006	2990.831	3301.623	19394.00	0.3789733	1.6228566E-02	61.42154
NP-237	211.5600	28-FEB-2006	4435.787	4904.916	20099.00	0.3958496	1.9988457E-02	82.39708
CM-244	248.5200	28-FEB-2006	5534.223	5884.439	20760.00	0.3927440	1.9825550E-02	67.39270

Instrument : CHAMBER 131
Detector : 45-145K1
Standard ID : AESS-016
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:46
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:08:16
Average Efficiency : 0.3897060
Average Efficiency Error : 1.0686211E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2989.369	3298.448	19647.00	0.3837073	1.6428316E-02	64.42750
NP-237	211.6800	28-FEB-2006	4432.591	4905.330	20018.00	0.3940307	1.9897401E-02	82.42314
CM-244	248.6400	28-FEB-2006	5532.857	5887.665	20846.00	0.3941807	1.9897297E-02	71.83934

Instrument : CHAMBER 132
Detector : 45-145K2
Standard ID : AESS-022
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:49
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:08:32
Average Efficiency : 0.3905833
Average Efficiency Error : 1.0710652E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2990.018	3301.016	19613.00	0.3830433	1.6400279E-02	65.20789
NP-237	211.6800	28-FEB-2006	4434.219	4902.195	20056.00	0.3947787	1.9934803E-02	89.44299
CM-244	248.6400	28-FEB-2006	5534.644	5883.351	21028.00	0.3976221	2.0069377E-02	68.53607

Instrument : CHAMBER 133
Detector : 45-145K3
Standard ID : AESS-017
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:52
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:09:47
Average Efficiency : 0.3868218
Average Efficiency Error : 1.0608377E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7200	28-FEB-2006	2989.115	3302.033	19459.00	0.3799319	1.6268853E-02	67.58065
NP-237	211.7400	28-FEB-2006	4435.237	4904.688	19979.00	0.3931513	1.9853372E-02	78.76342
CM-244	248.7000	28-FEB-2006	5532.486	5884.151	20667.00	0.3907017	1.9723292E-02	68.61700

Instrument : CHAMBER 134
Detector : 45-145K4
Standard ID : AESS-023
Standard Reference Date : 7-FEB-2003 00:00:00
Calibration Analysis Date/Time : 4-APR-2006 12:01:56
Calibration Count Time : 240.0000
Efficiency Calibration Date/Time : 4-APR-2006 17:11:02
Average Efficiency : 0.3909511
Average Efficiency Error : 1.0721575E-02
Confidence : 95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.6600	28-FEB-2006	2987.530	3301.962	19533.00	0.3814809	1.6334314E-02	58.87649
NP-237	211.6800	28-FEB-2006	4434.547	4905.459	20169.00	0.3970030	2.0046022E-02	84.02620
CM-244	248.6400	28-FEB-2006	5534.869	5887.271	21114.00	0.3992483	2.0150691E-02	67.90365

Instrument	CHAMBER 135
Detector	45-145K5
Standard ID	AESS-018
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 12:01:59
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 17:11:53
Average Efficiency	0.3932157
Average Efficiency Error	1.0781703E-02
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.7800	28-FEB-2006	2990.104	3298.632	19831.00	0.3870894	1.6570982E-02	66.57359
NP-237	211.8000	28-FEB-2006	4434.981	4906.088	20001.00	0.3934731	1.9869408E-02	92.58358
CM-244	248.7600	28-FEB-2006	5531.074	5884.261	21277.00	0.4021365	2.0295015E-02	73.11333

Instrument	CHAMBER 136
Detector	45-145L1
Standard ID	AESS-024
Standard Reference Date	7-FEB-2003 00:00:00
Calibration Analysis Date/Time	4-APR-2006 12:02:04
Calibration Count Time	240.0000
Efficiency Calibration Date/Time	4-APR-2006 17:12:12
Average Efficiency	0.3798372
Average Efficiency Error	1.0422947E-02
Confidence	95.00000

Cal. Istps	DPM	Exp. Date	Start Engy	End Engy	Counts	EFF.	EFF Err	Resolution
GD-148	219.4200	28-FEB-2006	2988.496	3298.473	18764.00	0.3668631	1.5717393E-02	63.35145
NP-237	211.4400	28-FEB-2006	4437.582	4903.436	19751.00	0.3892161	1.9656880E-02	93.25786
CM-244	248.4000	28-FEB-2006	5532.704	5884.860	20649.00	0.3908328	1.9730078E-02	69.15901

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 3 Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?	MJH 3/28/06 ✓	✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included: amp, HVPS, ADC settings?	✓		

Prepared By: Michael Britton Date: 3/28/06

Reviewed By: John T Austin Date: 3/29/2006

Effective Date: ~~3/27/06~~ 3/28/06
MJH 3/28/06

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. M... 5-12-05

This standard will expire one year after the calibration date.

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

VMS Calibration Report V1.5 Generated 28-MAR-2006 04:38:19

Configuration : MCA0:[GAMMA]GAMMA3$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA3 Energy Calib Time: 24-MAR-2006 14:18:51
Efficiency type : Empirical Effncy Calib Time: 28-MAR-2006 04:38:19
Detector Geometry: GAMMA3 Shelf : 0

Energy Calibration Report

Energy = -0.4854 + 0.5009*Channel + -6.6053E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	93.86	46.50	46.53	-0.028
2	119.71	59.54	59.47	0.064
3	176.73	88.03	88.03	-0.001
4	244.61	122.06	122.03	0.030
5	332.21	165.85	165.91	-0.057
6	783.12	391.70	391.73	-0.026
7	1322.16	661.66	661.66	0.004
8	1794.29	898.04	898.04	0.000
9	2343.97	1173.24	1173.22	0.020
10	2662.17	1332.50	1332.50	0.002
11	3668.37	1836.06	1836.07	-0.008

FWHM Calibration Report

FWHM = 0.7852 + 4.4197E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.16	1.09	0.077
2	59.54	1.23	1.13	0.103
3	88.03	1.21	1.20	0.013
4	122.06	1.29	1.27	0.020
5	165.85	1.34	1.35	-0.014
6	391.70	1.54	1.66	-0.117
7	661.66	1.77	1.92	-0.148
8	898.04	1.93	2.11	-0.176
9	1173.24	2.31	2.30	0.010
10	1332.50	2.46	2.40	0.060
11	1836.06	2.85	2.68	0.172

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-4.078	0.9221	-2.9904E-02	-0.1834	0.1708	-4.9140E-02

Average Deviation = 1.60 % Reduced Chi-Square = 0.977

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	9.16E-03	2.84E-04	9.28E-03	-0.42	-1.29

Sample ID : CAL_GAMMA3_CAN Acquisition date : 27-MAR-2006 12:28:24

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	2.89E-02	8.76E-04	2.80E-02	1.02	3.09
3	88.03	5.95E-02	1.97E-03	6.17E-02	-1.14	-3.76
4	122.06	7.06E-02	2.14E-03	7.03E-02	0.16	0.49
5	165.85	6.44E-02	1.85E-03	6.40E-02	0.25	0.73
6	391.70	3.54E-02	9.81E-04	3.54E-02	-0.05	-0.13
7	661.66	2.37E-02	7.15E-04	2.32E-02	0.60	1.82
8	898.04	1.71E-02	4.73E-04	1.77E-02	-1.27	-3.50
9	1173.24	1.40E-02	3.82E-04	1.38E-02	0.48	1.31
10	1332.50	1.25E-02	3.28E-04	1.24E-02	0.38	0.98
11	1836.06	9.88E-03	2.68E-04	9.93E-03	-0.19	-0.52

Approved by: Michael Sutton Approval Date: 3 / 28 / 06

VAX/VMS Nuclide Identification Report Generated 27-MAR-2006 14:30:04.57

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]CAL_GAMMA3_CAN.CNF;1
Sample date : 1-APR-2002 12:00:00. Acquisition date : 27-MAR-2006 12:28:24
Sample ID : CAL_GAMMA3_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA3 Detector geometry: 2L_MB
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:01:15.44 1.0%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 12922955
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.36*	78273	76259	1.25	93.52	87	11	1.09E+01	0.8	
2	0	59.43	171888	76460	1.26	119.61	113	14	2.39E+01	0.4	
3	0	66.65	745	34117	1.31	134.04	132	7	1.03E-01	41.2	
4	2	84.66	1647	6684	1.19	170.00	169	15	2.29E-01	5.4	7.87E+01
5	2	88.00	287800	35567	1.27	176.67	169	15	4.00E+01	0.2	
6	0	122.04	122027	34510	1.30	244.62	238	14	1.69E+01	0.4	
7	0	136.46	15047	22314	1.30	273.41	268	12	2.09E+00	2.2	
8	0	165.87	64884	22558	1.34	332.14	326	13	9.01E+00	0.6	
9	0	255.11	1354	10535	1.47	510.32	506	8	1.88E-01	13.4	
10	0	279.22	2667	11696	1.49	558.46	554	10	3.70E-01	7.8	
11	0	371.64	189	6036	1.22	743.00	740	6	2.63E-02	65.4	
12	0	391.71	33685	14939	1.57	783.08	775	15	4.68E+00	1.0	
13	0	511.02*	697	8961	2.35	1021.33	1016	12	9.68E-02	27.5	
14	0	591.25	143	4776	1.72	1181.56	1180	8	1.98E-02	84.2	
15	0	595.34	178	4342	2.68	1189.71	1188	7	2.48E-02	61.7	
16	0	661.68	127059	12926	1.83	1322.22	1312	20	1.76E+01	0.4	
17	0	669.96	113	4836	0.93	1338.76	1338	8	1.56E-02	107.4	
18	0	691.50*	177	3676	0.89	1381.77	1379	6	2.45E-02	54.8	
19	0	802.97*	121	4330	1.08	1604.40	1604	8	1.68E-02	94.4	
20	0	814.14*	736	6611	2.57	1626.71	1621	12	1.02E-01	22.4	
21	0	821.54	464	6352	2.41	1641.50	1636	11	6.44E-02	33.6	
22	0	898.07	35795	13207	2.10	1794.34	1784	20	4.97E+00	0.9	
23	0	961.56	525	6890	3.35	1921.16	1917	10	7.30E-02	30.0	
24	0	1098.23*	80	3720	1.53	2194.16	2190	7	1.11E-02	126.7	
25	0	1173.30	125551	6498	2.35	2344.12	2332	22	1.74E+01	0.3	
26	0	1332.61*	113124	3253	2.47	2662.40	2651	22	1.57E+01	0.3	
27	0	1371.53	98	850	1.80	2740.16	2735	11	1.35E-02	58.8	
28	0	1420.15*	49	553	0.58	2837.30	2833	7	6.85E-03	80.7	
29	0	1522.18*	37	488	1.03	3041.15	3037	6	5.12E-03	96.7	
30	0	1533.83	35	661	0.57	3064.43	3063	7	4.90E-03	121.8	
31	0	1551.38*	131	831	2.45	3099.49	3095	10	1.82E-02	42.2	
32	0	1619.73	48	703	0.95	3236.06	3233	9	6.67E-03	100.9	
33	0	1634.95*	75	516	1.39	3266.48	3264	8	1.04E-02	53.8	
34	0	1683.03	64	472	2.42	3362.54	3357	9	8.87E-03	62.6	
35	0	1836.23	21605	683	3.00	3668.68	3655	27	3.00E+00	0.8	
36	0	1886.29	25	213	1.18	3768.74	3764	9	3.51E-03	105.6	
37	0	1972.19	41	285	2.45	3940.39	3933	13	5.67E-03	87.2	
38	0	1990.48	18	176	0.76	3976.95	3975	8	2.47E-03	131.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated 28-MAR-2006 07:09:02.90

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA3_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 28-MAR-2006 05:05:09
Sample ID : VER_GAMMA3_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA3 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:01:15.16 1.0%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 12922955
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.37*	76646	82188	1.25	93.55	87	12	1.06E+01	0.8	
2	0	59.43	172157	71473	1.25	119.63	113	13	2.39E+01	0.4	
3	0	66.19	1089	33473	1.74	133.12	131	7	1.51E-01	27.9	
4	2	79.40	2533	43405	1.43	159.49	151	32	3.52E-01	14.1	3.38E+02
5	2	87.98	291655	27949	1.30	176.62	151	32	4.05E+01	0.2	
6	0	103.05	364	16461	1.43	206.70	205	6	5.05E-02	56.0	
7	0	122.00	122177	38737	1.30	244.53	237	16	1.70E+01	0.5	
8	0	136.39	15220	20351	1.36	273.28	268	11	2.11E+00	2.0	
9	0	165.81	65080	24915	1.37	332.01	325	15	9.04E+00	0.7	
10	0	241.86	301	10991	1.32	483.86	481	8	4.18E-02	60.6	
11	0	254.87	1206	11954	1.34	509.83	506	9	1.67E-01	16.6	
12	0	271.23*	390	8324	1.47	542.50	540	7	5.42E-02	39.2	
13	0	279.04	2155	12022	1.66	558.11	553	10	2.99E-01	9.8	
14	0	330.60*	130	8123	2.51	661.05	661	8	1.81E-02	120.3	
15	0	391.47	33827	14997	1.55	782.61	775	15	4.70E+00	1.0	
16	0	439.52	300	7855	1.59	878.55	876	8	4.17E-02	51.4	
17	0	467.97*	138	7294	1.13	935.37	933	7	1.92E-02	102.8	
18	0	510.75*	590	7479	2.33	1020.79	1016	10	8.20E-02	27.8	
19	0	597.60	139	4831	1.39	1194.24	1189	8	1.93E-02	86.8	
20	0	661.25	126871	12658	1.85	1321.35	1311	20	1.76E+01	0.4	
21	0	692.79*	197	4707	1.25	1384.35	1381	8	2.73E-02	61.0	
22	0	733.39	124	4287	1.27	1465.43	1461	8	1.73E-02	91.7	
23	0	763.28	94	3854	1.26	1525.13	1522	7	1.30E-02	110.6	
24	0	813.05*	459	5077	1.91	1624.53	1621	9	6.37E-02	28.4	
25	0	897.44	35552	12516	2.05	1793.09	1782	19	4.94E+00	0.9	
26	0	959.94	162	5723	1.39	1917.92	1917	8	2.25E-02	81.2	
27	0	1155.70	93	2152	1.32	2308.97	2306	7	1.29E-02	83.6	
28	0	1172.51	124716	7070	2.35	2342.54	2332	23	1.73E+01	0.3	
29	0	1194.91	67	2009	1.38	2387.31	2383	10	9.33E-03	125.3	
30	0	1261.65	91	763	1.40	2520.62	2517	7	1.26E-02	51.6	
31	0	1289.13	39	1307	1.34	2575.53	2567	12	5.46E-03	184.6	
32	0	1331.68*	112453	3212	2.49	2660.53	2650	21	1.56E+01	0.3	
33	0	1355.45	58	1027	3.20	2708.02	2702	12	8.08E-03	111.2	
34	0	1418.24	63	460	1.48	2833.48	2831	6	8.75E-03	55.4	
35	0	1451.65	135	927	1.73	2900.22	2895	12	1.87E-02	46.0	
36	0	1467.31	36	750	1.60	2931.51	2928	9	4.95E-03	140.0	
37	0	1606.00	47	477	1.25	3208.63	3206	5	6.54E-03	71.0	
38	0	1834.92	21412	890	3.05	3666.07	3653	25	2.97E+00	0.8	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1879.44	23	114	1.13	3755.04	3753	5	3.20E-03	72.6	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                             DETECTOR DATA                             *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA3_C  *
* Acquisition date : 28-MAR-2006 05:05:09 Detector SN#     : 12922955   *
* Detector ID      : GAMMA3               Sensitivity      : 3.000      *
* Geometry         : CAN                  Energy tolerance: 2.000      *
* Elapsed live time:    0 02:00:00.00     Abundance limit  : 75.000     *
* Elapsed real time:    0 02:01:15.16     Half life ratio  :  8.000     *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date      :  1-APR-2005 12:00:00 Nuclide Library :             *
* Sample ID        : VER_GAMMA3_CAN       Analyst initials: MJH1        *
* Batch Number     :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
*                                                                       *
* Standard Weight  :   0.00000                                          *
* CALIB. DATE/TIME : 28-MAR-2006 04:38:19 MS Isotope      :             *
* MSD DPM          :    0.000             MSD Isotope     :             *
* LCS DPM          :    0.000             LCS Isotope     :             *
* LCSD DPM         :    0.000             LCSD Isotope    :             *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.915E+04	1.201E+03	9.109E+01	0.000E+00
CO-60	3.880E+04	2.209E+03	7.164E+01	0.000E+00
Y-88	8.492E+04	4.861E+03	4.012E+02	0.000E+00
CD-109	8.055E+05	9.079E+04	1.979E+03	0.000E+00
SN-113	4.847E+04	3.080E+03	6.133E+02	0.000E+00
CS-137	2.462E+04	1.781E+03	7.144E+01	0.000E+00
CE-139	2.924E+04	1.789E+03	2.229E+02	0.000E+00
HG-203	4.910E+04	1.014E+04	1.018E+04	0.000E+00
PB-210	8.021E+05	6.588E+04	9.050E+03	0.000E+00
AM-241	6.474E+04	6.198E+03	3.056E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error	Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 28-MAR-2006 07:09:04.15

```
****************************************************************************
*                         GENERAL ENG. LABS, LLC.                          *
*                           2040 Savage Road                               *
*                         Charleston, SC 29414                             *
****************************************************************************
```

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA3_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 28-MAR-2006 05:05:09
Sample ID : VER_GAMMA3_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA3 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:01:15.16 1.0%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 12922955
Matrix Spike DPM : LCS DPM :

****

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	122177	85.51*	7.029E+00	7.630E+03	1.915E+04	6.27
	136.47	15220	10.47	6.906E+00	7.901E+03	1.983E+04	8.01
CO-60	1173.24	124716	99.90	1.385E+00	3.383E+04	3.852E+04	6.16
	1332.50	112453	99.98*	1.239E+00	3.407E+04	3.880E+04	5.69
Y-88	898.04	35552	93.40	1.771E+00	8.068E+03	8.419E+04	8.86
	1836.06	21412	99.38*	9.937E-01	8.139E+03	8.492E+04	5.72
CD-109	88.03	291655	3.79*	6.166E+00	4.685E+05	8.055E+05	11.27
SN-113	391.70	33827	64.90*	3.545E+00	5.520E+03	4.847E+04	6.35
CS-137	661.66	126871	85.12*	2.325E+00	2.406E+04	2.462E+04	7.23
CE-139	165.85	65080	80.35*	6.397E+00	4.753E+03	2.924E+04	6.12
HG-203	70.83	------	4.75	4.462E+00	------	Line Not Found	------
	72.87	------	8.00	4.723E+00	------	Line Not Found	------
	82.60	------	3.55	5.751E+00	------	Line Not Found	------
	279.20	2155	77.30*	4.562E+00	2.294E+02	4.910E+04	20.65
PB-210	46.50	76646	4.05*	9.133E-01	7.778E+05	8.021E+05	8.21
AM-241	59.54	172157	35.90*	2.785E+00	6.464E+04	6.474E+04	9.57

Flag: "*" = Keyline

Summary of Nuclide Activity
Sample ID : VER_GAMMA3_CAN

Acquisition date : 28-MAR-2006 05:05:09

Total number of lines in spectrum	39	
Number of unidentified lines	26	
Number of lines tentatively identified by NID	13	33.33%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	2.51	7.630E+03	1.915E+04	0.120E+04	6.27	
CO-60	5.27Y	1.14	3.407E+04	3.880E+04	0.221E+04	5.69	
Y-88	106.63D	10.4	8.139E+03	8.492E+04	0.486E+04	5.72	
CD-109	461.40D	1.72	4.685E+05	8.055E+05	0.908E+05	11.27	
SN-113	115.09D	8.78	5.520E+03	4.847E+04	0.308E+04	6.35	
CS-137	30.00Y	1.02	2.406E+04	2.462E+04	0.178E+04	7.23	
CE-139	137.64D	6.15	4.753E+03	2.924E+04	0.179E+04	6.12	
HG-203	46.60D	214.	2.294E+02	4.910E+04	1.014E+04	20.65	
PB-210	22.26Y	1.03	7.778E+05	8.021E+05	0.659E+05	8.21	
AM-241	432.20Y	1.00	6.464E+04	6.474E+04	0.620E+04	9.57	
			---------	---------			
	Total Activity :		1.395E+06	1.967E+06			
	Grand Total Activity :		1.395E+06	1.967E+06			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	66.19	1089	33473	1.74	133.12	131	7	1.51E-01	55.9	3.82E+00	
2	79.40	2533	43405	1.43	159.49	151	32	3.52E-01	28.3	5.45E+00	
0	103.05	364	16461	1.43	206.70	205	6	5.05E-02	****	6.85E+00	
0	241.86	301	10991	1.32	483.86	481	8	4.18E-02	****	5.05E+00	
0	254.87	1206	11954	1.34	509.83	506	9	1.67E-01	33.2	4.87E+00	
0	271.23	390	8324	1.47	542.50	540	7	5.42E-02	78.4	4.66E+00	
0	330.60	130	8123	2.51	661.05	661	8	1.81E-02	****	4.03E+00	
0	439.52	300	7855	1.59	878.55	876	8	4.17E-02	****	3.24E+00	
0	467.97	138	7294	1.13	935.37	933	7	1.92E-02	****	3.09E+00	
0	510.75	590	7479	2.33	1020.79	1016	10	8.20E-02	55.7	2.88E+00	
0	597.60	139	4831	1.39	1194.24	1189	8	1.93E-02	****	2.53E+00	
0	692.79	197	4707	1.25	1384.35	1381	8	2.73E-02	****	2.23E+00	
0	733.39	124	4287	1.27	1465.43	1461	8	1.73E-02	****	2.12E+00	
0	763.28	94	3854	1.26	1525.13	1522	7	1.30E-02	****	2.05E+00	
0	813.05	459	5077	1.91	1624.53	1621	9	6.37E-02	56.7	1.94E+00	
0	959.94	162	5723	1.39	1917.92	1917	8	2.25E-02	****	1.66E+00	
0	1155.70	93	2152	1.32	2308.97	2306	7	1.29E-02	****	1.40E+00	
0	1194.91	67	2009	1.38	2387.31	2383	10	9.33E-03	****	1.36E+00	
0	1261.65	91	763	1.40	2520.62	2517	7	1.26E-02	****	1.30E+00	
0	1289.13	39	1307	1.34	2575.53	2567	12	5.46E-03	****	1.27E+00	
0	1355.45	58	1027	3.20	2708.02	2702	12	8.08E-03	****	1.22E+00	
0	1418.24	63	460	1.48	2833.48	2831	6	8.75E-03	****	1.18E+00	
0	1451.65	135	927	1.73	2900.22	2895	12	1.87E-02	92.0	1.16E+00	
0	1467.31	36	750	1.60	2931.51	2928	9	4.95E-03	****	1.15E+00	
0	1606.00	47	477	1.25	3208.63	3206	5	6.54E-03	****	1.07E+00	
0	1879.44	23	114	1.13	3755.04	3753	5	3.20E-03	****	9.83E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 28-MAR-2006 07:09:05.47

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                            DETECTOR DATA                              *
*                                                                       *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA3_CAN.CNF;1 *
* Acquisition date : 28-MAR-2006 05:05:09  Detector SN#     : 12922955  *
* Detector ID      : GAMMA3                Sensitivity      : 3.00000   *
* Geometry         : CAN                   Energy tolerance: 2.00000   *
* Elapsed live time: 0 02:00:00.00         Abundance limit  : 75.00000  *
* Elapsed real time: 0 02:01:15.16         Half life ratio  : 8.00000   *
*************************************************************************
*                                                                       *
*                            SAMPLE DATA                                *
*                                                                       *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL        *
* Sample ID        : VER_GAMMA3_CAN        Analyst initials: MJH1       *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*************************************************************************
*                                                                       *
*                              QC DATA                                  *
*                                                                       *
* CALIB. DATE/TIME : 28-MAR-2006 04:38:19.3MS Isotope      :           *
* MSD DPM          :                       MSD Isotope     :           *
* LCS DPM          :                       LCS Isotope     :           *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.915E+04	1.201E+03	9.109E+01	5.649E+00	210.214
CO-60	3.880E+04	2.209E+03	7.164E+01	4.050E+00	541.561
Y-88	8.492E+04	4.861E+03	4.012E+02	2.209E+01	211.683
CD-109	8.055E+05	9.079E+04	1.979E+03	2.230E+02	407.037
SN-113	4.847E+04	3.080E+03	6.133E+02	3.714E+01	79.036
CS-137	2.462E+04	1.781E+03	7.144E+01	5.144E+00	344.570
CE-139	2.924E+04	1.789E+03	2.229E+02	1.332E+01	131.192
HG-203	4.910E+04	1.014E+04	1.018E+04	6.877E+02	4.824
PB-210	8.021E+05	6.588E+04	9.050E+03	7.199E+02	88.638
AM-241	6.474E+04	6.198E+03	3.056E+02	2.916E+01	211.827

VMS Quality Assurance Report V1.3 Generated 26-MAR-2006 11:48:38

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA3.QAF;1

Sample ID : BKG_GAMMA3 Sample quantity : 1.80 LITER
Sample date : 25-MAR-2006 00:00:00 Acquisition date : 25-MAR-2006 19:07:45
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:05.65

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	9.29E+04	9.86E+04	9.76E+04	
BACKGROUND (CPS)	1.54	1.64	1.63	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 3 / 26 / 06

Gamma Spectroscopy Calibration Verification

Instrument: Gamma 3 Calibration Date: 3/28/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.021E+05	-1.80
Am-241		6.2283E+04	6.474E+04	3.94
Cd-109		8.2222E+05	8.055E+05	-2.03
Co-57		1.8996E+04	1.915E+04	0.81
Ce-139		2.8853E+04	2.924E+04	1.34
Sn-113		4.8141E+04	4.847E+04	0.68
Cs-137		2.4217E+04	2.462E+04	1.66
Co-60	1332.5	3.8655E+04	3.880E+04	0.38
Y-88	1836.06	8.5829E+04	8.492E+04	-1.06

Prepared By: [signature] Date: 3/28/06

Reviewed By: [signature] Date: 3/29/2006

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Front End Electronics Setup
Detector: GAMMA3

Date Performed: 3/24/06 Performed By: Michael [signature]

High Voltage Power Supply	Spectroscopy Amplifier
Model No. 3106 D	Model No. 2025
High Voltage 2.5 kV	Course Gain 20
	Fine Gain 0.575
ADC	Time Constant 4μsec.
Model No. 8701	Input polarity POSITIVE
Gain 4K	BSLR rate NORMAL
	BSLR mode SYM
	Threshold OFF
AIM Module	
Model No. ND556	
Address NI 3F7:1	

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 12 Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 1/5/06

Reviewed By: [signature] Date: 1/8/2006

Effective Date: 1/4/06

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171
843

Gamma Spectrometer Front End Electronics Setup

Detector: GAMMA 12

Date Performed: 12/27/05 Performed By: Michael Hutton

High Voltage Power Supply	*Spectroscopy Amplifier*
Model No. 3106 D High Voltage 3500 V	Model No. 2026 Course Gain 50 Fine Gain 0.75Z Time Constant 6 μsec Input polarity POSITIVE BSLR rate N/A BSLR mode N/A Threshold N/A
ADC Model No. ND579 Gain 4000	
AIM Module Model No. 556 Address NI89F:2	

Gamma Spectroscopy Calibration Verification

Instrument: Gamma 12 Calibration Date: 1/4/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.291E+05	1.50
Am-241		6.2283E+04	6.587E+04	5.76
Cd-109		8.2222E+05	8.073E+05	-1.81
Co-57		1.8996E+04	1.910E+04	0.55
Ce-139		2.8853E+04	2.925E+04	1.38
Sn-113		4.8141E+04	4.827E+04	0.27
Cs-137		2.4217E+04	2.450E+04	1.17
Co-60	1332.5	3.8655E+04	3.923E+04	1.49
Y-88	1836.06	8.5829E+04	8.498E+04	-0.99

Prepared By: [signature] Date: 1/5/06

Reviewed By: [signature] Date: 1/8/2006

VMS Quality Assurance Report V1.3 Generated 1-JAN-2006 15:37:40

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA12.QAF;1

Sample ID : BKG_GAMMA12 Sample quantity : 1.80 LITER
Sample date : 31-DEC-2005 00:00:00 Acquisition date : 31-DEC-2005 22:52:38
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:04.56

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	8.73E+04	9.88E+04	9.39E+04	
BACKGROUND (CPS)	1.49	1.72	1.61	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: MSH Approval Date: 1 / 3 / 06

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 21:17:55.18

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA12_CAN.CNF;6
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 4-JAN-2006 20:16:30.
Sample ID         : VER_GAMMA12_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA12              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:00:59.23  1.6%
Energy tolerance : 2.00000 KEV           Analyst Initials : MJH1
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 100017444
Matrix Spike DPM :                       LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	31.49	15149	18483	2.24	62.15	58	10	4.21E+00	1.9	
2	0	46.36*	42607	54752	1.47	91.91	84	14	1.18E+01	1.3	
3	0	59.47	89158	47604	1.47	118.15	110	16	2.48E+01	0.6	
4	0	67.58	830	21803	2.29	134.39	131	8	2.31E-01	31.0	
5	0	88.04*	162129	41730	1.47	175.35	167	16	4.50E+01	0.4	
6	0	122.09	73152	22850	1.49	243.50	236	16	2.03E+01	0.6	
7	0	136.51	9367	12748	1.50	272.37	267	12	2.60E+00	2.6	
8	0	165.90	48082	14884	1.55	331.21	324	16	1.34E+01	0.7	
9	0	255.09	1643	9058	2.12	509.72	504	13	4.56E-01	12.2	
10	0	279.20	4083	7639	1.61	557.98	552	12	1.13E+00	4.6	
11	0	282.54*	72	4339	1.33	564.66	563	7	1.99E-02	153.3	
12	0	371.48	239	4146	1.64	742.67	740	8	6.65E-02	47.0	
13	0	391.69*	27294	8247	1.65	783.12	776	16	7.58E+00	1.0	
14	0	409.38	142	3891	1.47	818.54	816	8	3.95E-02	76.3	
15	0	413.73*	149	4545	1.30	827.23	824	9	4.15E-02	81.8	
16	0	433.90	153	3995	0.88	867.60	864	8	4.25E-02	72.0	
17	0	511.11*	557	4759	2.94	1022.12	1016	12	1.55E-01	25.2	
18	0	570.43*	154	2383	1.25	1140.84	1138	7	4.29E-02	53.1	
19	0	661.58	62697	6737	1.83	1323.23	1313	19	1.74E+01	0.5	
20	0	734.66	80	1442	0.94	1469.47	1468	5	2.22E-02	72.1	
21	0	750.81	155	2260	1.89	1501.77	1499	8	4.31E-02	53.6	
22	0	814.09	553	3399	3.12	1628.40	1622	12	1.54E-01	21.5	
23	0	820.60*	172	2686	2.40	1641.41	1638	9	4.79E-02	54.7	
24	0	842.13*	234	2547	2.49	1684.49	1681	9	6.50E-02	39.4	
25	0	871.40	457	4449	5.64	1743.06	1736	15	1.27E-01	32.1	
26	0	897.93*	29871	6185	1.93	1796.14	1788	17	8.30E+00	0.8	
27	0	1026.30*	155	1856	1.36	2052.97	2050	7	4.32E-02	46.7	
28	0	1173.10*	64467	3533	2.11	2346.64	2336	22	1.79E+01	0.5	
29	0	1203.66	62	1357	4.42	2407.76	2404	13	1.73E-02	122.5	
30	0	1218.95	43	961	1.27	2438.34	2430	11	1.19E-02	140.8	
31	0	1273.23*	51	363	1.29	2546.92	2545	6	1.42E-02	60.8	
32	5	1325.10*	703	1340	3.53	2650.68	2641	35	1.95E-01	13.3	3.17E+00
33	5	1332.36*	57886	920	2.24	2665.20	2641	35	1.61E+01	0.4	
34	0	1411.07	64	364	1.88	2822.62	2820	7	1.79E-02	50.6	
35	0	1442.91	114	848	2.59	2886.31	2878	15	3.16E-02	56.6	
36	0	1465.96	93	552	1.51	2932.41	2929	10	2.59E-02	48.3	
37	0	1545.47*	52	363	1.29	3091.41	3089	6	1.43E-02	59.9	
38	0	1558.15*	56	686	1.30	3116.77	3113	9	1.55E-02	85.7	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1606.55*	51	386	0.66	3213.57	3212	5	1.43E-02	59.2	
40	0	1643.97	22	554	0.93	3288.39	3286	12	6.08E-03	216.0	
41	0	1658.09*	62	608	3.79	3316.63	3310	14	1.73E-02	84.8	
42	0	1678.17	46	366	1.17	3356.80	3351	10	1.26E-02	80.5	
43	0	1835.84	18092	489	2.47	3672.07	3661	22	5.03E+00	0.8	
44	0	2001.20	32	46	1.07	4002.68	4001	6	8.95E-03	37.5	
45	0	2010.85	30	172	5.99	4021.98	4013	16	8.38E-03	98.9	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*********************************************************************
*                        General Eng. Labs, LLC.                    *
*                            2040 Savage Road                       *
*                          Charleston, SC 29414                     *
*********************************************************************
*                                                                   *
*                            DETECTOR DATA                          *
*                                                                   *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA12_  *
* Acquisition date :  4-JAN-2006 20:16:30 Detector SN#    : 100017444  *
* Detector ID       : GAMMA12             Sensitivity     : 3.000      *
* Geometry          : CAN                 Energy tolerance: 2.000      *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000     *
* Elapsed real time:    0 01:00:59.23     Half life ratio :  8.000     *
*********************************************************************
*                                                                   *
*                            SAMPLE DATA                            *
*                                                                   *
* Sample date       :  1-APR-2005 12:00:00 Nuclide Library :         *
* Sample ID         : VER_GAMMA12_CAN      Analyst initials: MJH1    *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER  *
* Recovery          :    1.00000           Carrier Weight :    0.00000  *
*********************************************************************
*                                                                   *
*                              QC DATA                              *
* Standard Weight   :   0.00000                                     *
* CALIB. DATE/TIME :  4-JAN-2006 18:46:20 MS Isotope      :         *
* MSD DPM           :    0.000            MSD Isotope     :         *
* LCS DPM           :    0.000            LCS Isotope     :         *
* LCSD DPM          :    0.000            LCSD Isotope    :         *
*********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.910E+04	1.195E+03	1.271E+02	0.000E+00
CO-60	3.923E+04	2.477E+03	9.008E+01	0.000E+00
Y-88	8.498E+04	4.952E+03	3.587E+02	0.000E+00
CD-109	8.073E+05	9.071E+04	3.171E+03	0.000E+00
SN-113	4.827E+04	3.047E+03	5.613E+02	0.000E+00
CS-137	2.450E+04	1.720E+03	1.080E+02	0.000E+00
CE-139	2.925E+04	1.881E+03	2.477E+02	0.000E+00
HG-203	5.555E+04	6.347E+03	4.726E+03	0.000E+00
PB-210	8.291E+05	7.282E+04	1.491E+04	0.000E+00
AM-241	6.587E+04	6.843E+03	5.064E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 21:17:56.60

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA12_CAN.CNF;6
Sample date      : 1-APR-2005 12:00:00. Acquisition date : 4-JAN-2006 20:16:30.
Sample ID        : VER_GAMMA12_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name    : GAMMA12              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00        Elapsed real time: 0 01:00:59.23  1.6%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         :                      Detector SN#     : 100017444
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	73152	85.51*	6.840E+00	9.390E+03	1.910E+04	6.25
	136.47	9367	10.47	6.721E+00	9.994E+03	2.033E+04	8.75
CO-60	1173.24	64467	99.90	1.369E+00	3.539E+04	3.912E+04	6.02
	1332.50	57886	99.98*	1.225E+00	3.549E+04	3.923E+04	6.31
Y-88	898.04	29871	93.40	1.749E+00	1.373E+04	8.383E+04	8.92
	1836.06	18092	99.38*	9.823E-01	1.391E+04	8.498E+04	5.83
CD-109	88.03	162129	3.79*	6.043E+00	5.314E+05	8.073E+05	11.24
SN-113	391.70	27294	64.90*	3.497E+00	9.029E+03	4.827E+04	6.31
CS-137	661.66	62697	85.12*	2.297E+00	2.408E+04	2.450E+04	7.02
CE-139	165.85	48082	80.35*	6.239E+00	7.201E+03	2.925E+04	6.43
HG-203	70.83	------	4.75	4.436E+00	------ Line Not Found		------
	72.87	------	8.00	4.683E+00	------ Line Not Found		------
	82.60	------	3.55	5.651E+00	------ Line Not Found		------
	279.20	4083	77.30*	4.486E+00	8.840E+02	5.555E+04	11.43
PB-210	46.50	42607	4.05*	9.755E-01	8.096E+05	8.291E+05	8.78
AM-241	59.54	89158	35.90*	2.834E+00	6.579E+04	6.587E+04	10.39

Flag: "*" = Keyline

Sample ID : VER_GAMMA12_CAN Acquisition date : 4-JAN-2006 20:16:30

Total number of lines in spectrum	45	
Number of unidentified lines	32	
Number of lines tentatively identified by NID	13	28.89%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	2.03	9.390E+03	1.910E+04	0.119E+04	6.25	
CO-60	5.27Y	1.11	3.549E+04	3.923E+04	0.248E+04	6.31	
Y-88	106.63D	6.11	1.391E+04	8.498E+04	0.495E+04	5.83	
CD-109	461.40D	1.52	5.314E+05	8.073E+05	0.907E+05	11.24	
SN-113	115.09D	5.35	9.029E+03	4.827E+04	0.305E+04	6.31	
CS-137	30.00Y	1.02	2.408E+04	2.450E+04	0.172E+04	7.02	
CE-139	137.64D	4.06	7.201E+03	2.925E+04	0.188E+04	6.43	
HG-203	46.60D	62.8	8.840E+02	5.555E+04	0.635E+04	11.43	
PB-210	22.26Y	1.02	8.096E+05	8.291E+05	0.728E+05	8.78	
AM-241	432.20Y	1.00	6.579E+04	6.587E+04	0.684E+04	10.39	
			---------	---------			
	Total Activity :		1.507E+06	2.003E+06			
	Grand Total Activity :		1.507E+06	2.003E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : VER_GAMMA12_CAN Acquisition date : 4-JAN-2006 20:16:30

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	31.49	15149	18483	2.24	62.15	58	10	4.21E+00	3.9	4.32E-02	
0	67.58	830	21803	2.29	134.39	131	8	2.31E-01	61.9	4.01E+00	
0	255.09	1643	9058	2.12	509.72	504	13	4.56E-01	24.4	4.78E+00	
0	282.54	72	4339	1.33	564.66	563	7	1.99E-02	****	4.45E+00	
0	371.48	239	4146	1.64	742.67	740	8	6.65E-02	94.1	3.64E+00	
0	409.38	142	3891	1.47	818.54	816	8	3.95E-02	****	3.38E+00	
0	413.73	149	4545	1.30	827.23	824	9	4.15E-02	****	3.35E+00	
0	433.90	153	3995	0.88	867.60	864	8	4.25E-02	****	3.23E+00	
0	511.11	557	4759	2.94	1022.12	1016	12	1.55E-01	50.4	2.84E+00	
0	570.43	154	2383	1.25	1140.84	1138	7	4.29E-02	****	2.60E+00	
0	734.66	80	1442	0.94	1469.47	1468	5	2.22E-02	****	2.10E+00	
0	750.81	155	2260	1.89	1501.77	1499	8	4.31E-02	****	2.06E+00	
0	814.09	553	3399	3.12	1628.40	1622	12	1.54E-01	43.1	1.91E+00	
0	820.60	172	2686	2.40	1641.41	1638	9	4.79E-02	****	1.90E+00	
0	842.13	234	2547	2.49	1684.49	1681	9	6.50E-02	78.9	1.85E+00	
0	871.40	457	4449	5.64	1743.06	1736	15	1.27E-01	64.3	1.80E+00	
0	1026.30	155	1856	1.36	2052.97	2050	7	4.32E-02	93.3	1.55E+00	
0	1203.66	62	1357	4.42	2407.76	2404	13	1.73E-02	****	1.34E+00	
0	1218.95	43	961	1.27	2438.34	2430	11	1.19E-02	****	1.32E+00	
0	1273.23	51	363	1.29	2546.92	2545	6	1.42E-02	****	1.27E+00	
5	1325.10	703	1340	3.53	2650.68	2641	35	1.95E-01	26.6	1.23E+00	
0	1411.07	64	364	1.88	2822.62	2820	7	1.79E-02	****	1.17E+00	
0	1442.91	114	848	2.59	2886.31	2878	15	3.16E-02	****	1.15E+00	
0	1465.96	93	552	1.51	2932.41	2929	10	2.59E-02	96.5	1.13E+00	
0	1545.47	52	363	1.29	3091.41	3089	6	1.43E-02	****	1.09E+00	
0	1558.15	56	686	1.30	3116.77	3113	9	1.55E-02	****	1.08E+00	
0	1606.55	51	386	0.66	3213.57	3212	5	1.43E-02	****	1.06E+00	
0	1643.97	22	554	0.93	3288.39	3286	12	6.08E-03	****	1.04E+00	
0	1658.09	62	608	3.79	3316.63	3310	14	1.73E-02	****	1.04E+00	
0	1678.17	46	366	1.17	3356.80	3351	10	1.26E-02	****	1.03E+00	
0	2001.20	32	46	1.07	4002.68	4001	6	8.95E-03	74.9	9.51E-01	
0	2010.85	30	172	5.99	4021.98	4013	16	8.38E-03	****	9.49E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 21:17:58.03

```
*****************************************************************************
*                            GENERAL ENG. LABS, LLC.                        *
*                                2040 Savage Road                           *
*                              Charleston, SC 29414                         *
*****************************************************************************
*                                                                           *
*                                DETECTOR DATA                              *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA12_CAN.CNF;6*
* Acquisition date : 4-JAN-2006 20:16:30.  Detector SN#     : 100017444     *
* Detector ID      : GAMMA12               Sensitivity     : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 01:00:00.00         Abundance limit : 75.00000      *
* Elapsed real time: 0 01:00:59.23         Half life ratio : 8.00000       *
*****************************************************************************
*                                                                           *
*                                SAMPLE DATA                                *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL           *
* Sample ID        : VER_GAMMA12_CAN       Analyst initials: MJH1          *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                  QC DATA                                  *
*                                                                           *
* CALIB. DATE/TIME : 4-JAN-2006 18:46:20.49MS Isotope      :                *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.910E+04	1.195E+03	1.271E+02	7.804E+00	150.301
CO-60	3.923E+04	2.477E+03	9.008E+01	5.635E+00	435.516
Y-88	8.498E+04	4.952E+03	3.587E+02	2.009E+01	236.875
CD-109	8.073E+05	9.071E+04	3.171E+03	3.555E+02	254.594
SN-113	4.827E+04	3.047E+03	5.613E+02	3.375E+01	86.002
CS-137	2.450E+04	1.720E+03	1.080E+02	7.505E+00	226.779
CE-139	2.925E+04	1.881E+03	2.477E+02	1.550E+01	118.116
HG-203	5.555E+04	6.347E+03	4.726E+03	3.251E+02	11.753
PB-210	8.291E+05	7.282E+04	1.491E+04	1.239E+03	55.619
AM-241	6.587E+04	6.843E+03	5.064E+02	5.221E+01	130.080

VAX/VMS Nuclide Identification Report Generated 4-JAN-2006 18:46:23.04

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : MCA0:[GAMMA]GAMMA12$1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 4-JAN-2006 12:54:08.
Sample ID : CAL_GAMMA12_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA12 Detector geometry:
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:59.28 1.6%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 100017444
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.41	41977	50967	1.51	92.01	85	13	1.17E+01	1.2	
2	0	59.49	88823	45815	1.48	118.20	110	15	2.47E+01	0.6	
3	0	66.79	857	18870	2.27	132.80	130	7	2.38E-01	26.7	
4	0	73.03	475	22869	1.38	145.30	142	8	1.32E-01	55.4	
5	0	88.06	162342	39221	1.47	175.38	168	15	4.51E+01	0.4	
6	0	102.76	230	12936	1.46	204.82	202	8	6.38E-02	86.0	
7	0	122.10	72663	22281	1.48	243.52	236	16	2.02E+01	0.6	
8	0	136.55	9502	13377	1.52	272.44	267	13	2.64E+00	2.7	
9	0	165.89	47845	15718	1.55	331.17	323	16	1.33E+01	0.7	
10	0	230.80	283	5778	2.13	461.10	458	7	7.86E-02	45.0	
11	0	255.00	1410	7803	1.60	509.55	504	11	3.92E-01	12.4	
12	0	279.17	4146	6957	1.62	557.93	553	11	1.15E+00	4.2	
13	0	391.73	27319	7759	1.68	783.20	777	15	7.59E+00	0.9	
14	0	405.98	156	3451	1.06	811.73	809	7	4.33E-02	63.1	
15	0	511.60	670	5706	3.09	1023.10	1015	14	1.86E-01	24.2	
16	0	661.65	62934	6246	1.84	1323.37	1315	17	1.75E+01	0.5	
17	0	800.74	40	2322	1.40	1601.69	1598	8	1.12E-02	208.2	
18	0	814.23	416	2340	2.45	1628.67	1625	8	1.16E-01	20.7	
19	0	885.83	143	3264	0.91	1771.93	1767	10	3.98E-02	75.1	
20	0	898.02	30118	5741	2.00	1796.33	1789	16	8.37E+00	0.8	
21	0	937.66	80	4304	0.50	1875.63	1872	11	2.23E-02	158.5	
22	0	972.30	107	2759	1.93	1944.92	1942	9	2.96E-02	89.5	
23	0	997.54	131	2541	1.34	1995.42	1992	9	3.63E-02	70.0	
24	0	1021.78	186	2701	2.90	2043.93	2039	10	5.16E-02	52.9	
25	0	1064.52	229	1903	2.78	2129.42	2126	8	6.35E-02	33.7	
26	0	1104.73	79	1824	1.87	2209.86	2205	7	2.19E-02	90.3	
27	0	1173.23	63768	3234	2.11	2346.90	2337	20	1.77E+01	0.5	
28	3	1325.13	625	1367	2.92	2650.74	2641	35	1.74E-01	14.5	2.63E+00
29	3	1332.50	57972	961	2.24	2665.48	2641	35	1.61E+01	0.4	
30	0	1389.13	42	417	1.18	2778.74	2774	8	1.16E-02	86.5	
31	0	1392.10	48	316	1.33	2784.67	2781	7	1.34E-02	62.7	
32	0	1417.13	52	239	0.94	2834.74	2832	5	1.44E-02	47.0	
33	0	1480.14	64	474	1.41	2960.77	2957	9	1.78E-02	62.6	
34	0	1593.24	60	720	1.86	3186.95	3182	10	1.66E-02	85.1	
35	0	1598.98	43	593	1.24	3198.42	3195	8	1.20E-02	98.6	
36	0	1836.07	18172	462	2.42	3672.53	3662	23	5.05E+00	0.8	
37	0	1909.11	60	223	5.29	3818.57	3809	19	1.67E-02	61.1	
38	0	1935.89	53	115	3.87	3872.11	3868	11	1.47E-02	41.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1941.06	45	74	1.40	3882.45	3878	8	1.25E-02	36.6	
40	0	1980.28	71	341	11.29	3960.86	3943	30	1.98E-02	76.9	

VMS Calibration Report V1.5 Generated 4-JAN-2006 18:46:20

Configuration : MCA0:[GAMMA]GAMMA12$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA12 Energy Calib Time: 4-JAN-2006 18:46:20
Efficiency type : Empirical Effncy Calib Time: 4-JAN-2006 18:46:20
Detector Geometry: Shelf :

Energy Calibration Report

Energy = 0.4472 + 0.4995*Channel + 8.1181E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	92.01	46.50	46.41	0.093
2	118.25	59.54	59.52	0.020
3	175.42	88.03	88.08	-0.042
4	243.52	122.06	122.10	-0.038
5	331.18	165.85	165.89	-0.039
6	783.20	391.70	391.73	-0.024
7	1323.37	661.66	661.65	0.013
8	1796.33	898.04	898.02	0.019
9	2346.90	1173.24	1173.23	0.007
10	2665.48	1332.50	1332.50	-0.003
11	3672.53	1836.06	1836.07	-0.006

FWHM Calibration Report

FWHM = 1.238 + 2.6170E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.51	1.42	0.092
2	59.54	1.48	1.44	0.037
3	88.03	1.51	1.48	0.022
4	122.06	1.48	1.53	-0.044
5	165.85	1.55	1.58	-0.029
6	391.70	1.68	1.76	-0.075
7	661.66	1.84	1.91	-0.070
8	898.04	2.00	2.02	-0.024
9	1173.24	2.11	2.13	-0.023
10	1332.50	2.24	2.19	0.049
11	1836.06	2.42	2.36	0.064

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-4.089	0.9214	-2.7617E-02	-0.1842	0.1657	-4.7114E-02

Average Deviation = 1.72 % Reduced Chi-Square = 1.11

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	9.75E-03	3.16E-04	9.92E-03	-0.51	-1.66

Sample ID : CAL_GAMMA12_CAN Acquisition date : 4-JAN-2006 12:54:08

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	2.95E-02	9.03E-04	2.84E-02	1.17	3.57
3	88.03	5.83E-02	1.93E-03	6.04E-02	-1.12	-3.71
4	122.06	6.83E-02	2.09E-03	6.84E-02	-0.07	-0.21
5	165.85	6.31E-02	1.83E-03	6.24E-02	0.37	1.08
6	391.70	3.50E-02	9.67E-04	3.50E-02	0.06	0.17
7	661.66	2.33E-02	7.09E-04	2.30E-02	0.51	1.54
8	898.04	1.69E-02	4.60E-04	1.75E-02	-1.32	-3.60
9	1173.24	1.38E-02	3.79E-04	1.37E-02	0.39	1.07
10	1332.50	1.24E-02	3.28E-04	1.22E-02	0.60	1.59
11	1836.06	9.75E-03	2.65E-04	9.82E-03	-0.26	-0.70

Approved by: _____ Approval Date: 1 / 4 / 06 11/4/06

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 6-DEC-2004 10:31:17.67
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: M. M... 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: HP Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: Michael Austin Date: 2/3/06

Reviewed By: M J Austin Date: 2/3/2006

Effective Date: 2/1/06

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(843)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: HP

Date Performed: 2/1/06 Performed By: [signature] 2/1/06

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3106D High Voltage 4000V	Model No. 2026 Course Gain ~~200~~ 10 2/1/06 Fine Gain 0.616 Time Constant 6 μsec. Input polarity positive BSLR rate N/A BSLR mode N/A Threshold N/A
ADC	
Model No. 8701 Gain 4K	
AIM Module	
Model No. ND556 Address NI47D:1	

Gamma Spectroscopy Calibration Verification

Instrument: HP Calibration Date: 2/1/2006

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	8.297E+05	1.58
Am-241		6.2283E+04	6.564E+04	5.39
Cd-109		8.2222E+05	8.117E+05	-1.28
Co-57		1.8996E+04	1.911E+04	0.60
Ce-139		2.8853E+04	2.872E+04	-0.46
Sn-113		4.8141E+04	4.768E+04	-0.96
Cs-137		2.4217E+04	2.496E+04	3.07
Co-60	1332.5	3.8655E+04	3.885E+04	0.50
Y-88	1836.06	8.5829E+04	8.497E+04	-1.00

Prepared By: [signature] Date: 2/3/06

Reviewed By: [signature] Date: 2/3/2006

VMS Quality Assurance Report V1.3 Generated 29-JAN-2006 10:01:26

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_HP.QAF;1

Sample ID : BKG_HP Sample quantity : 1.80 LITER
Sample date : 28-JAN-2006 00:00:00 Acquisition date : 28-JAN-2006 17:18:54
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:05.76

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	1.30E+05	1.43E+05	1.38E+05	
BACKGROUND (CPS)	2.16	2.39	2.30	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: ~MJH Approval Date: 1 / 29 / 06

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 11:17:29.42

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 1-FEB-2006 10:51:38.
Sample ID : VER_HP_CAN Sample quantity : 1.00000E+00 LITER
Detector name : HP Detector geometry: CAN
Elapsed live time: 0 00:25:00.00 Elapsed real time: 0 00:25:22.46 1.5%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 8943324
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.73	245	12417	1.37	66.03	64	6	1.63E-01	72.2	
2	0	46.39*	32137	24439	1.25	93.26	87	11	2.14E+01	1.1	
3	0	59.48*	55491	21989	1.24	119.39	113	13	3.70E+01	0.7	
4	0	66.59*	340	9756	2.19	133.56	131	7	2.27E-01	48.3	
5	0	88.05*	87552	17854	1.23	176.37	171	12	5.84E+01	0.5	
6	0	103.96	200	4598	1.85	208.10	205	6	1.33E-01	54.2	
7	0	122.09	38336	9648	1.25	244.26	238	13	2.56E+01	0.7	
8	0	136.52*	4909	5669	1.22	273.04	268	11	3.27E+00	3.3	
9	0	165.91	23915	7578	1.33	331.66	324	15	1.59E+01	1.0	
10	0	255.21	717	2888	1.48	509.81	506	8	4.78E-01	13.5	
11	0	279.20	1586	3369	1.34	557.67	553	10	1.06E+00	7.3	
12	0	364.67	92	1367	1.33	728.16	726	5	6.13E-02	61.2	
13	0	391.71	14749	4953	1.56	782.11	773	17	9.83E+00	1.4	
14	0	475.85	94	1883	1.54	949.96	947	7	6.27E-02	77.2	
15	0	511.32*	140	1974	1.63	1020.74	1017	9	9.33E-02	58.2	
16	0	547.63	207	1376	2.28	1093.17	1090	8	1.38E-01	31.8	
17	0	576.46	52	1204	1.05	1150.69	1149	7	3.45E-02	112.4	
18	0	661.67	43226	3878	1.90	1320.72	1312	19	2.88E+01	0.6	
19	0	736.50	82	1196	1.48	1470.02	1467	8	5.46E-02	74.0	
20	0	740.37	59	1327	1.44	1477.74	1475	9	3.94E-02	112.0	
21	0	761.23	144	1189	2.01	1519.36	1516	9	9.59E-02	44.2	
22	0	814.12	366	2133	2.40	1624.91	1618	15	2.44E-01	28.0	
23	0	820.53	203	1766	1.64	1637.70	1633	12	1.35E-01	41.9	
24	0	897.99*	17515	3646	2.19	1792.28	1783	19	1.17E+01	1.1	
25	0	947.81*	124	2025	2.72	1891.70	1888	10	8.24E-02	68.6	
26	0	966.12*	174	1464	1.37	1928.23	1925	9	1.16E-01	40.4	
27	0	1003.99	81	896	1.29	2003.81	2002	6	5.43E-02	59.0	
28	0	1048.65	29	1430	2.23	2092.93	2089	10	1.93E-02	245.5	
29	0	1078.68	83	822	0.95	2152.87	2150	6	5.50E-02	56.1	
30	0	1173.22	45526	2606	2.53	2341.55	2329	27	3.04E+01	0.6	
31	0	1247.95	66	280	2.79	2490.71	2488	8	4.40E-02	45.6	
32	1	1324.75	333	657	2.67	2644.00	2632	45	2.22E-01	18.9	1.90E+01
33	1	1332.49	41630	719	2.88	2659.47	2632	45	2.78E+01	0.5	
34	4	1415.19	80	198	1.80	2824.54	2821	21	5.34E-02	30.5	1.68E+00
35	4	1420.36	101	371	3.32	2834.85	2821	21	6.74E-02	41.8	
36	0	1427.30	58	386	4.48	2848.71	2841	14	3.85E-02	73.5	
37	0	1560.27	53	453	3.43	3114.16	3109	12	3.52E-02	81.9	
38	0	1614.81	114	483	6.53	3223.03	3216	17	7.61E-02	45.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1836.06	11449	454	3.28	3664.76	3650	32	7.63E+00	1.0	
40	0	2047.96	24	55	2.29	4087.87	4086	5	1.58E-02	47.2	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*****************************************************************************
*                          General Eng. Labs, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN       *
* Acquisition date :  1-FEB-2006 10:51:38 Detector SN#     : 8943324        *
* Detector ID       : HP                  Sensitivity      : 3.000          *
* Geometry          : CAN                 Energy tolerance: 2.000          *
* Elapsed live time:    0 00:25:00.00     Abundance limit : 75.000          *
* Elapsed real time:    0 00:25:22.46     Half life ratio :  8.000          *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date       :  1-APR-2005 12:00:00 Nuclide Library :                *
* Sample ID         : VER_HP_CAN           Analyst initials: MJH1           *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery          :    1.00000           Carrier Weight :    0.00000      *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
* Standard Weight   :   0.00000                                             *
* CALIB. DATE/TIME :  1-FEB-2006 10:50:52 MS Isotope       :                *
* MSD DPM           :    0.000            MSD Isotope      :                *
* LCS DPM           :    0.000            LCS Isotope      :                *
* LCSD DPM          :    0.000            LCSD Isotope     :                *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.911E+04	1.220E+03	1.618E+02	0.000E+00
CO-60	3.885E+04	2.119E+03	1.019E+02	0.000E+00
Y-88	8.497E+04	5.090E+03	5.398E+02	0.000E+00
CD-109	8.117E+05	7.256E+04	4.051E+03	0.000E+00
SN-113	4.768E+04	3.278E+03	7.690E+02	0.000E+00
CS-137	2.496E+04	2.126E+03	1.243E+02	0.000E+00
CE-139	2.872E+04	1.816E+03	3.312E+02	0.000E+00
HG-203	5.220E+04	8.360E+03	8.014E+03	0.000E+00
PB-210	8.297E+05	6.714E+04	1.273E+04	0.000E+00
AM-241	6.564E+04	4.726E+03	5.305E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER	K.L. Act error) Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 11:17:30.86

```
*********************************************************************
*                          GENERAL ENG. LABS, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 1-FEB-2006 10:51:38.
Sample ID         : VER_HP_CAN           Sample quantity  : 1.00000E+00 LITER
Detector name     : HP                   Detector geometry: CAN
Elapsed live time: 0 00:25:00.00         Elapsed real time: 0 00:25:22.46  1.5%
Energy tolerance : 2.00000 KEV           Analyst Initials : MJH1
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 8943324
Matrix Spike DPM :                       LCS DPM          :
*********************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	38336	85.51*	9.227E+00	8.755E+03	1.911E+04	6.38
	136.47	4909	10.47	9.166E+00	9.217E+03	2.012E+04	9.59
CO-60	1173.24	45526	99.90	2.373E+00	3.460E+04	3.863E+04	6.29
	1332.50	41630	99.98*	2.156E+00	3.480E+04	3.885E+04	5.45
Y-88	898.04	17515	93.40	2.938E+00	1.150E+04	8.403E+04	8.94
	1836.06	11449	99.38*	1.785E+00	1.163E+04	8.497E+04	5.99
CD-109	88.03	87552	3.79*	8.120E+00	5.126E+05	8.117E+05	8.94
SN-113	391.70	14749	64.90*	5.422E+00	7.553E+03	4.768E+04	6.87
CS-137	661.66	43226	85.12*	3.737E+00	2.449E+04	2.496E+04	8.52
CE-139	165.85	23915	80.35*	8.718E+00	6.152E+03	2.872E+04	6.32
HG-203	70.83	------	4.75	6.194E+00	------ Line Not Found		------
	72.87	------	8.00	6.489E+00	------ Line Not Found		------
	82.60	------	3.55	7.644E+00	------ Line Not Found		------
	279.20	1586	77.30*	6.710E+00	5.511E+02	5.220E+04	16.02
PB-210	46.50	32137	4.05*	1.769E+00	8.083E+05	8.297E+05	8.09
AM-241	59.54	55491	35.90*	4.248E+00	6.555E+04	6.564E+04	7.20

Flag: "*" = Keyline

Sample ID : VER_HP_CAN
Acquisition date : 1-FEB-2006 10:51:38

Total number of lines in spectrum	40	
Number of unidentified lines	27	
Number of lines tentatively identified by NID	13	32.50%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	2.18	8.755E+03	1.911E+04	0.122E+04	6.38	
CO-60	5.27Y	1.12	3.480E+04	3.885E+04	0.212E+04	5.45	
Y-88	106.63D	7.31	1.163E+04	8.497E+04	0.509E+04	5.99	
CD-109	461.40D	1.58	5.126E+05	8.117E+05	0.726E+05	8.94	
SN-113	115.09D	6.31	7.553E+03	4.768E+04	0.328E+04	6.87	
CS-137	30.00Y	1.02	2.449E+04	2.496E+04	0.213E+04	8.52	
CE-139	137.64D	4.67	6.152E+03	2.872E+04	0.182E+04	6.32	
HG-203	46.60D	94.7	5.511E+02	5.220E+04	0.836E+04	16.02	
PB-210	22.26Y	1.03	8.083E+05	8.297E+05	0.671E+05	8.09	
AM-241	432.20Y	1.00	6.555E+04	6.564E+04	0.473E+04	7.20	
			---------	---------			
	Total Activity :		1.480E+06	2.004E+06			

Grand Total Activity : 1.480E+06 2.004E+06

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.73	245	12417	1.37	66.03	64	6	1.63E-01	****	1.99E-01	
0	66.59	340	9756	2.19	133.56	131	7	2.27E-01	96.5	5.52E+00	
0	103.96	200	4598	1.85	208.10	205	6	1.33E-01	****	8.95E+00	
0	255.21	717	2888	1.48	509.81	506	8	4.78E-01	27.1	7.07E+00	
0	364.67	92	1367	1.33	728.16	726	5	6.13E-02	****	5.68E+00	
0	475.85	94	1883	1.54	949.96	947	7	6.27E-02	****	4.75E+00	
0	511.32	140	1974	1.63	1020.74	1017	9	9.33E-02	****	4.52E+00	
0	547.63	207	1376	2.28	1093.17	1090	8	1.38E-01	63.5	4.30E+00	
0	576.46	52	1204	1.05	1150.69	1149	7	3.45E-02	****	4.14E+00	
0	736.50	82	1196	1.48	1470.02	1467	8	5.46E-02	****	3.44E+00	
0	740.37	59	1327	1.44	1477.74	1475	9	3.94E-02	****	3.43E+00	
0	761.23	144	1189	2.01	1519.36	1516	9	9.59E-02	88.3	3.35E+00	
0	814.12	366	2133	2.40	1624.91	1618	15	2.44E-01	56.1	3.18E+00	
0	820.53	203	1766	1.64	1637.70	1633	12	1.35E-01	83.9	3.16E+00	
0	947.81	124	2025	2.72	1891.70	1888	10	8.24E-02	****	2.81E+00	
0	966.12	174	1464	1.37	1928.23	1925	9	1.16E-01	80.9	2.77E+00	
0	1003.99	81	896	1.29	2003.81	2002	6	5.43E-02	****	2.69E+00	
0	1048.65	29	1430	2.23	2092.93	2089	10	1.93E-02	****	2.59E+00	
0	1078.68	83	822	0.95	2152.87	2150	6	5.50E-02	****	2.54E+00	
0	1247.95	66	280	2.79	2490.71	2488	8	4.40E-02	91.2	2.26E+00	
1	1324.75	333	657	2.67	2644.00	2632	45	2.22E-01	37.7	2.16E+00	
4	1415.19	80	198	1.80	2824.54	2821	21	5.34E-02	60.9	2.07E+00	
4	1420.36	101	371	3.32	2834.85	2821	21	6.74E-02	83.6	2.06E+00	
0	1427.30	58	386	4.48	2848.71	2841	14	3.85E-02	****	2.05E+00	
0	1560.27	53	453	3.43	3114.16	3109	12	3.52E-02	****	1.94E+00	
0	1614.81	114	483	6.53	3223.03	3216	17	7.61E-02	89.9	1.90E+00	
0	2047.96	24	55	2.29	4087.87	4086	5	1.58E-02	94.4	1.73E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 11:17:32.49

```
*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                             DETECTOR DATA                                 *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_HP_CAN.CNF;1  *
* Acquisition date : 1-FEB-2006 10:51:38.  Detector SN#     : 8943324       *
* Detector ID      : HP                    Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 00:25:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 00:25:22.46         Half life ratio  : 8.00000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL            *
* Sample ID        : VER_HP_CAN            Analyst initials: MJH1           *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 1-FEB-2006 10:50:52.50MS Isotope      :               *
* MSD DPM          :                       MSD Isotope     :               *
* LCS DPM          :                       LCS Isotope     :               *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.911E+04	1.220E+03	1.618E+02	1.005E+01	118.068
CO-60	3.885E+04	2.119E+03	1.019E+02	5.457E+00	381.402
Y-88	8.497E+04	5.090E+03	5.398E+02	3.030E+01	157.415
CD-109	8.117E+05	7.256E+04	4.051E+03	3.602E+02	200.379
SN-113	4.768E+04	3.278E+03	7.690E+02	4.849E+01	62.005
CS-137	2.496E+04	2.126E+03	1.243E+02	1.048E+01	200.773
CE-139	2.872E+04	1.816E+03	3.312E+02	1.982E+01	86.719
HG-203	5.220E+04	8.360E+03	8.014E+03	5.324E+02	6.514
PB-210	8.297E+05	6.714E+04	1.273E+04	9.838E+02	65.201
AM-241	6.564E+04	4.726E+03	5.305E+02	3.746E+01	123.731

VAX/VMS Nuclide Identification Report Generated 1-FEB-2006 10:50:55.46

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration    : MCA0:[GAMMA]HP$1
Sample date      : 1-APR-2005 12:00:00. Acquisition date : 1-FEB-2006 10:22:53.
Sample ID        : CAL_HP_CAN           Sample quantity  : 1.00000E+00 LITER
Detector name    : HP                   Detector geometry: HP
Elapsed live time: 0 00:25:00.00        Elapsed real time: 0 00:25:22.53  1.5%
Energy tolerance : 2.00000 KEV          Analyst Initials : MJH1
Abundance limit  : 75.00000             Sensitivity      : 3.00000
Batch ID         :                      Detector SN#     : 8943324
Matrix Spike DPM :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	27.90	2035	11434	2.04	56.38	55	6	1.36E+00	8.5	
2	0	33.31	468	16542	1.23	67.18	64	8	3.12E-01	47.9	
3	0	40.55	119	9343	0.68	81.62	80	4	7.91E-02	115.5	
4	0	46.40	31917	26612	1.23	93.29	87	12	2.13E+01	1.2	
5	6	57.94	2724	16246	1.73	116.31	112	14	1.82E+00	9.9	3.62E+00
6	6	59.54	53097	11581	1.18	119.51	112	14	3.54E+01	0.6	
7	0	66.91	277	10156	1.11	134.20	132	7	1.85E-01	60.5	
8	0	88.05	88234	18051	1.23	176.37	171	12	5.88E+01	0.5	
9	0	122.09	38137	10034	1.25	244.26	238	13	2.54E+01	0.7	
10	0	136.46	4694	6057	1.33	272.92	268	11	3.13E+00	3.5	
11	0	165.91	24085	7079	1.28	331.67	325	14	1.61E+01	1.0	
12	0	206.46	126	3423	1.00	412.55	409	8	8.39E-02	81.1	
13	0	255.43	561	3364	1.20	510.24	506	9	3.74E-01	19.1	
14	0	279.28	1768	3496	1.51	557.82	553	11	1.18E+00	6.9	
15	0	367.77	149	1515	1.62	734.34	732	6	9.93E-02	42.3	
16	0	391.71	14799	3908	1.58	782.11	776	14	9.87E+00	1.2	
17	0	423.62	149	1820	1.65	845.76	843	7	9.91E-02	48.3	
18	0	434.47	134	2108	1.44	867.41	864	8	8.94E-02	60.0	
19	0	469.96	39	2287	0.97	938.22	937	8	2.57E-02	215.6	
20	0	511.30	271	2203	2.03	1020.69	1016	10	1.81E-01	33.0	
21	0	518.69	66	1636	0.84	1035.43	1033	8	4.41E-02	106.4	
22	0	524.25	126	1287	1.31	1046.53	1043	7	8.41E-02	48.1	
23	0	661.66	43107	4417	1.88	1320.69	1311	20	2.87E+01	0.6	
24	0	673.55	80	1006	0.95	1344.42	1342	6	5.35E-02	63.5	
25	0	678.55	34	1344	1.31	1354.39	1352	8	2.28E-02	186.3	
26	0	700.41	148	1408	2.43	1398.01	1394	9	9.90E-02	46.4	
27	0	718.36	67	759	1.20	1433.84	1432	5	4.49E-02	62.7	
28	0	886.00	52	1256	1.01	1768.35	1765	7	3.49E-02	112.8	
29	0	898.05	17614	3777	2.10	1792.39	1782	21	1.17E+01	1.2	
30	0	948.56	74	2148	1.09	1893.18	1890	10	4.95E-02	117.3	
31	0	1004.07	120	1162	1.14	2003.97	2000	8	8.01E-02	50.1	
32	0	1068.07	134	906	2.19	2131.69	2129	7	8.92E-02	38.4	
33	0	1112.46	97	1318	2.71	2220.29	2218	9	6.48E-02	68.0	
34	0	1173.22	45712	2394	2.54	2341.55	2329	27	3.05E+01	0.6	
35	0	1204.29	55	426	1.61	2403.58	2399	8	3.67E-02	66.5	
36	0	1267.17	67	294	1.32	2529.07	2526	9	4.49E-02	47.6	
37	1	1325.25	248	706	2.67	2645.00	2634	39	1.65E-01	26.8	2.14E+01
38	1	1332.49	41550	796	2.85	2659.47	2634	39	2.77E+01	0.5	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1359.30	36	275	0.96	2712.98	2711	9	2.41E-02	83.7	
40	0	1836.08	11532	379	3.22	3664.79	3650	32	7.69E+00	1.0	

VMS Calibration Report V1.5 Generated 1-FEB-2006 10:50:52

Configuration : MCA0:[GAMMA]HP$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : HP
Efficiency type : Empirical
Detector Geometry: HP
Energy Calib Time: 1-FEB-2006 10:50:52
Effncy Calib Time: 1-FEB-2006 10:50:52
Shelf :

Energy Calibration Report

Energy = -0.3724 + 0.5014*Channel + -7.2505E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	93.29	46.50	46.40	0.100
2	119.51	59.54	59.55	-0.008
3	176.37	88.03	88.05	-0.018
4	244.26	122.06	122.09	-0.025
5	331.67	165.85	165.91	-0.057
6	782.11	391.70	391.71	-0.011
7	1320.69	661.66	661.66	0.004
8	1792.39	898.04	898.05	-0.005
9	2341.55	1173.24	1173.22	0.021
10	2659.46	1332.50	1332.49	0.010
11	3664.79	1836.06	1836.08	-0.012

FWHM Calibration Report

FWHM = 0.6537 + 5.5499E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.23	1.03	0.197
2	59.54	1.18	1.08	0.095
3	88.03	1.23	1.17	0.060
4	122.06	1.25	1.27	-0.016
5	165.85	1.28	1.37	-0.084
6	391.70	1.58	1.75	-0.177
7	661.66	1.88	2.08	-0.203
8	898.04	2.10	2.32	-0.218
9	1173.24	2.54	2.55	-0.013
10	1332.50	2.85	2.68	0.168
11	1836.06	3.22	3.03	0.191

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-3.565	0.8065	-3.0966E-03	-0.1656	0.1290	-3.6197E-02

Average Deviation = 0.939 % Reduced Chi-Square = 0.520

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	1.78E-02	5.74E-04	1.79E-02	-0.07	-0.22

Sample ID : CAL_HP_CAN Acquisition date : 1-FEB-2006 10:22:53

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	4.28E-02	1.31E-03	4.26E-02	0.17	0.51
3	88.03	8.07E-02	2.69E-03	8.12E-02	-0.18	-0.61
4	122.06	9.23E-02	2.85E-03	9.23E-02	0.02	0.05
5	165.85	8.74E-02	2.59E-03	8.72E-02	0.09	0.26
6	391.70	5.39E-02	1.55E-03	5.42E-02	-0.23	-0.65
7	661.66	3.84E-02	1.18E-03	3.74E-02	0.89	2.72
8	898.04	2.84E-02	8.08E-04	2.94E-02	-1.20	-3.43
9	1173.24	2.40E-02	6.63E-04	2.37E-02	0.48	1.31
10	1332.50	2.16E-02	5.73E-04	2.16E-02	0.12	0.32
11	1836.06	1.78E-02	4.98E-04	1.79E-02	-0.09	-0.25

Approved by: Michael Mitton Approval Date: 2 / 3 / 06

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776. Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. [illegible] 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: Gamma 13 Geometry: Ca

	YES	NO	Comments
1) Is all calibration standard information enclosed for:			
the primary standard certificate?	✓		
the secondard standard(s) documentation?	n/a		
the nuclide library used?	✓		
the VMS certificate file?	✓		
2) Is the detector efficiency curve printout included?		✓	
3) Is the efficiency calibration report included and reviewed?	✓		
4) Is the raw count data included for:			
the calibration peak report?	✓		
the calibration verification PEAK report?	✓		
the calibration verification NID report?	✓		
the last instrument background?	✓		
5) Are the calibration verification calculations included?	✓		
6) Are the instrument settings included: amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 6/22/05

Reviewed By: [signature] Date: 6/22/05

EFF: 6/22/05

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup
Detector: Gamma 13

Date Performed: 6/22/2005 Performed By: Kinsey Boehl

High Voltage Power Supply Model No. TC 950 High Voltage 3.00 KeV	***Spectroscopy Amplifier*** Model No. 2026 Course Gain 50 Fine Gain 0.643 Time Constant 6us Input polarity Neg BSLR rate N/A BSLR mode N/A Threshold N/A
ADC Model No. ND579 Gain 4K	
AIM Module Model No. ND556 Address NIC1:1	

Gamma Spectroscopy Calibration Verification

Instrument: Gamma 13 Calibration Date: 6/22/2005

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Am-241		6.2283E+04	6.206E+04	-0.36
Cd-109		8.2222E+05	8.060E+05	-1.97
Co-57		1.8996E+04	2.007E+04	5.65
Ce-139		2.8853E+04	2.820E+04	-2.26
Sn-113		4.8141E+04	4.847E+04	0.68
Cs-137		2.4217E+04	2.512E+04	3.73
Y-88	1836.06	8.5829E+04	8.662E+04	0.92
Co-60	1332.5	3.8655E+04	3.877E+04	0.30
Pb-210		8.1682E+05	8.833E+05	8.14

Prepared By: Date: 6/22/05

Reviewed By: Date: 6/21/05

Verified:

VMS Quality Assurance Report V1.3 Generated 18-JUN-2005 06:33:07

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA13.QAF;2

Sample ID : BKG_GAMMA13 Sample quantity : 1.80 LITER
Sample date : 17-JUN-2005 00:00:00 Acquisition date : 17-JUN-2005 13:51:45
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:06.98

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	1.86E+05	2.14E+05	1.92E+05	
BACKGROUND (CPS)	3.08	3.54	3.19	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 6/20/05

VAX/VMS Nuclide Identification Report Generated 20-JUN-2005 13:00:07.35

****

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

****

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA13_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 20-JUN-2005 11:57:47
Sample ID : VER_GAMMA13_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA13 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:01:46.67 2.9%
Energy tolerance : 2.00000 KEV Analyst Initials : AKB
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 37-TN11260A
Matrix Spike DPM : LCS DPM :

****

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	6	36.39	2783	8446	1.25	75.14	74	31	7.73E-01	3.7	1.45E+03
2	6	37.84	18612	58770	1.85	78.05	74	31	5.17E+00	2.2	
3	6	40.63	18755	91164	1.86	83.62	74	31	5.21E+00	3.3	
4	6	42.67	14388	65776	1.41	87.70	74	31	4.00E+00	3.3	
5	6	46.51*	291224	63194	1.38	95.40	74	31	8.09E+01	0.2	
6	6	49.31	9810	60706	1.59	100.99	74	31	2.73E+00	5.0	
7	0	59.60	203523	89035	1.15	121.58	115	14	5.65E+01	0.4	
8	7	66.77	6121	51907	2.10	135.90	131	24	1.70E+00	7.5	5.24E+00
9	7	68.76	5754	62281	2.11	139.89	131	24	1.60E+00	9.3	
10	7	70.80	9162	38851	1.32	143.97	131	24	2.55E+00	4.0	
11	7	72.85*	11278	34516	1.21	148.06	131	24	3.13E+00	3.0	
12	0	78.66*	663	30594	1.63	159.69	157	6	1.84E-01	41.9	
13	8	81.38	619	35702	1.15	165.14	162	26	1.72E-01	49.1	6.26E+02
14	8	82.73*	8116	65086	2.42	167.83	162	26	2.25E+00	6.3	
15	8	85.49*	10092	66260	2.38	173.35	162	26	2.80E+00	7.1	
16	8	88.05*	251500	28643	1.20	178.47	162	26	6.99E+01	0.2	
17	0	122.12	118333	41393	1.19	246.61	240	14	3.29E+01	0.5	
18	0	136.52*	13884	29268	1.18	275.41	270	12	3.86E+00	2.6	
19	0	165.89*	110255	32147	1.22	334.16	327	14	3.06E+01	0.5	
20	0	199.19*	4412	18983	1.44	400.75	396	11	1.23E+00	6.2	
21	0	203.88*	1130	13186	1.13	410.13	407	8	3.14E-01	17.9	
22	0	237.71*	488	11187	1.78	477.78	475	8	1.35E-01	37.9	
23	0	255.11	3100	12868	1.31	512.58	508	10	8.61E-01	7.1	
24	0	279.23*	77338	19722	1.32	560.82	553	16	2.15E+01	0.5	
25	0	300.16	269	7521	1.42	602.67	600	8	7.48E-02	56.1	
26	0	329.76	152	5892	1.05	661.85	659	7	4.22E-02	84.4	
27	0	391.72	77055	14956	1.45	785.75	778	16	2.14E+01	0.5	
28	0	510.86*	1768	8495	2.61	1023.97	1017	14	4.91E-01	11.3	
29	0	661.68*	54548	15066	1.72	1325.50	1316	20	1.52E+01	0.7	
30	0	701.75	209	4527	1.71	1405.61	1403	8	5.81E-02	56.3	
31	0	813.93*	1557	5852	2.32	1629.87	1623	15	4.33E-01	11.0	
32	0	898.03	93818	11753	1.87	1797.98	1788	20	2.61E+01	0.4	
33	0	1036.67	126	2387	1.19	2075.07	2073	7	3.51E-02	64.8	
34	0	1057.53	59	3009	1.30	2116.77	2113	9	1.64E-02	168.0	
35	0	1173.18*	60125	6828	2.13	2347.89	2336	24	1.67E+01	0.5	
36	5	1326.28	2286	3256	3.75	2653.84	2642	40	6.35E-01	8.4	4.00E+01
37	5	1332.50*	54024	2519	2.62	2666.27	2642	40	1.50E+01	0.5	
38	0	1356.32	62	906	1.39	2713.86	2712	6	1.73E-02	77.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1836.00	57861	2032	2.69	3672.16	3659	27	1.61E+01	0.5	
40	0	1966.22*	44	141	2.25	3932.28	3929	8	1.22E-02	49.7	
41	0	2032.54	41	345	8.17	4064.73	4054	20	1.14E-02	111.5	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*********************************************************************
*                          General Eng. Labs, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
*                                                                   *
*                             DETECTOR DATA                         *
*                                                                   *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA13_   *
* Acquisition date : 20-JUN-2005 11:57:47 Detector SN#    : 37-TN11260  *
* Detector ID      : GAMMA13              Sensitivity     : 3.000       *
* Geometry         : CAN                  Energy tolerance: 2.000       *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000      *
* Elapsed real time:    0 01:01:46.67     Half life ratio :  8.000      *
*********************************************************************
*                                                                   *
*                             SAMPLE DATA                           *
*                                                                   *
* Sample date      :  1-APR-2005 12:00:00 Nuclide Library :          *
* Sample ID        : VER_GAMMA13_CAN      Analyst initials: AKB      *
* Batch Number     :                      Sample Quantity : 1.0000E+00 LITER  *
* Recovery         :    1.00000           Carrier Weight :    0.00000   *
*********************************************************************
*                                                                   *
*                               QC DATA                             *
* Standard Weight  :   0.00000                                      *
* CALIB. DATE/TIME : 20-JUN-2005 11:56:42 MS Isotope      :         *
* MSD DPM          :    0.000             MSD Isotope     :         *
* LCS DPM          :    0.000             LCS Isotope     :         *
* LCSD DPM         :    0.000             LCSD Isotope    :         *
*********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	2.007E+04	2.282E+03	1.048E+02	0.000E+00
CO-60	3.877E+04	2.187E+03	1.444E+02	0.000E+00
Y-88	8.662E+04	4.686E+03	2.130E+02	0.000E+00
CD-109	8.060E+05	7.920E+04	2.349E+03	0.000E+00
SN-113	4.847E+04	2.878E+03	2.434E+02	0.000E+00
CS-137	2.512E+04	2.165E+03	1.767E+02	0.000E+00
CE-139	2.820E+04	2.057E+03	1.416E+02	0.000E+00
HG-203	6.379E+04	4.820E+03	3.566E+02	0.000E+00
PB-210	8.833E+05	6.433E+04	2.856E+03	0.000E+00
AM-241	6.206E+04	4.332E+03	2.647E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error	Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 20-JUN-2005 13:00:09.29

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA13_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 20-JUN-2005 11:57:47
Sample ID         : VER_GAMMA13_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA13              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:01:46.67  2.9%
Energy tolerance  : 2.00000 KEV          Analyst Initials : AKB
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 37-TN11260A
Matrix Spike DPM  :                      LCS DPM          :
*************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	118333	85.51*	6.347E+00	1.637E+04	2.007E+04	11.37
	136.47	13884	10.47	6.046E+00	1.647E+04	2.019E+04	11.89
CO-60	1173.24	60125	99.90	1.192E+00	3.791E+04	3.902E+04	6.36
	1332.50	54024	99.98*	1.077E+00	3.767E+04	3.877E+04	5.64
Y-88	898.04	93818	93.40	1.487E+00	5.072E+04	8.533E+04	6.48
	1836.06	57861	99.38*	8.490E-01	5.149E+04	8.662E+04	5.41
CD-109	88.03	251500	3.79*	6.971E+00	7.147E+05	8.060E+05	9.83
SN-113	391.70	77055	64.90*	2.978E+00	2.994E+04	4.847E+04	5.94
CS-137	661.66	54548	85.12*	1.925E+00	2.499E+04	2.512E+04	8.62
CE-139	165.85	110255	80.35*	5.465E+00	1.885E+04	2.820E+04	7.29
HG-203	70.83	9162	4.75	7.051E+00	2.054E+04	6.752E+04	14.77
	72.87	11278	8.00	7.060E+00	1.499E+04	4.929E+04	13.46
	82.60	8116	3.55	7.027E+00	2.443E+04	8.031E+04	18.11
	279.20	77338	77.30*	3.872E+00	1.940E+04	6.379E+04	7.56
PB-210	46.50	291224	4.05*	6.154E+00	8.773E+05	8.833E+05	7.28
AM-241	59.54	203523	35.90*	6.861E+00	6.204E+04	6.206E+04	6.98

Flag: "*" = Keyline

Sample ID : VER_GAMMA13_CAN Acquisition date : 20-JUN-2005 11:57:47

Total number of lines in spectrum	41	
Number of unidentified lines	25	
Number of lines tentatively identified by NID	16	39.02%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.23	1.637E+04	2.007E+04	0.228E+04	11.37	
CO-60	5.27Y	1.03	3.767E+04	3.877E+04	0.219E+04	5.64	
Y-88	106.63D	1.68	5.149E+04	8.662E+04	0.469E+04	5.41	
CD-109	461.40D	1.13	7.147E+05	8.060E+05	0.792E+05	9.83	
SN-113	115.09D	1.62	2.994E+04	4.847E+04	0.288E+04	5.94	
CS-137	30.00Y	1.01	2.499E+04	2.512E+04	0.217E+04	8.62	
CE-139	137.64D	1.50	1.885E+04	2.820E+04	0.206E+04	7.29	
HG-203	46.60D	3.29	1.940E+04	6.379E+04	0.482E+04	7.56	
PB-210	22.26Y	1.01	8.773E+05	8.833E+05	0.643E+05	7.28	
AM-241	432.20Y	1.00	6.204E+04	6.206E+04	0.433E+04	6.98	
			---------	---------			
	Total Activity :		1.853E+06	2.062E+06			
	Grand Total Activity :		1.853E+06	2.062E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	36.39	2783	8446	1.25	75.14	74	31	7.73E-01	7.4	5.00E+00	
6	37.84	18612	58770	1.85	78.05	74	31	5.17E+00	4.5	5.21E+00	
6	40.63	18755	91164	1.86	83.62	74	31	5.21E+00	6.6	5.57E+00	
6	42.67	14388	65776	1.41	87.70	74	31	4.00E+00	6.7	5.79E+00	
6	49.31	9810	60706	1.59	100.99	74	31	2.73E+00	10.0	6.37E+00	
7	66.77	6121	51907	2.10	135.90	131	24	1.70E+00	14.9	7.01E+00	
7	68.76	5754	62281	2.11	139.89	131	24	1.60E+00	18.6	7.04E+00	
0	78.66	663	30594	1.63	159.69	157	6	1.84E-01	83.9	7.05E+00	
8	81.38	619	35702	1.15	165.14	162	26	1.72E-01	98.1	7.04E+00	
8	85.49	10092	66260	2.38	173.35	162	26	2.80E+00	14.1	7.00E+00	
0	199.19	4412	18983	1.44	400.75	396	11	1.23E+00	12.5	4.89E+00	
0	203.88	1130	13186	1.13	410.13	407	8	3.14E-01	35.7	4.82E+00	
0	237.71	488	11187	1.78	477.78	475	8	1.35E-01	75.8	4.35E+00	
0	255.11	3100	12868	1.31	512.58	508	10	8.61E-01	14.2	4.14E+00	
0	300.16	269	7521	1.42	602.67	600	8	7.48E-02	****	3.67E+00	
0	329.76	152	5892	1.05	661.85	659	7	4.22E-02	****	3.41E+00	
0	510.86	1768	8495	2.61	1023.97	1017	14	4.91E-01	22.7	2.39E+00	
0	701.75	209	4527	1.71	1405.61	1403	8	5.81E-02	****	1.83E+00	
0	813.93	1557	5852	2.32	1629.87	1623	15	4.33E-01	22.0	1.62E+00	
0	1036.67	126	2387	1.19	2075.07	2073	7	3.51E-02	****	1.32E+00	
0	1057.53	59	3009	1.30	2116.77	2113	9	1.64E-02	****	1.30E+00	
5	1326.28	2286	3256	3.75	2653.84	2642	40	6.35E-01	16.8	1.08E+00	
0	1356.32	62	906	1.39	2713.86	2712	6	1.73E-02	****	1.06E+00	
0	1966.22	44	141	2.25	3932.28	3929	8	1.22E-02	99.5	8.11E-01	
0	2032.54	41	345	8.17	4064.73	4054	20	1.14E-02	****	7.93E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 20-JUN-2005 13:00:10.82

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

DETECTOR DATA

Configuration	DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA13_CAN.CNF;1		
Acquisition date	20-JUN-2005 11:57:47	Detector SN#	37-TN11260A
Detector ID	GAMMA13	Sensitivity	3.00000
Geometry	CAN	Energy tolerance	2.00000
Elapsed live time	0 01:00:00.00	Abundance limit	75.00000
Elapsed real time	0 01:01:46.67	Half life ratio	8.00000

SAMPLE DATA

Sample date	1-APR-2005 12:00:00.	Nuclide Library	CAL
Sample ID	VER_GAMMA13_CAN	Analyst initials	AKB
Batch Number		Sample Quantity	1.00000E+00 LITER

QC DATA

CALIB. DATE/TIME	20-JUN-2005 11:56:42.9	MS Isotope	
MSD DPM		MSD Isotope	
LCS DPM		LCS Isotope	

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	2.007E+04	2.282E+03	1.048E+02	1.188E+01	191.531
CO-60	3.877E+04	2.187E+03	1.444E+02	8.024E+00	268.588
Y-88	8.662E+04	4.686E+03	2.130E+02	1.135E+01	406.596
CD-109	8.060E+05	7.920E+04	2.349E+03	2.306E+02	343.066
SN-113	4.847E+04	2.878E+03	2.434E+02	1.424E+01	199.110
CS-137	2.512E+04	2.165E+03	1.767E+02	1.503E+01	142.118
CE-139	2.820E+04	2.057E+03	1.416E+02	1.024E+01	199.174
HG-203	6.379E+04	4.820E+03	3.566E+02	2.667E+01	178.896
PB-210	8.833E+05	6.433E+04	2.856E+03	2.075E+02	309.321
AM-241	6.206E+04	4.332E+03	2.647E+02	1.836E+01	234.421

VAX/VMS Nuclide Identification Report Generated 20-JUN-2005 11:33:24.16

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]CAL_GAMMA13_CAN.CNF;2
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 20-JUN-2005 10:31:08
Sample ID         : CAL_GAMMA13_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA13              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:01:46.29  2.9%
Energy tolerance : 2.00000 KEV           Analyst Initials : AKB
Abundance limit   : 75.00000            Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 37-TN11260A
Matrix Spike DPM :                       LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	37.98	14226	66957	1.39	78.32	74	31	3.95E+00	3.3	1.01E+03
2	3	40.66	13900	66344	1.40	83.70	74	31	3.86E+00	3.4	
3	3	46.55*	270184	55457	1.18	95.46	74	31	7.51E+01	0.2	
4	0	59.62	203384	86985	1.16	121.61	115	14	5.65E+01	0.4	
5	10	67.51	10402	66137	2.93	137.39	131	24	2.89E+00	5.4	1.09E+01
6	10	70.87	11085	48443	1.70	144.12	131	24	3.08E+00	3.9	
7	10	72.88*	10648	34619	1.12	148.14	131	24	2.96E+00	3.1	
8	4	82.65*	5848	49936	1.71	167.67	162	30	1.62E+00	6.9	5.13E+02
9	4	84.86*	8784	48471	1.72	172.09	162	30	2.44E+00	4.7	
10	4	88.03*	250811	27618	1.23	178.44	162	30	6.97E+01	0.2	
11	0	98.52*	294	17314	0.91	199.42	197	6	8.17E-02	70.9	
12	0	122.14	117267	41659	1.20	246.65	240	14	3.26E+01	0.5	
13	0	136.50*	14278	28684	1.20	275.38	270	12	3.97E+00	2.5	
14	0	165.90*	110209	31714	1.22	334.16	327	14	3.06E+01	0.5	
15	0	199.08*	4349	17263	1.37	400.52	396	10	1.21E+00	5.9	
16	0	203.74*	1356	14612	2.02	409.85	406	9	3.77E-01	16.3	
17	0	255.05	3567	12417	1.31	512.46	508	10	9.91E-01	6.1	
18	0	279.21*	77702	19412	1.33	560.78	553	16	2.16E+01	0.5	
19	0	313.65	224	5932	1.83	629.65	627	7	6.21E-02	57.6	
20	0	381.04	360	6102	2.43	764.39	761	8	9.99E-02	38.0	
21	0	391.69	76049	14994	1.44	785.68	778	16	2.11E+01	0.5	
22	0	510.72*	1708	8588	3.46	1023.69	1017	14	4.75E-01	11.8	
23	0	661.59*	54080	14331	1.70	1325.33	1316	19	1.50E+01	0.7	
24	0	813.72*	1287	5129	2.24	1629.44	1623	13	3.57E-01	11.8	
25	0	876.55*	84	2974	1.30	1755.03	1751	7	2.33E-02	108.5	
26	0	897.94	94388	12282	1.91	1797.78	1787	22	2.62E+01	0.4	
27	0	918.50	106	4210	1.04	1838.89	1836	9	2.94E-02	111.2	
28	0	1015.43	103	2128	0.99	2032.62	2029	6	2.87E-02	71.4	
29	0	1173.10*	59829	6655	2.17	2347.73	2337	23	1.66E+01	0.5	
30	0	1227.66	195	1798	3.41	2456.77	2451	12	5.43E-02	44.0	
31	0	1232.68	77	1027	0.95	2466.79	2462	7	2.14E-02	70.0	
32	0	1270.94	94	1695	1.09	2543.26	2538	12	2.62E-02	87.8	
33	6	1325.83	2620	3105	4.12	2652.94	2643	39	7.28E-01	6.7	3.29E+01
34	6	1332.34*	53359	2360	2.55	2665.96	2643	39	1.48E+01	0.5	
35	0	1457.66	40	1260	1.37	2916.35	2913	8	1.11E-02	155.1	
36	0	1570.74*	104	2203	2.09	3142.28	3137	10	2.89E-02	85.1	
37	0	1597.33	177	2304	1.20	3195.40	3190	10	4.91E-02	51.5	
38	0	1718.78*	56	511	1.74	3438.02	3435	8	1.54E-02	72.0	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1723.78	139	897	5.46	3448.01	3442	15	3.87E-02	47.6	
40	0	1753.06	37	321	1.37	3506.51	3503	7	1.03E-02	82.0	
41	0	1835.79	57460	2307	2.70	3671.74	3659	28	1.60E+01	0.5	
42	0	1857.38	94	478	2.25	3714.88	3710	10	2.60E-02	45.1	
43	0	1993.41	29	113	0.98	3986.58	3984	6	8.18E-03	59.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Calibration Report V1.5 Generated 20-JUN-2005 11:56:43

Configuration : MCA0:[GAMMA]GAMMA13$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA13 Energy Calib Time: 17-JUN-2005 12:54:40
Efficiency type : Empirical Effncy Calib Time: 20-JUN-2005 11:56:42
Detector Geometry: GAMMA13 Shelf :

Energy Calibration Report

Energy = -1.182 + 0.5000*Channel + 9.1833E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	95.32	46.50	46.48	0.023
2	121.43	59.54	59.53	0.007
3	178.42	88.03	88.02	0.011
4	246.57	122.06	122.10	-0.039
5	334.10	165.85	165.87	-0.013
6	785.72	391.70	391.70	0.000
7	1325.46	661.66	661.66	0.005
8	1797.97	898.04	898.03	0.015
9	2347.97	1173.24	1173.22	0.024
10	2666.35	1332.50	1332.54	-0.040
11	3672.28	1836.06	1836.06	0.008

FWHM Calibration Report

FWHM = 0.7849 + 4.2344E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.30	1.07	0.225
2	59.54	1.14	1.11	0.032
3	88.03	1.26	1.18	0.077
4	122.06	1.19	1.25	-0.062
5	165.85	1.24	1.33	-0.088
6	391.70	1.46	1.62	-0.166
7	661.66	1.73	1.87	-0.145
8	898.04	1.92	2.05	-0.135
9	1173.24	2.15	2.24	-0.085
10	1332.50	2.58	2.33	0.250
11	1836.06	2.70	2.60	0.097

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a4	a5	a6	a7
941.3	-4.248	0.8364	4.2377E-02	-5.4519E-02	1.1469E-02	-3.6336E-03

Average Deviation = 1.62 % Reduced Chi-Square = 1.05

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	6.17E-02	1.86E-03	6.15E-02	0.12	0.36

Sample ID : CAL_GAMMA13_CAN Acquisition date : 20-JUN-2005 10:31:08

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	6.83E-02	2.07E-03	6.86E-02	-0.13	-0.40
3	88.03	6.81E-02	2.25E-03	6.97E-02	-0.71	-2.34
4	122.06	6.65E-02	2.02E-03	6.35E-02	1.47	4.48
5	165.85	5.34E-02	1.51E-03	5.47E-02	-0.84	-2.38
6	391.70	2.96E-02	7.84E-04	2.98E-02	-0.26	-0.68
7	661.66	1.98E-02	6.09E-04	1.93E-02	0.89	2.75
8	898.04	1.46E-02	3.85E-04	1.49E-02	-0.71	-1.88
9	1173.24	1.21E-02	3.33E-04	1.19E-02	0.51	1.40
10	1332.50	1.07E-02	2.82E-04	1.08E-02	-0.35	-0.94
11	1836.06	8.51E-03	2.25E-04	8.49E-03	0.07	0.19

Approved by: _____ Approval Date: 6 / 20 / 05

for 6/21/6

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 6-DEC-2004 10:31:17.67
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: M. Mn 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 16 Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			NA
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included: amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 8/2/05

Reviewed By: [signature] Date: 8/2/05

EFFECTIVE: 7/21/05

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: GAMMA 16

Date Performed: 7/15/05 Performed By: [signature]

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3106A	Model No. 2021
High Voltage 4.00	Course Gain 10
	Fine Gain 1.228
	Time Constant 4usec
ADC	Input polarity +
	BSLR rate AUTO
Model No. 8701	BSLR mode ASYM
Gain 4K	Threshold AUTO
AIM Module	
Model No. MAS56	
Address SA3:1	

Gamma Spectroscopy Calibration Verification

Instrument: GAMMA 16 Calibration Date: 7/21/2005

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Am-241		6.2283E+04	6.629E+04	6.43
Cd-109		8.2222E+05	8.508E+05	3.48
Co-57		1.8996E+04	1.876E+04	-1.24
Ce-139		2.8853E+04	2.945E+04	2.07
Sn-113		4.8141E+04	4.790E+04	-0.50
Cs-137		2.4217E+04	2.451E+04	1.21
Y-88	1836.06	8.5829E+04	8.660E+04	0.90
Co-60	1332.5	3.8655E+04	3.809E+04	-1.46
Pb-210		8.1682E+05	7.366E+05	-9.82

Prepared By: [signature] Date: 7/21/05

Reviewed By: [signature] Date: 7/21/05

Verified:

VMS Quality Assurance Report V1.3 Generated 14-JUL-2005 11:13:22

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA16.QAF;1

Sample ID : BKG_GAMMA16 Sample quantity : 1.80 LITER
Sample date : 13-JUL-2005 00:00:00 Acquisition date : 13-JUL-2005 18:31:31
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:04.03

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	7.54E+04	9.49E+04	9.10E+04	
BACKGROUND (CPS)	1.26	1.58	1.52	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 7 / 19 / 05

VAX/VMS Nuclide Identification Report Generated 21-JUL-2005 18:11:10.10

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_CAN.CNF;2
Sample date : 1-APR-2005 12:00:00. Acquisition date : 21-JUL-2005 16:08:40
Sample ID : VER_GAMMA16_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:02:08.21 1.7%
Energy tolerance : 2.00000 KEV Analyst Initials : AKB
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 1922864
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.51*	15761	60905	1.13	91.62	87	11	2.19E+00	3.1	
2	6	59.45*	66074	39421	1.20	117.48	110	18	9.18E+00	0.6	4.88E+01
3	6	61.34*	8517	66645	2.00	121.26	110	18	1.18E+00	6.9	
4	0	70.19*	455	38225	0.66	138.96	137	6	6.32E-02	67.9	
5	0	72.86	2904	38728	1.03	144.29	142	6	4.03E-01	10.9	
6	4	82.77*	6674	66552	1.71	164.09	158	36	9.27E-01	7.0	1.37E+03
7	4	85.27*	11514	64353	1.72	169.09	158	36	1.60E+00	4.5	
8	4	87.96	258924	44505	1.26	174.46	158	36	3.60E+01	0.2	
9	4	94.23*	1449	31809	1.19	187.00	158	36	2.01E-01	22.9	
10	2	121.96*	149095	34668	1.19	242.44	236	26	2.07E+01	0.3	2.56E+02
11	2	124.12	17805	34923	1.37	246.75	236	26	2.47E+00	2.6	
12	0	136.55*	19490	50673	1.15	271.59	267	12	2.71E+00	2.4	
13	0	149.58	279	18806	0.64	297.64	296	5	3.88E-02	73.9	
14	0	165.83	158465	75916	1.21	330.12	324	13	2.20E+01	0.4	
15	0	255.02	4921	24235	1.26	508.40	504	10	6.84E-01	6.1	
16	0	279.19*	84624	43808	1.32	556.71	549	16	1.18E+01	0.7	
17	0	310.06	492	11923	1.66	618.43	616	7	6.83E-02	37.1	
18	0	391.51	112266	42136	1.41	781.27	774	15	1.56E+01	0.5	
19	0	425.85*	99	11161	1.29	849.93	848	8	1.38E-02	184.6	
20	0	481.57*	287	7440	1.42	961.33	959	6	3.99E-02	47.9	
21	0	510.74*	3138	18369	3.21	1019.65	1012	16	4.36E-01	9.8	
22	0	542.90*	74	7694	0.56	1083.96	1082	7	1.03E-02	197.2	
23	0	604.88	107	8823	0.73	1207.89	1207	8	1.48E-02	152.5	
24	0	661.34*	103693	31836	1.63	1320.79	1313	17	1.44E+01	0.5	
25	0	744.42	111	5213	1.19	1486.94	1484	6	1.54E-02	103.1	
26	0	813.63	2008	9452	1.80	1625.35	1620	12	2.79E-01	9.9	
27	0	897.51*	150608	30883	1.81	1793.11	1784	19	2.09E+01	0.4	
28	0	1172.47*	119493	17668	2.02	2343.12	2332	22	1.66E+01	0.4	
29	2	1324.30	2744	4515	2.58	2646.90	2635	47	3.81E-01	5.8	2.69E+02
30	2	1331.49*	104267	4540	2.59	2661.27	2635	47	1.45E+01	0.4	
31	0	1419.78	141	2308	1.72	2837.93	2835	9	1.95E-02	62.2	
32	0	1459.30*	119	1620	1.40	2917.01	2915	6	1.65E-02	54.6	
33	0	1682.86*	114	1445	1.31	3364.41	3361	8	1.58E-02	58.7	
34	0	1834.92*	98698	6584	2.45	3668.77	3656	26	1.37E+01	0.4	
35	0	1866.47	102	400	3.37	3731.93	3727	10	1.42E-02	37.8	
36	0	1990.81*	70	356	1.87	3980.83	3977	10	9.72E-03	51.9	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_ *
* Acquisition date : 21-JUL-2005 16:08:40 Detector SN#     : 1922864    *
* Detector ID       : GAMMA16             Sensitivity      : 3.000      *
* Geometry          : CAN                 Energy tolerance: 2.000      *
* Elapsed live time:    0 02:00:00.00     Abundance limit  : 75.000     *
* Elapsed real time:    0 02:02:08.21     Half life ratio  :  8.000     *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date       :  1-APR-2005 12:00:00 Nuclide Library :            *
* Sample ID         : VER_GAMMA16_CAN      Analyst initials: AKB        *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery          :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight   :   0.00000                                         *
* CALIB. DATE/TIME : 21-JUL-2005 16:06:26 MS Isotope       :            *
* MSD DPM           :    0.000           MSD Isotope      :            *
* LCS DPM           :    0.000           LCS Isotope      :            *
* LCSD DPM          :    0.000           LCSD Isotope     :            *
*************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.876E+04	1.211E+03	1.005E+02	0.000E+00
CO-60	3.809E+04	2.028E+03	9.399E+01	0.000E+00
Y-88	8.660E+04	4.653E+03	1.758E+02	0.000E+00
CD-109	8.508E+05	1.236E+05	2.785E+03	0.000E+00
SN-113	4.790E+04	2.839E+03	2.605E+02	0.000E+00
CS-137	2.451E+04	1.967E+03	1.286E+02	0.000E+00
CE-139	2.945E+04	1.930E+03	1.561E+02	0.000E+00
HG-203	6.575E+04	4.606E+03	4.757E+02	0.000E+00
PB-210	7.366E+05	1.020E+05	3.766E+04	0.000E+00
AM-241	6.629E+04	8.303E+03	8.214E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 21-JUL-2005 18:11:11.81

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_CAN.CNF;2
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 21-JUL-2005 16:08:40
Sample ID         : VER_GAMMA16_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA16              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:02:08.21  1.7%
Energy tolerance  : 2.00000 KEV          Analyst Initials : AKB
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 1922864
Matrix Spike DPM  :                      LCS DPM          :
*************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	149095	85.51*	4.633E+00	1.413E+04	1.876E+04	6.46
	136.47	19490	10.47	4.646E+00	1.504E+04	1.997E+04	8.65
CO-60	1173.24	119493	99.90	1.186E+00	3.787E+04	3.942E+04	7.62
	1332.50	104267	99.98*	1.070E+00	3.659E+04	3.809E+04	5.33
Y-88	898.04	150608	93.40	1.483E+00	4.081E+04	8.408E+04	8.81
	1836.06	98698	99.38*	8.870E-01	4.203E+04	8.660E+04	5.37
CD-109	88.03	258924	3.79*	3.562E+00	7.199E+05	8.508E+05	14.53
SN-113	391.70	112266	64.90*	2.649E+00	2.452E+04	4.790E+04	5.93
CS-137	661.66	103693	85.12*	1.879E+00	2.434E+04	2.451E+04	8.03
CE-139	165.85	158465	80.35*	4.401E+00	1.682E+04	2.945E+04	6.55
HG-203	70.83	455	4.75	2.075E+00	1.733E+03	9.064E+03	136.81
	72.87	2904	8.00	2.333E+00	5.842E+03	3.055E+04	26.96
	82.60	6674	3.55	3.194E+00	2.210E+04	1.156E+05	21.88
	279.20	84624	77.30*	3.268E+00	1.257E+04	6.575E+04	7.01
PB-210	46.50	15761	4.05*	2.002E-01	7.297E+05	7.366E+05	13.85
AM-241	59.54	66074	35.90*	1.043E+00	6.625E+04	6.629E+04	12.53

Flag: "*" = Keyline

Sample ID : VER_GAMMA16_CAN Acquisition date : 21-JUL-2005 16:08:40

Total number of lines in spectrum	36	
Number of unidentified lines	20	
Number of lines tentatively identified by NID	16	44.44%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.33	1.413E+04	1.876E+04	0.121E+04	6.46	
CO-60	5.27Y	1.04	3.659E+04	3.809E+04	0.203E+04	5.33	
Y-88	106.63D	2.06	4.203E+04	8.660E+04	0.465E+04	5.37	
CD-109	461.40D	1.18	7.199E+05	8.508E+05	1.236E+05	14.53	
SN-113	115.09D	1.95	2.452E+04	4.790E+04	0.284E+04	5.93	
CS-137	30.00Y	1.01	2.434E+04	2.451E+04	0.197E+04	8.03	
CE-139	137.64D	1.75	1.682E+04	2.945E+04	0.193E+04	6.55	
HG-203	46.60D	5.23	1.257E+04	6.575E+04	0.461E+04	7.01	
PB-210	22.26Y	1.01	7.297E+05	7.366E+05	1.020E+05	13.85	
AM-241	432.20Y	1.00	6.625E+04	6.629E+04	0.830E+04	12.53	
			---------	---------			
	Total Activity :		1.687E+06	1.965E+06			
Grand Total Activity :			1.687E+06	1.965E+06			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : VER_GAMMA16_CAN
Acquisition date : 21-JUL-2005 16:08:40

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
6	61.34	8517	66645	2.00	121.26	110	18	1.18E+00	13.8	1.21E+00	
4	85.27	11514	64353	1.72	169.09	158	36	1.60E+00	8.9	3.38E+00	
4	94.23	1449	31809	1.19	187.00	158	36	2.01E-01	45.8	3.92E+00	
2	124.12	17805	34923	1.37	246.75	236	26	2.47E+00	5.2	4.64E+00	
0	149.58	279	18806	0.64	297.64	296	5	3.88E-02	****	4.56E+00	
0	255.02	4921	24235	1.26	508.40	504	10	6.84E-01	12.2	3.46E+00	
0	310.06	492	11923	1.66	618.43	616	7	6.83E-02	74.2	3.06E+00	
0	425.85	99	11161	1.29	849.93	848	8	1.38E-02	****	2.51E+00	
0	481.57	287	7440	1.42	961.33	959	6	3.99E-02	95.8	2.33E+00	
0	510.74	3138	18369	3.21	1019.65	1012	16	4.36E-01	19.7	2.24E+00	
0	542.90	74	7694	0.56	1083.96	1082	7	1.03E-02	****	2.15E+00	
0	604.88	107	8823	0.73	1207.89	1207	8	1.48E-02	****	2.00E+00	
0	744.42	111	5213	1.19	1486.94	1484	6	1.54E-02	****	1.72E+00	
0	813.63	2008	9452	1.80	1625.35	1620	12	2.79E-01	19.9	1.61E+00	
2	1324.30	2744	4515	2.58	2646.90	2635	47	3.81E-01	11.6	1.07E+00	
0	1419.78	141	2308	1.72	2837.93	2835	9	1.95E-02	****	1.02E+00	
0	1459.30	119	1620	1.40	2917.01	2915	6	1.65E-02	****	1.00E+00	
0	1682.86	114	1445	1.31	3364.41	3361	8	1.58E-02	****	9.18E-01	
0	1866.47	102	400	3.37	3731.93	3727	10	1.42E-02	75.6	8.83E-01	
0	1990.81	70	356	1.87	3980.83	3977	10	9.72E-03	****	8.73E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 21-JUL-2005 18:11:13.31

```
*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                             DETECTOR DATA                                 *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA16_CAN.CNF;2*
* Acquisition date : 21-JUL-2005 16:08:40  Detector SN#     : 1922864       *
* Detector ID      : GAMMA16               Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 02:00:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 02:02:08.21         Half life ratio  : 8.00000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL            *
* Sample ID        : VER_GAMMA16_CAN       Analyst initials: AKB            *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 21-JUL-2005 16:06:26.3MS Isotope      :               *
* MSD DPM          :                       MSD Isotope     :               *
* LCS DPM          :                       LCS Isotope     :               *
*****************************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.876E+04	1.211E+03	1.005E+02	6.444E+00	186.624
CO-60	3.809E+04	2.028E+03	9.399E+01	4.945E+00	405.232
Y-88	8.660E+04	4.653E+03	1.758E+02	9.342E+00	492.665
CD-109	8.508E+05	1.236E+05	2.785E+03	4.046E+02	305.508
SN-113	4.790E+04	2.839E+03	2.605E+02	1.521E+01	183.873
CS-137	2.451E+04	1.967E+03	1.286E+02	1.024E+01	190.637
CE-139	2.945E+04	1.930E+03	1.561E+02	1.014E+01	188.634
HG-203	6.575E+04	4.606E+03	4.757E+02	3.274E+01	138.228
PB-210	7.366E+05	1.020E+05	3.766E+04	4.646E+03	19.561
AM-241	6.629E+04	8.303E+03	8.214E+02	1.022E+02	80.702

VAX/VMS Nuclide Identification Report Generated 21-JUL-2005 12:16:05.09

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]CAL_GAMMA16_CAN.CNF;2
Sample date : 1-APR-2005 12:00:00. Acquisition date : 21-JUL-2005 10:13:27
Sample ID : CAL_GAMMA16_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA16 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:02:08.17 1.7%
Energy tolerance : 2.00000 KEV Analyst Initials : AKB
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 1922864
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.58*	16752	69959	1.19	91.76	86	13	2.33E+00	3.3	
2	7	59.47*	65704	39785	1.23	117.52	110	20	9.13E+00	0.6	1.09E+02
3	7	62.64*	4386	72379	2.21	123.85	110	20	6.09E-01	14.0	
4	0	67.16*	424	34782	1.41	132.89	131	6	5.89E-02	69.6	
5	1	70.70*	2155	36276	1.03	139.97	137	14	2.99E-01	14.2	3.45E+00
6	1	72.83	3982	49445	1.27	144.23	137	14	5.53E-01	9.9	
7	7	83.33*	10677	88462	2.28	165.22	156	38	1.48E+00	5.8	8.82E+02
8	7	85.61*	12808	55343	1.57	169.78	156	38	1.78E+00	3.7	
9	7	87.94	236022	38613	1.11	174.42	156	38	3.28E+01	0.3	
10	7	90.73*	21262	33723	1.19	180.00	156	38	2.95E+00	2.1	
11	0	122.11*	152424	93452	1.19	242.73	236	14	2.12E+01	0.5	
12	0	136.52*	19674	50622	1.19	271.54	267	12	2.73E+00	2.4	
13	0	165.83	157736	76422	1.22	330.12	324	13	2.19E+01	0.4	
14	0	254.93	4304	22281	1.15	508.23	504	9	5.98E-01	6.4	
15	0	279.17*	83108	43235	1.34	556.69	550	15	1.15E+01	0.6	
16	0	391.49	112242	41807	1.41	781.23	774	15	1.56E+01	0.5	
17	0	510.54*	2114	14640	2.94	1019.25	1014	12	2.94E-01	11.7	
18	0	562.67	496	8207	2.53	1123.49	1120	8	6.89E-02	32.0	
19	0	566.90*	252	8309	1.43	1131.94	1128	8	3.50E-02	63.0	
20	0	633.31*	105	7926	1.40	1264.75	1262	7	1.46E-02	140.6	
21	0	661.29*	104928	33283	1.63	1320.69	1312	18	1.46E+01	0.5	
22	0	780.61*	243	6174	1.41	1559.32	1557	8	3.38E-02	56.4	
23	0	813.23	1522	8996	1.83	1624.55	1620	11	2.11E-01	12.3	
24	0	897.43*	151202	30916	1.81	1792.96	1783	20	2.10E+01	0.4	
25	0	919.51*	105	4989	1.11	1837.12	1833	6	1.45E-02	107.2	
26	0	967.48*	128	6845	1.35	1933.07	1931	9	1.78E-02	117.3	
27	0	1172.35*	118950	17901	2.03	2342.88	2332	22	1.65E+01	0.4	
28	0	1232.14*	76	1938	1.21	2462.49	2459	7	1.05E-02	97.8	
29	2	1324.23	2745	4934	2.58	2646.75	2636	50	3.81E-01	5.8	2.56E+02
30	2	1331.30*	105930	4576	2.59	2660.90	2636	50	1.47E+01	0.3	
31	0	1482.47*	83	1795	0.80	2963.37	2962	6	1.15E-02	81.8	
32	0	1519.67	72	1845	1.07	3037.83	3034	6	1.00E-02	94.8	
33	0	1582.76	125	2351	1.42	3164.08	3162	6	1.73E-02	62.1	
34	0	1585.99	162	3527	2.77	3170.53	3167	9	2.24E-02	66.7	
35	0	1771.70	50	718	0.92	3542.22	3539	10	6.99E-03	100.4	
36	0	1834.68*	97542	6569	2.46	3668.29	3656	25	1.35E+01	0.4	
37	0	1961.51*	70	268	1.22	3922.17	3919	8	9.79E-03	41.8	
38	0	2043.64	51	296	1.38	4086.59	4083	8	7.09E-03	60.4	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit

Flag: "*" = Peak area was modified by background subtraction

VMS Calibration Report V1.5 Generated 21-JUL-2005 16:06:26

Configuration : MCA0:[GAMMA]GAMMA16$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA16 Energy Calib Time: 15-JUL-2005 19:16:33
Efficiency type : Empirical Effncy Calib Time: 21-JUL-2005 16:06:26
Detector Geometry: GAMMA16 Shelf :

Energy Calibration Report

Energy = 0.6687 + 0.5003*Channel + -1.0425E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	91.53	46.50	46.47	0.034
2	117.52	59.54	59.47	0.070
3	174.62	88.03	88.03	0.000
4	242.69	122.06	122.09	-0.033
5	330.22	165.85	165.88	-0.028
6	781.76	391.70	391.75	-0.052
7	1321.54	661.66	661.72	-0.055
8	1794.19	898.04	898.05	-0.005
9	2344.63	1173.24	1173.22	0.017
10	2663.10	1332.50	1332.40	0.101
11	3671.15	1836.06	1836.11	-0.049

FWHM Calibration Report

FWHM = 0.8501 + 3.5341E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.14	1.09	0.048
2	59.54	1.18	1.12	0.053
3	88.03	1.42	1.18	0.234
4	122.06	1.21	1.24	-0.031
5	165.85	1.21	1.31	-0.099
6	391.70	1.37	1.55	-0.178
7	661.66	1.60	1.76	-0.164
8	898.04	1.75	1.91	-0.159
9	1173.24	1.98	2.06	-0.084
10	1332.50	2.49	2.14	0.346
11	1836.06	2.40	2.36	0.034

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-4.250	0.8327	-9.6741E-02	-0.2175	0.2504	-7.3823E-02

Average Deviation = 2.48 % Reduced Chi-Square = 2.11

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	1.92E-03	8.62E-05	2.00E-03	-0.91	-4.09

Sample ID : CAL_GAMMA16_CAN Acquisition date : 21-JUL-2005 10:13:27

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	1.10E-02	3.39E-04	1.05E-02	1.57	4.81
3	88.03	3.36E-02	1.11E-03	3.57E-02	-1.89	-6.25
4	122.06	4.67E-02	1.42E-03	4.63E-02	0.29	0.89
5	165.85	4.47E-02	1.27E-03	4.40E-02	0.52	1.48
6	391.70	2.63E-02	6.96E-04	2.65E-02	-0.25	-0.65
7	661.66	1.92E-02	5.86E-04	1.88E-02	0.79	2.41
8	898.04	1.43E-02	3.76E-04	1.48E-02	-1.40	-3.69
9	1173.24	1.22E-02	3.32E-04	1.18E-02	0.91	2.49
10	1332.50	1.07E-02	2.81E-04	1.07E-02	0.06	0.15
11	1836.06	8.83E-03	2.32E-04	8.87E-03	-0.15	-0.41

Approved by: _____ 7/21/05 Approval Date: 7 / 21 / 05

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776. Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. Mc 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: GAMMA 18 Geometry: CAN

	YES	NO	Comments
1) Is all calibration standard information enclosed for:			
the primary standard certificate?	✓		
the secondard standard(s) documentation?			N/A
the nuclide library used?	✓		
the VMS certificate file?	✓		
2) Is the detector efficiency curve printout included?		✓	
3) Is the efficiency calibration report included and reviewed?	✓		
4) Is the raw count data included for:			
the calibration peak report?	✓		
the calibration verification PEAK report?	✓		
the calibration verification NID report?	✓		
the last instrument background?	✓		
5) Are the calibration verification calculations included?	✓		
6) Are the instrument settings included: amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 8/24/05

Reviewed By: [signature] Date: 8/24/05

EFFECTIVE DATE: 14 AUG 05

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: GAMMA 1B

Date Performed: 8/14/03 Performed By: JM

High Voltage Power Supply Model No. 3106D High Voltage 3.00KeV	***Spectroscopy Amplifier*** Model No. 2026 Course Gain 100 Fine Gain 0.575 Time Constant 6 US Input polarity + BSLR rate BSLR mode Threshold
ADC Model No. 8701 Gain 1K	
AIM Module Model No. NB 556 Address 4BE0	

VMS Quality Assurance Report V1.3 Generated 14-AUG-2005 14:49:09

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_GAMMA18.QAF;1

Sample ID : BKG_GAMMA18 Sample quantity : 1.80 LITER
Sample date : 13-AUG-2005 00:00:00 Acquisition date : 13-AUG-2005 22:03:05
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:25.59

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	1.27E+05	1.39E+05	1.34E+05	
BACKGROUND (CPS)	2.11	2.32	2.23	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 8 / 14 / 05

Gamma Spectroscopy Calibration Verification

Instrument: GAMMA 18 Calibration Date: 8/15/2005

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Am-241		6.2283E+04	6.505E+04	4.44
Cd-109		8.2222E+05	8.068E+05	-1.88
Co-57		1.8996E+04	1.879E+04	-1.08
Ce-139		2.8853E+04	2.936E+04	1.76
Sn-113		4.8141E+04	4.780E+04	-0.71
Cs-137		2.4217E+04	2.496E+04	3.07
Y-88	1836.06	8.5829E+04	8.428E+04	-1.80
Co-60	1332.5	3.8655E+04	3.945E+04	2.06
Pb-210		8.1682E+05	8.259E+05	1.11

Prepared By: [signature] Date: 8/24/05

Reviewed By: [signature] Date: 8/24/05

Verified:

VAX/VMS Nuclide Identification Report Generated 14-AUG-2005 20:50:56.03

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA18_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 14-AUG-2005 19:47:45
Sample ID         : VER_GAMMA18_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA18              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:02:42.16  4.3%
Energy tolerance  : 2.00000 KEV          Analyst Initials : AKB
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 30-TP30546-A
Matrix Spike DPM  :                      LCS DPM          :
*************************************************************************
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.44*	26316	35722	1.00	92.06	87	10	7.31E+00	1.5	
2	0	59.50	69050	45360	1.03	118.17	112	12	1.92E+01	0.7	
3	0	66.65*	986	28787	1.73	132.47	129	8	2.74E-01	29.9	
4	3	70.81*	1278	19173	1.10	140.79	138	11	3.55E-01	16.5	1.47E+00
5	3	72.88	2246	19093	0.83	144.93	138	11	6.24E-01	9.5	
6	8	81.42	831	16166	1.30	162.02	160	23	2.31E-01	22.1	9.63E+01
7	8	82.53*	4263	36390	2.12	164.24	160	23	1.18E+00	8.3	
8	8	85.09*	6271	52634	2.11	169.36	160	23	1.74E+00	9.5	
9	8	88.05	195261	24384	1.04	175.28	160	23	5.42E+01	0.3	
10	0	122.09	110298	36629	1.11	243.37	238	12	3.06E+01	0.5	
11	0	126.04	889	16239	1.78	251.26	249	6	2.47E-01	23.1	
12	0	136.50	14262	22851	1.10	272.18	268	10	3.96E+00	2.2	
13	1	165.91	111771	14948	1.14	331.01	324	18	3.10E+01	0.4	6.11E+01
14	1	169.90*	665	14816	1.18	339.00	324	18	1.85E-01	31.4	
15	0	199.21*	165	9082	1.26	397.61	397	6	4.58E-02	91.6	
16	0	223.18	175	9854	1.36	445.57	444	6	4.86E-02	90.0	
17	0	255.19	3542	13479	1.24	509.60	505	10	9.84E-01	6.4	
18	0	269.53	251	9741	1.12	538.29	535	8	6.97E-02	68.4	
19	0	274.01	75	9709	0.48	547.25	544	8	2.08E-02	228.6	
20	0	279.25*	44638	18905	1.24	557.73	551	14	1.24E+01	0.8	
21	0	358.53*	192	4426	1.37	716.33	714	5	5.34E-02	52.4	
22	0	391.76*	83460	18094	1.37	782.81	776	15	2.32E+01	0.5	
23	0	445.89	141	6790	0.76	891.11	887	8	3.91E-02	101.7	
24	0	510.78*	1966	9813	2.84	1020.93	1014	14	5.46E-01	10.9	
25	0	595.26	123	5203	1.39	1189.95	1188	8	3.41E-02	102.2	
26	0	644.53	235	4098	0.80	1288.55	1286	6	6.52E-02	43.6	
27	3	661.71	90976	7457	1.73	1322.93	1313	41	2.53E+01	0.4	7.39E+01
28	3	672.17	734	10887	2.31	1343.85	1313	41	2.04E-01	30.2	
29	0	799.33	91	3575	1.37	1598.32	1594	8	2.53E-02	114.3	
30	0	813.80	620	4836	2.31	1627.28	1623	10	1.72E-01	21.3	
31	0	869.61	80	3896	1.30	1738.96	1738	8	2.22E-02	135.6	
32	0	898.06*	109400	15970	1.77	1795.91	1787	19	3.04E+01	0.4	
33	0	1173.23	100248	11917	1.98	2346.71	2336	22	2.78E+01	0.4	
34	0	1222.62	91	1284	1.10	2445.58	2442	7	2.52E-02	66.4	
35	0	1312.88	49	1805	2.45	2626.28	2624	11	1.36E-02	168.3	
36	1	1325.26	1525	2411	2.41	2651.07	2639	60	4.24E-01	7.9	1.06E+02
37	1	1332.57	92160	2672	2.39	2665.71	2639	60	2.56E+01	0.4	
38	0	1451.95	88	954	1.21	2904.73	2902	6	2.45E-02	56.3	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1455.07	101	1460	1.04	2910.98	2907	9	2.81E-02	68.9	
40	0	1467.50*	34	1509	1.44	2935.87	2933	9	9.33E-03	209.3	
41	0	1512.67	97	1654	1.56	3026.31	3024	9	2.70E-02	76.1	
42	0	1554.39	101	1965	1.40	3109.86	3106	9	2.79E-02	80.1	
43	0	1612.05	178	1820	1.70	3225.33	3222	9	4.94E-02	43.9	
44	0	1645.48	31	1399	1.35	3292.27	3292	9	8.66E-03	216.9	
45	0	1685.95	92	895	1.72	3373.32	3370	8	2.56E-02	57.3	
46	0	1688.22	45	893	1.38	3377.86	3377	8	1.25E-02	115.5	
47	0	1749.21*	61	284	0.67	3500.02	3498	5	1.70E-02	43.5	
48	0	1817.69	114	515	4.35	3637.19	3632	11	3.17E-02	39.7	
49	0	1836.14	71379	6218	2.47	3674.14	3662	25	1.98E+01	0.5	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*************************************************************************
*                          General Eng. Labs, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
*                                                                       *
*                              DETECTOR DATA                            *
*                                                                       *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA18_ *
* Acquisition date : 14-AUG-2005 19:47:45 Detector SN#    : 30-TP30546  *
* Detector ID       : GAMMA18             Sensitivity     : 3.000       *
* Geometry          : CAN                 Energy tolerance: 2.000       *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000      *
* Elapsed real time:    0 01:02:42.16     Half life ratio :  8.000      *
*************************************************************************
*                                                                       *
*                              SAMPLE DATA                              *
*                                                                       *
* Sample date       :  1-APR-2005 12:00:00 Nuclide Library :            *
* Sample ID         : VER_GAMMA18_CAN      Analyst initials: AKB        *
* Batch Number      :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery          :    1.00000           Carrier Weight :    0.00000  *
*************************************************************************
*                                                                       *
*                                QC DATA                                *
* Standard Weight   :   0.00000                                         *
* CALIB. DATE/TIME : 14-AUG-2005 18:48:42 MS Isotope      :             *
* MSD DPM           :    0.000           MSD Isotope     :             *
* LCS DPM           :    0.000           LCS Isotope     :             *
* LCSD DPM          :    0.000           LCSD Isotope    :             *
*************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.879E+04	1.184E+03	1.009E+02	0.000E+00
CO-60	3.945E+04	3.219E+03	9.040E+01	0.000E+00
Y-88	8.428E+04	4.940E+03	2.055E+02	0.000E+00
CD-109	8.068E+05	8.655E+04	2.741E+03	0.000E+00
SN-113	4.780E+04	3.102E+03	2.412E+02	0.000E+00
CS-137	2.496E+04	1.670E+03	1.041E+02	0.000E+00
CE-139	2.936E+04	1.720E+03	1.346E+02	0.000E+00
HG-203	5.880E+04	3.960E+03	5.786E+02	0.000E+00
PB-210	8.259E+05	7.981E+04	1.850E+04	0.000E+00
AM-241	6.505E+04	7.509E+03	5.796E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 14-AUG-2005 20:50:57.58

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*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA18_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 14-AUG-2005 19:47:45
Sample ID         : VER_GAMMA18_CAN      Sample quantity  : 1.00000E+00 LITER
Detector name     : GAMMA18              Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:02:42.16  4.3%
Energy tolerance  : 2.00000 KEV          Analyst Initials : AKB
Abundance limit   : 75.00000             Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 30-TP30546-A
Matrix Spike DPM  :                      LCS DPM          :
*************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	110298	85.51*	7.280E+00	1.330E+04	1.879E+04	6.30
	136.47	14262	10.47	7.316E+00	1.398E+04	1.974E+04	8.14
CO-60	1173.24	100248	99.90	2.037E+00	3.698E+04	3.883E+04	6.49
	1332.50	92160	99.98*	1.842E+00	3.757E+04	3.945E+04	8.16
Y-88	898.04	109400	93.40	2.548E+00	3.451E+04	8.318E+04	11.34
	1836.06	71379	99.38*	1.542E+00	3.496E+04	8.428E+04	5.86
CD-109	88.03	195261	3.79*	5.875E+00	6.584E+05	8.068E+05	10.73
SN-113	391.70	83460	64.90*	4.564E+00	2.115E+04	4.780E+04	6.49
CS-137	661.66	90976	85.12*	3.242E+00	2.475E+04	2.496E+04	6.69
CE-139	165.85	111771	80.35*	7.032E+00	1.485E+04	2.936E+04	5.86
HG-203	70.83	1278	4.75	3.901E+00	5.177E+03	3.876E+04	35.83
	72.87	2246	8.00	4.187E+00	5.034E+03	3.769E+04	23.31
	82.60	4263	3.55	5.351E+00	1.685E+04	1.261E+05	21.62
	279.20	44638	77.30*	5.520E+00	7.854E+03	5.880E+04	6.73
PB-210	46.50	26316	4.05*	5.975E-01	8.164E+05	8.259E+05	9.66
AM-241	59.54	69050	35.90*	2.221E+00	6.501E+04	6.505E+04	11.54

Flag: "*" = Keyline

Sample ID : VER_GAMMA18_CAN Acquisition date : 14-AUG-2005 19:47:45

Total number of lines in spectrum 49
Number of unidentified lines 33
Number of lines tentatively identified by NID 16 32.65%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.41	1.330E+04	1.879E+04	0.118E+04	6.30	
CO-60	5.27Y	1.05	3.757E+04	3.945E+04	0.322E+04	8.16	
Y-88	106.63D	2.41	3.496E+04	8.428E+04	0.494E+04	5.86	
CD-109	461.40D	1.23	6.584E+05	8.068E+05	0.866E+05	10.73	
SN-113	115.09D	2.26	2.115E+04	4.780E+04	0.310E+04	6.49	
CS-137	30.00Y	1.01	2.475E+04	2.496E+04	0.167E+04	6.69	
CE-139	137.64D	1.98	1.485E+04	2.936E+04	0.172E+04	5.86	
HG-203	46.60D	7.49	7.854E+03	5.880E+04	0.396E+04	6.73	
PB-210	22.26Y	1.01	8.164E+05	8.259E+05	0.798E+05	9.66	
AM-241	432.20Y	1.00	6.501E+04	6.505E+04	0.751E+04	11.54	
			---------	---------			
	Total Activity :		1.694E+06	2.001E+06			

Grand Total Activity : 1.694E+06 2.001E+06

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Sample ID : VER_GAMMA18_CAN Acquisition date : 14-AUG-2005 19:47:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	66.65	986	28787	1.73	132.47	129	8	2.74E-01	59.8	3.30E+00	
8	81.42	831	16166	1.30	162.02	160	23	2.31E-01	44.1	5.23E+00	
8	85.09	6271	52634	2.11	169.36	160	23	1.74E+00	19.0	5.61E+00	
0	126.04	889	16239	1.78	251.26	249	6	2.47E-01	46.1	7.31E+00	
1	169.90	665	14816	1.18	339.00	324	18	1.85E-01	62.8	6.98E+00	
0	199.21	165	9082	1.26	397.61	397	6	4.58E-02	****	6.55E+00	
0	223.18	175	9854	1.36	445.57	444	6	4.86E-02	****	6.20E+00	
0	255.19	3542	13479	1.24	509.60	505	10	9.84E-01	12.7	5.79E+00	
0	269.53	251	9741	1.12	538.29	535	8	6.97E-02	****	5.63E+00	
0	274.01	75	9709	0.48	547.25	544	8	2.08E-02	****	5.58E+00	
0	358.53	192	4426	1.37	716.33	714	5	5.34E-02	****	4.80E+00	
0	445.89	141	6790	0.76	891.11	887	8	3.91E-02	****	4.22E+00	
0	510.78	1966	9813	2.84	1020.93	1014	14	5.46E-01	21.9	3.88E+00	
0	595.26	123	5203	1.39	1189.95	1188	8	3.41E-02	****	3.50E+00	
0	644.53	235	4098	0.80	1288.55	1286	6	6.52E-02	87.2	3.31E+00	
3	672.17	734	10887	2.31	1343.85	1313	41	2.04E-01	60.4	3.21E+00	
0	799.33	91	3575	1.37	1598.32	1594	8	2.53E-02	****	2.80E+00	
0	813.80	620	4836	2.31	1627.28	1623	10	1.72E-01	42.7	2.76E+00	
0	869.61	80	3896	1.30	1738.96	1738	8	2.22E-02	****	2.62E+00	
0	1222.62	91	1284	1.10	2445.58	2442	7	2.52E-02	****	1.97E+00	
0	1312.88	49	1805	2.45	2626.28	2624	11	1.36E-02	****	1.86E+00	
1	1325.26	1525	2411	2.41	2651.07	2639	60	4.24E-01	15.7	1.85E+00	
0	1451.95	88	954	1.21	2904.73	2902	6	2.45E-02	****	1.73E+00	
0	1455.07	101	1460	1.04	2910.98	2907	9	2.81E-02	****	1.73E+00	
0	1467.50	34	1509	1.44	2935.87	2933	9	9.33E-03	****	1.72E+00	
0	1512.67	97	1654	1.56	3026.31	3024	9	2.70E-02	****	1.69E+00	
0	1554.39	101	1965	1.40	3109.86	3106	9	2.79E-02	****	1.66E+00	
0	1612.05	178	1820	1.70	3225.33	3222	9	4.94E-02	87.8	1.63E+00	
0	1645.48	31	1399	1.35	3292.27	3292	9	8.66E-03	****	1.61E+00	
0	1685.95	92	895	1.72	3373.32	3370	8	2.56E-02	****	1.59E+00	
0	1688.22	45	893	1.38	3377.86	3377	8	1.25E-02	****	1.59E+00	
0	1749.21	61	284	0.67	3500.02	3498	5	1.70E-02	87.1	1.57E+00	
0	1817.69	114	515	4.35	3637.19	3632	11	3.17E-02	79.4	1.55E+00	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-AUG-2005 20:50:58.72

```
**********************************************************************
*                          GENERAL ENG. LABS, LLC.                   *
*                              2040 Savage Road                      *
*                            Charleston, SC 29414                    *
**********************************************************************
*                                                                    *
*                            DETECTOR DATA                           *
*                                                                    *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_GAMMA18_CAN.CNF;1*
* Acquisition date : 14-AUG-2005 19:47:45  Detector SN#     : 30-TP30546-A  *
* Detector ID      : GAMMA18               Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 01:00:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 01:02:42.16         Half life ratio  : 8.00000       *
**********************************************************************
*                                                                    *
*                            SAMPLE DATA                             *
*                                                                    *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL           *
* Sample ID        : VER_GAMMA18_CAN       Analyst initials: AKB           *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
**********************************************************************
*                                                                    *
*                              QC DATA                               *
*                                                                    *
* CALIB. DATE/TIME : 14-AUG-2005 18:48:42.4MS Isotope      :         *
* MSD DPM          :                       MSD Isotope     :         *
* LCS DPM          :                       LCS Isotope     :         *
**********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.879E+04	1.184E+03	1.009E+02	6.292E+00	186.196
CO-60	3.945E+04	3.219E+03	9.040E+01	7.348E+00	436.376
Y-88	8.428E+04	4.940E+03	2.055E+02	1.189E+01	410.021
CD-109	8.068E+05	8.655E+04	2.741E+03	2.938E+02	294.346
SN-113	4.780E+04	3.102E+03	2.412E+02	1.547E+01	198.203
CS-137	2.496E+04	1.670E+03	1.041E+02	6.919E+00	239.774
CE-139	2.936E+04	1.720E+03	1.346E+02	7.825E+00	218.166
HG-203	5.880E+04	3.960E+03	5.786E+02	3.783E+01	101.634
PB-210	8.259E+05	7.981E+04	1.850E+04	1.690E+03	44.642
AM-241	6.505E+04	7.509E+03	5.796E+02	6.635E+01	112.235

VAX/VMS Nuclide Identification Report Generated 14-AUG-2005 18:48:44.82

****
*
*
*
****

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : MCA0:[GAMMA]GAMMA18$1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 14-AUG-2005 15:59:41
Sample ID : CAL_GAMMA18_CAN Sample quantity : 1.00000E+00 LITER
Detector name : GAMMA18 Detector geometry: GAMMA18
Elapsed live time: 0 00:45:00.00 Elapsed real time: 0 00:47:01.45 4.3%
Energy tolerance : 2.00000 KEV Analyst Initials : AKB
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 30-TP30546-A
Matrix Spike DPM : LCS DPM :

****

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.45	19237	26927	1.02	92.08	87	10	7.12E+00	1.8	
2	0	49.78	389	15780	2.46	98.73	97	6	1.44E-01	51.3	
3	0	59.51	51910	33955	1.03	118.19	112	12	1.92E+01	0.8	
4	1	67.51	401	8285	0.87	134.19	133	16	1.48E-01	30.4	3.78E+00
5	1	70.91	1191	16741	1.08	141.00	133	16	4.41E-01	17.5	
6	1	72.88	2103	16855	1.05	144.94	133	16	7.79E-01	10.0	
7	10	84.01	6480	42941	2.61	167.21	160	22	2.40E+00	7.0	6.21E+01
8	10	88.05	144655	18669	1.01	175.27	160	22	5.36E+01	0.3	
9	0	99.51	148	12689	0.50	198.20	195	6	5.46E-02	121.0	
10	3	119.70	247	4356	1.05	238.59	237	15	9.14E-02	32.9	2.24E+01
11	3	122.08	83052	12908	1.06	243.34	237	15	3.08E+01	0.4	
12	0	136.48	10360	17224	1.09	272.15	268	10	3.84E+00	2.6	
13	1	165.89	82925	11418	1.12	330.98	324	17	3.07E+01	0.4	1.82E+01
14	1	168.40	1233	11561	1.17	336.00	324	17	4.57E-01	19.4	
15	0	199.17	62	6925	1.19	397.54	397	6	2.28E-02	213.8	
16	0	255.15	2684	9988	1.21	509.51	505	10	9.94E-01	7.2	
17	0	279.24	33854	12925	1.23	557.70	552	13	1.25E+01	0.9	
18	4	391.75	63992	5635	1.42	782.78	776	29	2.37E+01	0.4	5.75E+01
19	4	400.17	673	7861	2.17	799.63	776	29	2.49E-01	25.9	
20	0	511.07	1268	7091	2.54	1021.51	1015	13	4.70E-01	14.0	
21	0	661.65	67006	12903	1.60	1322.80	1315	17	2.48E+01	0.5	
22	0	782.07	167	2792	1.78	1563.79	1561	8	6.18E-02	55.4	
23	0	814.11	484	3630	2.38	1627.89	1623	10	1.79E-01	23.8	
24	0	898.04	81974	12308	1.78	1795.86	1786	20	3.04E+01	0.5	
25	0	911.49	98	3436	0.63	1822.79	1820	7	3.61E-02	100.4	
26	0	1099.38	117	2936	0.98	2198.88	2196	9	4.32E-02	84.1	
27	0	1115.98	147	2670	1.38	2232.09	2229	9	5.45E-02	64.0	
28	0	1173.18	75318	8656	2.00	2346.61	2336	22	2.79E+01	0.5	
29	0	1250.63	120	1031	3.08	2501.65	2498	9	4.45E-02	48.9	
30	1	1324.94	1229	1744	2.41	2650.44	2639	59	4.55E-01	8.6	7.59E+01
31	1	1332.51	68867	2078	2.41	2665.58	2639	59	2.55E+01	0.4	
32	1	1345.48	351	2323	2.42	2691.56	2639	59	1.30E-01	27.4	
33	0	1696.29	64	624	1.65	3394.04	3390	8	2.39E-02	68.3	
34	0	1836.05	54197	4204	2.48	3673.96	3661	26	2.01E+01	0.5	
35	0	1852.63	61	497	1.33	3707.17	3706	10	2.27E-02	71.8	
36	0	1972.76	27	285	2.90	3947.80	3943	11	9.83E-03	124.8	

VMS Calibration Report V1.5 Generated 14-AUG-2005 18:48:42

Configuration : MCA0:[GAMMA]GAMMA18$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : GAMMA18 Energy Calib Time: 14-AUG-2005 18:48:42
Efficiency type : Empirical Effncy Calib Time: 14-AUG-2005 18:48:42
Detector Geometry: GAMMA18 Shelf :

Energy Calibration Report

Energy = 0.4111 + 0.5000*Channel + -1.0279E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	92.08	46.50	46.45	0.051
2	118.19	59.54	59.51	0.031
3	175.27	88.03	88.05	-0.011
4	243.34	122.06	122.08	-0.019
5	330.97	165.85	165.89	-0.039
6	782.78	391.70	391.75	-0.047
7	1322.80	661.66	661.65	0.009
8	1795.86	898.04	898.04	0.005
9	2346.61	1173.24	1173.18	0.058
10	2665.63	1332.50	1332.53	-0.032
11	3673.99	1836.06	1836.07	-0.007

FWHM Calibration Report

FWHM = 0.6124 + 4.3347E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.02	0.91	0.116
2	59.54	1.03	0.95	0.084
3	88.03	1.01	1.02	-0.011
4	122.06	1.06	1.09	-0.033
5	165.85	1.12	1.17	-0.053
6	391.70	1.42	1.47	-0.054
7	661.66	1.60	1.73	-0.131
8	898.04	1.78	1.91	-0.135
9	1173.24	2.00	2.10	-0.101
10	1332.50	2.51	2.19	0.313
11	1836.06	2.48	2.47	0.005

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
941.3	-3.709	0.8389	-6.3520E-02	-0.2455	0.2241	-6.0972E-02

Average Deviation = 2.26 % Reduced Chi-Square = 1.91

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	5.89E-03	2.05E-04	6.03E-03	-0.68	-2.36

Sample ID : CAL_GAMMA18_CAN Acquisition date : 14-AUG-2005 15:59:41

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	2.33E-02	7.24E-04	2.23E-02	1.35	4.22
3	88.03	5.69E-02	1.88E-03	5.87E-02	-0.98	-3.26
4	122.06	7.22E-02	2.19E-03	7.28E-02	-0.27	-0.81
5	165.85	7.07E-02	2.00E-03	7.03E-02	0.20	0.58
6	391.70	4.63E-02	1.22E-03	4.56E-02	0.52	1.37
7	661.66	3.28E-02	1.00E-03	3.24E-02	0.39	1.19
8	898.04	2.42E-02	6.40E-04	2.55E-02	-2.01	-5.32
9	1173.24	2.07E-02	5.68E-04	2.04E-02	0.58	1.58
10	1332.50	1.90E-02	4.99E-04	1.84E-02	1.12	2.94
11	1836.06	1.52E-02	4.05E-04	1.54E-02	-0.46	-1.21

Approved by: _____ Approval Date: 8 / 14 / 05

8/24/05

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 8-JUL-2005 17:13:45.13
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: M. [illegible] 5-12-05

This standard will expire one year after the calibration date.

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Geometry Calibration Package

Detector: Well Geometry: CAN

		YES	NO	Comments
1)	Is all calibration standard information enclosed for:			
	the primary standard certificate?	✓		
	the secondard standard(s) documentation?			N/A
	the nuclide library used?	✓		
	the VMS certificate file?	✓		
2)	Is the detector efficiency curve printout included?		✓	
3)	Is the efficiency calibration report included and reviewed?	✓		
4)	Is the raw count data included for:			
	the calibration peak report?	✓		
	the calibration verification PEAK report?	✓		
	the calibration verification NID report?	✓		
	the last instrument background?	✓		
5)	Are the calibration verification calculations included?	✓		
6)	Are the instrument settings included:			
	amp, HVPS, ADC settings?	✓		

Prepared By: [signature] Date: 12/15/05

Reviewed By: [signature] Date: 12/15/05

Effective Date: 12/14/05

General Engineering Laboratories, LLC
2040 Savage Road, Charleston, SC 29414
(803)556-8171

Gamma Spectrometer Front End Electronics Setup

Detector: Well

Date Performed: 12/12/05 Performed By: Michael Fitton

High Voltage Power Supply	***Spectroscopy Amplifier***
Model No. 3106D High Voltage 2.5 kV	Model No. 2026 Course Gain 20 Fine Gain 0.542 Time Constant 4 μ sec. Input polarity Positive BSLR rate N/A BSLR mode N/A Threshold N/A
ADC	
Model No. 8701 Gain 4000	
AIM Module	
Model No. 556A Address NIE Ø4:2	

Gamma Spectroscopy Calibration Verification

Instrument: Well Calibration Date: 12/14/2005

Geometry: CAN Standard Id: 70530-278

Isotope		CALIBRATED ACTIVITY (PCI)	MEASURED ACTIVITY (PCI)	DIFFERENCE %
Pb-210		8.1682E+05	7.865E+05	-3.71
Am-241		6.2283E+04	6.213E+04	-0.25
Cd-109		8.2222E+05	8.102E+05	-1.46
Co-57		1.8996E+04	1.950E+04	2.65
Ce-139		2.8853E+04	2.851E+04	-1.19
Sn-113		4.8141E+04	4.723E+04	-1.89
Cs-137		2.4217E+04	2.487E+04	2.70
Co-60	1332.5	3.8655E+04	3.810E+04	-1.44
Y-88	1836.06	8.5829E+04	8.701E+04	1.38

Prepared By: [signature] Date: 12/15/05

Reviewed By: [signature] Date: 12/15/05

Verified:

VMS Quality Assurance Report V1.3 Generated 11-DEC-2005 12:16:35

QA filename : DKA300:[CANBERRA.GAMMA]QC_BKG_WELL.QAF;2

Sample ID : BKG_WELL Sample quantity : 1.80 LITER
Sample date : 10-DEC-2005 00:00:00 Acquisition date : 10-DEC-2005 19:27:01
Elapsed live time: 0 16:40:00.00 Elapsed real time: 0 16:40:12.72

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
BACKGROUND (GROSS COUNTS)	8.07E+04	1.24E+05	1.01E+05	
BACKGROUND (CPS)	1.34	2.06	1.68	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: JM Approval Date: 12 / 11 / 05

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 18:19:29.84

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 14-DEC-2005 17:17:48
Sample ID : VER_WELL_CAN Sample quantity : 1.00000E+00 LITER
Detector name : WELL Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:01:15.52 2.1%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 3941466
Matrix Spike DPM : LCS DPM :

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	32.94	8090	42222	1.45	64.85	62	8	2.25E+00	4.5	
2	1	36.16	2099	10359	1.36	71.25	70	27	5.83E-01	6.1	3.83E+02
3	1	40.19*	6404	41044	1.37	79.25	70	27	1.78E+00	5.7	
4	1	42.20	7325	40817	1.38	83.25	70	27	2.03E+00	5.1	
5	1	46.51*	126212	39800	1.39	91.80	70	27	3.51E+01	0.4	
6	0	59.47	120117	56340	1.32	117.56	110	15	3.34E+01	0.5	
7	10	66.54	2603	25638	2.05	131.60	126	25	7.23E-01	12.0	3.80E+00
8	10	69.04	3337	46040	2.81	136.56	126	25	9.27E-01	15.1	
9	10	72.96*	1748	35224	2.27	144.35	126	25	4.86E-01	21.2	
10	0	88.07*	140788	36704	1.32	174.36	168	14	3.91E+01	0.4	
11	0	122.09	58293	20487	1.34	241.96	234	15	1.62E+01	0.7	
12	0	136.50	7151	11280	1.33	270.59	266	11	1.99E+00	3.1	
13	0	156.62	194	6859	1.39	310.56	308	7	5.40E-02	71.0	
14	0	165.92*	37327	11395	1.39	329.05	323	13	1.04E+01	0.8	
15	0	199.37*	534	6782	1.82	395.51	391	9	1.48E-01	28.2	
16	0	255.10	777	6322	1.42	506.25	502	10	2.16E-01	19.5	
17	0	279.27*	3871	5995	1.53	554.28	549	11	1.08E+00	4.2	
18	0	309.70	233	4389	1.90	614.75	612	9	6.48E-02	51.6	
19	0	391.71*	19069	7046	1.52	777.72	769	16	5.30E+00	1.2	
20	0	511.27*	337	3672	1.31	1015.34	1011	11	9.37E-02	35.4	
21	0	530.86*	155	1686	1.02	1054.28	1052	6	4.31E-02	42.7	
22	0	573.83	91	1923	1.59	1139.69	1137	7	2.54E-02	80.4	
23	0	610.33*	24	1687	0.73	1212.23	1211	6	6.56E-03	276.8	
24	0	625.88	102	2504	1.45	1243.14	1239	9	2.84E-02	88.7	
25	0	629.80*	139	1633	1.14	1250.94	1248	6	3.87E-02	46.7	
26	0	661.67*	36964	5440	1.70	1314.29	1305	18	1.03E+01	0.7	
27	0	690.27	124	2402	2.16	1371.14	1367	9	3.45E-02	71.8	
28	0	744.04	100	1822	1.25	1478.03	1476	8	2.78E-02	74.3	
29	0	777.53*	126	1713	1.47	1544.61	1541	8	3.50E-02	57.5	
30	0	803.35*	96	1015	0.93	1595.95	1594	5	2.67E-02	50.7	
31	0	814.14*	429	2506	1.60	1617.41	1612	11	1.19E-01	23.1	
32	0	849.87	77	1407	1.21	1688.44	1685	6	2.15E-02	77.4	
33	0	875.35	98	1489	1.21	1739.10	1736	6	2.71E-02	63.3	
34	0	898.03*	20561	4400	1.83	1784.19	1775	17	5.71E+00	1.0	
35	0	1069.73	33	2166	3.43	2125.61	2118	11	9.17E-03	273.0	
36	0	1114.84*	100	1453	1.00	2215.34	2214	8	2.77E-02	66.8	
37	0	1159.38	83	853	1.86	2303.92	2300	7	2.31E-02	59.2	
38	0	1173.21*	37348	2431	2.05	2331.42	2322	19	1.04E+01	0.6	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
39	0	1211.27*	62	505	1.68	2407.11	2404	8	1.71E-02	64.8	
40	0	1231.58	56	379	1.70	2447.51	2443	8	1.55E-02	61.9	
41	0	1270.20*	58	314	1.44	2524.31	2521	7	1.61E-02	52.5	
42	0	1318.08	74	341	1.18	2619.56	2616	7	2.05E-02	43.2	
43	5	1325.67	553	983	3.54	2634.67	2623	39	1.53E-01	15.9	1.07E+01
44	5	1332.50*	33504	562	2.23	2648.24	2623	39	9.31E+00	0.6	
45	0	1404.12	36	236	0.59	2790.71	2786	7	9.97E-03	72.9	
46	0	1459.28*	57	523	4.35	2900.44	2894	13	1.59E-02	83.7	
47	0	1551.48*	99	367	2.36	3083.88	3080	8	2.74E-02	35.2	
48	0	1587.75	69	293	0.88	3156.03	3154	6	1.92E-02	40.9	
49	0	1596.97	25	299	0.56	3174.38	3171	6	6.88E-03	112.0	
50	0	1623.14	97	727	7.89	3226.45	3219	21	2.70E-02	70.1	
51	0	1674.93	69	343	5.02	3329.51	3323	14	1.91E-02	59.0	
52	0	1782.30	70	91	4.84	3543.16	3538	12	1.94E-02	29.7	
53	0	1797.31*	29	67	1.63	3573.03	3570	7	8.06E-03	50.3	
54	0	1836.11*	11797	362	2.41	3650.25	3638	24	3.28E+00	1.0	
55	0	1952.53	23	75	4.63	3881.96	3877	15	6.39E-03	84.7	
56	0	2013.87	20	16	1.46	4004.04	4002	5	5.47E-03	39.2	

Flag: "*" = Peak area was modified by background subtraction

VAX/VMS Nuclide Identification Report Generated

```
*********************************************************************
*                          General Eng. Labs, LLC.                  *
*                              2040 Savage Road                     *
*                            Charleston, SC 29414                   *
*********************************************************************
*                                                                   *
*                             DETECTOR DATA                         *
*                                                                   *
* Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN *
* Acquisition date : 14-DEC-2005 17:17:48 Detector SN#    : 3941466  *
* Detector ID      : WELL                 Sensitivity     : 3.000    *
* Geometry         : CAN                  Energy tolerance: 2.000    *
* Elapsed live time:    0 01:00:00.00     Abundance limit : 75.000   *
* Elapsed real time:    0 01:01:15.52     Half life ratio :  8.000   *
*********************************************************************
*                                                                   *
*                             SAMPLE DATA                           *
*                                                                   *
* Sample date      :  1-APR-2005 12:00:00 Nuclide Library : FERMC    *
* Sample ID        : VER_WELL_CAN         Analyst initials: MJH1     *
* Batch Number     :                      Sample Quantity : 1.0000E+00 LITER *
* Recovery         :    1.00000           Carrier Weight :    0.00000 *
*********************************************************************
*                                                                   *
*                               QC DATA                             *
* Standard Weight  :   0.00000                                      *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53 MS Isotope      :         *
* MSD DPM          : ********            MSD Isotope     :         *
* LCS DPM          :    0.000           LCS Isotope     :         *
* LCSD DPM         :    0.000           LCSD Isotope    :         *
*********************************************************************
```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	
CO-57	1.950E+04	2.638E+02	1.533E+02	0.000E+00
CO-60	3.810E+04	4.318E+02	1.279E+02	0.000E+00
Y-88	8.701E+04	1.765E+03	4.402E+02	0.000E+00
CD-109	8.102E+05	6.444E+03	3.601E+03	0.000E+00
SN-113	4.723E+04	1.154E+03	7.098E+02	0.000E+00
CS-137	2.487E+04	3.480E+02	1.676E+02	0.000E+00
CE-139	2.851E+04	4.485E+02	2.896E+02	0.000E+00
HG-203	5.713E+04	4.795E+03	4.579E+03	0.000E+00
PB-210	7.865E+05	6.259E+03	5.155E+03	0.000E+00
AM-241	6.213E+04	6.487E+02	3.775E+02	0.000E+00

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/LITER)	K.L. Act error Ided	MDA (pCi/LITER)

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 18:19:31.36

```
*************************************************************************
*                          GENERAL ENG. LABS, LLC.                      *
*                              2040 Savage Road                         *
*                            Charleston, SC 29414                       *
*************************************************************************
Configuration     : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN.CNF;1
Sample date       : 1-APR-2005 12:00:00. Acquisition date : 14-DEC-2005 17:17:48
Sample ID         : VER_WELL_CAN         Sample quantity  : 1.00000E+00 LITER
Detector name     : WELL                 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00         Elapsed real time: 0 01:01:15.52  2.1%
Energy tolerance : 2.00000 KEV           Analyst Initials : MJH1
Abundance limit   : 75.00000            Sensitivity      : 3.00000
Batch ID          :                      Detector SN#     : 3941466
Matrix Spike DPM :                       LCS DPM          :
*************************************************************************
```

Nuclide Line Activity Report

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/LITER	Decay Corr pCi/LITER	2-Sigma %Error
CO-57	122.06	58293	85.51*	5.059E+00	1.012E+04	1.950E+04	1.35
	136.47	7151	10.47	4.895E+00	1.048E+04	2.019E+04	6.22
CO-60	1173.24	37348	99.90	8.068E-01	3.479E+04	3.817E+04	1.21
	1332.50	33504	99.98*	7.245E-01	3.473E+04	3.810E+04	1.13
Y-88	898.04	20561	93.40	1.013E+00	1.631E+04	8.683E+04	2.03
	1836.06	11797	99.38*	5.453E-01	1.634E+04	8.701E+04	2.03
CD-109	88.03	140788	3.79*	5.066E+00	5.505E+05	8.102E+05	0.80
SN-113	391.70	19069	64.90*	2.199E+00	1.003E+04	4.723E+04	2.44
CS-137	661.66	36964	85.12*	1.332E+00	2.447E+04	2.487E+04	1.40
CE-139	165.85	37327	80.35*	4.469E+00	7.804E+03	2.851E+04	1.57
HG-203	70.83	3337	4.75	4.551E+00	1.159E+04	5.318E+05	30.16
	72.87	1748	8.00	4.705E+00	3.486E+03	1.600E+05	42.47
	82.60	------	3.55	4.973E+00	------ Line Not Found		------
	279.20	3871	77.30*	3.020E+00	1.245E+03	5.713E+04	8.39
PB-210	46.50	126212	4.05*	3.041E+00	7.695E+05	7.865E+05	0.80
AM-241	59.54	120117	35.90*	4.048E+00	6.206E+04	6.213E+04	1.04

Flag: "*" = Keyline

Sample ID : VER_WELL_CAN
Acquisition date : 14-DEC-2005 17:17:48

Total number of lines in spectrum	56	
Number of unidentified lines	41	
Number of lines tentatively identified by NID	15	26.79%

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/LITER	Decay Corr pCi/LITER	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.93	1.012E+04	1.950E+04	0.026E+04	1.35	
CO-60	5.27Y	1.10	3.473E+04	3.810E+04	0.043E+04	1.13	
Y-88	106.63D	5.32	1.634E+04	8.701E+04	0.177E+04	2.03	
CD-109	461.40D	1.47	5.505E+05	8.102E+05	0.064E+05	0.80	
SN-113	115.09D	4.71	1.003E+04	4.723E+04	0.115E+04	2.44	
CS-137	30.00Y	1.02	2.447E+04	2.487E+04	0.035E+04	1.40	
CE-139	137.64D	3.65	7.804E+03	2.851E+04	0.045E+04	1.57	
HG-203	46.60D	45.9	1.245E+03	5.713E+04	0.480E+04	8.39	
PB-210	22.26Y	1.02	7.695E+05	7.865E+05	0.063E+05	0.80	
AM-241	432.20Y	1.00	6.206E+04	6.213E+04	0.065E+04	1.04	
			---------	---------			
	Total Activity :		1.487E+06	1.961E+06			

Grand Total Activity :	1.487E+06	1.961E+06

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Sample ID : VER_WELL_CAN
Acquisition date : 14-DEC-2005 17:17:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	32.94	8090	42222	1.45	64.85	62	8	2.25E+00	9.1	1.66E+00	
1	36.16	2099	10359	1.36	71.25	70	27	5.83E-01	12.2	2.00E+00	
1	40.19	6404	41044	1.37	79.25	70	27	1.78E+00	11.5	2.42E+00	
1	42.20	7325	40817	1.38	83.25	70	27	2.03E+00	10.2	2.63E+00	
10	66.54	2603	25638	2.05	131.60	126	25	7.23E-01	24.1	4.44E+00	
0	156.62	194	6859	1.39	310.56	308	7	5.40E-02	****	4.61E+00	
0	199.37	534	6782	1.82	395.51	391	9	1.48E-01	56.4	3.97E+00	
0	255.10	777	6322	1.42	506.25	502	10	2.16E-01	39.0	3.27E+00	
0	309.70	233	4389	1.90	614.75	612	9	6.48E-02	****	2.75E+00	
0	511.27	337	3672	1.31	1015.34	1011	11	9.37E-02	70.9	1.70E+00	
0	530.86	155	1686	1.02	1054.28	1052	6	4.31E-02	85.3	1.64E+00	
0	573.83	91	1923	1.59	1139.69	1137	7	2.54E-02	****	1.52E+00	
0	610.33	24	1687	0.73	1212.23	1211	6	6.56E-03	****	1.44E+00	
0	625.88	102	2504	1.45	1243.14	1239	9	2.84E-02	****	1.40E+00	
0	629.80	139	1633	1.14	1250.94	1248	6	3.87E-02	93.4	1.39E+00	
0	690.27	124	2402	2.16	1371.14	1367	9	3.45E-02	****	1.28E+00	
0	744.04	100	1822	1.25	1478.03	1476	8	2.78E-02	****	1.20E+00	
0	777.53	126	1713	1.47	1544.61	1541	8	3.50E-02	****	1.15E+00	
0	803.35	96	1015	0.93	1595.95	1594	5	2.67E-02	****	1.12E+00	
0	814.14	429	2506	1.60	1617.41	1612	11	1.19E-01	46.3	1.10E+00	
0	849.87	77	1407	1.21	1688.44	1685	6	2.15E-02	****	1.06E+00	
0	875.35	98	1489	1.21	1739.10	1736	6	2.71E-02	****	1.04E+00	
0	1069.73	33	2166	3.43	2125.61	2118	11	9.17E-03	****	8.72E-01	
0	1114.84	100	1453	1.00	2215.34	2214	8	2.77E-02	****	8.42E-01	
0	1159.38	83	853	1.86	2303.92	2300	7	2.31E-02	****	8.15E-01	
0	1211.27	62	505	1.68	2407.11	2404	8	1.71E-02	****	7.85E-01	
0	1231.58	56	379	1.70	2447.51	2443	8	1.55E-02	****	7.74E-01	
0	1270.20	58	314	1.44	2524.31	2521	7	1.61E-02	****	7.54E-01	
0	1318.08	74	341	1.18	2619.56	2616	7	2.05E-02	86.4	7.31E-01	
5	1325.67	553	983	3.54	2634.67	2623	39	1.53E-01	31.7	7.28E-01	
0	1404.12	36	236	0.59	2790.71	2786	7	9.97E-03	****	6.93E-01	
0	1459.28	57	523	4.35	2900.44	2894	13	1.59E-02	****	6.70E-01	
0	1551.48	99	367	2.36	3083.88	3080	8	2.74E-02	70.5	6.36E-01	
0	1587.75	69	293	0.88	3156.03	3154	6	1.92E-02	81.8	6.23E-01	
0	1596.97	25	299	0.56	3174.38	3171	6	6.88E-03	****	6.20E-01	
0	1623.14	97	727	7.89	3226.45	3219	21	2.70E-02	****	6.11E-01	
0	1674.93	69	343	5.02	3329.51	3323	14	1.91E-02	****	5.94E-01	
0	1782.30	70	91	4.84	3543.16	3538	12	1.94E-02	59.3	5.61E-01	
0	1797.31	29	67	1.63	3573.03	3570	7	8.06E-03	****	5.56E-01	
0	1952.53	23	75	4.63	3881.96	3877	15	6.39E-03	****	5.14E-01	
0	2013.87	20	16	1.46	4004.04	4002	5	5.47E-03	78.3	4.98E-01	

Flags: "T" = Tentatively associated

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 18:19:32.72

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*****************************************************************************
*                          GENERAL ENG. LABS, LLC.                          *
*                              2040 Savage Road                             *
*                            Charleston, SC 29414                           *
*****************************************************************************
*                                                                           *
*                              DETECTOR DATA                                *
*                                                                           *
* Configuration    : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]VER_WELL_CAN.CNF;1   *
* Acquisition date : 14-DEC-2005 17:17:48  Detector SN#     : 3941466       *
* Detector ID      : WELL                  Sensitivity      : 3.00000       *
* Geometry         : CAN                   Energy tolerance: 2.00000       *
* Elapsed live time: 0 01:00:00.00         Abundance limit  : 75.00000      *
* Elapsed real time: 0 01:01:15.52         Half life ratio  : 8.00000       *
*****************************************************************************
*                                                                           *
*                              SAMPLE DATA                                  *
*                                                                           *
* Sample date      : 1-APR-2005 12:00:00.  Nuclide Library : CAL             *
* Sample ID        : VER_WELL_CAN          Analyst initials: MJH1            *
* Batch Number     :                       Sample Quantity : 1.00000E+00 LITER *
*****************************************************************************
*                                                                           *
*                                QC DATA                                    *
*                                                                           *
* CALIB. DATE/TIME : 14-DEC-2005 17:16:53.5MS Isotope      :                *
* MSD DPM          :                       MSD Isotope     :                *
* LCS DPM          :                       LCS Isotope     :                *
*****************************************************************************
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/LITER)	Act error	MDA (pCi/LITER)	MDA error	Act/MDA
CO-57	1.950E+04	2.638E+02	1.533E+02	0.000E+00	127.159
CO-60	3.810E+04	4.318E+02	1.279E+02	0.000E+00	297.796
Y-88	8.701E+04	1.765E+03	4.402E+02	0.000E+00	197.670
CD-109	8.102E+05	6.444E+03	3.601E+03	0.000E+00	225.016
SN-113	4.723E+04	1.154E+03	7.098E+02	0.000E+00	66.545
CS-137	2.487E+04	3.480E+02	1.676E+02	0.000E+00	148.422
CE-139	2.851E+04	4.485E+02	2.896E+02	0.000E+00	98.418
HG-203	5.713E+04	4.795E+03	4.579E+03	0.000E+00	12.478
PB-210	7.865E+05	6.259E+03	5.155E+03	0.000E+00	152.566
AM-241	6.213E+04	6.487E+02	3.775E+02	0.000E+00	164.571

VAX/VMS Nuclide Identification Report Generated 14-DEC-2005 16:11:43.64

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****

GENERAL ENG. LABS, LLC.
2040 Savage Road
Charleston, SC 29414

Configuration : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]CAL_WELL_CAN.CNF;1
Sample date : 1-APR-2005 12:00:00. Acquisition date : 14-DEC-2005 15:09:59
Sample ID : CAL_WELL_CAN Sample quantity : 1.00000E+00 LITER
Detector name : WELL Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:01:15.78 2.1%
Energy tolerance : 2.00000 KEV Analyst Initials : MJH1
Abundance limit : 75.00000 Sensitivity : 3.00000
Batch ID : Detector SN# : 3941466
Matrix Spike DPM : LCS DPM :

****

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	33.01	8246	41954	1.55	64.99	62	8	2.29E+00	4.4	
2	9	37.37*	5883	36050	2.91	73.65	70	27	1.63E+00	5.5	1.30E+02
3	9	41.25	15566	86773	2.94	81.36	70	27	4.32E+00	4.5	
4	9	44.00	10962	50654	1.67	86.83	70	27	3.05E+00	4.5	
5	9	46.52*	132120	44971	1.47	91.82	70	27	3.67E+01	0.4	
6	0	59.51	118513	53096	1.29	117.63	111	14	3.29E+01	0.5	
7	7	67.04	4333	33444	2.54	132.59	126	24	1.20E+00	9.1	4.66E+00
8	7	69.77	2487	29794	1.88	138.02	126	24	6.91E-01	13.9	
9	7	72.94*	2226	31922	2.19	144.32	126	24	6.18E-01	15.4	
10	0	88.06*	142647	39189	1.32	174.36	167	15	3.96E+01	0.4	
11	0	103.33	253	10867	1.47	204.69	202	7	7.02E-02	68.7	
12	0	122.12	58815	21574	1.37	242.03	234	16	1.63E+01	0.7	
13	0	136.54	7058	11508	1.38	270.68	266	11	1.96E+00	3.2	
14	0	165.94*	36981	11897	1.38	329.08	323	13	1.03E+01	0.8	
15	0	199.10*	273	5487	1.45	394.97	391	7	7.57E-02	45.5	
16	0	203.75	121	3853	0.74	404.22	402	5	3.37E-02	77.2	
17	0	255.24	878	5574	1.13	506.53	503	9	2.44E-01	15.7	
18	0	279.32*	3554	6174	1.41	554.37	550	11	9.87E-01	4.6	
19	0	391.76*	19250	6457	1.54	777.83	770	15	5.35E+00	1.2	
20	0	469.11	39	3000	0.75	931.54	931	7	1.09E-02	231.8	
21	0	661.69*	37044	5332	1.73	1314.32	1306	17	1.03E+01	0.7	
22	0	697.49	92	1645	1.36	1385.50	1382	6	2.55E-02	70.7	
23	0	793.28	125	1522	1.53	1575.92	1573	7	3.48E-02	52.5	
24	0	814.01*	391	2512	1.47	1617.14	1612	11	1.09E-01	25.3	
25	0	898.05*	20363	4638	1.87	1784.24	1776	17	5.66E+00	1.0	
26	0	1012.14	108	1801	1.97	2011.10	2007	9	3.00E-02	71.7	
27	0	1046.13	88	1097	1.49	2078.69	2077	6	2.43E-02	60.9	
28	0	1173.25*	37789	2386	2.03	2331.50	2321	20	1.05E+01	0.6	
29	0	1238.14	35	440	1.28	2460.56	2457	8	9.59E-03	106.6	
30	5	1325.67	516	1196	3.54	2634.67	2621	42	1.43E-01	17.6	6.82E+00
31	5	1332.53*	33702	632	2.21	2648.30	2621	42	9.36E+00	0.6	
32	0	1430.30	32	536	4.84	2842.79	2836	13	8.76E-03	152.5	
33	0	1485.64*	66	309	1.43	2952.89	2949	8	1.84E-02	47.8	
34	0	1753.86	21	208	5.28	3486.57	3479	16	5.83E-03	155.1	
35	0	1836.17*	11671	397	2.41	3650.38	3639	24	3.24E+00	1.0	
36	0	1886.85	12	29	1.42	3751.23	3748	6	3.31E-03	77.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Calibration Report V1.5 Generated 14-DEC-2005 17:16:53

Configuration : MCA0:[GAMMA]WELL$1
Analyses by : CALIBRATE V1.7,PEAK V16.4
Detector Name : WELL Energy Calib Time: 13-DEC-2005 09:34:01
Efficiency type : Empirical Effncy Calib Time: 14-DEC-2005 17:16:53
Detector Geometry: WELL Shelf : 0

Energy Calibration Report

Energy = 0.2987 + 0.5034*Channel + -1.2315E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	91.73	46.50	46.47	0.026
2	117.44	59.54	59.42	0.121
3	174.31	88.03	88.04	-0.006
4	242.00	122.06	122.11	-0.050
5	329.06	165.85	165.93	-0.073
6	777.81	391.70	391.76	-0.055
7	1314.30	661.66	661.67	-0.014
8	1784.19	898.04	898.03	0.016
9	2331.37	1173.24	1173.19	0.051
10	2648.23	1332.50	1332.49	0.008
11	3650.20	1836.06	1836.09	-0.024

FWHM Calibration Report

FWHM = 1.046 + 3.1639E-02*(Energy**1/2)

Nbr	Energy	True FWHM	Computed FWHM	Difference
1	46.50	1.48	1.26	0.215
2	59.54	1.33	1.29	0.036
3	88.03	1.33	1.34	-0.010
4	122.06	1.37	1.40	-0.028
5	165.85	1.39	1.45	-0.064
6	391.70	1.52	1.67	-0.148
7	661.66	1.76	1.86	-0.102
8	898.04	1.92	1.99	-0.075
9	1173.24	2.09	2.13	-0.043
10	1332.50	2.30	2.20	0.094
11	1836.06	2.53	2.40	0.124

Efficiency Calibration Report

Eff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a4	a5	a6	a7
941.3	-4.633	0.8619	7.0681E-02	6.4484E-02	-7.1717E-02	8.2159E-03

Average Deviation = 1.46 % Reduced Chi-Square = 0.771

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff

1	46.50	3.06E-02	9.28E-04	3.04E-02	0.27	0.82

Sample ID : CAL_WELL_CAN Acquisition date : 14-DEC-2005 15:09:59

Nbr	Energy (KEV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
2	59.54	3.98E-02	1.21E-03	4.05E-02	-0.56	-1.71
3	88.03	5.05E-02	1.68E-03	5.07E-02	-0.08	-0.25
4	122.06	5.24E-02	1.61E-03	5.06E-02	1.11	3.41
5	165.85	4.37E-02	1.27E-03	4.47E-02	-0.75	-2.18
6	391.70	2.18E-02	6.20E-04	2.20E-02	-0.36	-1.01
7	661.66	1.37E-02	4.22E-04	1.33E-02	0.95	2.93
8	898.04	9.96E-03	2.79E-04	1.01E-02	-0.61	-1.70
9	1173.24	8.14E-03	2.25E-04	8.07E-03	0.32	0.88
10	1332.50	7.18E-03	1.91E-04	7.24E-03	-0.33	-0.87
11	1836.06	5.47E-03	1.53E-04	5.45E-03	0.11	0.30

Approved by: _____ Approval Date: 12 / 15 / 05

12/18/05

Print Time : 14-JUN-2005 17:43:24.41
Certificate file name : DKA300:[CANBERRA.GAMMA]70530-278.CER;1
Certificate title : CAN
Certificate date : 1-APR-2005 12:00:00.00
Certificate quantity : 1.00000E+00

Rcd	Nuclide	Halflife	CAL/ INIT	Energy	Rate	%Abun	Activity (uCi)
1	AM-241	432.20Y	Yes	59.54	8.2730E+02	35.90	6.2283E-02
2	CD-109	462.60D	No	88.03	1.1530E+03	3.79	8.2222E-01
3	Co-57	271.79D	No	122.06	6.0100E+02	85.51	1.8996E-02
4	CE-139	137.60D	No	165.85	8.5780E+02	80.35	2.8853E-02
5	SN-113	115.10D	No	391.70	1.1560E+03	64.90	4.8141E-02
6	CS-137	30.07Y	Yes	661.66	7.6270E+02	85.12	2.4217E-02
7	Y-88	106.60D	No	898.04	3.0220E+03	93.40	8.7447E-02
8	Y-88	106.60D	Yes	1836.06	3.1560E+03	99.38	8.5829E-02
9	Co-60	5.27Y	Yes	1173.24	1.4150E+03	99.90	3.8282E-02
10	CO-60	5.27Y	No	1332.50	1.4300E+03	99.98	3.8655E-02
11	PB-210	22.30Y	No	46.50	1.2240E+03	4.05	8.1682E-01

Library Title :
Library file name : DKA300:[CANBERRA.GAMMA]CAL.NLB;1
Date printed : 6-DEC-2004 10:31:17.67
Number of nuclides : 10
Number of lines : 17

Nuclide Name	Half-Life	Nuclide Type	Key Line	Energy		Abundance
CO-57	271.74D		*	122.06	keV	85.51 %
				136.47	keV	10.47 %
CO-60	5.27Y			1173.24	keV	99.90 %
			*	1332.50	keV	99.98 %
Y-88	106.63D			898.04	keV	93.40 %
			*	1836.06	keV	99.38 %
CD-109	461.40D		*	88.03	keV	3.79 %
SN-113	115.09D		*	391.70	keV	64.90 %
CS-137	30.00Y		*	661.66	keV	85.12 %
CE-139	137.64D		*	165.85	keV	80.35 %
HG-203	46.60D			70.83	keV	4.75 %
				72.87	keV	8.00 %
				82.60	keV	3.55 %
			*	279.20	keV	77.30 %
PB-210	22.26Y		*	46.50	keV	4.05 %
AM-241	432.20Y		*	59.54	keV	35.90 %

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

70530-278

100 mL Solid in 100 mL Aluminum Can

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 and Pb-210 were calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in US NRC Regulatory Guide 4.15, Revision 1, February 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration Date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Pb-210	46.5	22.3	y	1224	3.0
Am-241	59.5	432.2	y	827.3	3.0
Cd-109	88	462.6	d	1153	3.3
Co-57	122	271.79	d	601.0	3.0
Ce-139	166	137.6	d	857.8	2.8
Hg-203	279	46.61	d	1856	2.7
Sn-113	392	115.1	d	1156	2.6
Cs-137	662	30.07	y	762.7	3.0
Y-88	898	106.6	d	3022	2.6
Co-60	1173	5.271	y	1415	2.7
Co-60	1332	5.271	y	1430	2.6
Y-88	1836	106.6	d	3156	2.6

P O NUMBER 2832RD, Item 3

SOURCE PREPARED BY: M. Dimitrova

M. Dimitrova, Radiochemist

Q A APPROVED: M. [illegible] 5-12-05

This standard will expire one year after the calibration date.

0840

Certificate of Analysis

o2si
mart solutions®

Catalog No: 060092-05
Lot No: 1006451
Storage: Ambient
Matrix: 1M HNO_3
Container: 250 ml Narrow Mouth, HDPE
Description: Uranium 10 µg/L ± 0.5% in 1M HNO_3

Quality System
Audited & Registered
by NSF-ISR to ISO 9001:2000

e Received: 7-OCT-04
piration Date: 11/1/2006

Element	Symbol	CAS No	Source Lot No	Purity %	Concentration ug/L
ranium Total	U	7440-61-1	7075.42.5	100	10

By: Mark Filla

Mark Filla

d was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 00). Only calibrated Class A volumetric glassware was used to prepare this standard. Sub-boiled distilled acid and deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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Phone (843) 763-4884 • Fax (843) 766-9182
www.o2si.com

0842

Certificate of Analysis

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mart solutions®

Catalog No: 060092-17
Lot No: 1006458
Storage: Ambient
Matrix: 1M HNO_3
Container: 250 ml Narrow Mouth, HDPE
Description: Uranium 500 µg/L ± 0.5% in 1M HNO_3

Quality System
Audited & Registered
by NSF-ISR to ISO 9001:2000

te Received: 7-OCT-05
piration Date: 11/1/2006

Element	Symbol	CAS No	Source Lot No	Purity %	Concentration ug/L
Uranium Total	U	7440-61-1	7075.42.5	100	500

y: Mark Filla

was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 00). Only calibrated Class A volumetric glassware was used to prepare this standard. Sub-boiled distilled acid and deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity his standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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0872

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Certificate of Analysis

Catalog No: 060092-07
Lot No: 1006725
Storage: Ambient
Matrix: 1M HNO_3
Container: 250 ml Narrow Mouth, HDPE
Description: Uranium 3 µg/L ± 0.5% in 1M HNO_3

Quality System
Audited & Registered
by NSF-ISR to ISO 9001:2000

Date Received: 12/22/05
Expiration Date: 1/1/2007

Element	Symbol	CAS No	Source Lot No	Purity %	Concentration ug/L
Uranium Total	U	7440-61-1	7075.42.5	100	3

Certified By: Mark Filla

This standard was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 22/264157-00). Only calibrated Class A volumetric glassware was used to prepare this standard. Sub-boiled distilled acid and 18 megaohm deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity prior to use. This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

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RCS-041-048

0876

Certificate of Analysis

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nart solutions®

Catalog No: 060092-16
Lot No: 1006787
Storage: Ambient
Matrix: 1M HNO_3
Container: 250 ml Narrow Mouth, HDPE
Description: Uranium 250 µg/L ± 0.5% in 1M HNO_3

Quality System
Audited & Registered
by NSF-ISR to ISO 9001:2000

Received: 11/10/06
ration Date: 2/1/2007

Element	Symbol	CAS No	Source Lot No	Purity %	Concentration ug/L
anium Total	U	7440-61-1	7075.42.5	100	250

By: Mark Filla

rd was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number -00). Only calibrated Class A volumetric glassware was used to prepare this standard. Sub-boiled distilled acid and n deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity This standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

2040 Savage Road • Charleston, SC 29407
Phone (843) 763-4884 • Fax (843) 766-9182
www.o2si.com

LCS-041-052

0898

ENVIRONMENTAL EXPRESS

Certificate of Analysis

HP2684-B-250

Lot # 602416

Source	Source Purity	Matrix	Standard Concentration
Uranium Oxide	99.968%	HNO3, 1M	5.0 µg/L ± 0.5% Uranium

This spectrometric standard solution has been prepared from high-purity reference materials. Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water. The reference materials have been assayed by inductively coupled plasma optical emission spectrometry (ICP-OES).

The standard has been prepared gravimetrically by weighing the reference material to 5 significant figures. Volumetric glassware has been calibrated gravimetrically to 5 significant figures. The standard concentration has been verified by ICP-OES against an independent source which is traceable to National Institute of Standards and Technology, Standard Reference Material No. 3164.

This standard is valid for three months from the shipping date provided the solution is kept tightly capped and stored under normal laboratory conditions.

Theodore C Rains

Theodore C. Rains, Ph.D.
Laboratory Director

p Date: MAY 2006

SDS ATTACHED

o Park Blvd.
nt, South Carolina 29464
43.881.6560
.800.343.5319
.881.3964
onmentalExpress.com

RC-S-041-074

0914

ENVIRONMENTAL EXPRESS

Certificate of Analysis

HP2684-A-250

(Sol A)

Lot # 605815

Source	Source Purity	Matrix	Standard Concentration
Uranium Oxide	99.968%	HNO_3, 1M	1.0 µg/L Uranium

This spectrometric standard solution has been prepared from high-purity reference materials. Sub-boiling distilled high-purity acid has been used to place the materials in solution and to stabilize the standard. The matrix is as noted above in 18 megaohm deionized water. The reference materials have been assayed by inductively coupled plasma optical emission spectrometry (ICP-OES).

The standard has been prepared gravimetrically by weighing the reference material to 5 significant figures. Volumetric glassware has been calibrated gravimetrically to 5 significant figures. The standard concentration has been verified by ICP-OES against an independent source which is traceable to National Institute of Standards and Technology, Standard Reference Material No. 3164.

This standard is valid for three months from the shipping date provided the solution is kept tightly capped and stored under normal laboratory conditions.

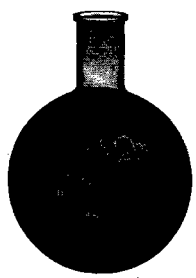
Theodore C Rains

Exp Date: JUL 2006

Theodore C. Rains, Ph.D.
Laboratory Director

MSDS ATTACHED

Wando Park Blvd.
Pleasant, South Carolina 29464
ne: 1.843.881.6560
ree: 1.800.343.5319
1.843.881.3964
environmentalexpress.com



RCS041 - 90

CONTINUING CALIBRATION DATA

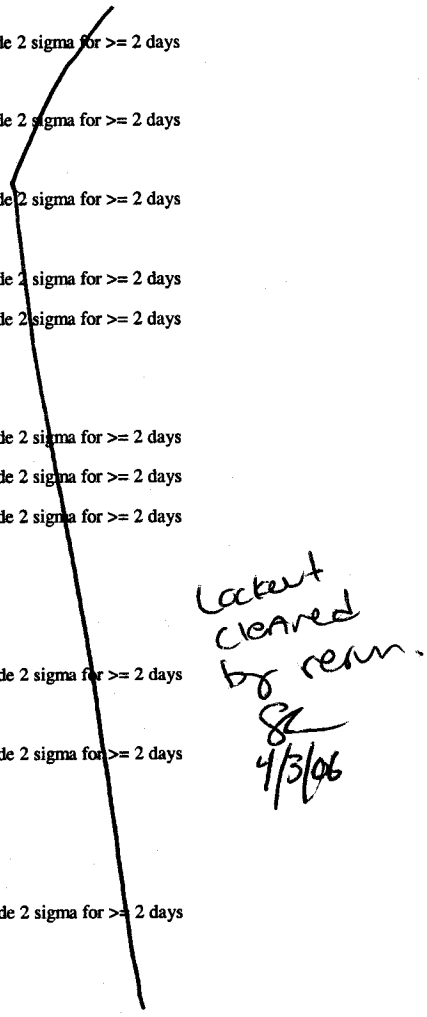
Gas Flow Proportional Counter Checks for 03-APR-2006

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LB4100A1	ALPHA EFF	10:11	30	23701	790	0.02	GOOD	
	BETA EFF	10:11	30	1.74E+05	5800	-0.68	GOOD	
	ALPHA BKG	10:45	60	4.00	0.07	0.26	GOOD	
	BETA BKG	10:45	60	89.0	1.48	4	DETL	Outside 2 sigma for >= 2 days
LB4100A2	ALPHA EFF	10:11	30	15893	530	-0.44	GOOD	
	BETA EFF	10:11	30	1.30E+05	4340	0.7	GOOD	
	ALPHA BKG	10:45	60	3.00	0.05	-0.51	GOOD	
	BETA BKG	10:45	60	40.0	0.67	-1.2	GOOD	
LB4100A3	ALPHA EFF	10:11	30	22264	742	-0.31	GOOD	
	BETA EFF	10:11	30	1.58E+05	5280	0.51	GOOD	
	ALPHA BKG	10:45	60	4.00	0.07	-0.27	GOOD	
	BETA BKG	10:45	60	78.0	1.3	1.79	GOOD	
LB4100A4	ALPHA EFF	10:11	30	18721	624	-3	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:11	30	1.75E+05	5820	2.66	DETL	Outside 2 sigma for >= 2 days
	ALPHA BKG	10:45	60	3.00	0.05	-0.08	GOOD	
	BETA BKG	10:45	60	60.0	1	0.17	GOOD	
LB4100B1	ALPHA EFF	10:11	30	20847	695	-0.94	GOOD	
	BETA EFF	10:11	30	1.89E+05	6300	0.61	GOOD	
	ALPHA BKG	10:45	60	3.00	0.05	0.38	GOOD	
	BETA BKG	10:45	60	52.0	0.87	-0.17	GOOD	
LB4100B2	ALPHA EFF	10:11	30	20449	682	-0.8	GOOD	
	BETA EFF	10:11	30	1.66E+05	5540	0.41	GOOD	
	ALPHA BKG	10:45	60	3.00	0.05	0.24	GOOD	
	BETA BKG	10:45	60	37.0	0.62	-0.5	GOOD	
LB4100B3	ALPHA EFF	10:11	30	15795	527	-0.12	GOOD	
	BETA EFF	10:11	30	1.23E+05	4100	0.78	GOOD	
	ALPHA BKG	10:45	60	2.00	0.03	-0.42	GOOD	
	BETA BKG	10:45	60	71.0	1.18	-0.16	GOOD	
LB4100B4	ALPHA EFF	10:11	30	18261	609	-1	GOOD	
	BETA EFF	10:11	30	1.57E+05	5230	1.43	GOOD	
	ALPHA BKG	10:45	60	0	0	-1.3	GOOD	
	BETA BKG	10:45	60	286	4.77	36.3	DETL	Outside 2 sigma for >= 2 days
LB4100C1	ALPHA EFF	10:11	30	20477	683	-0.58	GOOD	
	BETA EFF	10:11	30	1.33E+05	4440	-0.41	GOOD	
	ALPHA BKG	10:45	60	15.0	0.25	0.12	GOOD	
	BETA BKG	10:45	60	69.0	1.15	-0.44	GOOD	
LB4100C2	ALPHA EFF	10:11	30	20616	687	-0.67	GOOD	
	BETA EFF	10:11	30	1.91E+05	6380	0.23	GOOD	
	ALPHA BKG	10:45	60	2.00	0.03	-0.84	GOOD	
	BETA BKG	10:45	60	63.0	1.05	1.07	GOOD	
LB4100C3	ALPHA EFF	10:11	30	16050	535	-0.68	GOOD	
	BETA EFF	10:11	30	1.35E+05	4500	0.12	GOOD	

— = α lockout

= = α/β lockout

	ALPHA BKG	10:45	60	0	0	-1.5	GOOD	
	BETA BKG	10:45	60	46.0	0.77	-0.95	GOOD	
LB4100C4	ALPHA EFF	10:11	30	22933	764	-0.02	GOOD	
	BETA EFF	10:11	30	2.17E+05	7220	0.35	GOOD	
	ALPHA BKG	10:45	60	1.00	0.02	-1.2	GOOD	
	BETA BKG	10:45	60	59.0	0.98	0.93	GOOD	
LB4100D1	ALPHA EFF	10:11	30	24856	829	-2.2	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:11	30	2.34E+05	7790	-0.25	GOOD	
	ALPHA BKG	10:45	60	23.0	0.38	6.49	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	10:45	60	53.0	0.88	0.44	GOOD	
	ALPHA EFF	11:28	30	27008	900	0.07	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	11:28	30	2.39E+05	7960	0.33	GOOD	
LB4100D2	ALPHA EFF	10:11	30	17836	595	-3.3	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:11	30	1.45E+05	4830	-2.3	DETL	Outside 2 sigma for >= 2 days
	ALPHA BKG	10:45	60	9.00	0.15	0.02	GOOD	
	BETA BKG	10:45	60	51.0	0.85	-0.99	GOOD	
	ALPHA EFF	11:28	30	18983	633	-0.91	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	11:28	30	1.49E+05	4970	-0.31	DETL	Outside 2 sigma for >= 2 days
LB4100D3	ALPHA EFF	10:11	30	16956	565	-3.2	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:11	30	1.47E+05	4920	-0.23	GOOD	
	ALPHA BKG	10:45	60	2.00	0.03	-0.41	GOOD	
	BETA BKG	10:45	60	43.0	0.72	-0.42	GOOD	
	ALPHA EFF	11:28	30	17942	598	-1.3	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	11:28	30	1.47E+05	4910	-0.39	GOOD	
LB4100D4	ALPHA EFF	10:11	30	19489	650	-2.8	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:11	30	1.81E+05	6030	0.52	GOOD	
	ALPHA BKG	10:45	60	5.00	0.08	0.17	GOOD	
	BETA BKG	10:45	60	45.0	0.75	-0.91	GOOD	
	ALPHA EFF	11:28	30	20653	688	-1.1	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	11:28	30	1.83E+05	6110	0.99	GOOD	
LB4100E1	ALPHA BKG	01:27	60	14.0	0.23	0.89	GOOD	
	BETA BKG	01:27	60	64.0	1.07	-1.7	GOOD	
	ALPHA EFF	09:04	30	32595	1090	-1.3	GOOD	
	BETA EFF	09:04	30	2.14E+05	7130	0.76	GOOD	
LB4100E2	ALPHA BKG	01:27	60	5.00	0.08	-0.85	GOOD	
	BETA BKG	01:27	60	81.0	1.35	-0.91	GOOD	
	ALPHA EFF	09:04	30	34210	1140	-0.83	GOOD	
	BETA EFF	09:04	30	2.91E+05	9710	0.8	GOOD	
LB4100E3	ALPHA BKG	01:27	60	2.00	0.03	-1.1	GOOD	
	BETA BKG	01:27	60	72.0	1.2	1	GOOD	
	ALPHA EFF	09:04	30	34789	1160	-0.94	GOOD	
	BETA EFF	09:04	30	2.28E+05	7590	-0.74	GOOD	
LB4100E4	ALPHA BKG	01:27	60	3.00	0.05	-1.5	GOOD	
	BETA BKG	01:27	60	111	1.85	-0.06	GOOD	
	ALPHA EFF	09:04	30	30185	1010	-0.46	GOOD	
	BETA EFF	09:04	30	2.25E+05	7520	0.03	GOOD	
LB4100F1	ALPHA BKG	01:27	60	6.00	0.1	0.65	GOOD	



Lockout cleared by rerun. SR 4/3/06

	BETA BKG	01:27	60	61.0	1.02	0.54	GOOD	
	ALPHA EFF	09:04	30	28679	956	0.16	GOOD	
	BETA EFF	09:04	30	2.04E+05	6790	0.52	GOOD	
LB4100F2	ALPHA BKG	01:27	60	3.00	0.05	-1.3	GOOD	
	BETA BKG	01:27	60	67.0	1.12	0.15	GOOD	
	ALPHA EFF	09:04	30	27762	925	2.18	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	09:04	30	2.16E+05	7190	-0.83	GOOD	
LB4100F3	ALPHA BKG	01:27	60	6.00	0.1	-1.1	GOOD	
	BETA BKG	01:27	60	85.0	1.42	0.3	GOOD	
	ALPHA EFF	09:04	30	27643	921	0.49	GOOD	
	BETA EFF	09:04	30	2.60E+05	8650	1.07	GOOD	
LB4100F4	ALPHA BKG	01:27	60	3.00	0.05	0.19	GOOD	
	BETA BKG	01:27	60	49.0	0.82	-0.26	GOOD	
	ALPHA EFF	09:04	30	24121	804	-2.4	GOOD	
	BETA EFF	09:04	30	1.99E+05	6640	0.84	GOOD	
LB4100G1	ALPHA BKG	01:26	60	6.00	0.1	-1	GOOD	
	BETA BKG	01:26	60	144	2.4	4.24	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	09:04	30	31815	1060	0.49	GOOD	
	BETA EFF	09:04	30	2.22E+05	7410	0.06	GOOD	
LB4100G2	ALPHA BKG	01:26	60	3.00	0.05	-0.32	GOOD	
	BETA BKG	01:26	60	111	1.85	9.58	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	09:04	30	30717	1020	-1.2	GOOD	
	BETA EFF	09:04	30	2.85E+05	9490	0.09	GOOD	
LB4100G3	ALPHA BKG	01:26	60	12.0	0.2	-0.09	GOOD	
	BETA BKG	01:26	60	53.0	0.88	-0.85	GOOD	
	ALPHA EFF	09:04	30	22536	751	0.36	GOOD	
	BETA EFF	09:04	30	2.45E+05	8180	-0.33	GOOD	
LB4100G4	ALPHA BKG	01:26	60	3.00	0.05	-0.08	GOOD	
	BETA BKG	01:26	60	83.0	1.38	2.67	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	09:04	30	15195	507	-0.02	GOOD	
	BETA EFF	09:04	30	1.50E+05	4990	-1.1	GOOD	
LB4100H1	ALPHA BKG	01:26	60	5.00	0.08	-0.19	GOOD	
	BETA BKG	01:26	60	35.0	0.58	-1.4	GOOD	
	ALPHA EFF	09:04	30	29197	973	-0.88	GOOD	
	BETA EFF	09:04	30	1.42E+05	4730	-0.24	GOOD	
LB4100H2	ALPHA BKG	01:26	60	9.00	0.15	1.38	GOOD	
	BETA BKG	01:26	60	88.0	1.47	3.88	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	09:04	30	19143	638	0.45	GOOD	
	BETA EFF	09:04	30	1.39E+05	4640	-2.3	DETL	Outside 2 sigma for >= 2 days
LB4100H3	ALPHA BKG	01:26	60	8.00	0.13	0.3	GOOD	
	BETA BKG	01:26	60	53.0	0.88	0.56	GOOD	
	ALPHA EFF	09:04	30	18495	617	-0.86	GOOD	
	BETA EFF	09:04	30	1.48E+05	4930	-1.4	GOOD	
LB4100H4	ALPHA BKG	01:26	60	2.00	0.03	-1.1	GOOD	
	BETA BKG	01:26	60	47.0	0.78	0.15	GOOD	
	ALPHA EFF	09:04	30	18060	602	-0.76	GOOD	
	BETA EFF	09:04	30	1.18E+05	3940	-1.7	GOOD	

PIC1A	ALPHA BKG	09:27	60	7.00	0.12	-0.46	GOOD	
	BETA BKG	09:27	60	20.0	0.33	-1.2	GOOD	
	ALPHA EFF	10:13	30	9277	309	-2.5	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:13	30	1.95E+05	6520	-0.64	GOOD	
PIC1B	ALPHA BKG	09:27	60	5.00	0.08	-0.36	GOOD	
	BETA BKG	09:27	60	26.0	0.43	0.57	GOOD	
	ALPHA EFF	10:13	30	10923	364	-1.8	GOOD	
	BETA EFF	10:13	30	2.13E+05	7090	-1.6	GOOD	
PIC1C	ALPHA BKG	09:27	60	5.00	0.08	-0.3	GOOD	
	BETA BKG	09:27	60	30.0	0.5	0.68	GOOD	
	ALPHA EFF	10:13	30	15314	510	-1.3	GOOD	
	BETA EFF	10:13	30	2.44E+05	8140	-0.9	GOOD	
PIC1D	ALPHA BKG	09:27	60	3.00	0.05	-1.4	GOOD	
	BETA BKG	09:27	60	32.0	0.53	0.64	GOOD	
	ALPHA EFF	10:13	30	16342	545	-0.76	GOOD	
	BETA EFF	10:13	30	1.89E+05	6300	0.24	GOOD	
PIC2A	ALPHA BKG	09:27	60	4.00	0.07	-0.61	GOOD	
	BETA BKG	09:27	60	19.0	0.32	-0.66	GOOD	
	ALPHA EFF	10:13	30	15555	519	-1.4	GOOD	
	BETA EFF	10:13	30	2.32E+05	7740	0.64	GOOD	
PIC2B	ALPHA BKG	09:27	60	3.00	0.05	-0.7	GOOD	
	BETA BKG	09:27	60	20.0	0.33	-0.27	GOOD	
	ALPHA EFF	10:14	30	13585	453	-1.8	GOOD	
	BETA EFF	10:14	30	2.30E+05	7657	0.82	GOOD	
PIC2C	ALPHA BKG	09:27	60	6.00	0.1	-0.39	GOOD	
	BETA BKG	09:27	60	26.0	0.43	0.33	GOOD	
	ALPHA EFF	10:14	30	19020	634	-0.63	GOOD	
	BETA EFF	10:14	30	1.93E+05	6420	-0.59	GOOD	
PIC2D	ALPHA BKG	09:28	60	6.00	0.1	-0.23	GOOD	
	BETA BKG	09:28	60	36.0	0.6	1.29	GOOD	
	ALPHA EFF	10:14	30	17020	567	-1.2	GOOD	
	BETA EFF	10:14	30	2.24E+05	7460	0.44	GOOD	
PIC3A	ALPHA BKG	09:28	60	5.00	0.08	-0.87	GOOD	
	BETA BKG	09:28	60	33.0	0.55	0.54	GOOD	
	ALPHA EFF	10:14	30	21662	722	-1.8	GOOD	
	BETA EFF	10:14	30	1.77E+05	5910	0.54	GOOD	
PIC3B	ALPHA BKG	09:28	60	7.00	0.12	-0.12	GOOD	
	BETA BKG	09:28	60	33.0	0.55	0.64	GOOD	
	ALPHA EFF	10:14	30	20561	685	-1	GOOD	
	BETA EFF	10:14	30	1.96E+05	6530	-0.05	GOOD	
PIC3C	ALPHA BKG	09:28	60	1.00	0.02	-1.8	GOOD	
	BETA BKG	09:28	60	23.0	0.38	-0.21	GOOD	
	ALPHA EFF	10:14	30	17326	578	-1.2	GOOD	
	BETA EFF	10:14	30	2.12E+05	7060	0.3	GOOD	
PIC3D	ALPHA BKG	09:29	60	2.00	0.03	-1.9	GOOD	
	BETA BKG	09:29	60	25.0	0.42	-0.13	GOOD	
	ALPHA EFF	10:14	30	24596	820	-1.6	GOOD	

	BETA EFF	10:14	30	2.13E+05	7100	-1.5	GOOD	
PIC4A	ALPHA BKG	09:29	60	3.00	0.05	-1.2	GOOD	
	BETA BKG	09:29	60	38.0	0.63	0.68	GOOD	
	ALPHA EFF	10:14	30	12671	422	-1.4	GOOD	
	BETA EFF	10:14	30	1.75E+05	5820	-0.44	GOOD	
PIC4B	ALPHA BKG	09:29	60	8.00	0.13	0.74	GOOD	
	BETA BKG	09:29	60	29.0	0.48	0.16	GOOD	
	ALPHA EFF	10:15	30	17600	587	-2.7	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	10:15	30	2.24E+05	7450	0.62	GOOD	
PIC4C	ALPHA BKG	09:29	60	7.00	0.12	-0.29	GOOD	
	BETA BKG	09:29	60	16.0	0.27	-0.83	GOOD	
	ALPHA EFF	10:15	30	20189	673	-1.5	GOOD	
	BETA EFF	10:15	30	2.00E+05	6670	-0.83	GOOD	
PIC4D	ALPHA BKG	09:30	60	10.0	0.17	0.5	GOOD	
	BETA BKG	09:30	60	23.0	0.38	-0.38	GOOD	
	ALPHA EFF	10:15	30	20507	684	-1.3	GOOD	
	BETA EFF	10:15	30	2.11E+05	7020	0.12	GOOD	
PIC5A	ALPHA BKG	09:30	60	3.00	0.05	-0.01	GOOD	
	BETA BKG	09:30	60	24.0	0.4	0.41	GOOD	
	ALPHA EFF	10:16	30	11236	375	0.33	GOOD	
	BETA EFF	10:16	30	3.98E+05	13300	-3.2	RERUN	
PIC5B	ALPHA BKG	09:30	60	6.00	0.1	0.7	GOOD	
	BETA BKG	09:30	60	139	2.32	15.4	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	10:16	30	10118	337	1.05	GOOD	
	BETA EFF	10:16	30	3.49E+05	11600	-3.3	DETL	Outside 2 sigma for >= 2 days
PIC5C	ALPHA BKG	09:30	60	2.00	0.03	-0.31	GOOD	
	BETA BKG	09:30	60	18.0	0.3	-0.66	GOOD	
	ALPHA EFF	10:16	30	10344	345	0.42	GOOD	
	BETA EFF	10:16	30	3.87E+05	12900	-4.2	DETL	Outside 2 sigma for >= 2 days
PIC5D	ALPHA BKG	09:30	60	4.00	0.07	-0.04	GOOD	
	BETA BKG	09:30	60	9.00	0.15	-0.86	GOOD	
	ALPHA EFF	10:16	30	8729	291	-0.2	GOOD	
	BETA EFF	10:16	30	3.08E+05	10300	-5.2	DETL	Outside 2 sigma for >= 2 days
PIC6A	ALPHA BKG	09:31	60	3.00	0.05	0.09	GOOD	
	BETA BKG	09:31	60	21.0	0.35	-0.02	GOOD	
	ALPHA EFF	10:16	30	7930	264	0.11	GOOD	
	BETA EFF	10:16	30	2.80E+05	9320	-4.6	DETL	Outside 2 sigma for >= 2 days
PIC6B	ALPHA BKG	09:31	60	2.00	0.03	-0.45	GOOD	
	BETA BKG	09:31	60	23.0	0.38	0.28	GOOD	
	ALPHA EFF	10:16	30	10070	336	-0.35	GOOD	
	BETA EFF	10:16	30	2.90E+05	9660	-2.7	DETL	Outside 2 sigma for >= 2 days
PIC6C	ALPHA BKG	09:31	60	5.00	0.08	0.47	GOOD	
	BETA BKG	09:31	60	23.0	0.38	-0.16	GOOD	
	ALPHA EFF	10:17	30	14184	473	0.78	GOOD	
	BETA EFF	10:17	30	3.50E+05	11700	-1.2	GOOD	
PIC6D	ALPHA BKG	09:31	60	2.00	0.03	-0.52	GOOD	
	BETA BKG	09:31	60	17.0	0.28	-1.2	GOOD	

	ALPHA EFF	10:17	30	10875	363	-0.6	GOOD	
	BETA EFF	10:17	30	3.59E+05	12000	-3.5	DETL	Outside 2 sigma for >= 2 days
PIC7A	ALPHA BKG	09:31	60	4.00	0.07	-0.57	GOOD	
	BETA BKG	09:31	60	24.0	0.4	-0.6	GOOD	
	ALPHA EFF	10:17	30	9728	324	-0.61	GOOD	
	BETA EFF	10:17	30	3.78E+05	12600	-1.1	GOOD	
PIC7B	ALPHA BKG	09:31	60	15.0	0.25	-0.57	GOOD	
	BETA BKG	09:31	60	41.0	0.68	-0.34	GOOD	
	ALPHA EFF	10:17	30	10014	334	-0.87	GOOD	
	BETA EFF	10:17	30	3.18E+05	10600	-0.5	GOOD	
PIC7C	ALPHA BKG	09:32	60	1.00	0.02	-1.3	GOOD	
	BETA BKG	09:32	60	34.0	0.57	-0.46	GOOD	
	ALPHA EFF	10:17	30	11308	377	-0.68	GOOD	
	BETA EFF	10:17	30	3.82E+05	12700	-0.4	GOOD	
PIC7D	ALPHA BKG	09:32	60	6.00	0.1	-0.74	GOOD	
	BETA BKG	09:32	60	22.0	0.37	-0.59	GOOD	
	ALPHA EFF	10:17	30	8259	275	-0.52	GOOD	
	BETA EFF	10:17	30	2.83E+05	9440	-0.24	GOOD	
PIC8A	ALPHA BKG	09:32	60	7.00	0.12	-0.42	GOOD	
	BETA BKG	09:32	60	37.0	0.62	-0.68	GOOD	
	ALPHA EFF	10:17	30	12675	423	-0.41	GOOD	
	BETA EFF	10:17	30	3.71E+05	12400	-2.5	GOOD	
PIC8B	ALPHA BKG	09:32	60	5.00	0.08	-0.33	GOOD	
	BETA BKG	09:32	60	59.0	0.98	-0.27	GOOD	
	ALPHA EFF	10:18	30	9491	316	-0.81	GOOD	
	BETA EFF	10:18	30	3.70E+05	12300	-0.37	GOOD	
PIC8C	ALPHA BKG	09:32	60	9.00	0.15	-0.92	GOOD	
	BETA BKG	09:32	60	41.0	0.68	0.05	GOOD	
	ALPHA EFF	10:18	30	14586	486	-0.35	GOOD	
	BETA EFF	10:18	30	4.27E+05	14200	-0.52	GOOD	
PIC8D	ALPHA BKG	09:33	60	13.0	0.22	-0.37	GOOD	
	BETA BKG	09:33	60	58.0	0.97	-0.59	GOOD	
	ALPHA EFF	10:18	30	11041	368	1.52	GOOD	
	BETA EFF	10:18	30	3.72E+05	12400	0.13	GOOD	

Reviewed by _____

Date 4/3/06

General Engineering Laboratories, LLC

Gas Flow Proportional Counter Checks for 09-APR-2006

Short Name	Parmname	Run Time	Count Time	Counts	CPM	Stdev	Status	Comments
LB4100A1	ALPHA BKG	07:24	500	15.0	0.03	-0.8	GOOD	
	BETA BKG	07:24	500	459	0.92	-0.15	GOOD	
	ALPHA EFF	08:40	30	23597	787	-0.1	GOOD	
	BETA EFF	08:40	30	1.79E+05	5950	0.75	GOOD	
LB4100A2	ALPHA BKG	07:24	500	27.0	0.05	-0.4	GOOD	
	BETA BKG	07:24	500	393	0.79	-0.45	GOOD	
	ALPHA EFF	08:40	30	15992	533	-0.29	GOOD	
	BETA EFF	08:40	30	1.31E+05	4370	0.97	GOOD	
LB4100A3	ALPHA BKG	07:24	500	23.0	0.05	-0.48	GOOD	
	BETA BKG	07:24	500	436	0.87	-0.4	GOOD	
	ALPHA EFF	08:40	30	22229	741	-0.35	GOOD	
	BETA EFF	08:40	30	1.59E+05	5310	0.78	GOOD	
LB4100A4	ALPHA BKG	07:24	500	15.0	0.03	-0.48	GOOD	
	BETA BKG	07:24	500	1254	2.51	4.53	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:40	30	18809	627	-2.8	GOOD	
	BETA EFF	08:40	30	1.72E+05	5740	1.6	GOOD	
LB4100B1	ALPHA BKG	07:24	500	7.00	0.01	-0.68	GOOD	
	BETA BKG	07:24	500	427	0.85	-0.25	GOOD	
	ALPHA EFF	08:40	30	20720	691	-1.2	GOOD	
	BETA EFF	08:40	30	1.89E+05	6280	0.51	GOOD	
LB4100B2	ALPHA BKG	07:24	500	13.0	0.03	-0.46	GOOD	
	BETA BKG	07:24	500	388	0.78	-0.28	GOOD	
	ALPHA EFF	08:40	30	20672	689	-0.47	GOOD	
	BETA EFF	08:40	30	1.64E+05	5460	0.13	GOOD	
LB4100B3	ALPHA BKG	07:24	500	16.0	0.03	-0.45	GOOD	
	BETA BKG	07:24	500	580	1.16	-0.33	GOOD	
	ALPHA EFF	08:40	30	15885	530	0.08	GOOD	
	BETA EFF	08:40	30	1.23E+05	4100	0.78	GOOD	
LB4100B4	ALPHA BKG	07:24	500	13.0	0.03	-0.44	GOOD	
	BETA BKG	07:24	500	2073	4.15	30.7	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:40	30	18490	616	-0.58	GOOD	
	BETA EFF	08:40	30	1.56E+05	5190	1.07	GOOD	
LB4100C1	ALPHA BKG	07:24	500	121	0.24	-0.01	GOOD	
	BETA BKG	07:24	500	594	1.19	-0.3	GOOD	
	ALPHA EFF	08:40	30	21999	733	0.88	GOOD	
	BETA EFF	08:40	30	1.35E+05	4501	0.22	GOOD	
LB4100C2	ALPHA BKG	07:24	500	43.0	0.09	0.26	GOOD	
	BETA BKG	07:24	500	414	0.83	-0.58	GOOD	
	ALPHA EFF	08:40	30	22230	741	1	GOOD	

O = Alpha Lockout

// = Alpha/Beta Lockout

	BETA EFF	08:40	30	1.95E+05	6510	1.32	GOOD	
LB4100C3	ALPHA BKG	07:24	500	19.0	0.04	-0.55	GOOD	
	BETA BKG	07:24	500	431	0.86	-0.14	GOOD	
	ALPHA EFF	08:40	30	16654	555	0.13	GOOD	
	BETA EFF	08:40	30	1.35E+05	4500	0.12	GOOD	
LB4100C4	ALPHA BKG	07:24	500	29.0	0.06	0.14	GOOD	
	BETA BKG	07:24	500	405	0.81	-0.07	GOOD	
	ALPHA EFF	08:40	30	25462	849	1.07	GOOD	
	BETA EFF	08:40	30	2.20E+05	7320	0.71	GOOD	
LB4100D1	ALPHA BKG	07:24	500	153	0.31	4.87	DETL	Outside 2 sigma for >= 2 days
	BETA BKG	07:24	500	468	0.94	0.79	GOOD	
	ALPHA EFF	08:40	30	26400	880	-0.58	GOOD	
	BETA EFF	08:40	30	2.39E+05	7970	0.36	GOOD	
LB4100D2	ALPHA BKG	07:24	500	70.0	0.14	-0.13	GOOD	
	BETA BKG	07:24	500	472	0.94	-0.35	GOOD	
	ALPHA EFF	08:40	30	19133	638	-0.6	GOOD	
	BETA EFF	08:40	30	1.49E+05	4980	-0.13	GOOD	
LB4100D3	ALPHA BKG	07:24	500	17.0	0.03	-0.39	GOOD	
	BETA BKG	07:24	500	380	0.76	-0.07	GOOD	
	ALPHA EFF	08:40	30	17942	598	-1.3	GOOD	
	BETA EFF	08:40	30	1.50E+05	5010	1.12	GOOD	
LB4100D4	ALPHA BKG	07:24	500	20.0	0.04	-0.79	GOOD	
	BETA BKG	07:24	500	441	0.88	-0.19	GOOD	
	ALPHA EFF	08:40	30	20675	689	-1.1	GOOD	
	BETA EFF	08:40	30	1.84E+05	6130	1.09	GOOD	
LB4100E1	ALPHA BKG	07:29	500	94.0	0.19	0.08	GOOD	
	BETA BKG	07:29	500	698	1.4	0.83	GOOD	
	ALPHA EFF	08:45	30	33059	1100	-0.81	GOOD	
	BETA EFF	08:45	30	2.15E+05	7153	0.95	GOOD	
LB4100E2	ALPHA BKG	07:29	500	68.0	0.14	0.19	GOOD	
	BETA BKG	07:29	500	748	1.5	-0.46	GOOD	
	ALPHA EFF	08:45	30	34280	1140	-0.76	GOOD	
	BETA EFF	08:45	30	2.93E+05	9764	1.06	GOOD	
LB4100E3	ALPHA BKG	07:29	500	29.0	0.06	-0.4	GOOD	
	BETA BKG	07:29	500	527	1.05	-0.1	GOOD	
	ALPHA EFF	08:45	30	35223	1170	-0.55	GOOD	
	BETA EFF	08:45	30	2.27E+05	7570	-0.83	GOOD	
LB4100E4	ALPHA BKG	07:29	500	54.0	0.11	-0.37	GOOD	
	BETA BKG	07:29	500	909	1.82	-0.21	GOOD	
	ALPHA EFF	08:45	30	30173	1010	-0.48	GOOD	
	BETA EFF	08:45	30	2.26E+05	7540	0.18	GOOD	
LB4100F1	ALPHA BKG	07:29	500	35.0	0.07	-0.14	GOOD	
	BETA BKG	07:29	500	586	1.17	1.93	GOOD	
	ALPHA EFF	08:45	30	28746	958	0.25	GOOD	

	BETA EFF	08:45	30	2.04E+05	6810	0.63	GOOD	
LB4100F2	ALPHA BKG	07:29	500	33.0	0.07	-0.99	GOOD	
	BETA BKG	07:29	500	651	1.3	1.59	GOOD	
	ALPHA EFF	08:45	30	27663	922	2.05	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:45	30	2.18E+05	7270	-0.43	GOOD	
LB4100F3	ALPHA BKG	07:29	500	51.0	0.1	-1.1	GOOD	
	BETA BKG	07:29	500	668	1.34	-0.18	~~PEND~~	Good. Not a lockout condition. -SRB 4.9.06
	ALPHA EFF	08:45	30	28120	937	1.17	GOOD	
	BETA EFF	08:45	30	2.59E+05	8620	0.96	GOOD	
LB4100F4	ALPHA BKG	07:29	500	15.0	0.03	-0.34	GOOD	
	BETA BKG	07:29	500	353	0.71	-0.6	GOOD	
	ALPHA EFF	08:45	30	24315	811	-2.2	GOOD	
	BETA EFF	08:45	30	2.00E+05	6680	1.07	GOOD	
LB4100G1	ALPHA BKG	07:29	500	35.0	0.07	-1.6	GOOD	
	BETA BKG	07:29	500	1087	2.17	3.56	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:45	30	31962	1070	0.69	GOOD	
	BETA EFF	08:45	30	2.22E+05	7410	0.13	GOOD	
LB4100G2	ALPHA BKG	07:29	500	33.0	0.07	0.14	GOOD	
	BETA BKG	07:29	500	695	1.39	5.45	DETL	Outside 2 sigma for >= 2 days
	ALPHA EFF	08:45	30	31128	1040	-0.71	GOOD	
	BETA EFF	08:45	30	2.87E+05	9550	0.51	GOOD	
LB4100G3	ALPHA BKG	07:29	500	103	0.21	0	GOOD	
	BETA BKG	07:29	500	546	1.09	0.7	GOOD	
	ALPHA EFF	08:45	30	22567	752	0.49	GOOD	
	BETA EFF	08:45	30	2.46E+05	8190	-0.17	GOOD	
LB4100G4	ALPHA BKG	07:29	500	14.0	0.03	-0.59	GOOD	
	BETA BKG	07:29	500	457	0.91	-0.21	GOOD	
	ALPHA EFF	08:45	30	15327	511	0.86	GOOD	
	BETA EFF	08:45	30	1.53E+05	5110	2.07	GOOD	
LB4100H1	ALPHA BKG	07:29	500	52.0	0.1	0.31	GOOD	
	BETA BKG	07:29	500	351	0.7	-0.12	GOOD	
	ALPHA EFF	08:45	30	29574	986	-0.62	GOOD	
	BETA EFF	08:45	30	1.42E+05	4730	-0.22	GOOD	
LB4100H2	ALPHA BKG	07:29	500	32.0	0.06	-0.21	GOOD	
	BETA BKG	07:29	500	401	0.8	-0.7	GOOD	
	ALPHA EFF	08:45	30	18426	614	-0.26	GOOD	
	BETA EFF	08:45	30	1.53E+05	5090	1.47	GOOD	
LB4100H3	ALPHA BKG	07:29	500	37.0	0.07	-0.84	GOOD	
	BETA BKG	07:29	500	400	0.8	-0.1	GOOD	
	ALPHA EFF	08:45	30	18611	620	-0.74	GOOD	
	BETA EFF	08:45	30	1.52E+05	5050	-0.32	GOOD	
LB4100H4	ALPHA BKG	07:29	500	35.0	0.07	-0.11	GOOD	
	BETA BKG	07:29	500	426	0.85	0.86	GOOD	
	ALPHA EFF	08:45	30	18047	602	-0.77	GOOD	

	BETA EFF	08:45	30	1.21E+05	4030	-0.81	GOOD
PIC1A	ALPHA BKG	07:15	500	47.0	0.09	-0.89	GOOD
	BETA BKG	07:15	500	211	0.42	-0.7	GOOD
	ALPHA EFF	08:01	30	9502	317	-1.8	GOOD
	BETA EFF	08:01	30	1.96E+05	6530	-0.05	GOOD
PIC1B	ALPHA BKG	07:15	500	30.0	0.06	-0.86	GOOD
	BETA BKG	07:15	500	181	0.36	-0.08	GOOD
	ALPHA EFF	08:02	30	10863	362	-2	GOOD
	BETA EFF	08:02	30	2.14E+05	7130	-0.3	GOOD
PIC1C	ALPHA BKG	07:16	500	35.0	0.07	-0.54	GOOD
	BETA BKG	07:16	500	217	0.43	0.28	GOOD
	ALPHA EFF	08:02	30	15512	517	-0.87	GOOD
	BETA EFF	08:02	30	2.46E+05	8190	0.69	GOOD
PIC1D	ALPHA BKG	07:16	500	20.0	0.04	-1.5	GOOD
	BETA BKG	07:16	500	177	0.35	-0.64	GOOD
	ALPHA EFF	08:02	30	16778	559	-0.21	GOOD
	BETA EFF	08:02	30	1.89E+05	6310	0.65	GOOD
PIC2A	ALPHA BKG	07:16	500	38.0	0.08	-0.45	GOOD
	BETA BKG	07:16	500	203	0.41	-0.37	GOOD
	ALPHA EFF	08:02	30	15509	517	-1.5	GOOD
	BETA EFF	08:02	30	2.32E+05	7740	0.65	GOOD
PIC2B	ALPHA BKG	07:16	500	21.0	0.04	-0.87	GOOD
	BETA BKG	07:16	500	121	0.24	-0.72	GOOD
	ALPHA EFF	08:02	30	13511	450	-2.1	GOOD
	BETA EFF	08:02	30	2.30E+05	7660	0.89	GOOD
PIC2C	ALPHA BKG	07:16	500	36.0	0.07	-0.89	GOOD
	BETA BKG	07:16	500	175	0.35	-0.18	GOOD
	ALPHA EFF	08:03	30	19055	635	-0.59	GOOD
	BETA EFF	08:03	30	1.93E+05	6450	0.34	GOOD
PIC2D	ALPHA BKG	07:16	500	31.0	0.06	-1	GOOD
	BETA BKG	07:16	500	229	0.46	0.33	GOOD
	ALPHA EFF	08:03	30	16962	565	-1.3	GOOD
	BETA EFF	08:03	30	2.24E+05	7480	1.02	GOOD
PIC3A	ALPHA BKG	07:17	500	23.0	0.05	-1.7	GOOD
	BETA BKG	07:17	500	181	0.36	-0.58	GOOD
	ALPHA EFF	08:03	30	21859	729	-1.7	GOOD
	BETA EFF	08:03	30	1.79E+05	5970	1.64	GOOD
PIC3B	ALPHA BKG	07:17	500	35.0	0.07	-1.1	GOOD
	BETA BKG	07:17	500	191	0.38	-0.42	GOOD
	ALPHA EFF	08:03	30	21118	704	-0.54	GOOD
	BETA EFF	08:03	30	1.96E+05	6530	0.16	GOOD
PIC3C	ALPHA BKG	07:17	500	28.0	0.06	-1.1	GOOD
	BETA BKG	07:17	500	217	0.43	0.19	GOOD
	ALPHA EFF	08:03	30	17257	575	-1.3	GOOD

	BETA EFF	08:03	30	2.12E+05	7070	0.55	GOOD
PIC3D	ALPHA BKG	07:17	500	27.0	0.05	-1.4	GOOD
	BETA BKG	07:17	500	208	0.42	-0.14	GOOD
	ALPHA EFF	08:03	30	24798	827	-1.4	GOOD
	BETA EFF	08:03	30	2.14E+05	7130	-0.71	GOOD
PIC4A	ALPHA BKG	07:18	500	28.0	0.06	-1	GOOD
	BETA BKG	07:18	500	196	0.39	-0.64	GOOD
	ALPHA EFF	08:03	30	12529	418	-1.7	GOOD
	BETA EFF	08:03	30	1.76E+05	5860	0.98	GOOD
PIC4B	ALPHA BKG	07:18	500	84.0	0.17	1.33	GOOD
	BETA BKG	07:18	500	227	0.45	0.03	GOOD
	ALPHA EFF	08:04	30	17575	586	-2.8	GOOD
	BETA EFF	08:04	30	2.23E+05	7450	0.43	GOOD
PIC4C	ALPHA BKG	07:18	500	31.0	0.06	-1.2	GOOD
	BETA BKG	07:18	500	198	0.4	-0.34	GOOD
	ALPHA EFF	08:04	30	20082	669	-1.7	GOOD
	BETA EFF	08:04	30	2.02E+05	6740	1.04	GOOD
PIC4D	ALPHA BKG	07:18	500	66.0	0.13	0.03	GOOD
	BETA BKG	07:18	500	222	0.44	0.01	GOOD
	ALPHA EFF	08:04	30	20463	682	-1.3	GOOD
	BETA EFF	08:04	30	2.13E+05	7090	1.55	GOOD
PIC5A	ALPHA BKG	07:19	500	26.0	0.05	-0.51	GOOD
	BETA BKG	07:19	500	183	0.37	-0.44	GOOD
	ALPHA EFF	08:04	30	11612	387	-0.21	GOOD
	BETA EFF	08:04	30	3.98E+05	13300	-1.5	GOOD
PIC5B	ALPHA BKG	07:19	500	38.0	0.08	-0.11	GOOD
	BETA BKG	07:19	500	1105	2.21	0.62	~~RERUN~~ GOOD. Not a lockout condition. -SRB 4.9.06
	ALPHA EFF	08:04	30	10410	347	-0.01	GOOD
	BETA EFF	08:04	30	3.50E+05	11700	0.1	GOOD
PIC5C	ALPHA BKG	07:19	500	29.0	0.06	0.69	GOOD
	BETA BKG	07:19	500	140	0.28	-1	GOOD
	ALPHA EFF	08:05	30	10569	352	-0.18	GOOD
	BETA EFF	08:05	30	3.88E+05	12900	-1.1	GOOD
PIC5D	ALPHA BKG	07:19	500	19.0	0.04	-0.21	GOOD
	BETA BKG	07:19	500	178	0.36	0.3	GOOD
	ALPHA EFF	08:05	30	9088	303	-0.3	GOOD
	BETA EFF	08:05	30	3.09E+05	10300	-1.6	GOOD
PIC6A	ALPHA BKG	07:20	500	21.0	0.04	-0.32	GOOD
	BETA BKG	07:20	500	127	0.25	-1	GOOD
	ALPHA EFF	08:05	30	8130	271	-0.24	GOOD
	BETA EFF	08:05	30	2.80E+05	9350	-1.2	GOOD
PIC6B	ALPHA BKG	07:20	500	15.0	0.03	-0.52	GOOD
	BETA BKG	07:20	500	141	0.28	0.13	GOOD
	ALPHA EFF	08:05	30	10342	345	-0.49	GOOD

	BETA EFF	08:05	30	2.89E+05	9630	-1.7	GOOD	
PIC6C	ALPHA BKG	07:20	500	26.0	0.05	0.14	GOOD	
	BETA BKG	07:20	500	120	0.24	-0.56	GOOD	
	ALPHA EFF	08:05	30	14858	495	-0.14	GOOD	
	BETA EFF	08:05	30	3.50E+05	11700	-1.9	~~PEND~~ GOOD. Not a lockout condition. -SRB 4.9.06	
PIC6D	ALPHA BKG	07:20	500	18.0	0.04	-0.24	GOOD	
	BETA BKG	07:20	500	186	0.37	0.07	GOOD	
	ALPHA EFF	08:06	30	11491	383	-0.19	GOOD	
	BETA EFF	08:06	30	3.59E+05	12000	-0.98	GOOD	
PIC7A	ALPHA BKG	07:20	500	33.0	0.07	-0.58	GOOD	
	BETA BKG	07:20	500	187	0.37	-0.64	GOOD	
	ALPHA EFF	08:06	30	9836	328	-0.5	GOOD	
	BETA EFF	08:06	30	3.77E+05	12600	-1.5	GOOD	
PIC7B	ALPHA BKG	07:20	500	133	0.27	-0.5	GOOD	
	BETA BKG	07:20	500	295	0.59	-0.43	GOOD	
	ALPHA EFF	08:06	30	10336	345	-0.43	GOOD	
	BETA EFF	08:06	30	3.18E+05	10600	-0.5	GOOD	
PIC7C	ALPHA BKG	07:21	500	48.0	0.1	-0.59	GOOD	
	BETA BKG	07:21	500	182	0.36	-0.82	GOOD	
	ALPHA EFF	08:06	30	11813	394	-0.15	GOOD	
	BETA EFF	08:06	30	3.82E+05	12700	-0.32	GOOD	
PIC7D	ALPHA BKG	07:21	500	62.0	0.12	-0.65	GOOD	
	BETA BKG	07:21	500	172	0.34	-0.62	GOOD	
	ALPHA EFF	08:06	30	8403	280	-0.29	GOOD	
	BETA EFF	08:06	30	2.81E+05	9370	-0.44	GOOD	
PIC8A	ALPHA BKG	07:21	500	52.0	0.1	-0.5	GOOD	
	BETA BKG	07:21	500	236	0.47	-0.74	GOOD	
	ALPHA EFF	08:06	30	12930	431	-0.09	GOOD	
	BETA EFF	08:06	30	3.73E+05	12400	-1.3	GOOD	
PIC8B	ALPHA BKG	07:21	500	26.0	0.05	-0.53	GOOD	
	BETA BKG	07:21	500	443	0.89	-0.36	GOOD	
	ALPHA EFF	08:06	30	9633	321	-0.56	GOOD	
	BETA EFF	08:06	30	3.70E+05	12300	-0.4	GOOD	
PIC8C	ALPHA BKG	07:21	500	101	0.2	-0.73	GOOD	
	BETA BKG	07:21	500	224	0.45	-0.46	GOOD	
	ALPHA EFF	08:07	30	14869	496	-0.03	GOOD	
	BETA EFF	08:07	30	4.27E+05	14200	-0.52	GOOD	
PIC8D	ALPHA BKG	07:22	500	94.0	0.19	-0.52	GOOD	
	BETA BKG	07:22	500	591	1.18	-0.43	GOOD	
	ALPHA EFF	08:07	30	11449	382	2.12	DETL	Outside 2 sigma for >= 2 days
	BETA EFF	08:07	30	3.72E+05	12400	0.16	GOOD	

Reviewed by SRB

Date 4.9.06

General Engineering Laboratories, LLC

Review of Alpha Spectrometer QA results (Daily checks) 5-APR-2006 15:49:51.61

Starting with bank 1
Ending with bank 19

	Detector	Parameter	Flag
5-APR-2006	2	PSFWHM-5000	Above
5-APR-2006	6	PSFWHM-5000	Below
5-APR-2006	6	PSENERGY-5000	Above
5-APR-2006	6	PSCENTRD-5000	Above
5-APR-2006	12	PSFWHM-5000	Above
5-APR-2006	14	PSFWHM-5000	Below
5-APR-2006	14	PSENERGY-5000	Above
5-APR-2006	22	PSENERGY-5000	Above
5-APR-2006	24	PSFWHM-5000	Below
5-APR-2006	25	PSFWHM-5000	Below
5-APR-2006	25	PSCENTRD-5000	Below
5-APR-2006	39	PSENERGY-5000	Above
5-APR-2006	67	PSFWHM-5000	Above
5-APR-2006	68	PSFWHM-5000	Above
5-APR-2006	71	PSFWHM-5000	Above
5-APR-2006	71	PSENERGY-5000	Above
5-APR-2006	74	PSENERGY-5000	Above
5-APR-2006	81	PSENERGY-5000	Above
5-APR-2006	97	PSENERGY-5000	Above
5-APR-2006	101	PSFWHM-5000	Above
5-APR-2006	105	PSENERGY-5000	Above
5-APR-2006	106	PSFWHM-5000	Above

5-APR-2006 115 PSFWHM-5000 Above

DETECTORS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

APPROVAL DATE: 4.5.06 APPROVAL TIME: 15:54

APPROVED BY: SRB PROCEDURE # GL-RAD-I-009

Report completed at 5-APR-2006 15:51:05.43

Review of QA results (Daily checks) 5-APR-2006 15:51:07.15

Starting with bank 1
Ending with bank 19

This is a list of Detectors that may not have properly transfered to the QA file

APPROVAL DATE: 4.5.06 APPROVAL TIME: 15:54

APPROVED BY: SRB PROCEDURE # GL-RAD-I-009

Report completed at 5-APR-2006 15:51:51.30

Review of Alpha Spectrometer QA results (Daily checks) 6-APR-2006 08:38:28.57

Starting with bank 1
Ending with bank 19

	Detector	Parameter	Flag
6-APR-2006	2	PSFWHM-5000	Above
6-APR-2006	4	PSFWHM-5000	Above
6-APR-2006	6	PSFWHM-5000	Below
6-APR-2006	6	PSENERGY-5000	Above
6-APR-2006	6	PSCENTRD-5000	Above
6-APR-2006	12	PSFWHM-5000	Above
6-APR-2006	14	PSFWHM-5000	Below
6-APR-2006	14	PSENERGY-5000	Above
6-APR-2006	22	PSENERGY-5000	Above
6-APR-2006	24	PSFWHM-5000	Below
6-APR-2006	25	PSFWHM-5000	Below
6-APR-2006	25	PSCENTRD-5000	Below
6-APR-2006	39	PSENERGY-5000	Above
6-APR-2006	67	PSFWHM-5000	Above
6-APR-2006	68	PSFWHM-5000	Above
6-APR-2006	71	PSENERGY-5000	Above
6-APR-2006	74	PSENERGY-5000	Above
6-APR-2006	84	PSENERGY-5000	Above
6-APR-2006	97	PSENERGY-5000	Above
6-APR-2006	105	PSENERGY-5000	Above
6-APR-2006	108	PSFWHM-5000	Above
6-APR-2006	115	PSFWHM-5000	Above

DETECTORS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

APPROVAL DATE: 4/6/06 APPROVAL TIME: 840

APPROVED BY: [signature] PROCEDURE # GL-RAD-I-009

Report completed at 6-APR-2006 08:39:44.30

Review of QA results (Daily checks) 6-APR-2006 08:39:45.42

Starting with bank 1
Ending with bank 19

This is a list of Detectors that may not have properly transfered to the QA file

APPROVAL DATE: 4/6/06 APPROVAL TIME: 840

APPROVED BY: [signature] PROCEDURE # GL-RAD-I-009

Report completed at 6-APR-2006 08:40:31.64

VMS Quality Assurance Report V1.3 Generated 6-APR-2006 05:45:05

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA3.QAF;3

Sample ID : QC_GAMMA3 Sample quantity : 1.00 LITER
Sample date : 1-APR-2002 12:00:00 Acquisition date : 6-APR-2006 05:39:27
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:00.98

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	174	180	177	
PEAK CENTROID (CHANS) CS-137	1320	1326	1321	
PEAK CENTROID (CHANS) CO-60	2659	2663	2661	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.2	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.7	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.5	
*DECAY CORR. ACT. (pCi) CD-109	7.59E+05	9.28E+05	7.56E+05	Below*
*DECAY CORR. ACT. (pCi) CS-137	2.50E+04	3.06E+04	2.74E+04	
*DECAY CORR. ACT. (pCi) CO-60	3.67E+04	4.49E+04	4.12E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: JAM Approval Date: 4 / 6 /06

* ACTIVITY WITHIN 3 SIG LIMITS.

VMS Quality Assurance Report V1.3 Generated 6-APR-2006 06:53:11

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA13.QAF;3

Sample ID : QC_GAMMA13 Sample quantity : 1.00 LITER
Sample date : 1-APR-2002 12:00:00 Acquisition date : 6-APR-2006 06:47:00
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:03.03

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	174	182	178	
PEAK CENTROID (CHANS) CS-137	1320	1328	1324	
PEAK CENTROID (CHANS) CO-60	2660	2668	2663	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1331	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.0	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.5	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.1	
DECAY CORR ACTIVITY (pCi) CD-109	7.61E+05	9.30E+05	8.96E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.92E+04	3.24E+04	3.13E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.68E+04	4.50E+04	4.39E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: pm Approval Date: 4 / 6 /06

VMS Quality Assurance Report V1.3 Generated 6-APR-2006 05:56:02

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA18.QAF;2

Sample ID : QC_GAMMA18 Sample quantity : 1.00 LITER
Sample date : 1-APR-2002 12:00:00 Acquisition date : 6-APR-2006 05:49:08
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:04.67

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	170	178	175	
PEAK CENTROID (CHANS) CS-137	1319	1327	1322	
PEAK CENTROID (CHANS) CO-60	2661	2669	2663	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1331	
*PEAK FWHM (keV) CD-109	0.1	2.0	0.9	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.7	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.1	
DECAY CORR ACTIVITY (pCi) CD-109	7.61E+05	9.30E+05	9.01E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.90E+04	3.15E+04	3.15E+04	Above*
DECAY CORR. ACTIVITY (pCi) CO-60	3.68E+04	4.50E+04	4.57E+04	Above*

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: MM Approval Date: 4 / 6 / 06

*Activity within 3 sig limits.

VMS Quality Assurance Report V1.3 Generated 6-APR-2006 06:53:50

QA filename : DKA300:[CANBERRA.GAMMA]QC_HP.QAF;4

Sample ID : QC_HP Sample quantity : 1.00 LITER
Sample date : 1-APR-2003 12:00:00 Acquisition date : 6-APR-2006 06:47:06
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:02.84

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	172	180	174	
PEAK CENTROID (CHANS) CS-137	1317	1325	1321	
PEAK CENTROID (CHANS) CO-60	2657	2665	2664	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	662	
*PEAK ENERGY (keV) CO-60	1330	1334	1333	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.2	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.8	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.4	
DECAY CORR ACTIVITY (pCi) CD-109	7.13E+05	8.71E+05	7.98E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.23E+04	2.73E+04	2.71E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.57E+04	4.37E+04	4.00E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 4 / 6 / 06

VMS Quality Assurance Report V1.3 Generated 6-APR-2006 05:56:48

QA filename : DKA300:[CANBERRA.GAMMA]QC_WELL.QAF;4

Sample ID : QC_WELL Sample quantity : 1.00 LITER
Sample date : 1-APR-2002 12:00:00 Acquisition date : 6-APR-2006 05:49:17
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:01.70

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	170	178	175	
PEAK CENTROID (CHANS) CS-137	1310	1318	1314	
PEAK CENTROID (CHANS) CO-60	2644	2652	2648	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	662	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.4	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.8	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.3	
*DECAY CORR. ACT. (pCi) CD-109	7.40E+05	9.90E+05	7.37E+05	Below*
*DECAY CORR. ACT. (pCi) CS-137	2.50E+04	3.06E+04	2.90E+04	
*DECAY CORR. ACT. (pCi) CO-60	3.67E+04	4.49E+04	3.94E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: JMH Approval Date: 4 / 6 / 04

* Activity within 3 sig limits.

VMS Quality Assurance Report V1.3 Generated 10-APR-2006 05:40:14

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA16.QAF;2

Sample ID : QC_GAMMA16 Sample quantity : 1.00 LITER
Sample date : 1-APR-2004 12:00:00 Acquisition date : 10-APR-2006 05:34:07
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:02.14

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	172	180	174	
PEAK CENTROID (CHANS) CS-137	1319	1327	1320	
PEAK CENTROID (CHANS) CO-60	2661	2669	2660	Below*
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	661	
*PEAK ENERGY (keV) CO-60	1330	1334	1331	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.1	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.5	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.0	
DECAY CORR ACTIVITY (pCi) CD-109	7.41E+05	9.05E+05	7.59E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.24E+04	2.74E+04	2.52E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.55E+04	4.34E+04	4.11E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: JMM Approval Date: 4 / 10 / 06

* PEAK ENERGY WITHIN LIMITS.

VMS Quality Assurance Report V1.3 Generated 12-APR-2006 05:44:45

QA filename : DKA300:[CANBERRA.GAMMA]QC_GAMMA12.QAF;5

Sample ID : QC_GAMMA12 Sample quantity : 1.00 LITER
Sample date : 1-JAN-2001 12:00:00 Acquisition date : 12-APR-2006 05:36:31
Elapsed live time: 0 00:05:00.00 Elapsed real time: 0 00:05:02.10

Out-of-range Test: BOUNDARY

Parameter Description	Lower	Upper	Value	Flag
PEAK CENTROID (CHANS) CD-109	174	180	175	
PEAK CENTROID (CHANS) CS-137	1321	1327	1323	
PEAK CENTROID (CHANS) CO-60	2663	2669	2665	
*PEAK ENERGY (keV) CD-109	86	90	88	
*PEAK ENERGY (keV) CS-137	660	664	662	
*PEAK ENERGY (keV) CO-60	1330	1334	1332	
*PEAK FWHM (keV) CD-109	0.1	2.0	1.1	
*PEAK FWHM (keV) CS-137	0.1	3.0	1.5	
*PEAK FWHM (keV) CO-60	0.1	3.0	2.1	
DECAY CORR ACTIVITY (pCi) CD-109	7.23E+05	8.52E+05	7.76E+05	
DECAY CORR ACTIVITY (pCi) CS-137	2.39E+04	2.95E+04	2.61E+04	
DECAY CORR. ACTIVITY (pCi) CO-60	3.60E+04	4.45E+04	4.03E+04	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: pm Approval Date: 4 / 12 / 06

BACKGROUND AND EFFICIENCY DATA

LB4100B1 04/03/2006

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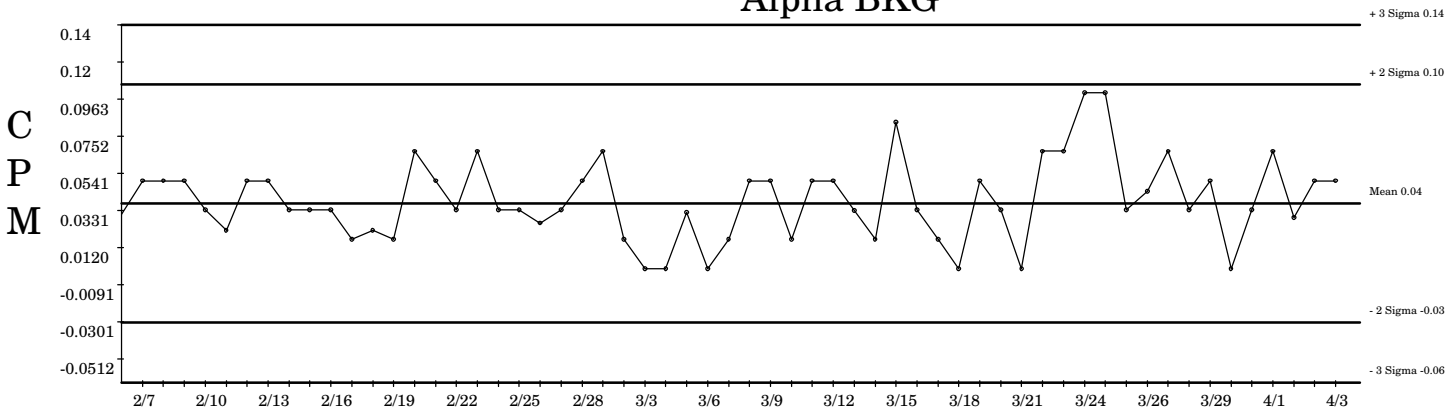

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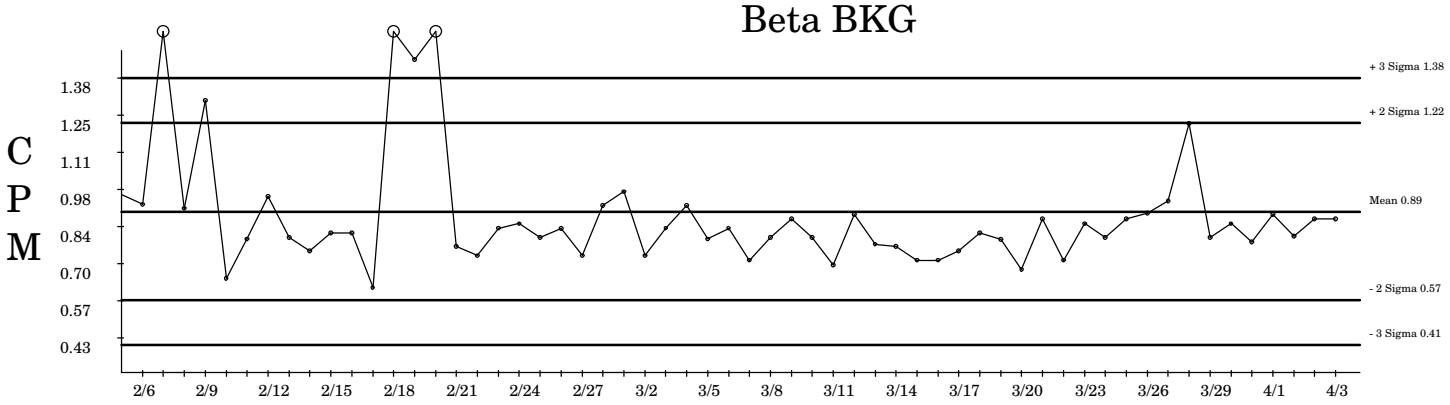

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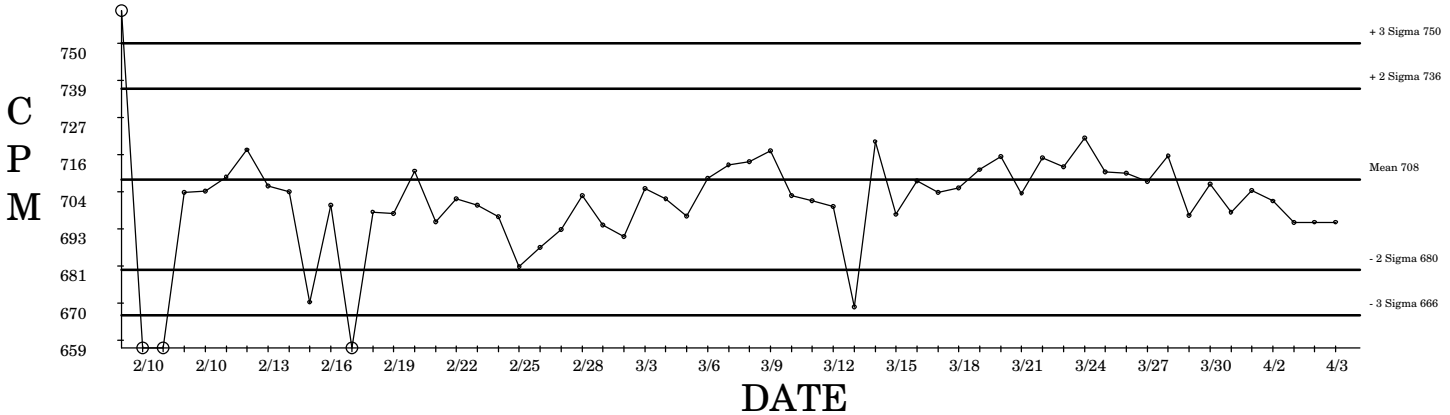

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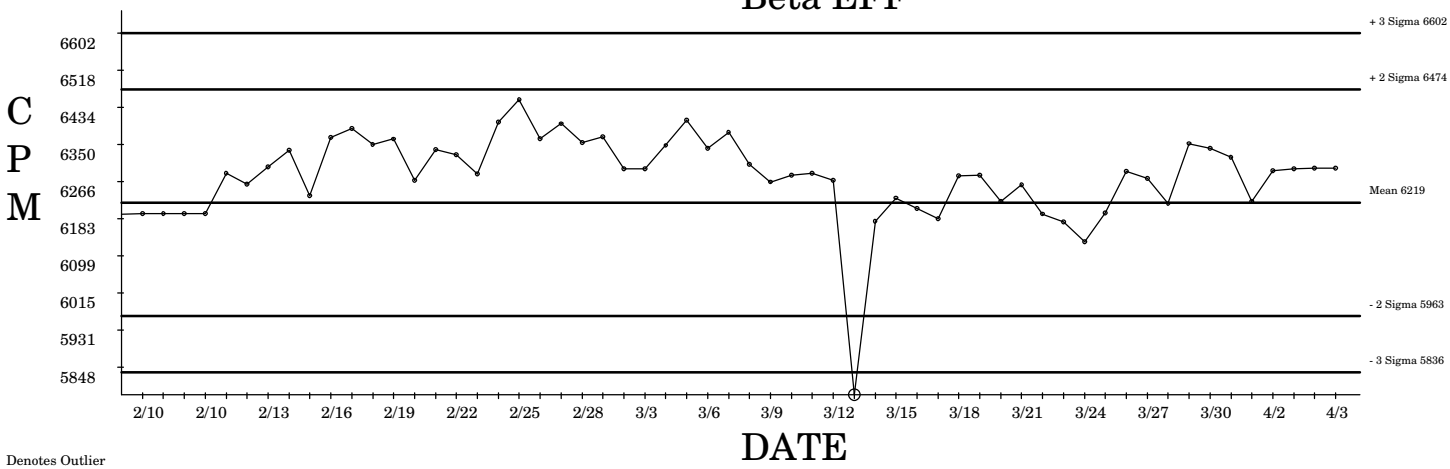

○ Denotes Outlier

LB4100B2 04/03/2006

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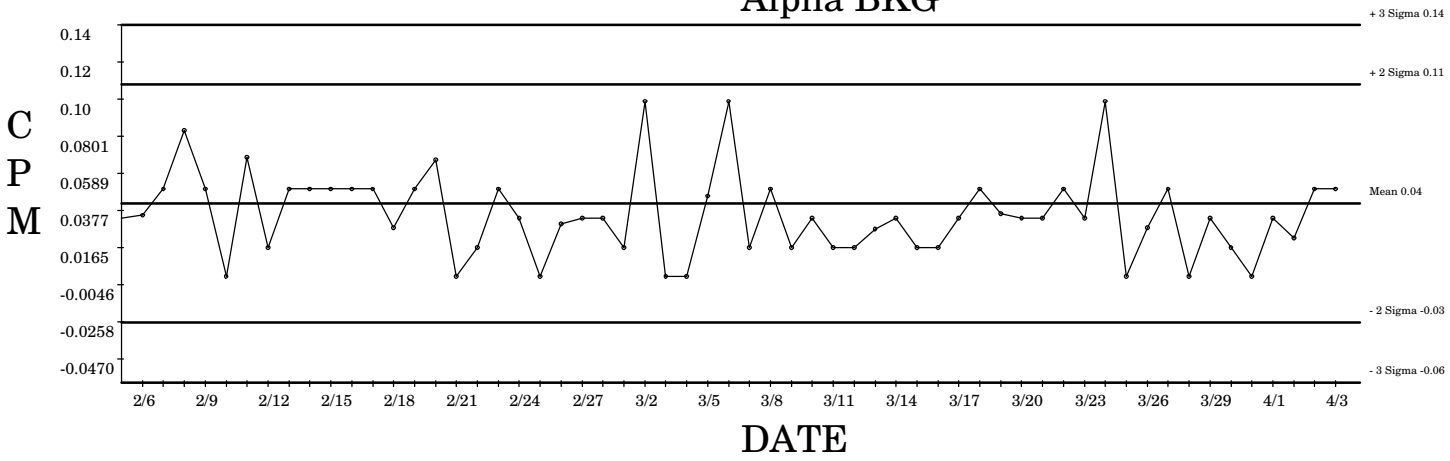

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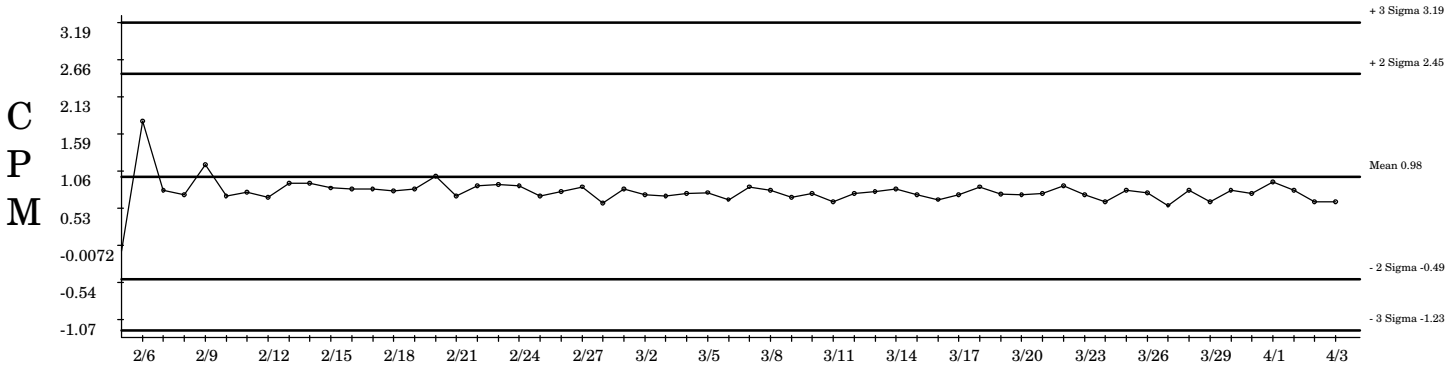

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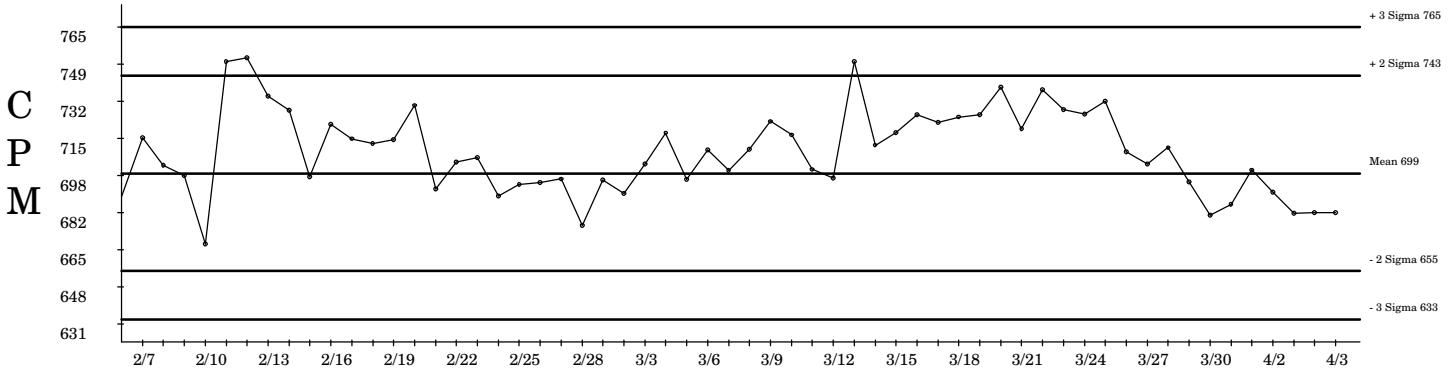

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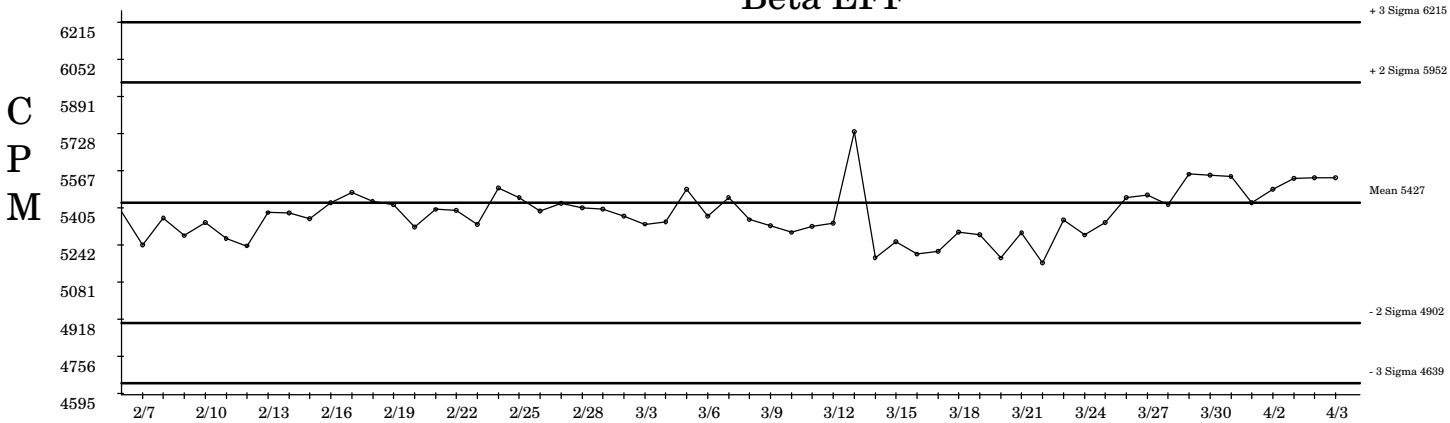

○ Denotes Outlier

LB4100B3 04/03/2006

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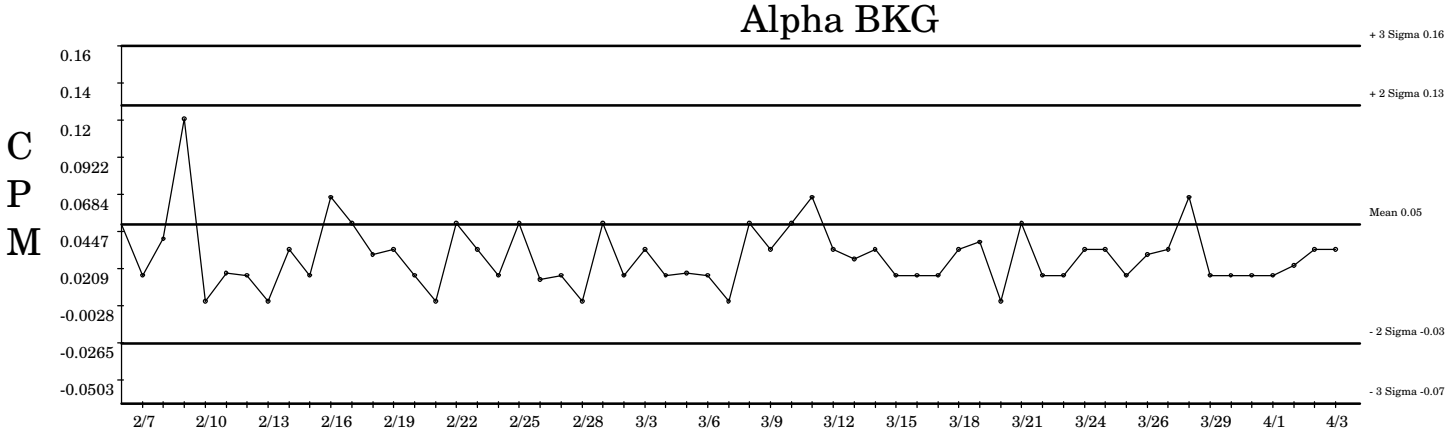

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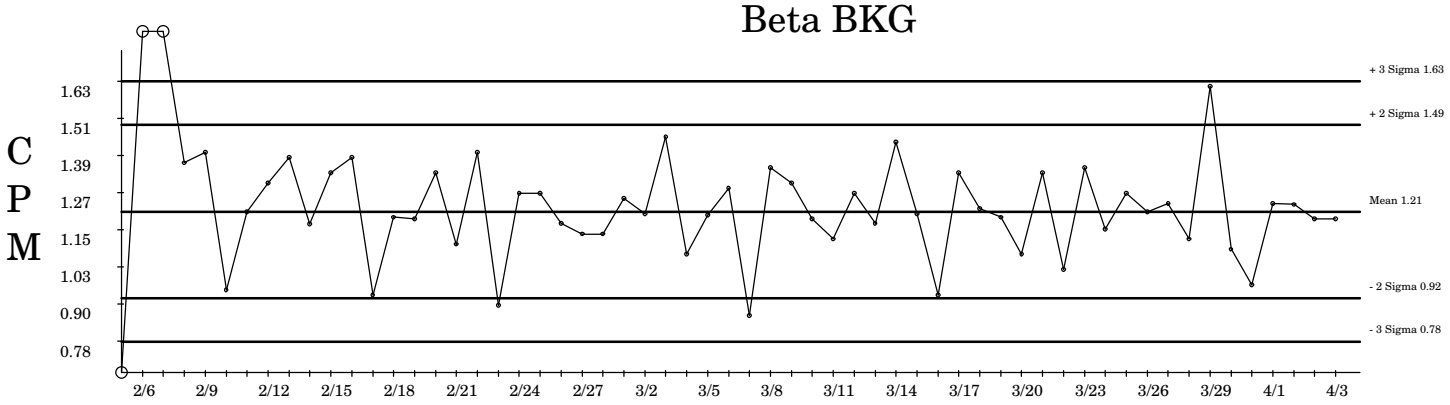

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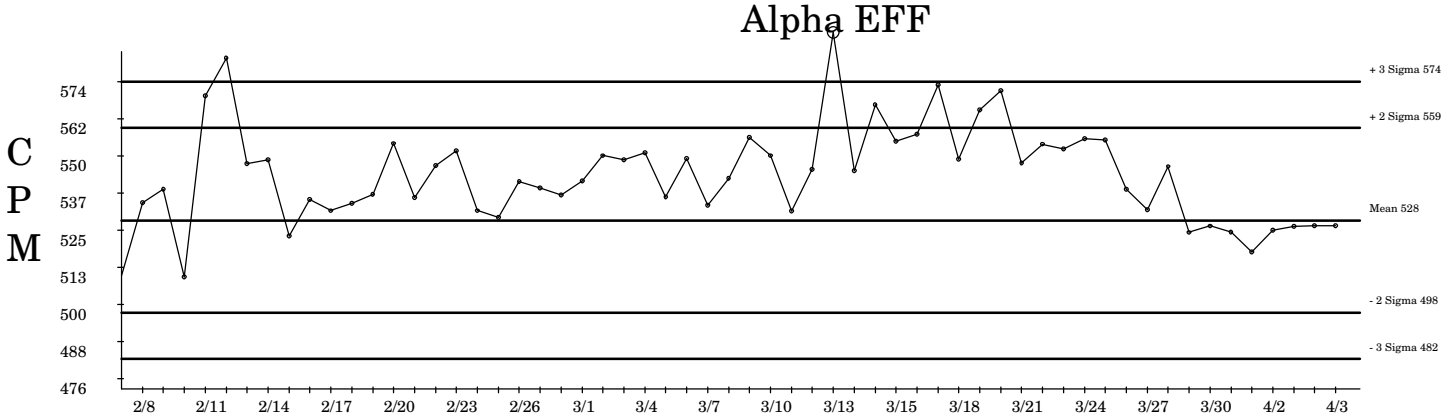

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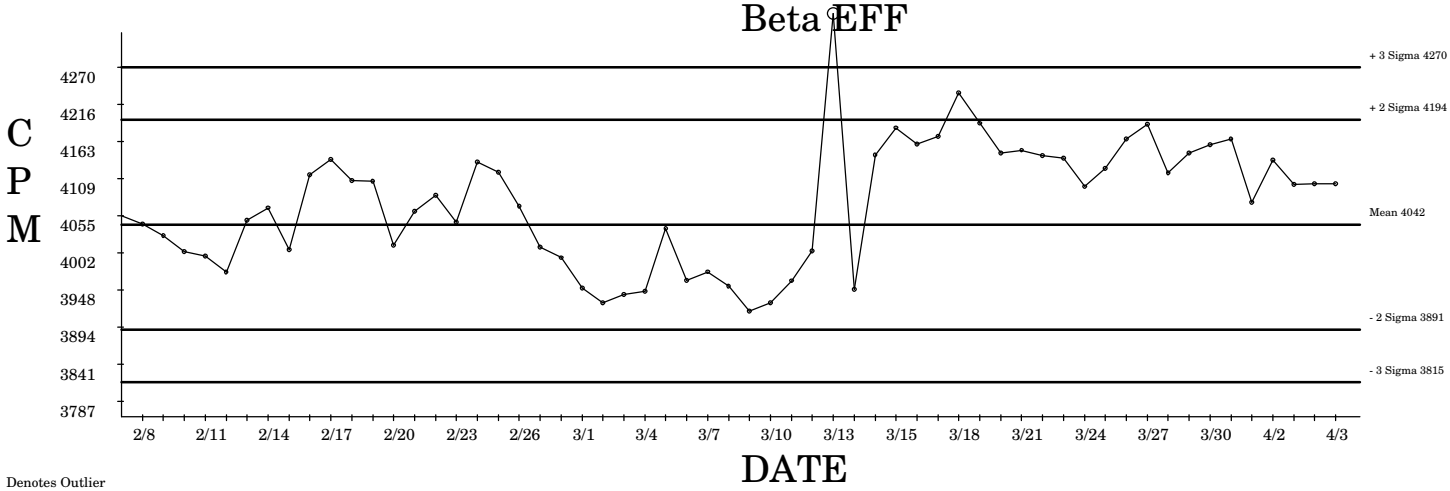

○ Denotes Outlier

LB4100C1 04/03/2006

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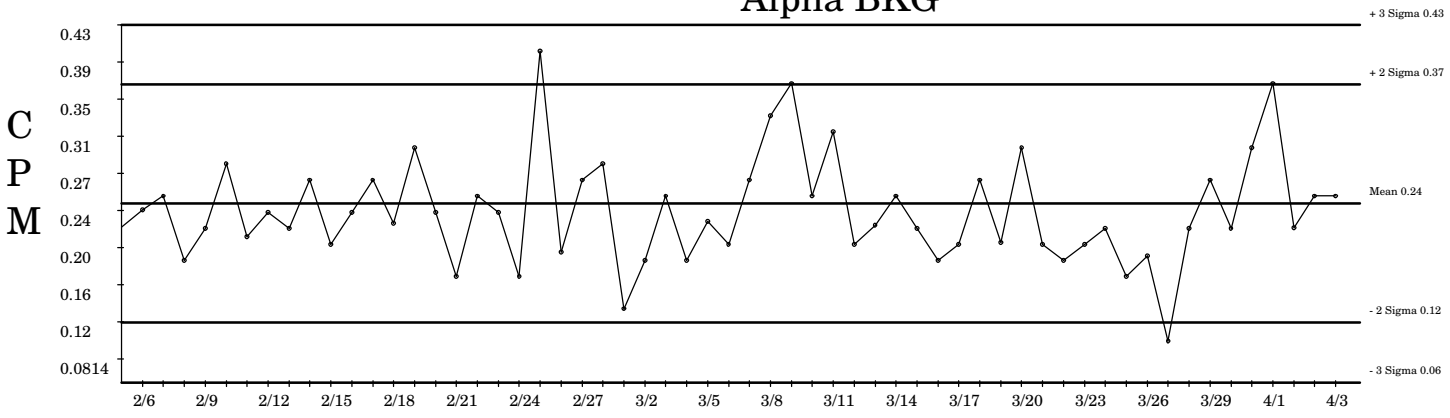

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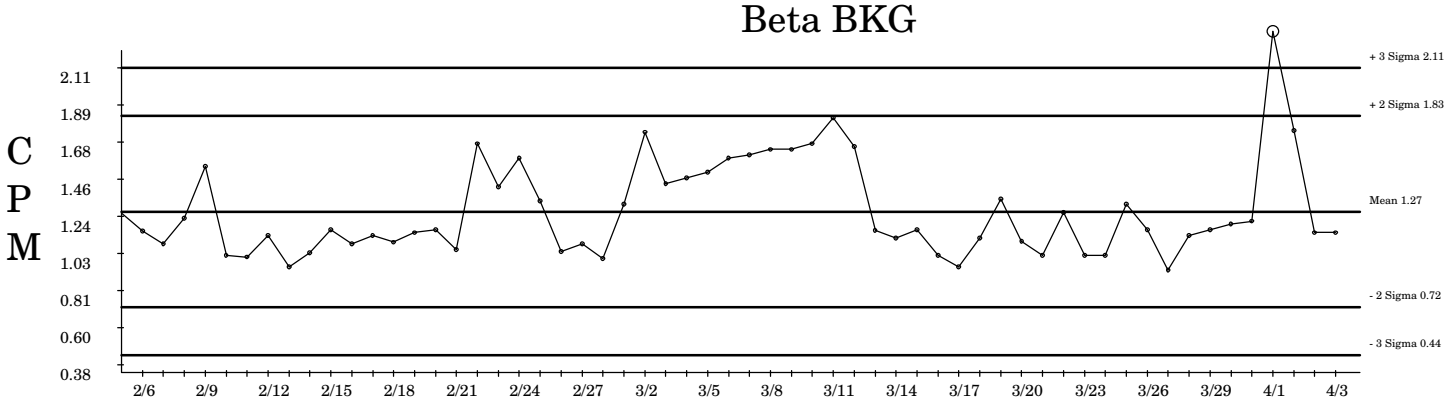

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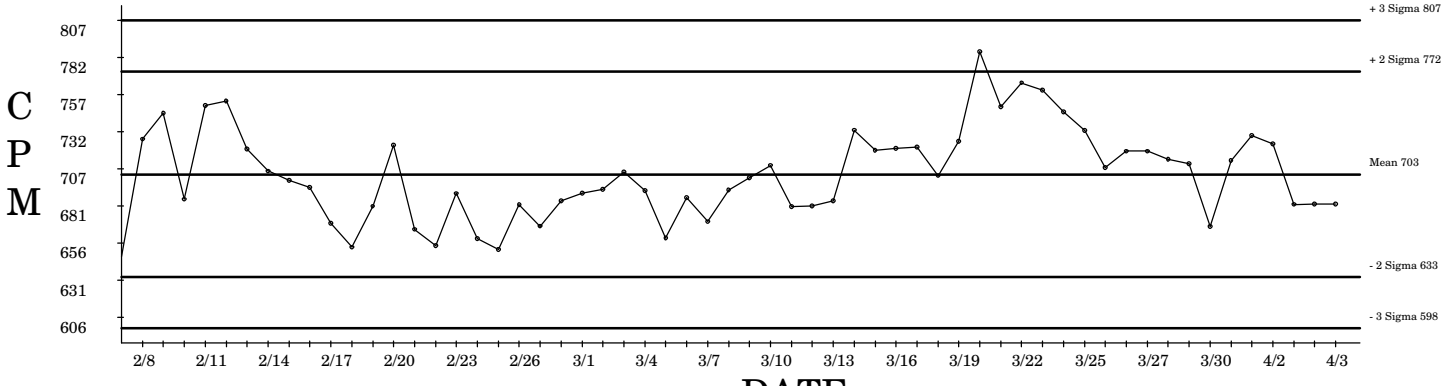

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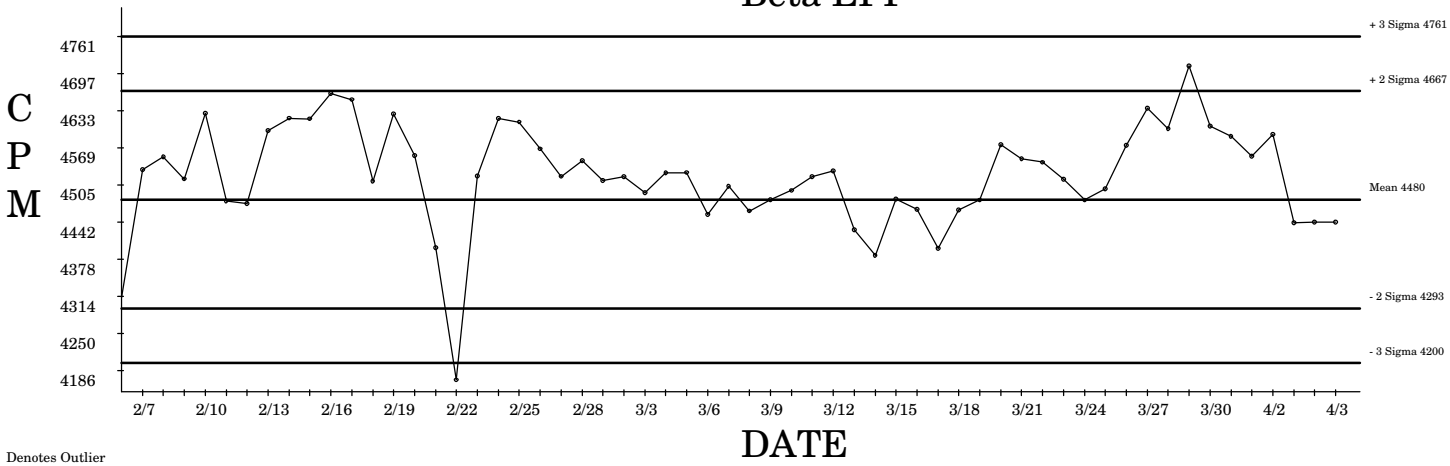

○ Denotes Outlier

LB4100C2 04/03/2006

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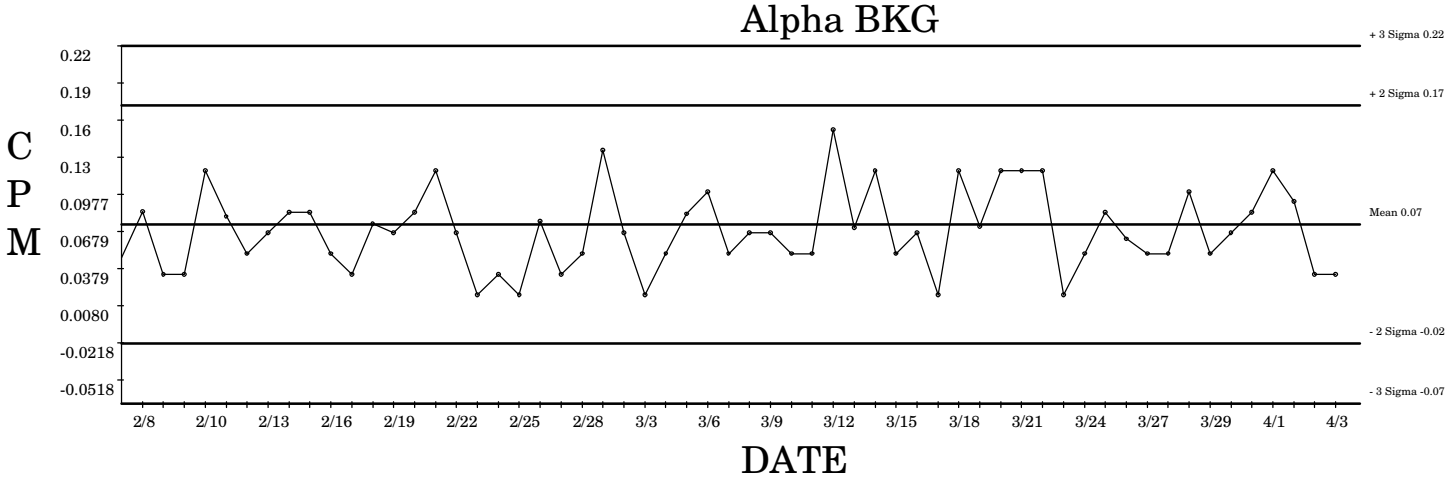

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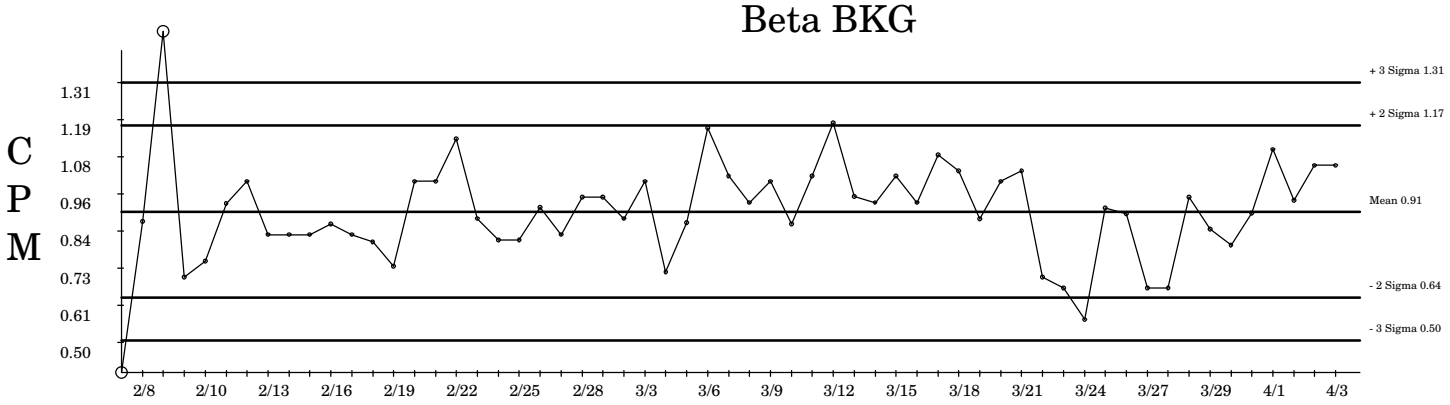

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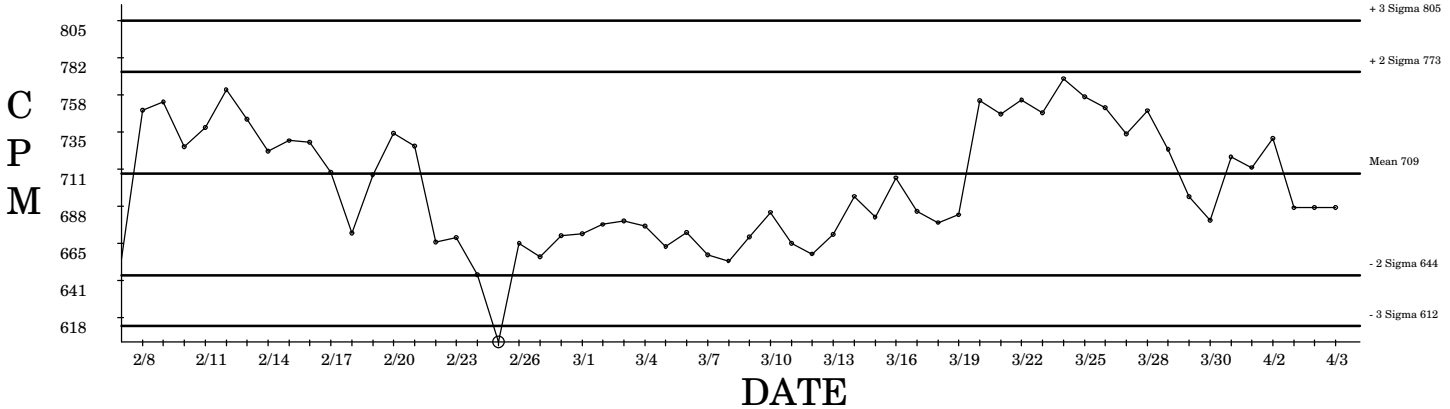

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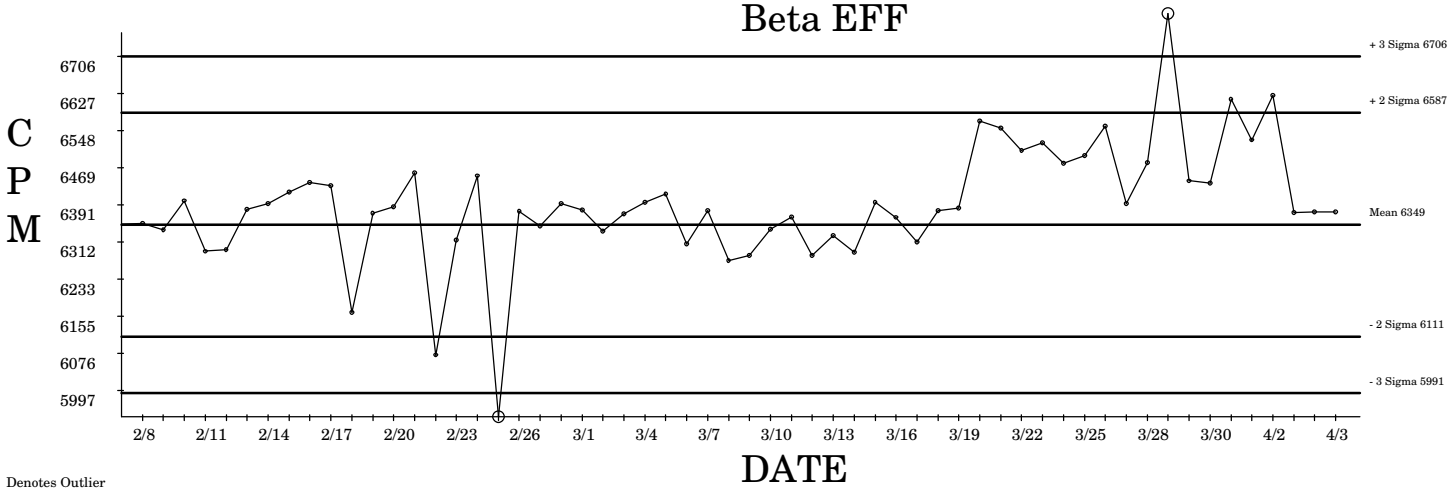

○ Denotes Outlier

LB4100C3 04/03/2006

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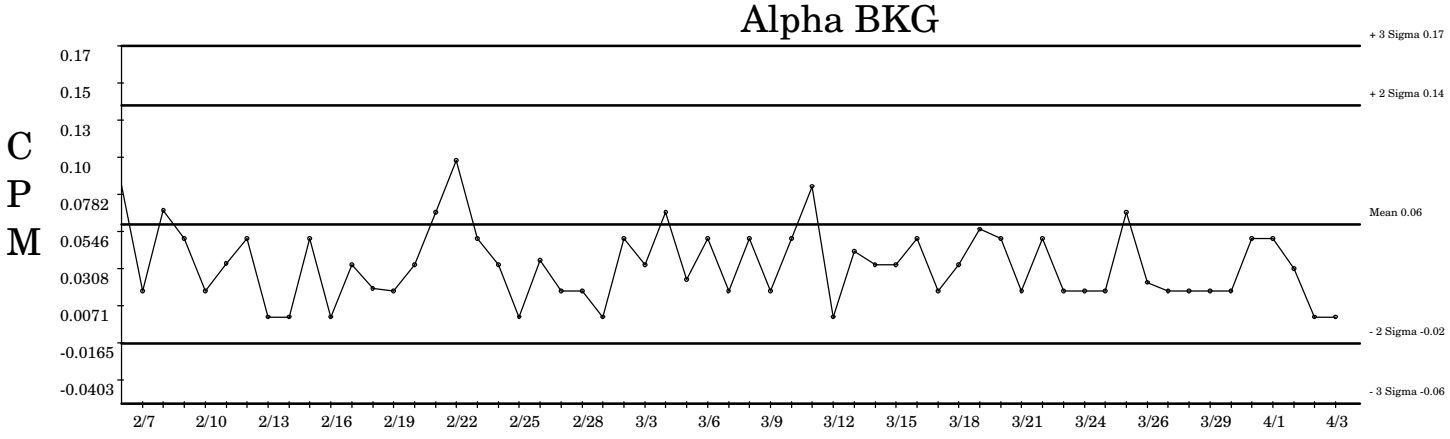

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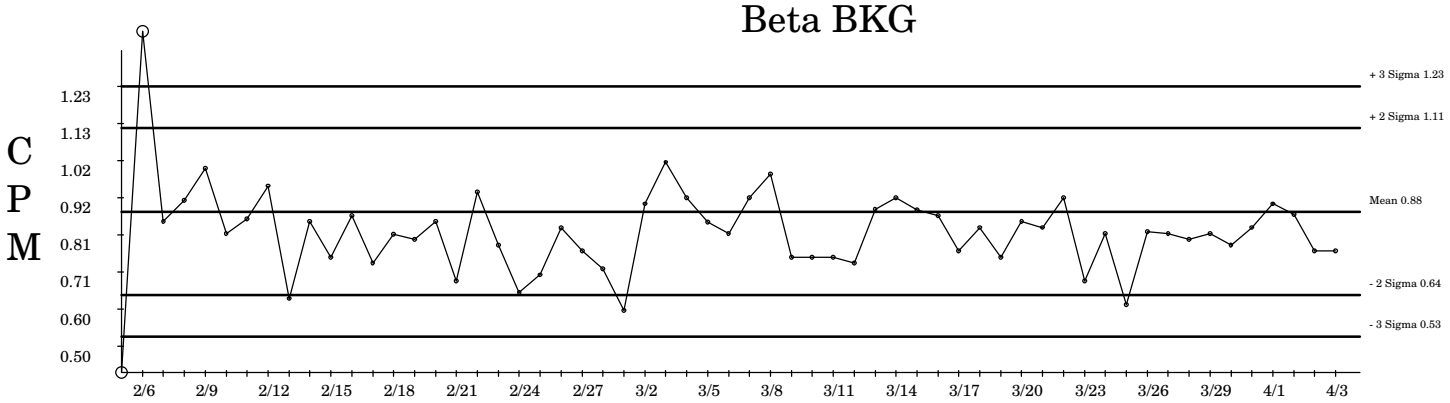

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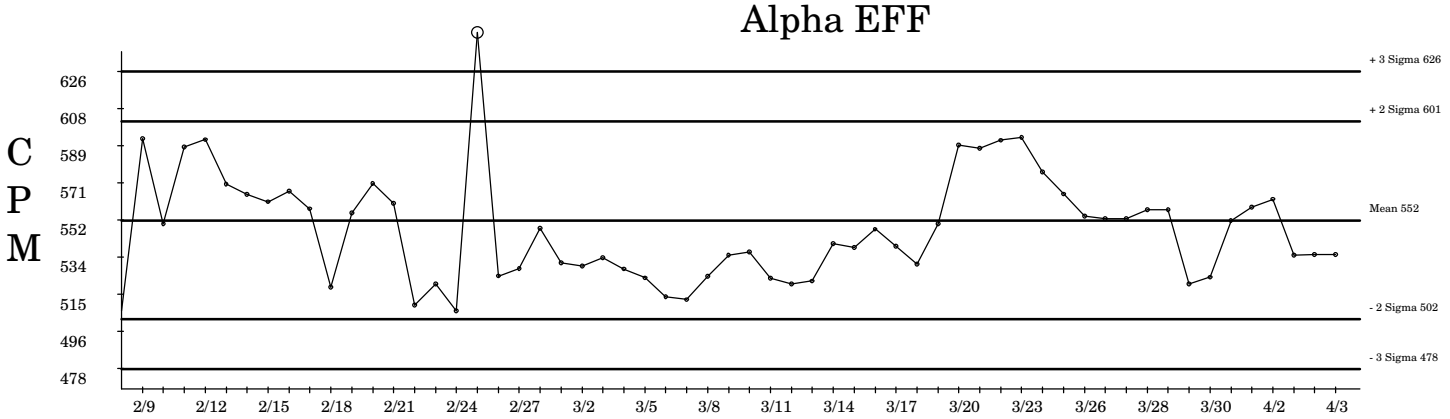

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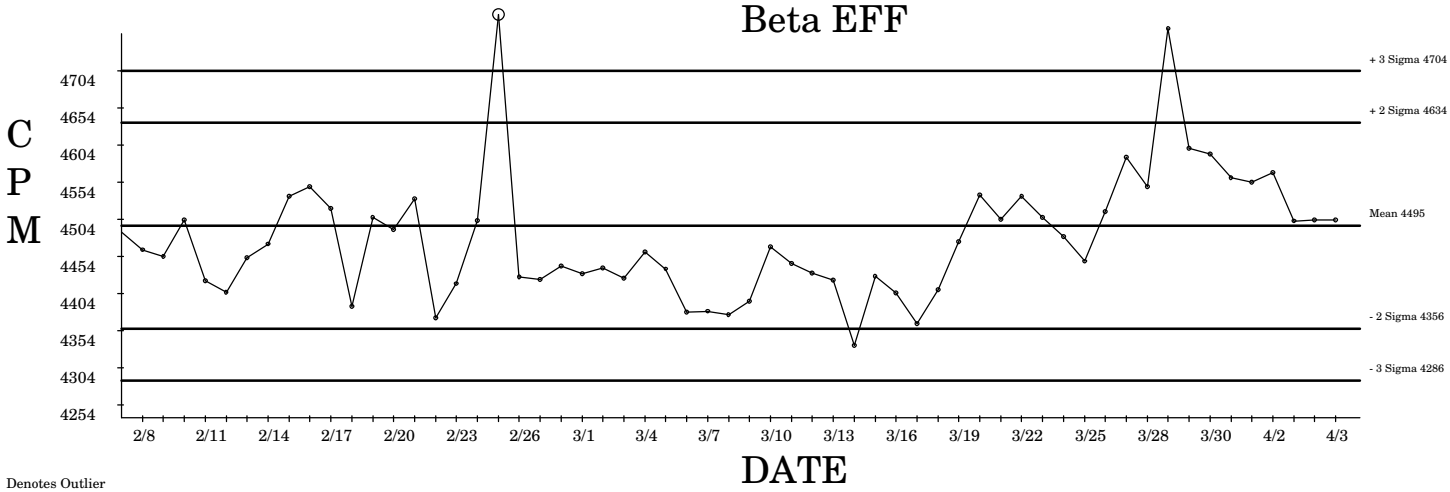

○ Denotes Outlier

LB4100C4 04/03/2006

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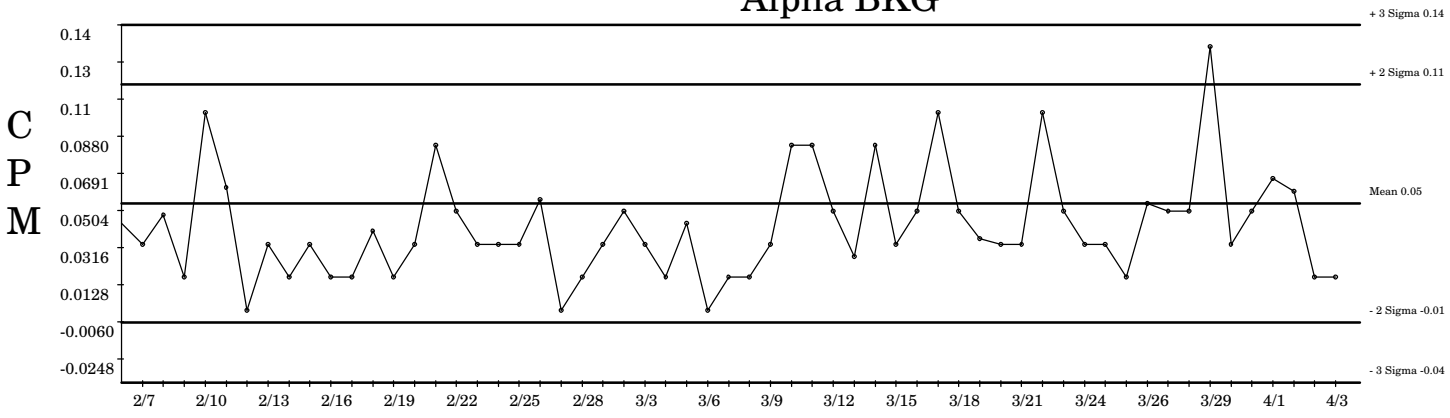

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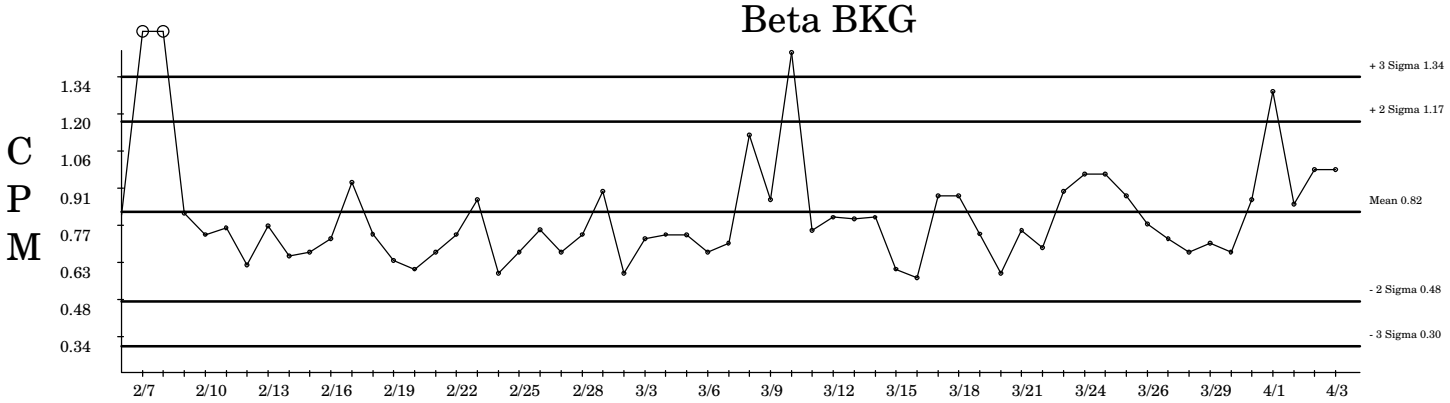

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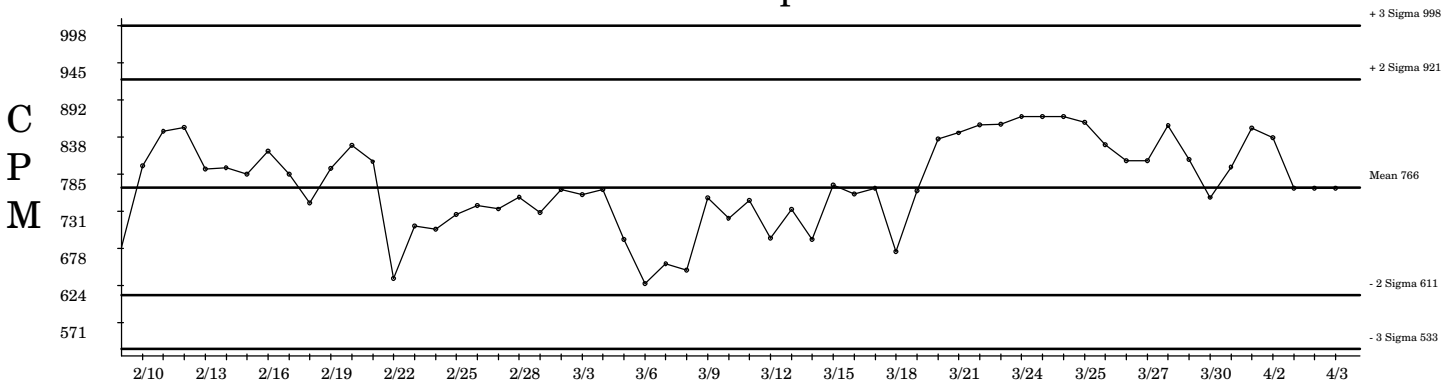

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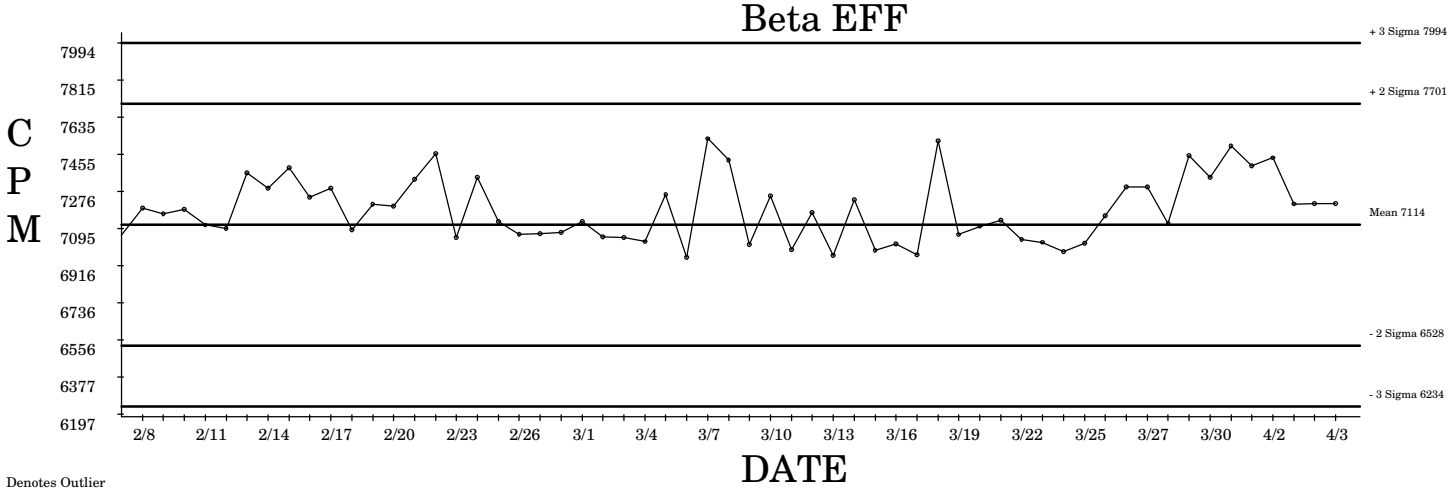

○ Denotes Outlier

LB4100H4 04/03/2006

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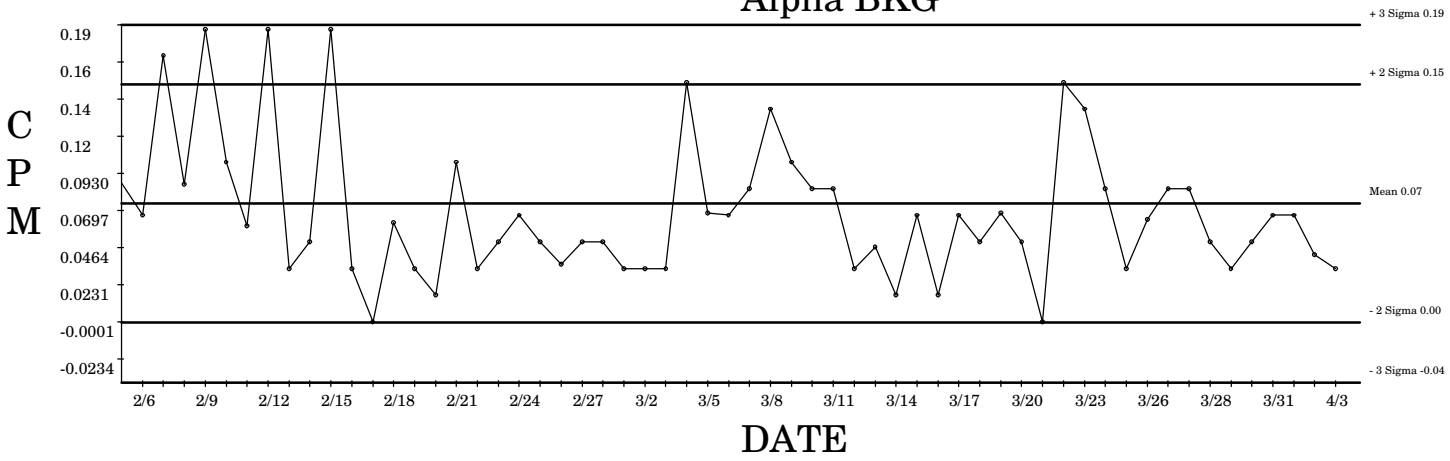

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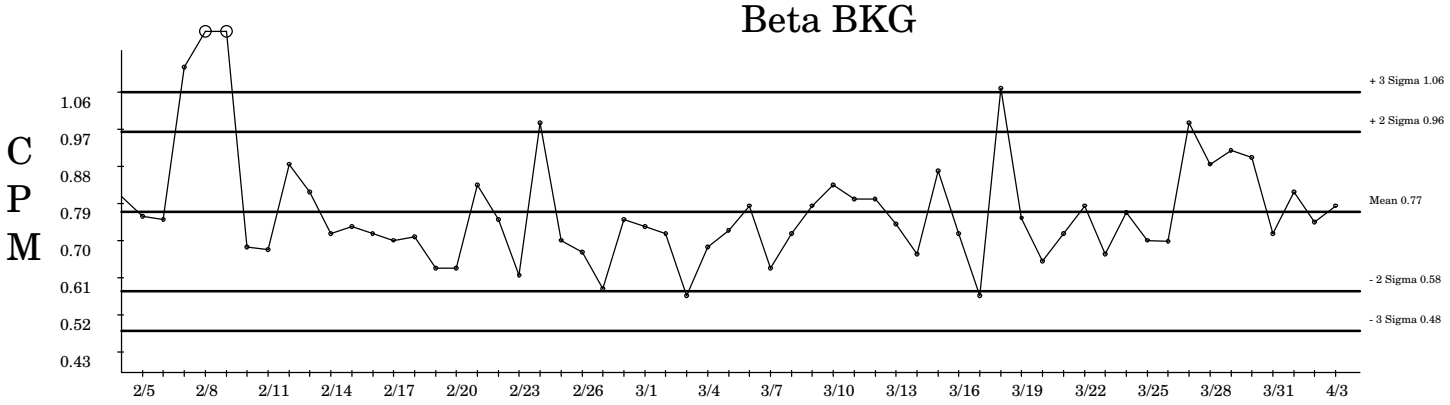

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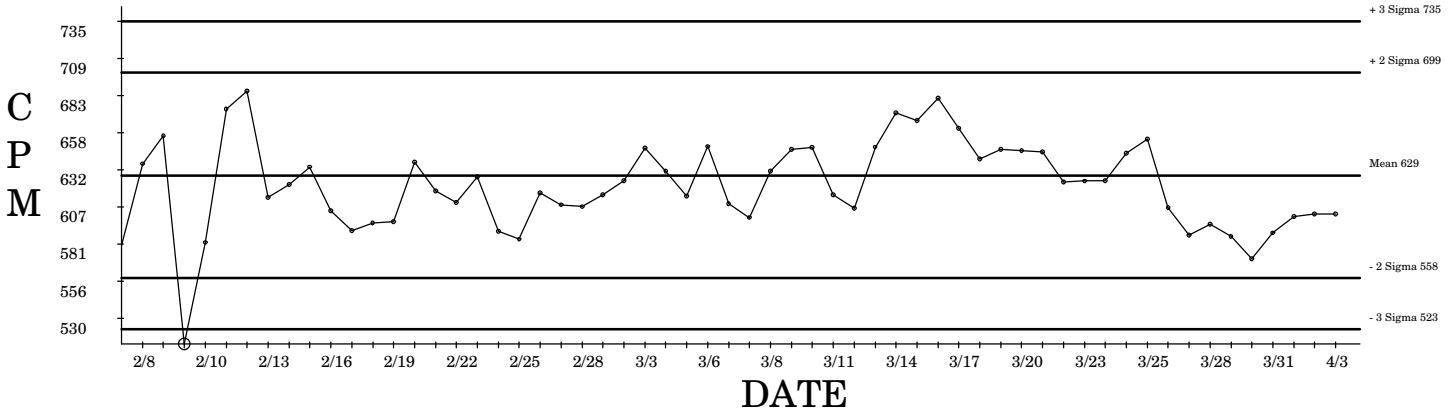

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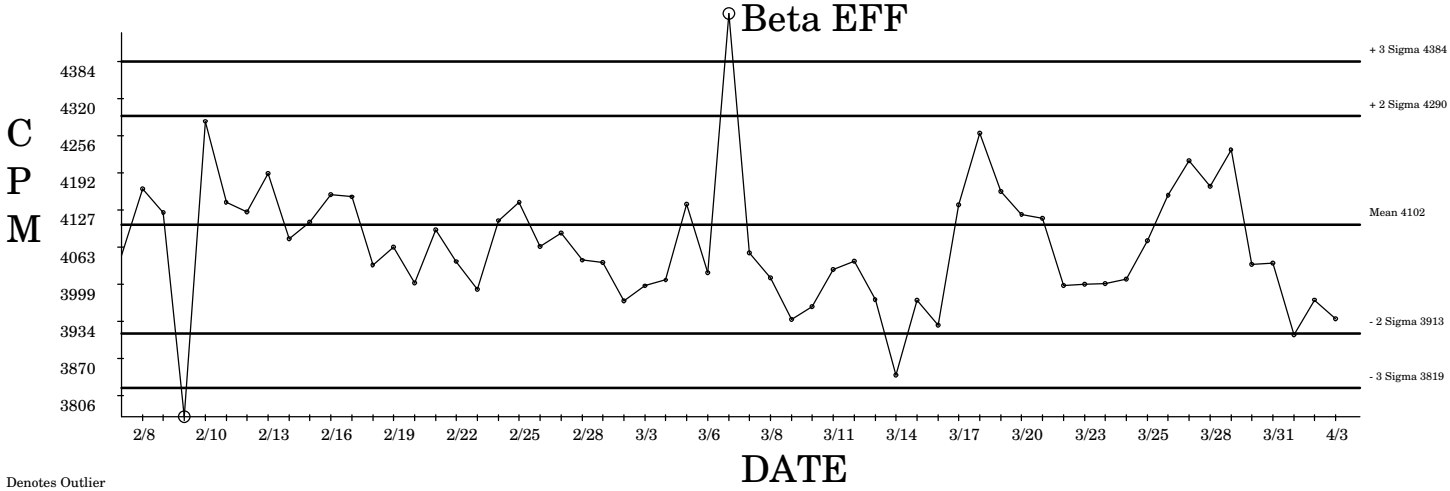

○ Denotes Outlier

PIC1A 04/09/2006

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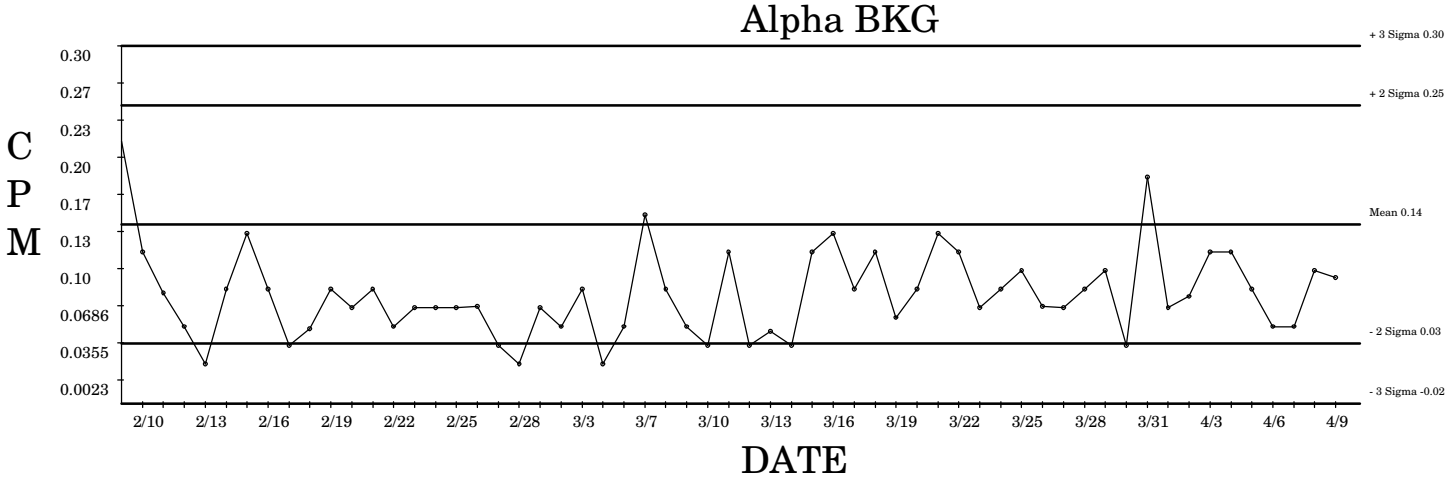

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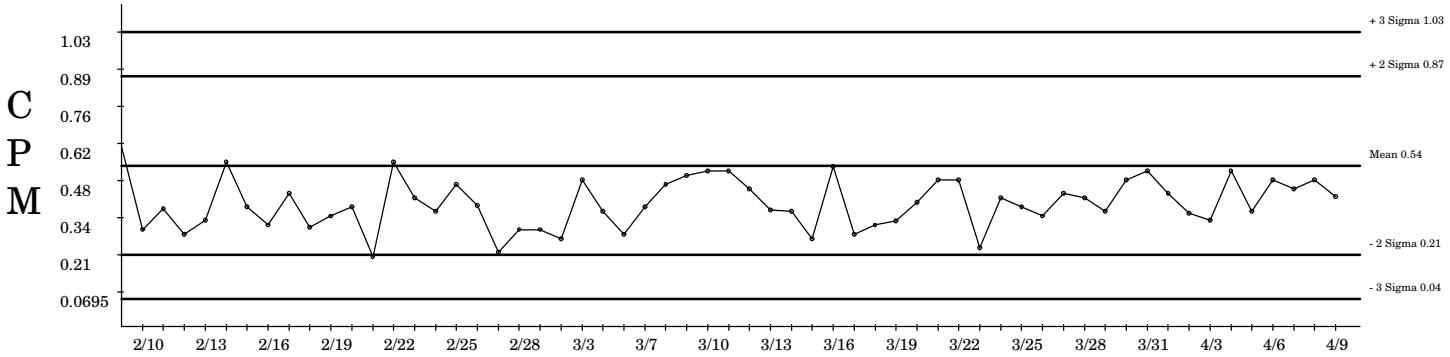

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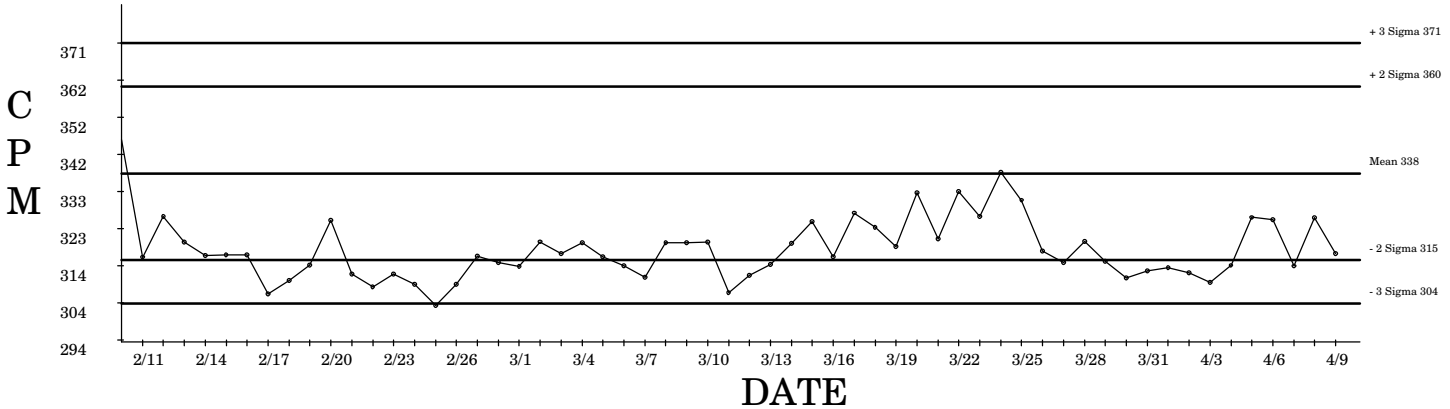

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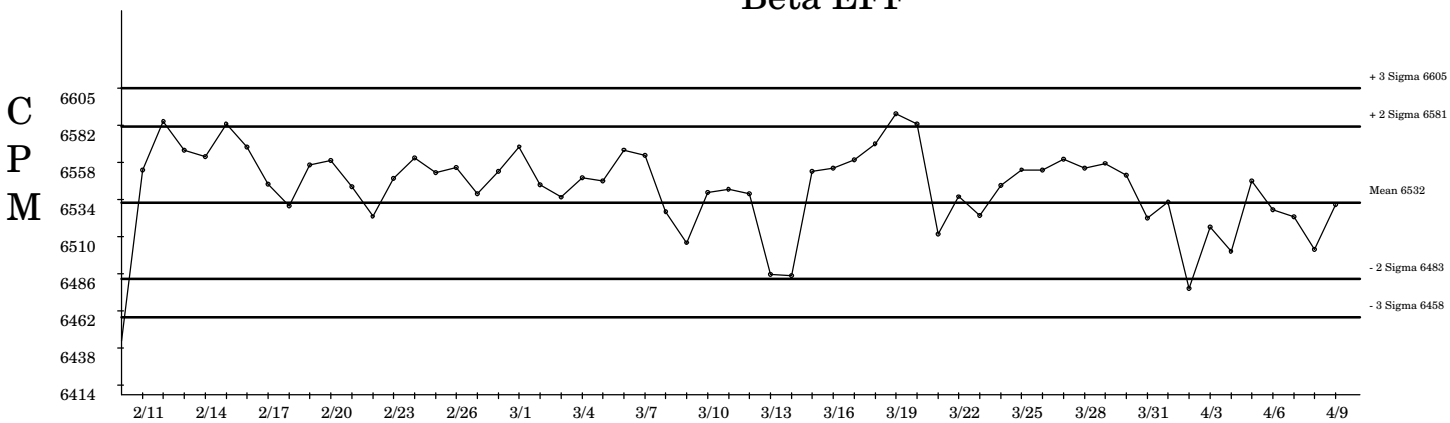

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PIC1B 04/09/2006

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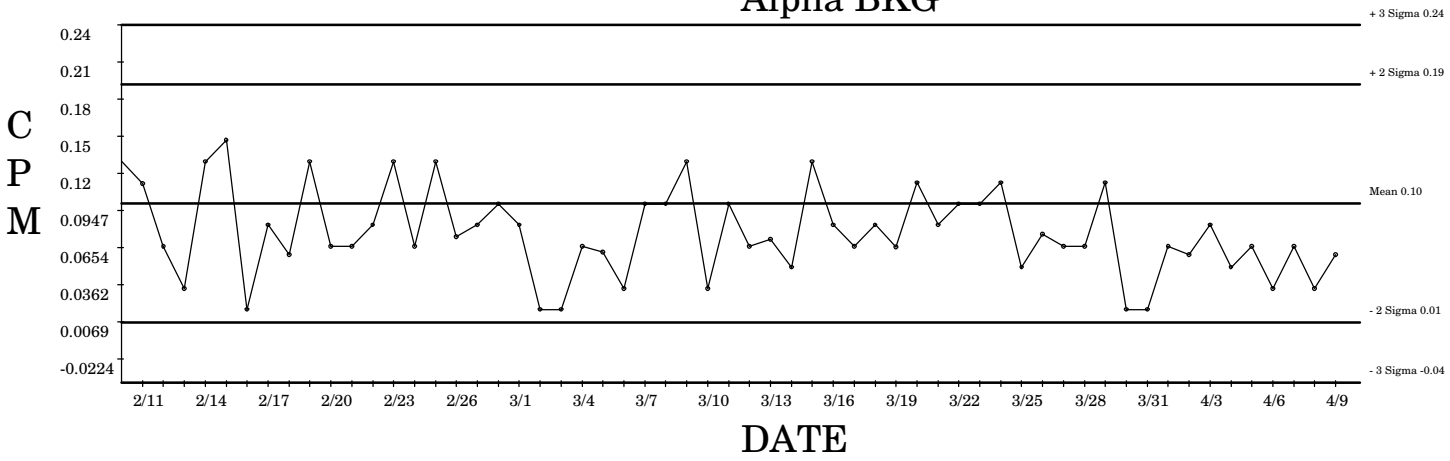

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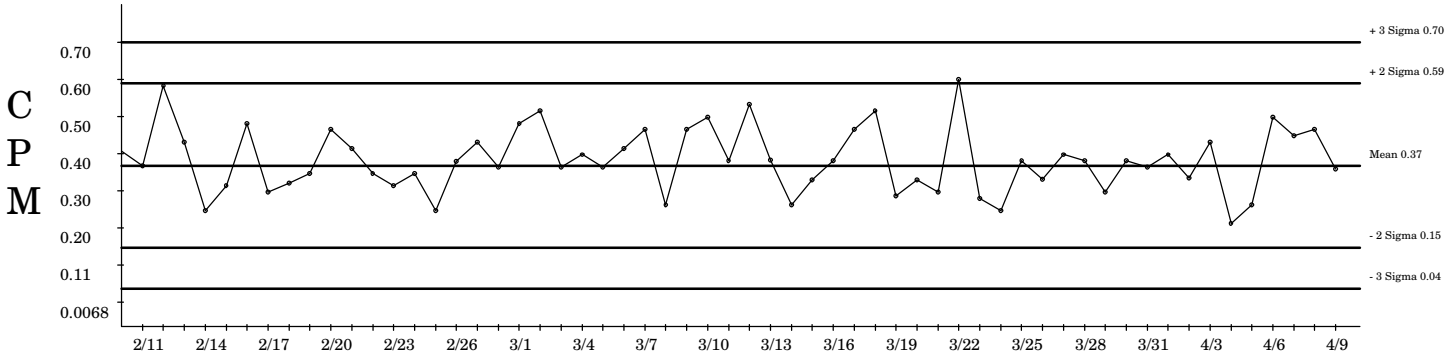

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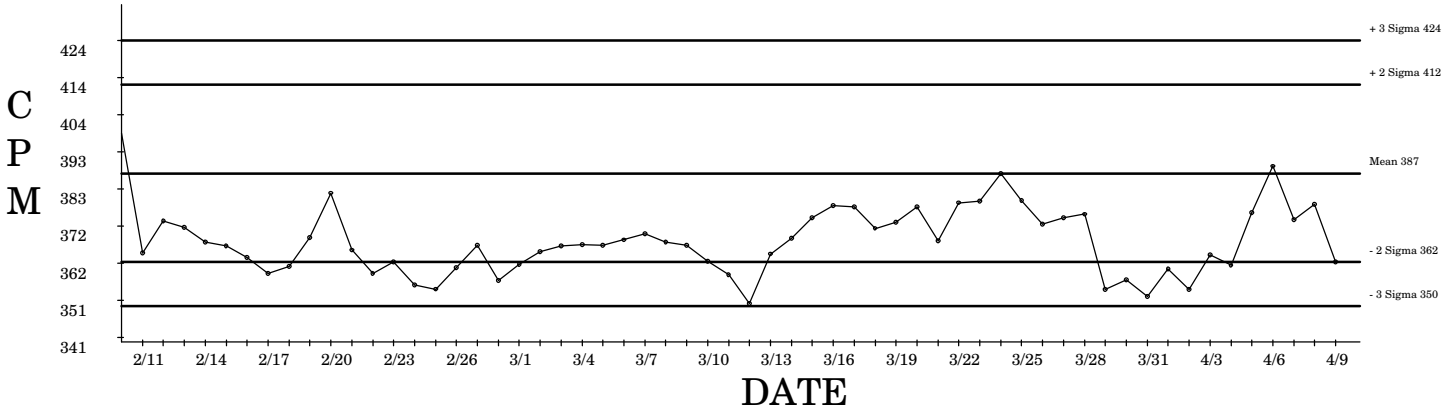

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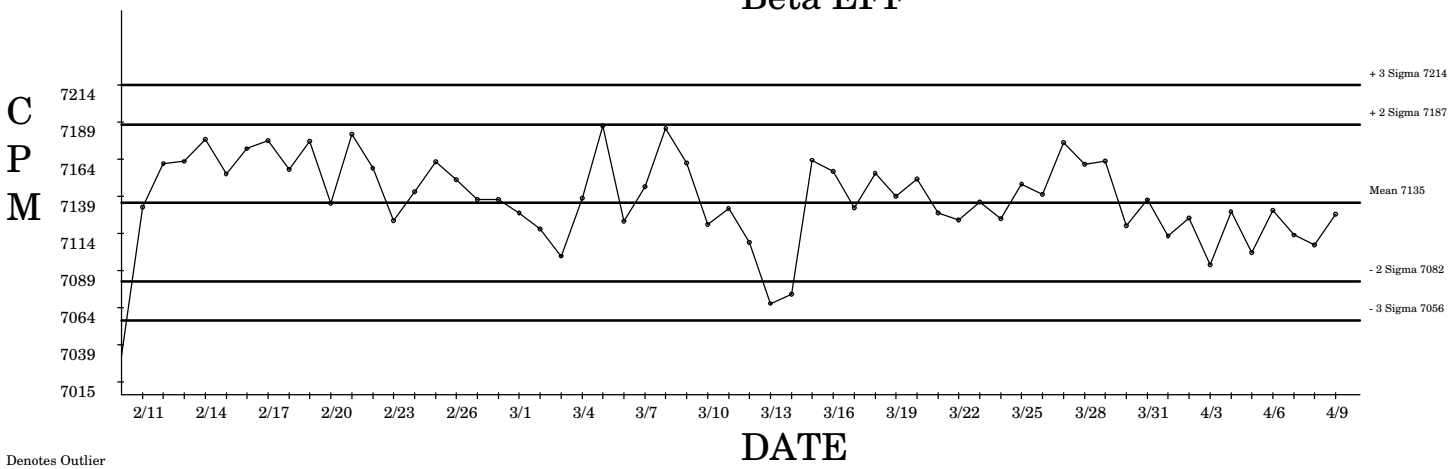

○ Denotes Outlier

PIC1C 04/09/2006

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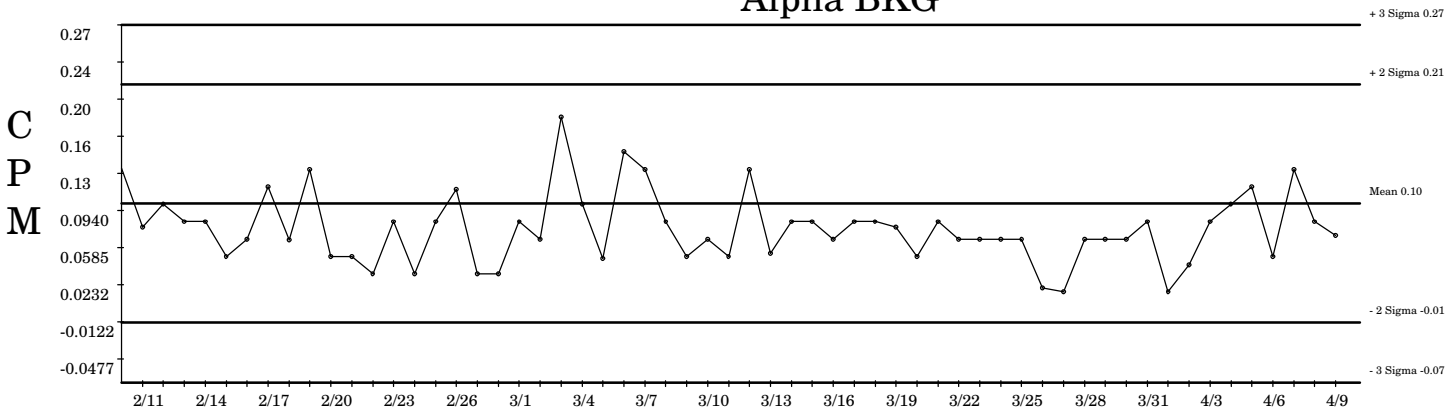

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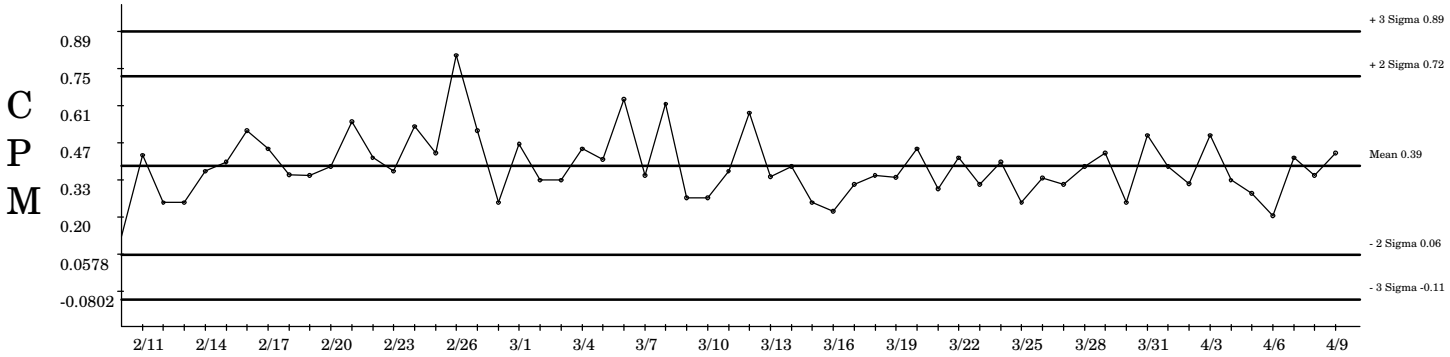

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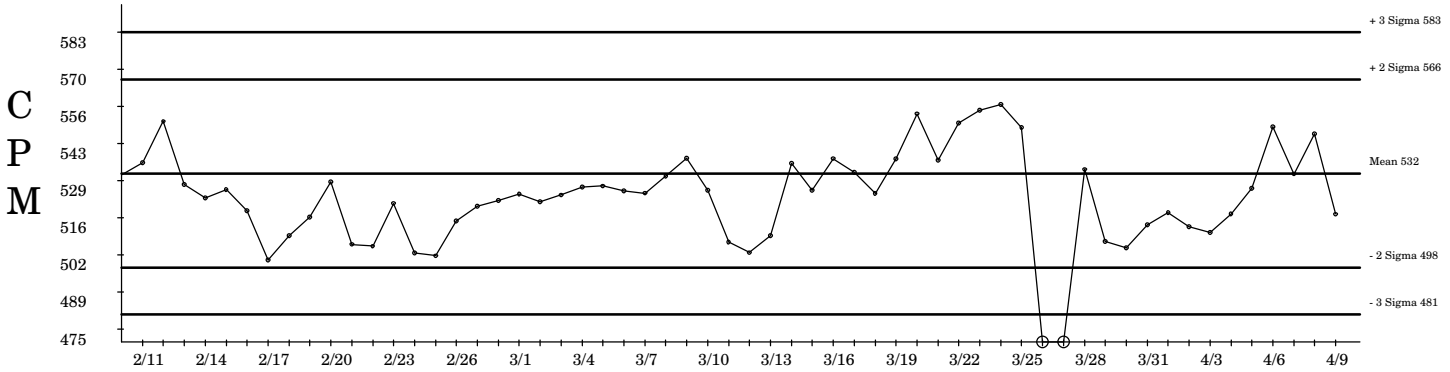

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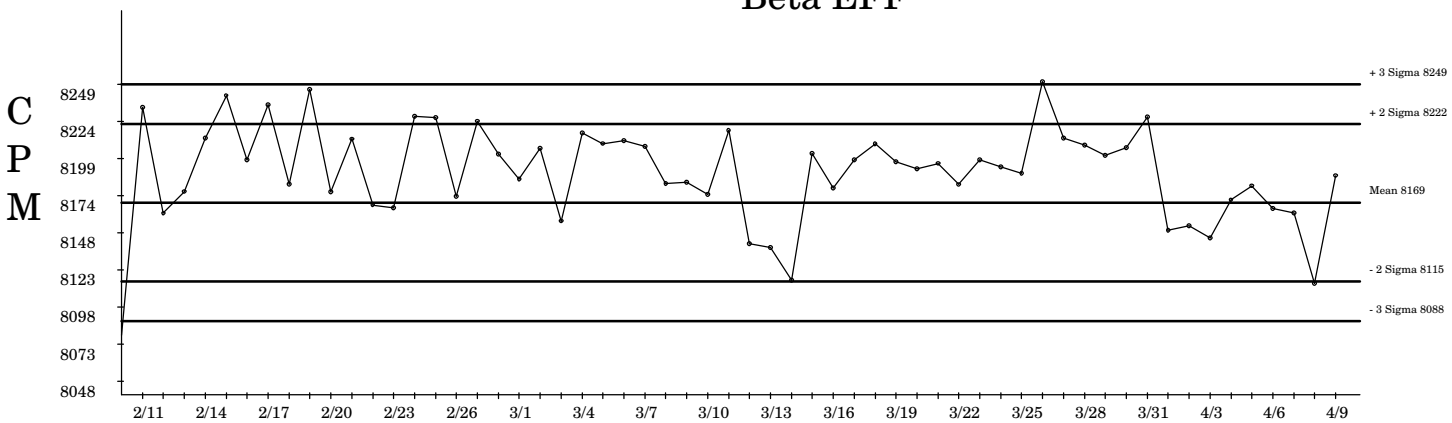

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○ Denotes Outlier

PIC1D 04/09/2006

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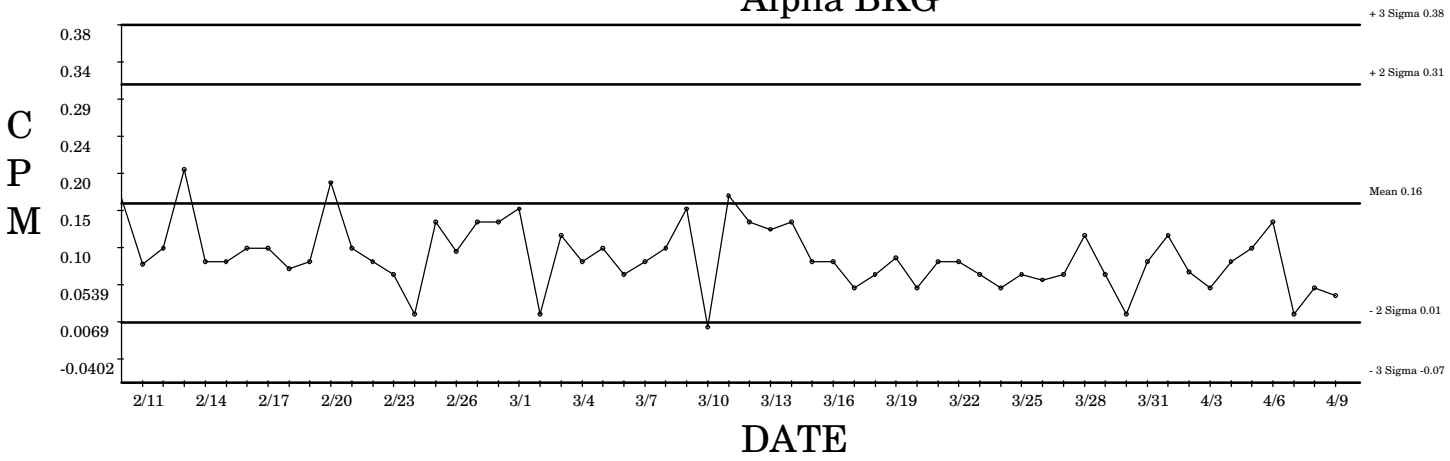

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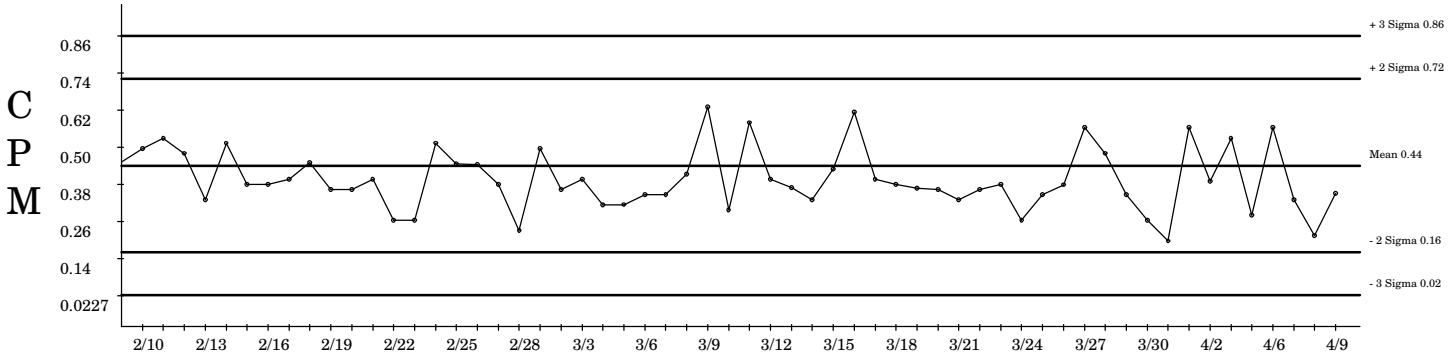

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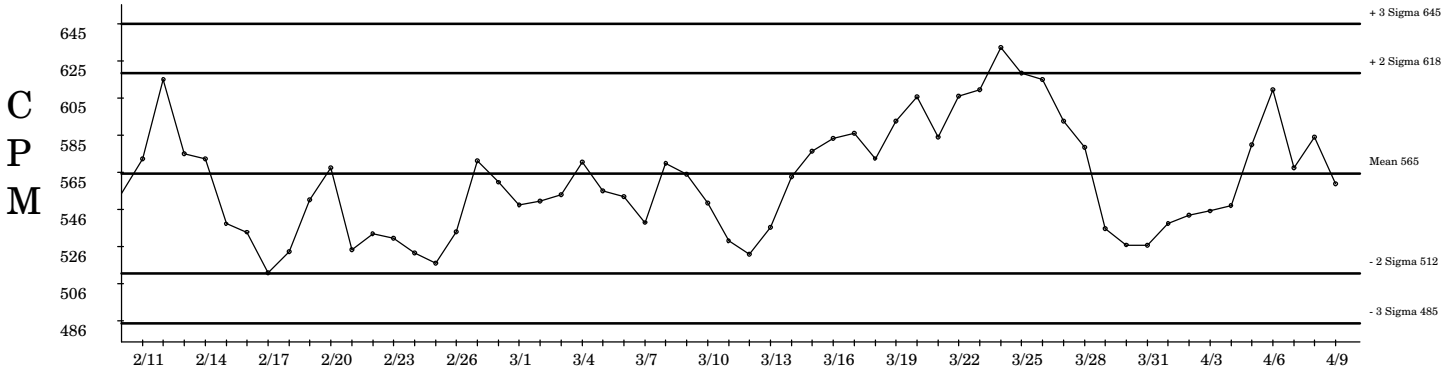

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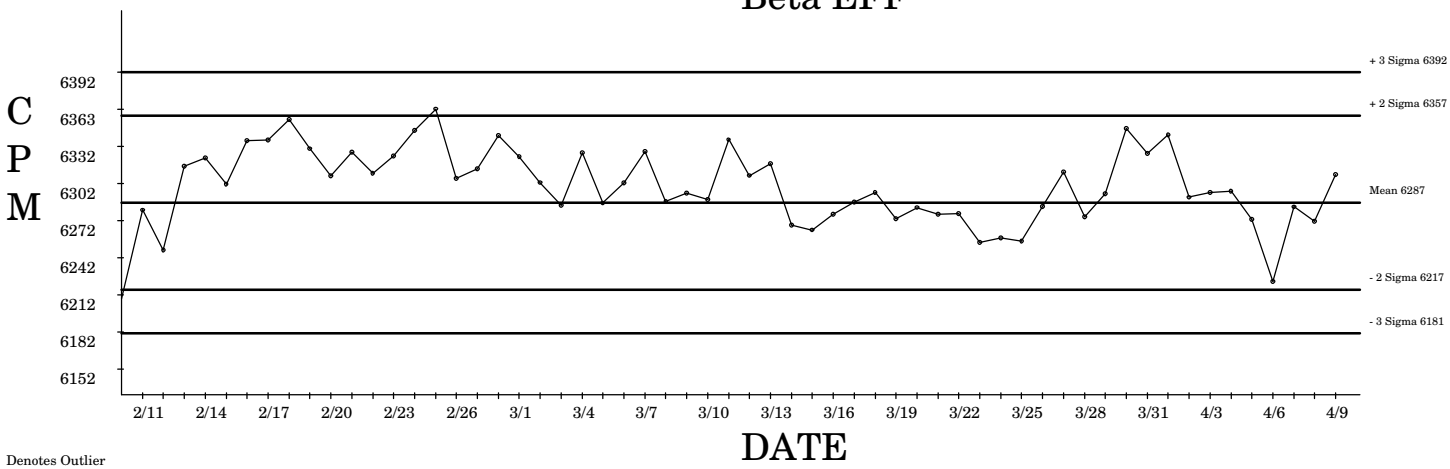

○ Denotes Outlier

PIC2A 04/09/2006

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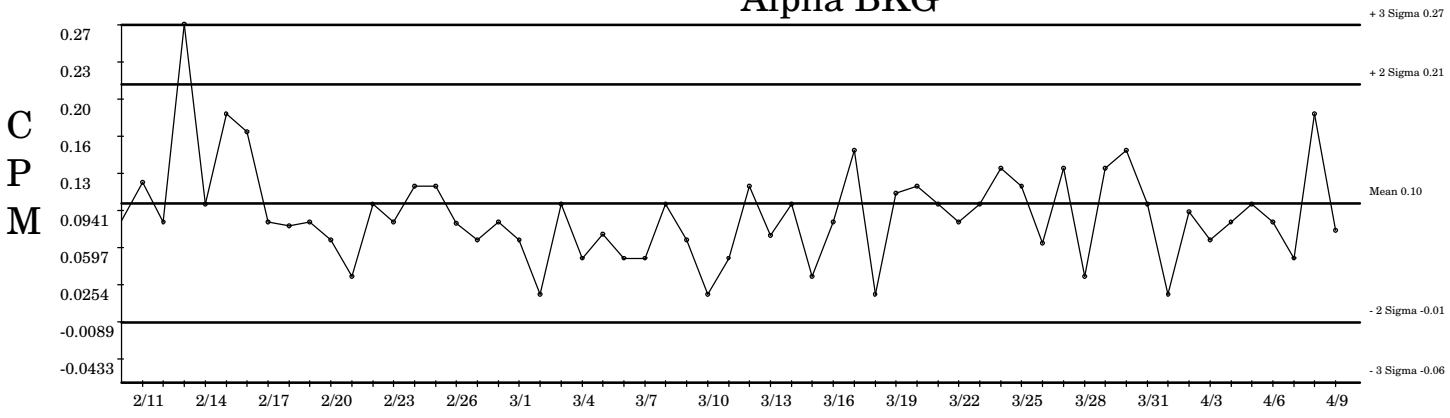

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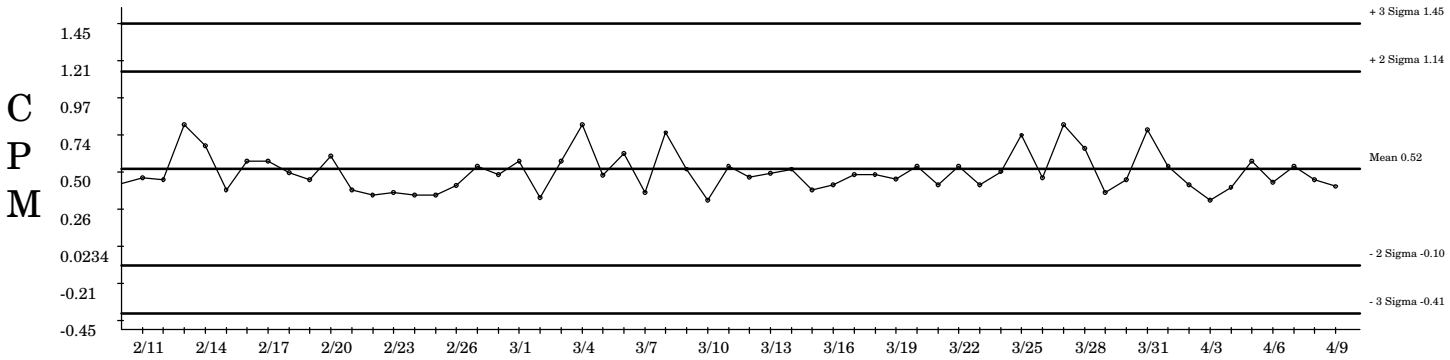

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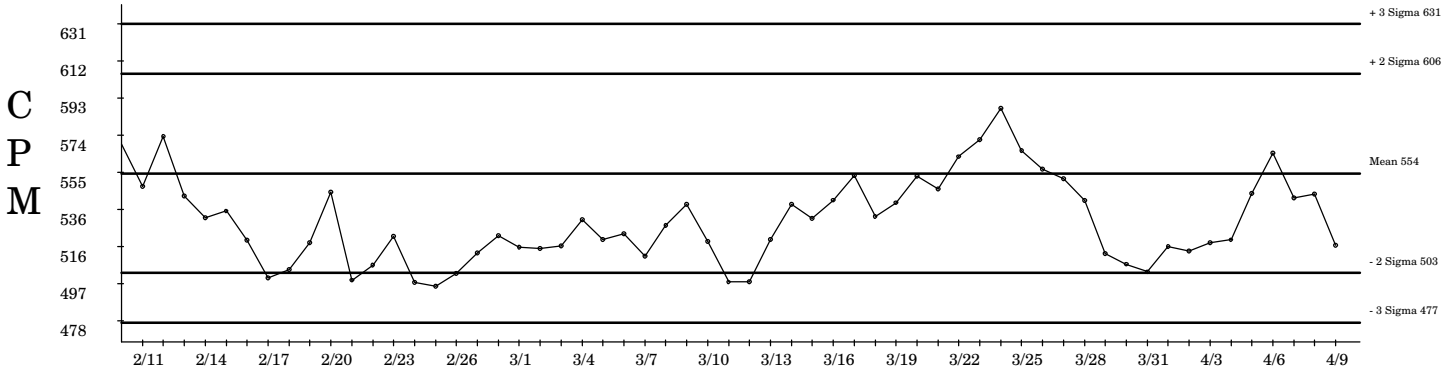
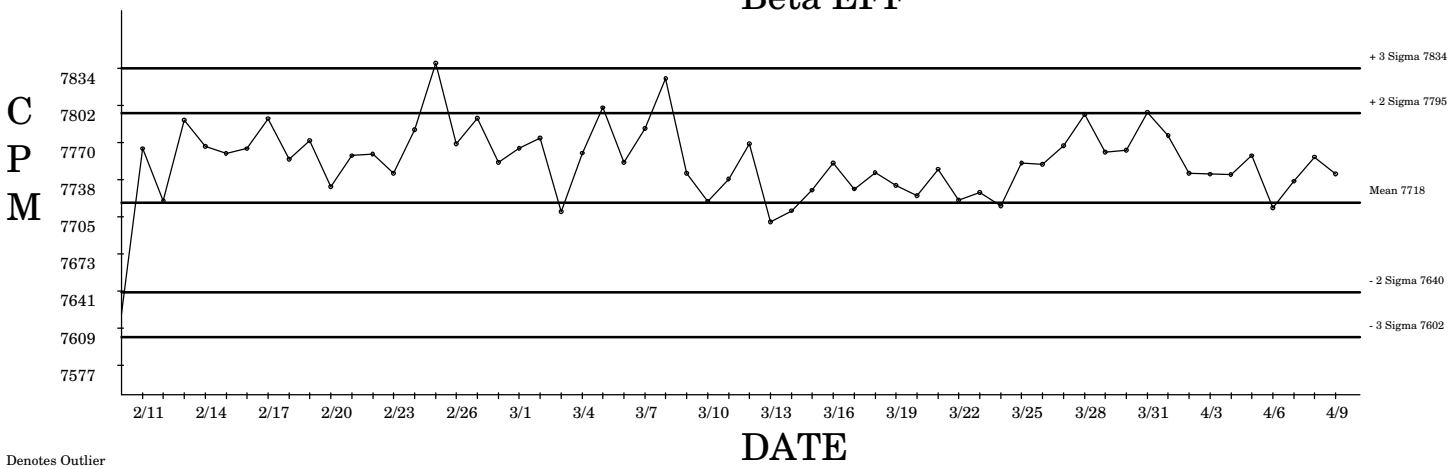


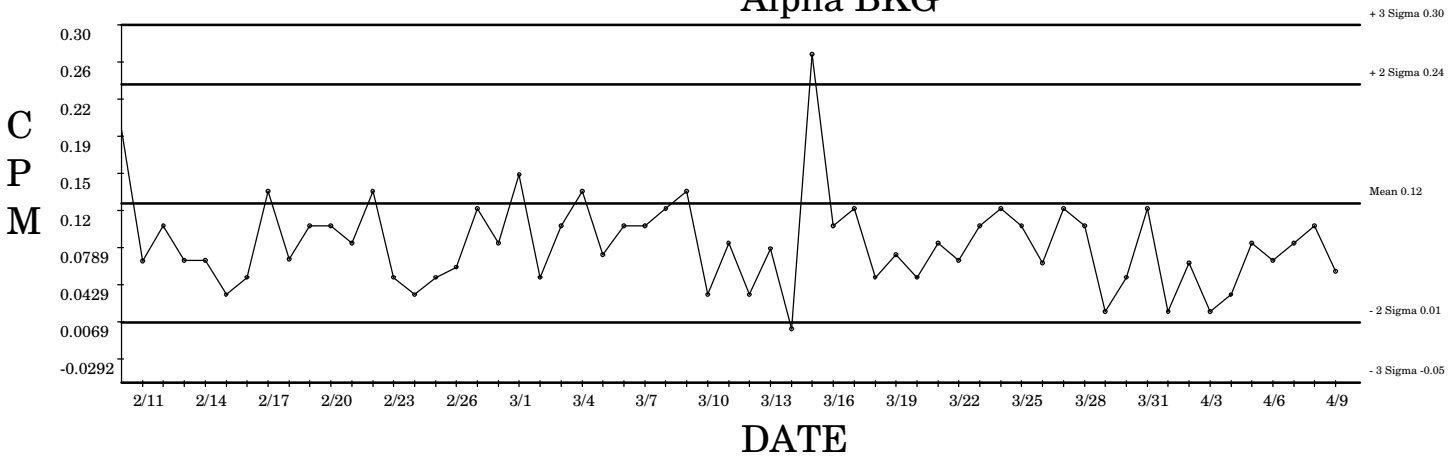
Beta EFF



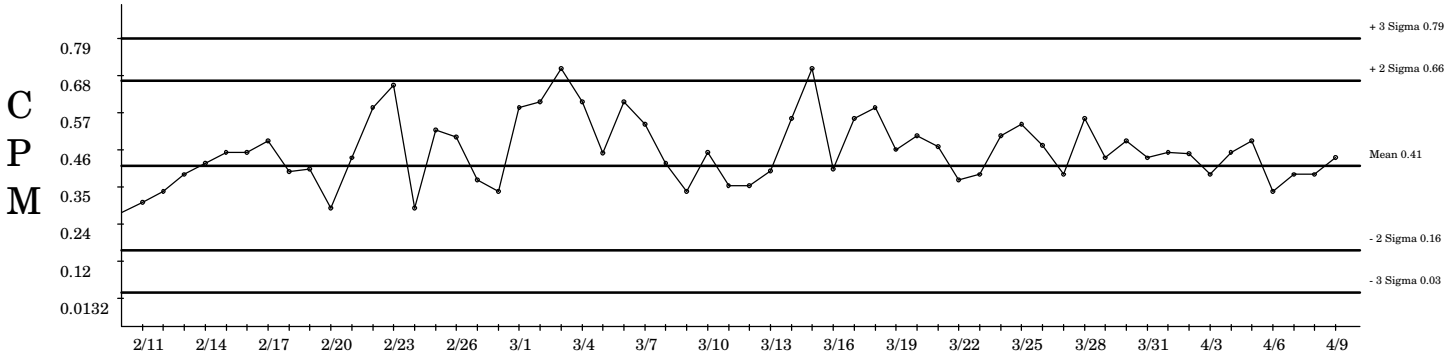
○ Denotes Outlier

PIC3C 04/09/2006

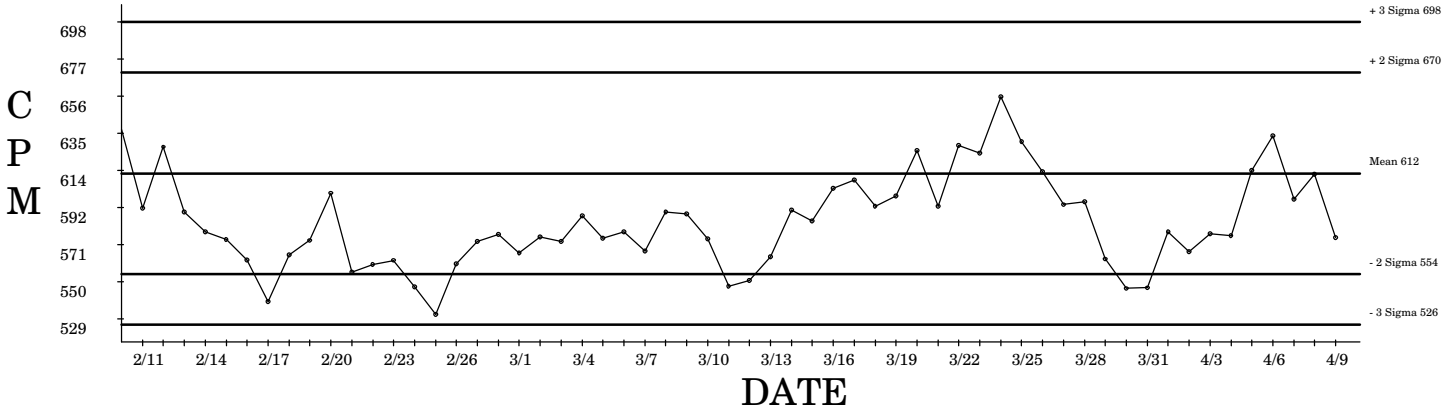
Alpha BKG



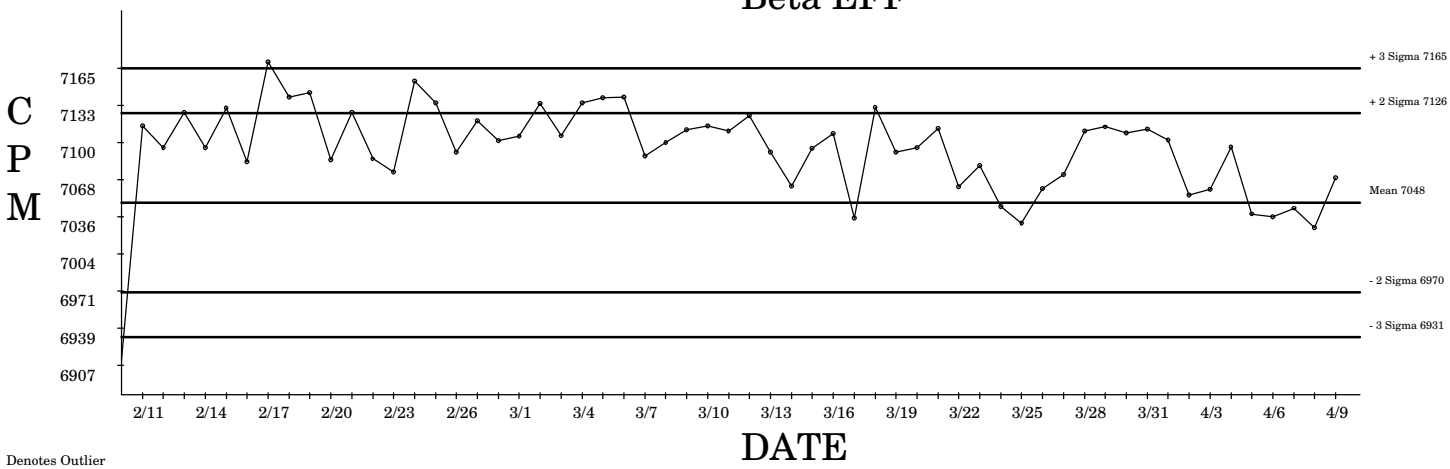
Beta BKG



Alpha EFF



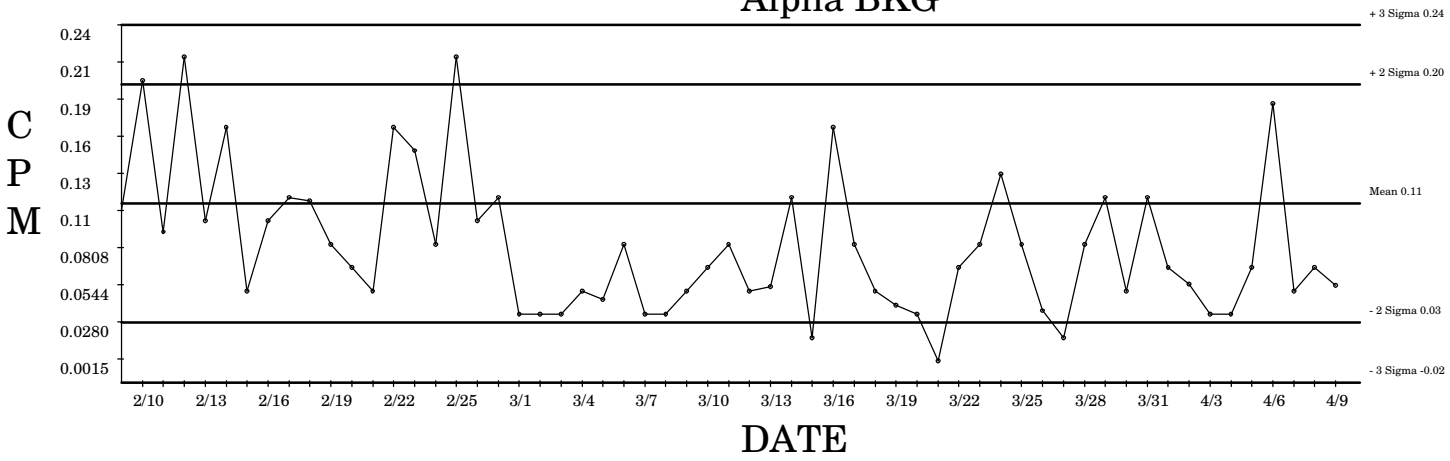
Beta EFF



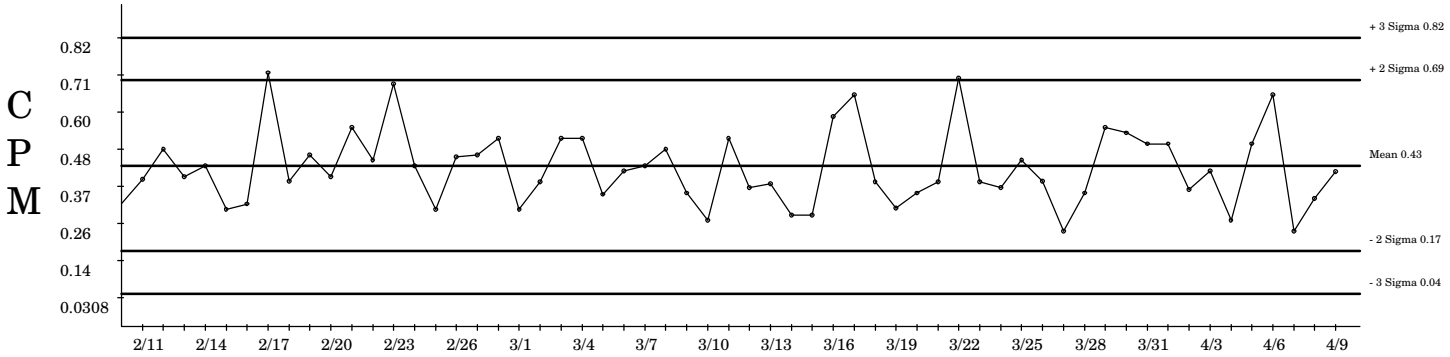
○ Denotes Outlier

PIC3D 04/09/2006

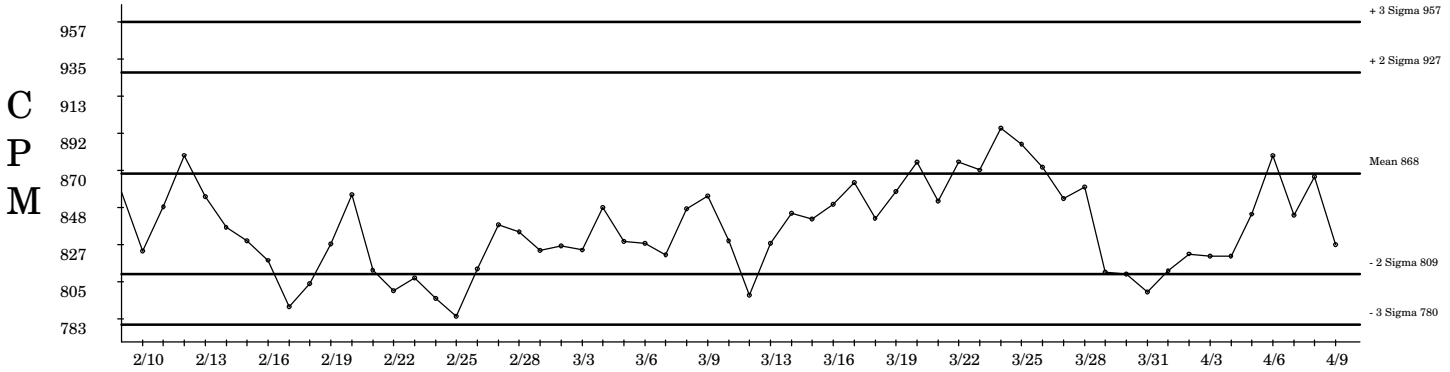
Alpha BKG



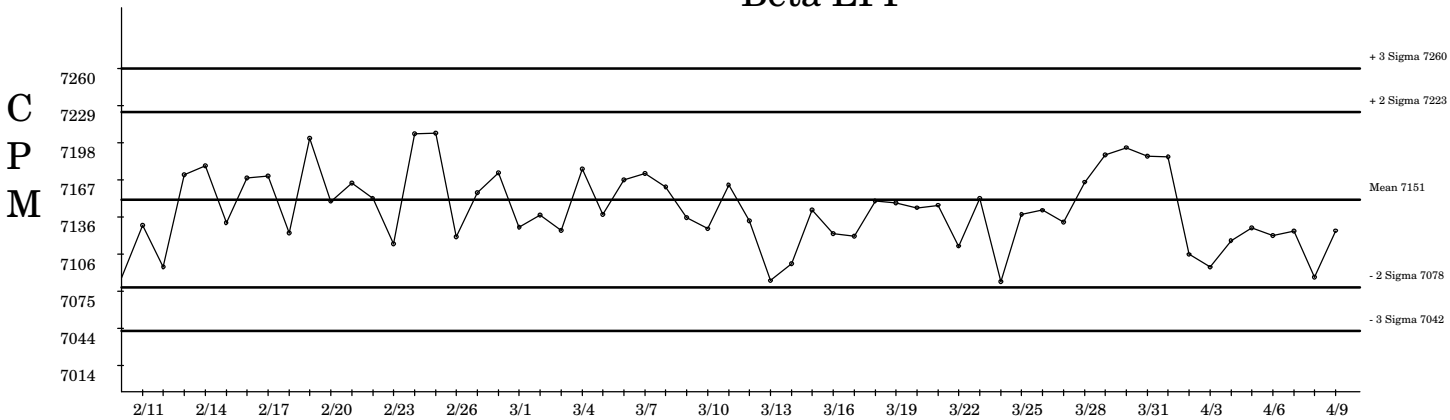
Beta BKG



Alpha EFF



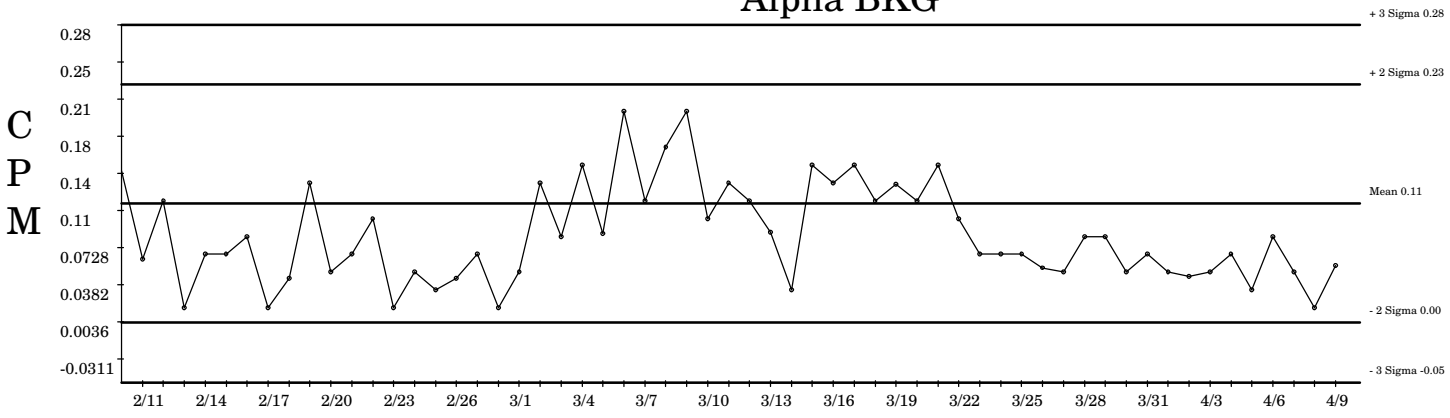
Beta EFF



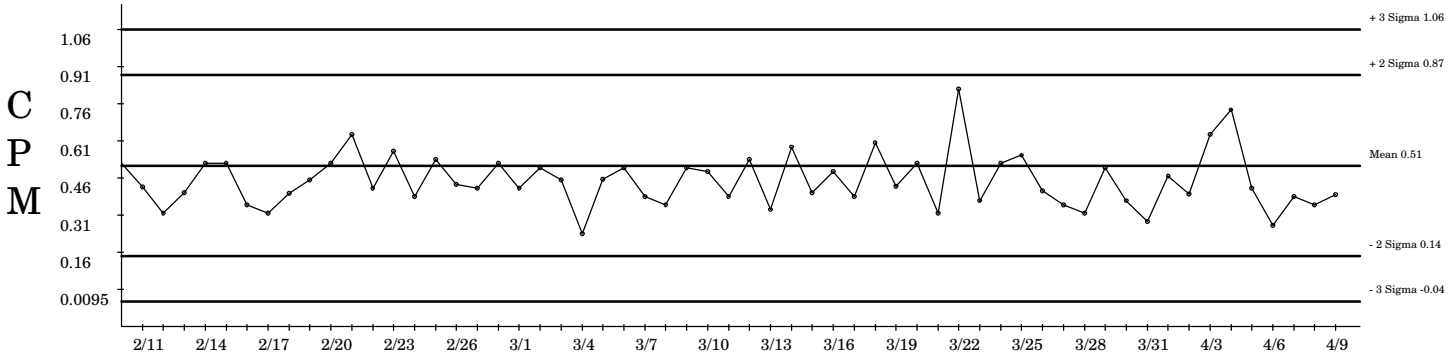
○ Denotes Outlier

PIC4A 04/09/2006

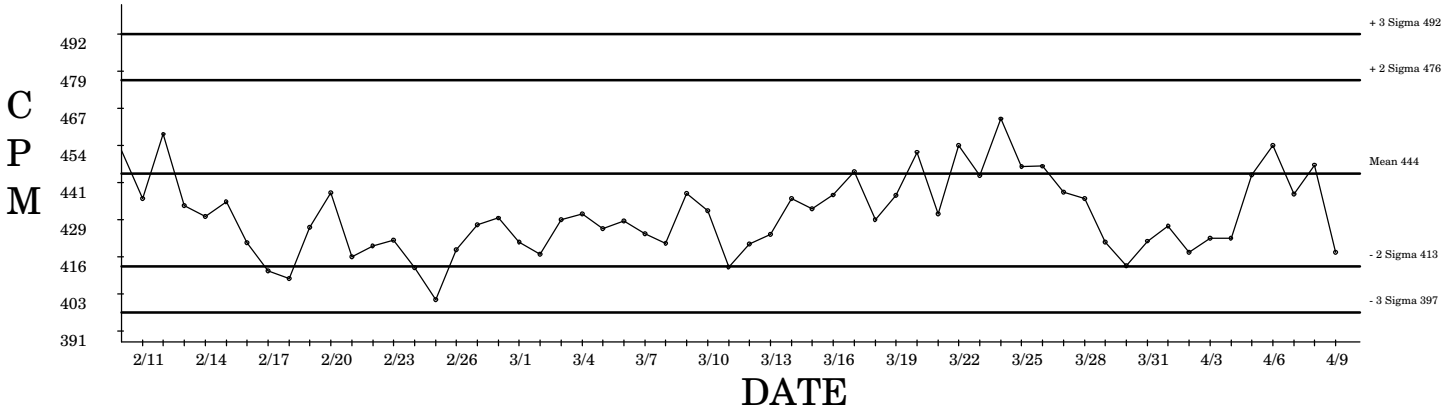
Alpha BKG



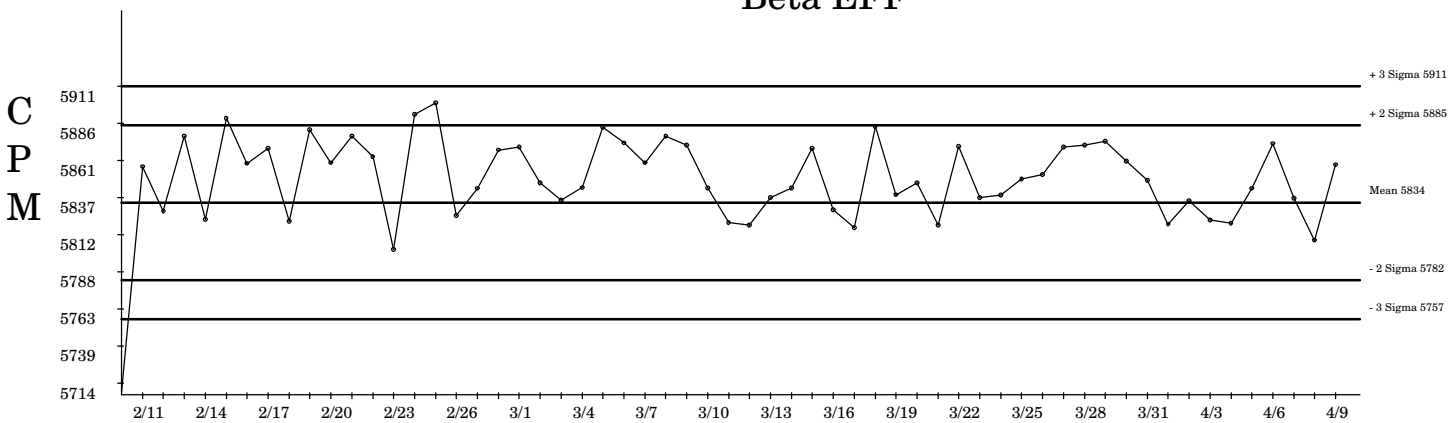
Beta BKG



Alpha EFF



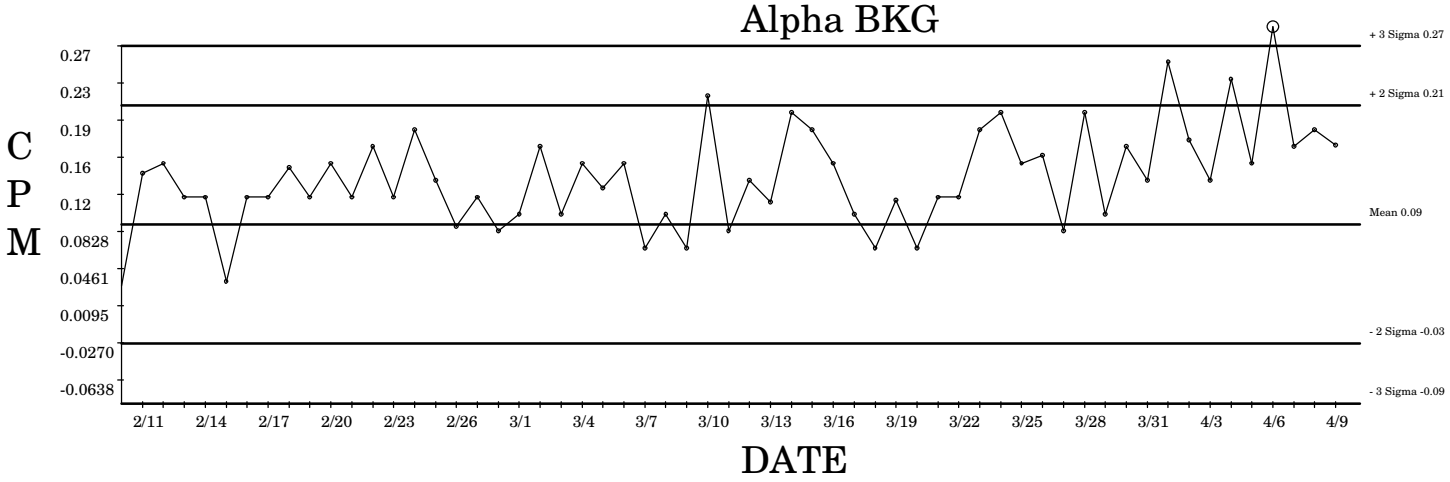
Beta EFF



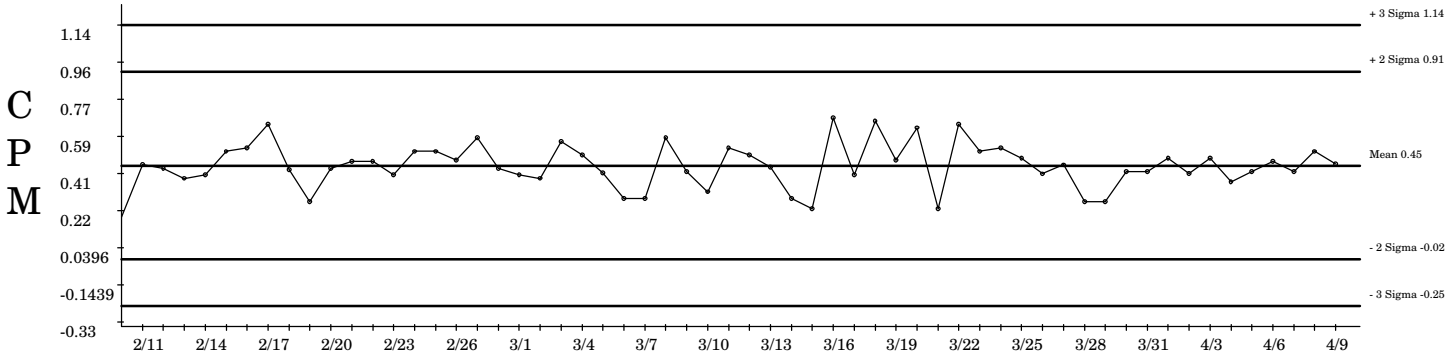
○ Denotes Outlier

PIC4B 04/09/2006

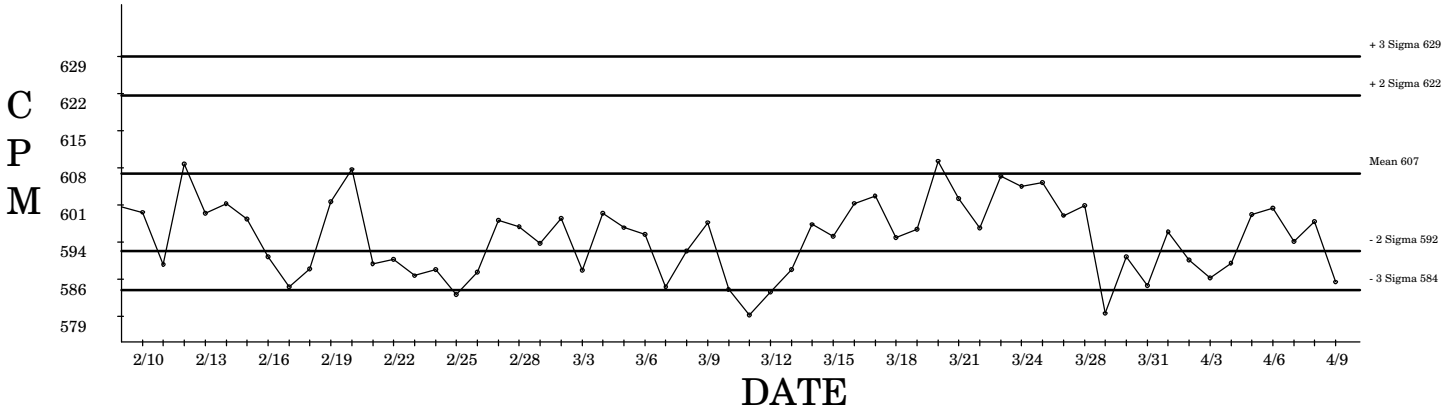
Alpha BKG



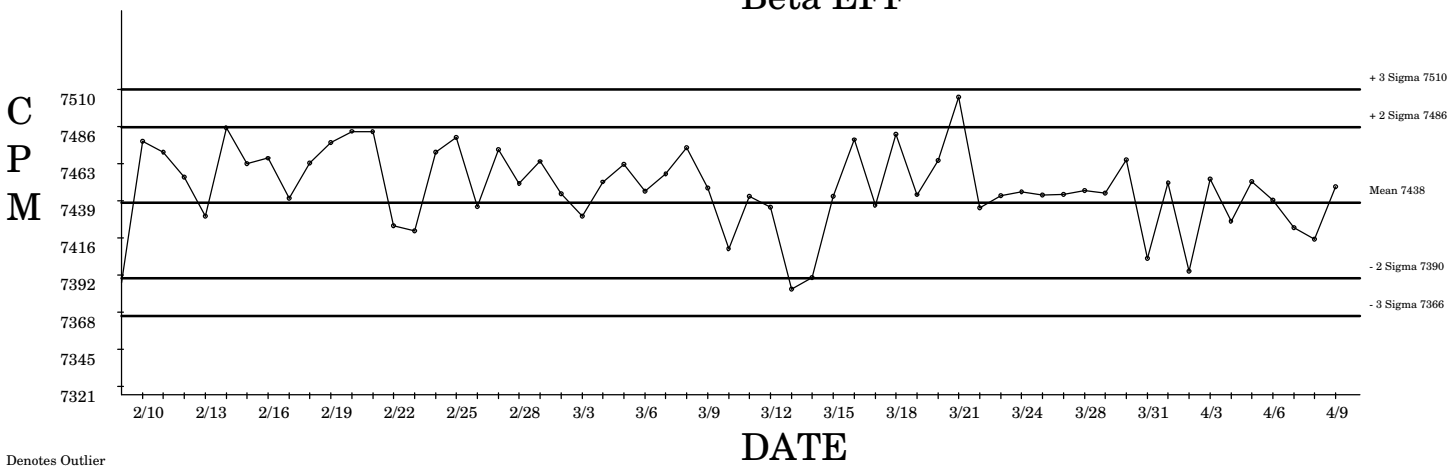
Beta BKG



Alpha EFF

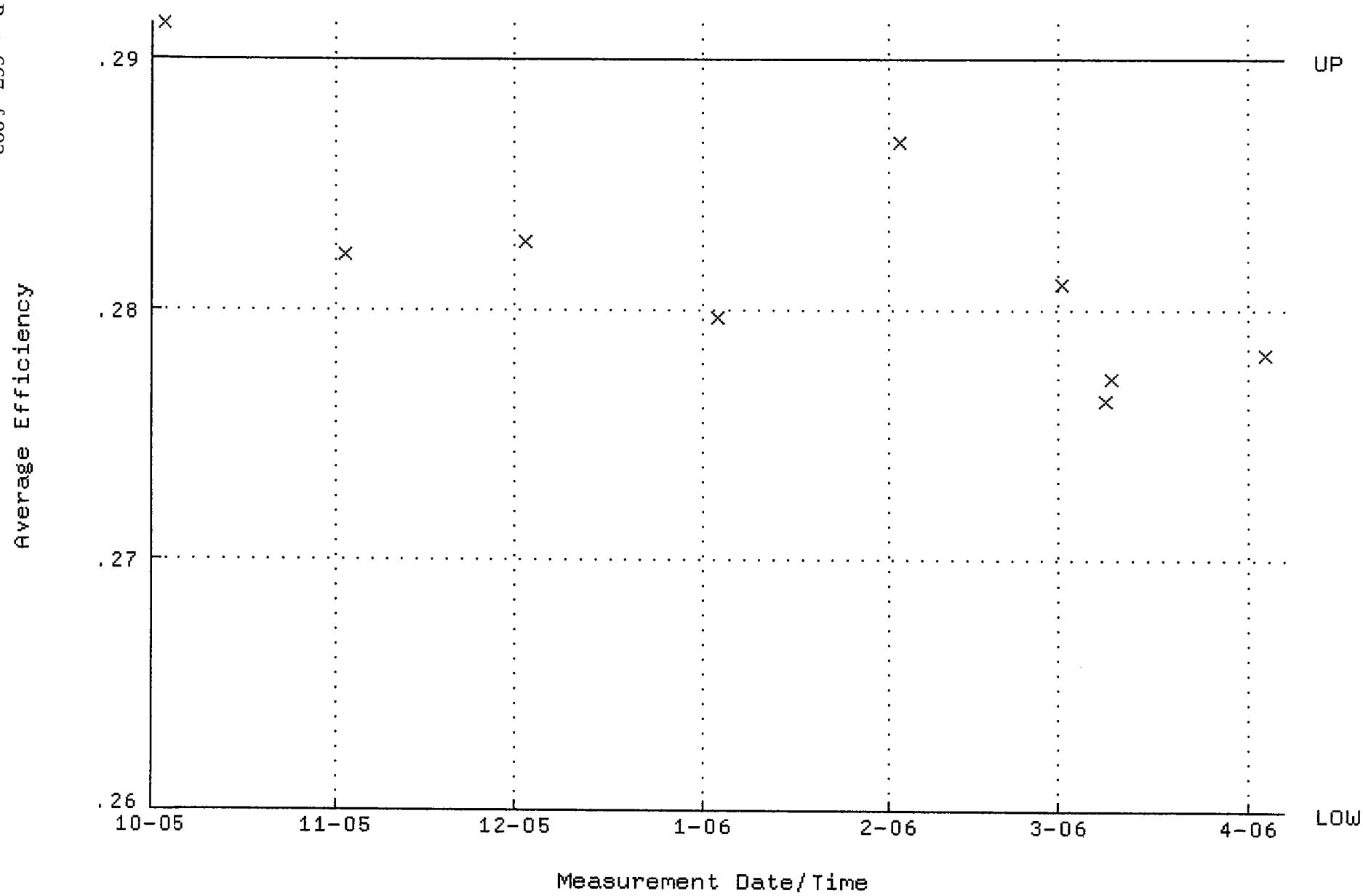


Beta EFF

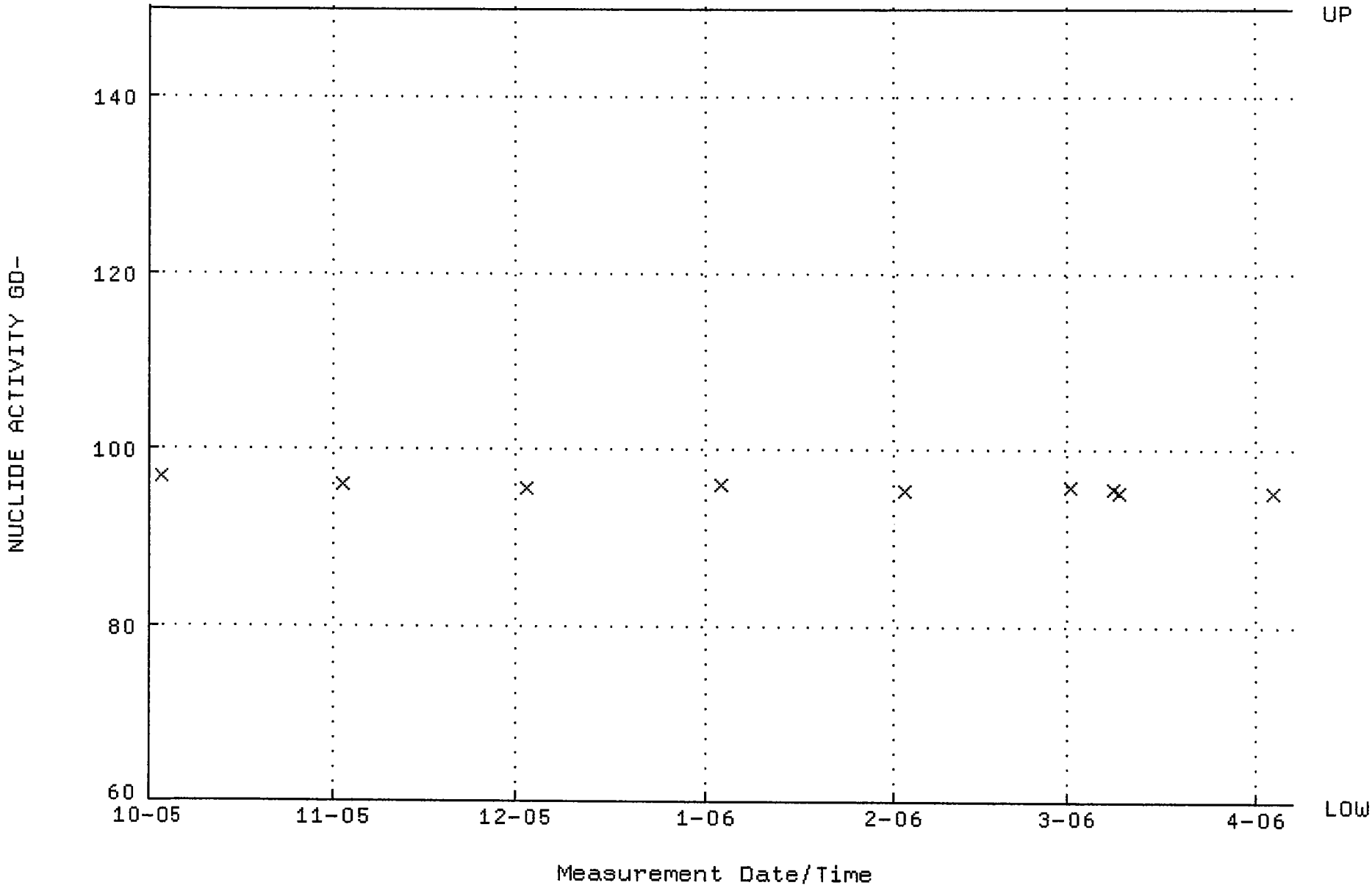


○ Denotes Outlier

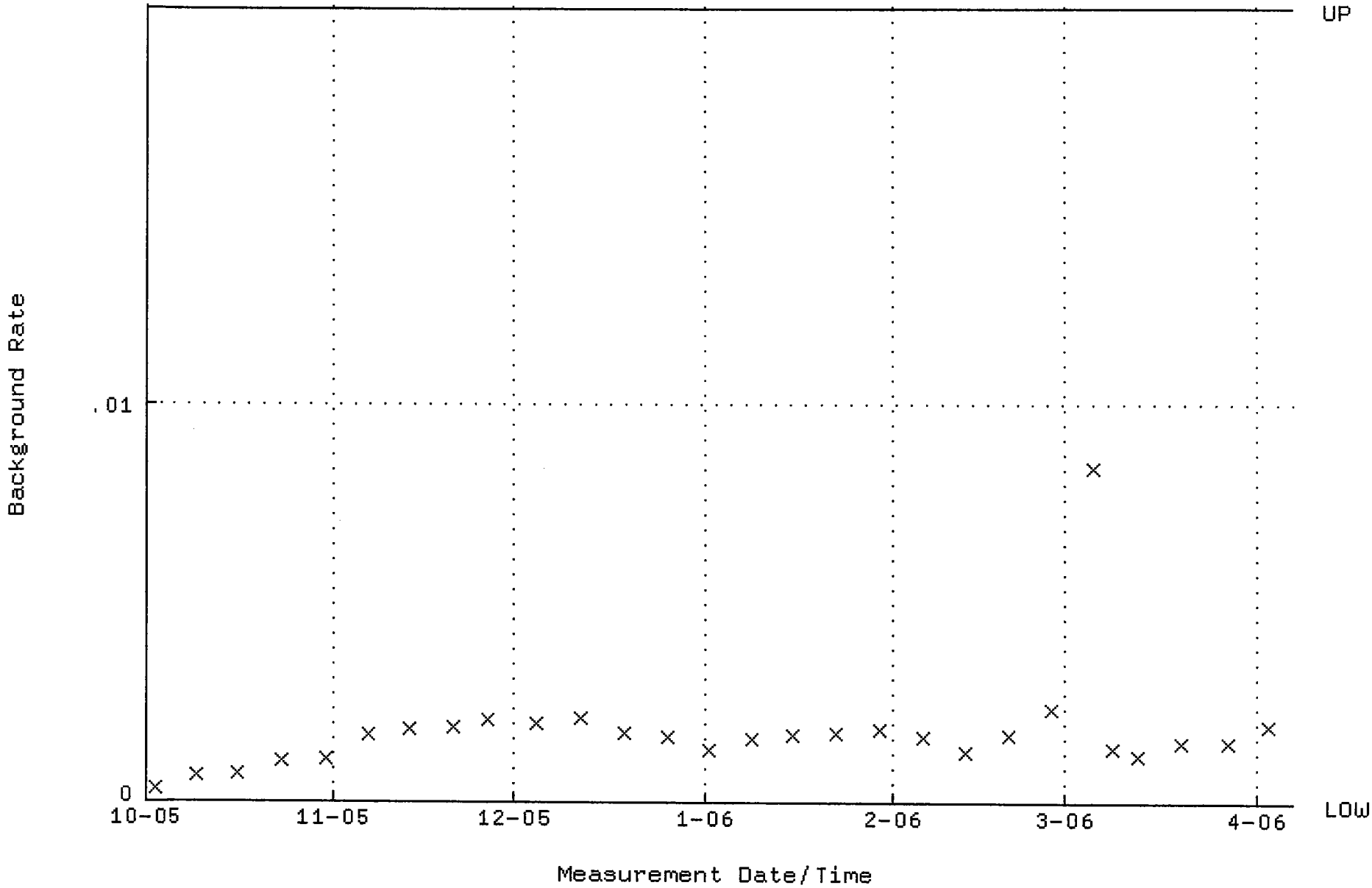
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.260000 through 0.290000



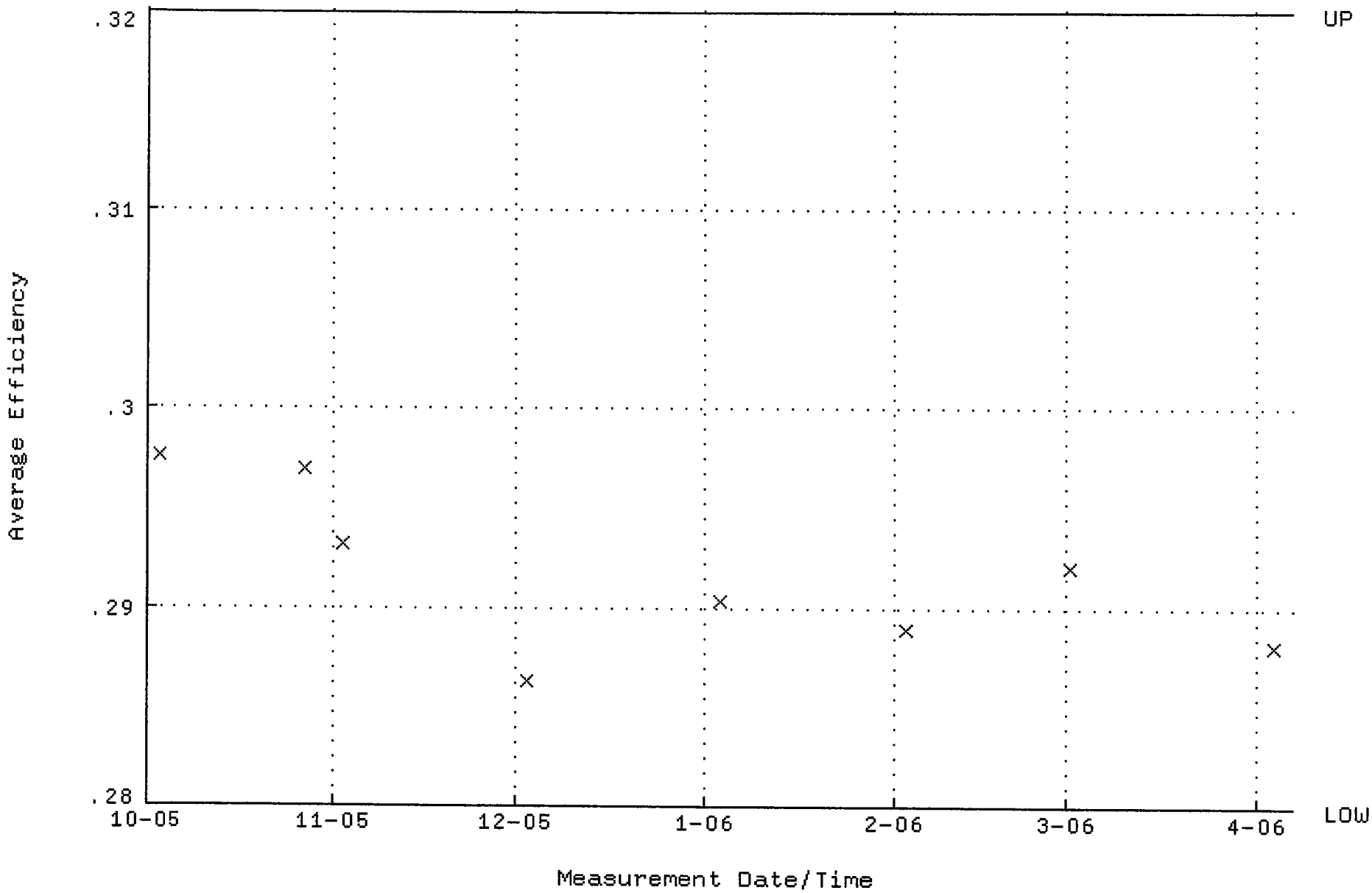
QA filename : DKA100:[ENV_ALPHA.QA.W]W001.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000

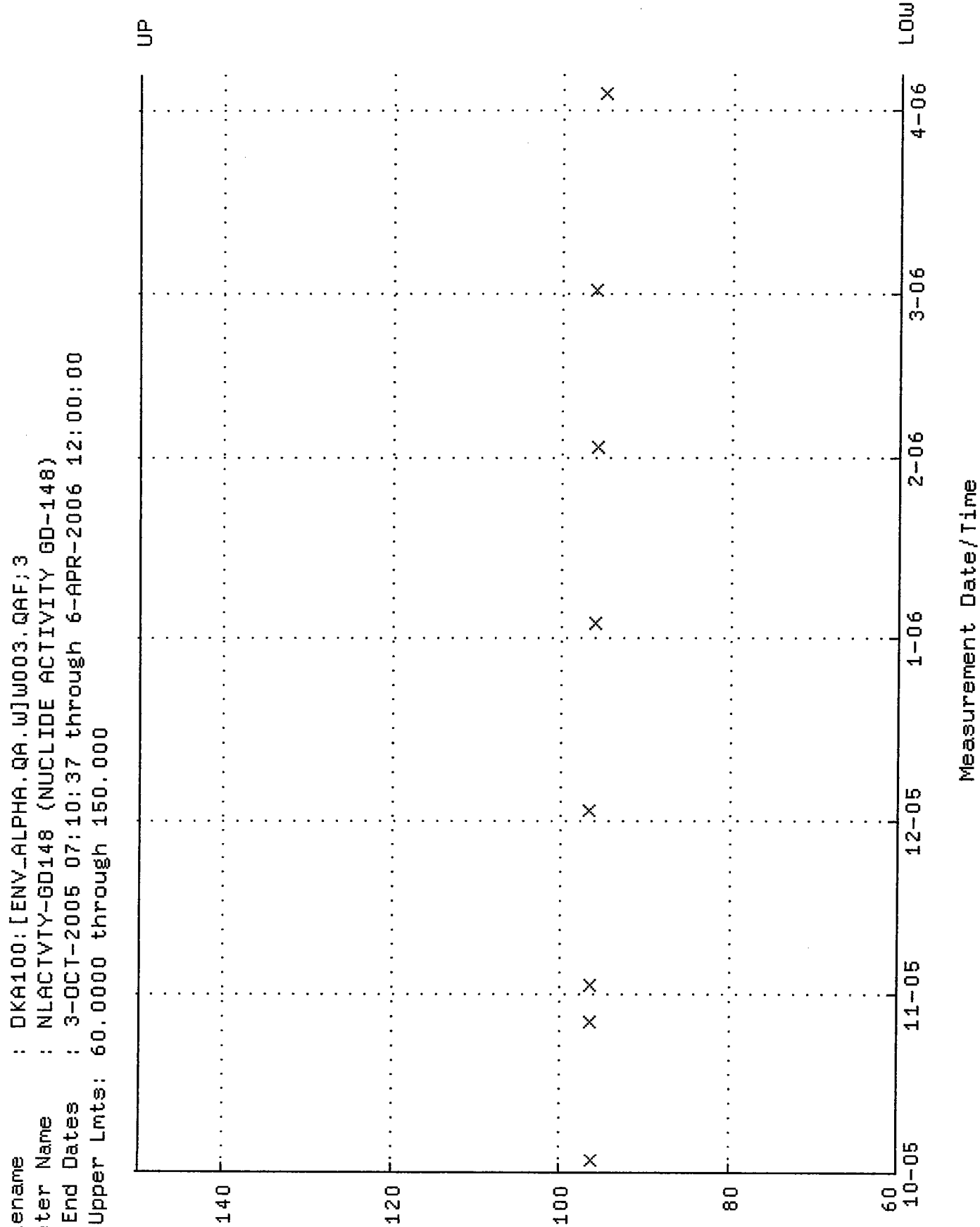


QA filename : DKA100:[ENV_ALPHA.QA.B]B001.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:38 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

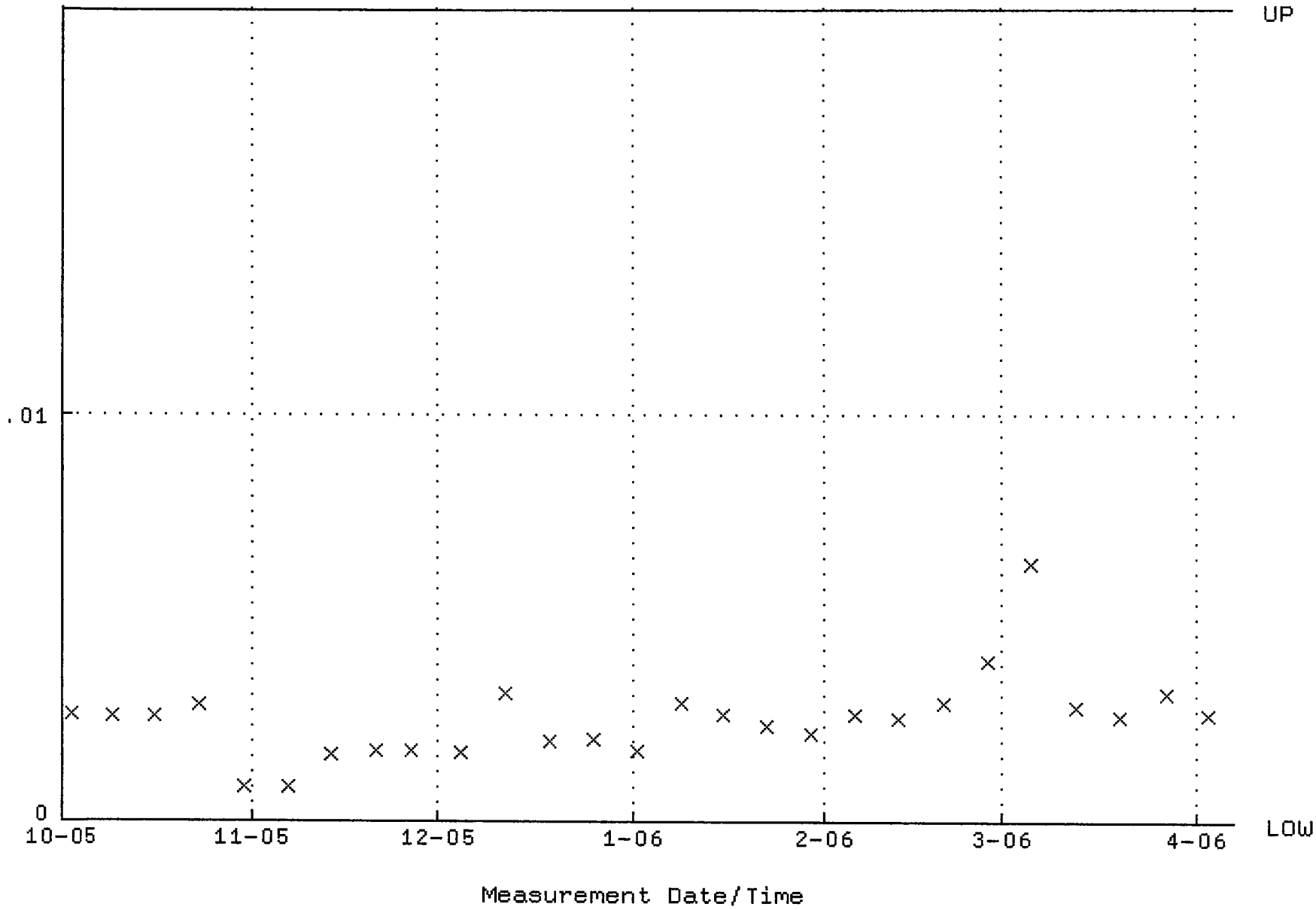


QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.320000

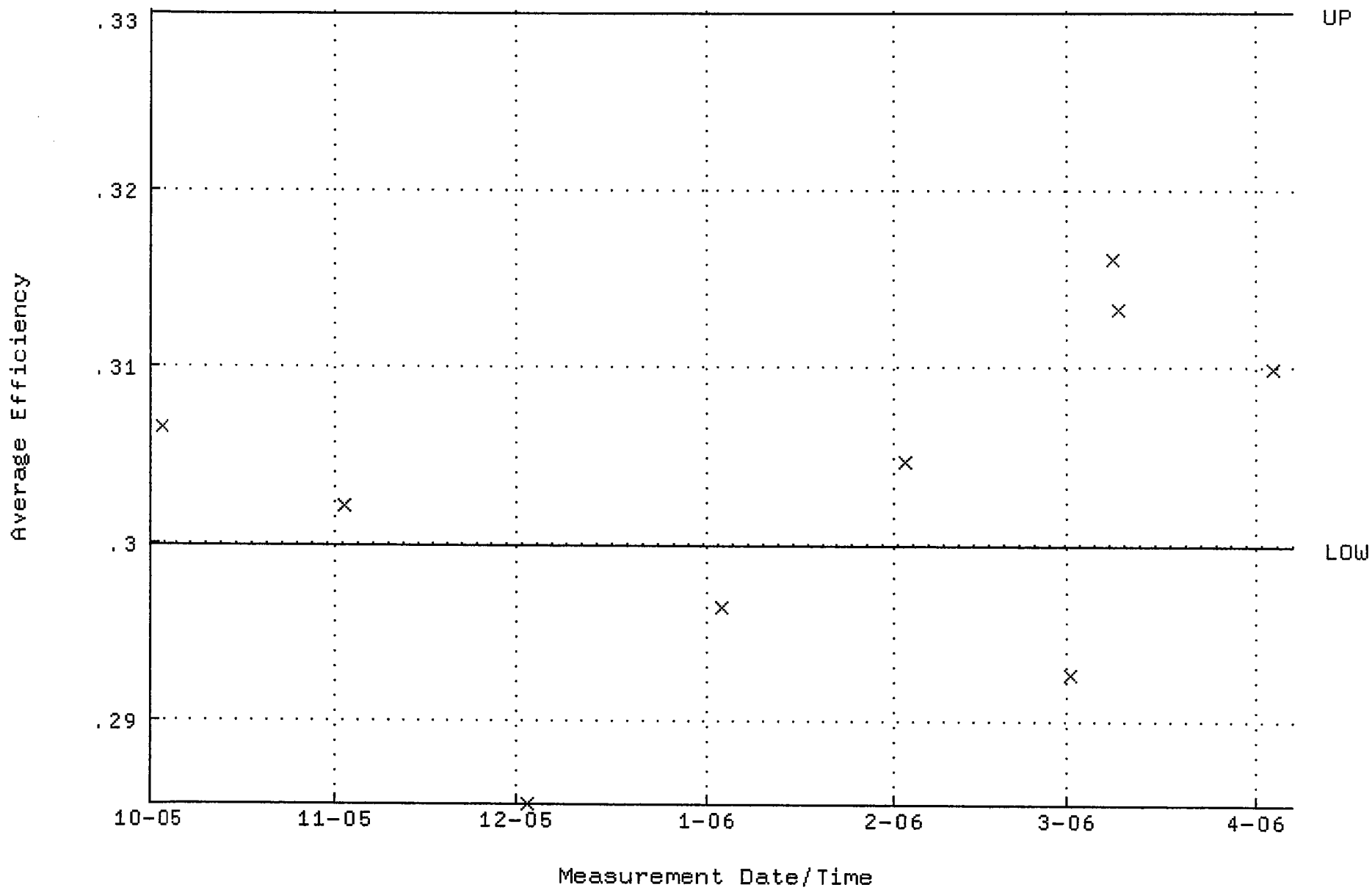



QA filename : DKA100:[ENV_ALPHA.QA.WJW003.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000
UP
LOW
NUCLIDE ACTIVITY GD-
140
120
100
80
60
10-05
11-05
12-05
1-06
2-06
3-06
4-06
Measurement Date/Time

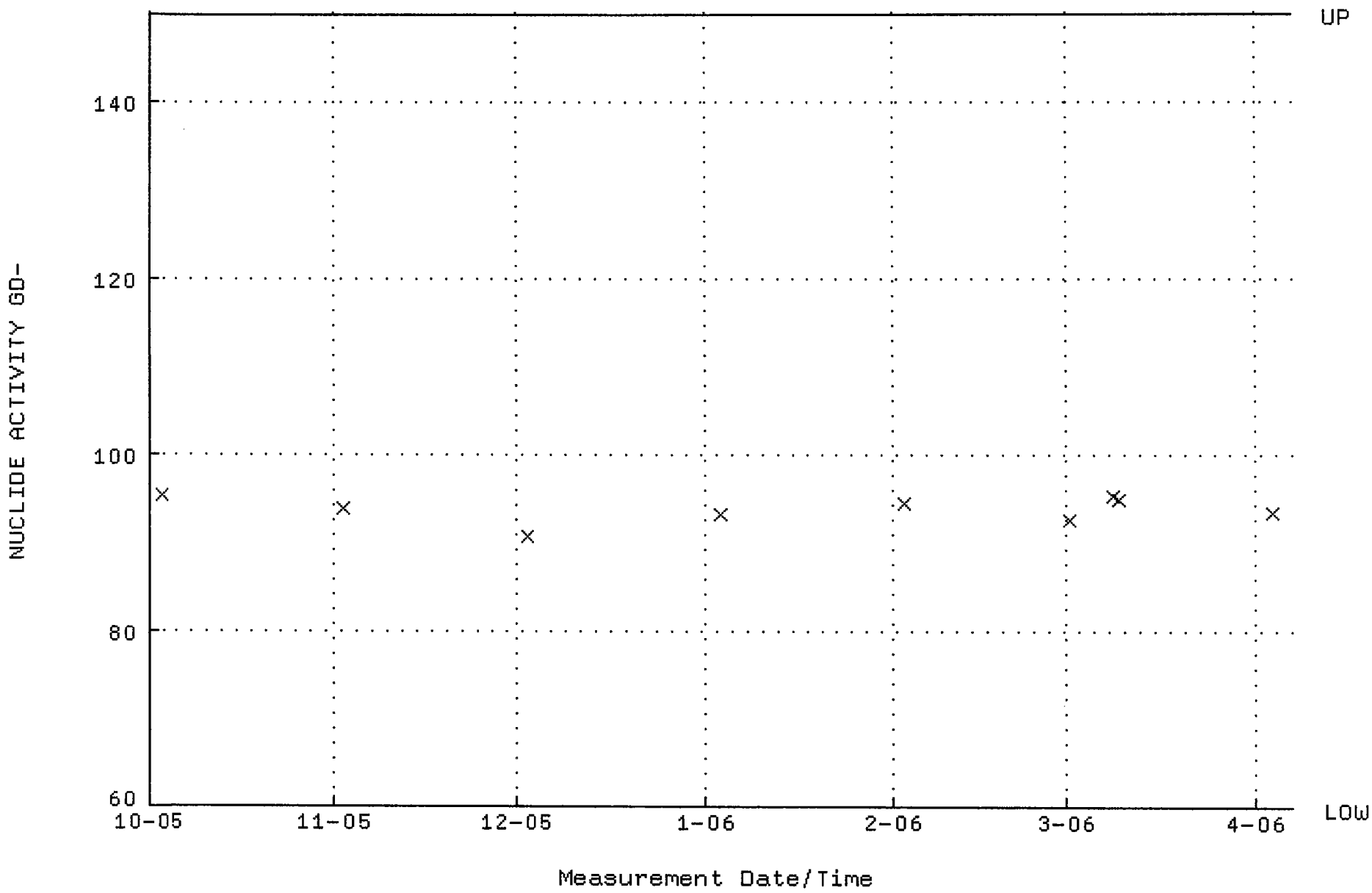
QA filename : DKA100:[ENV_ALPHA.QA.B]B003.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:38 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



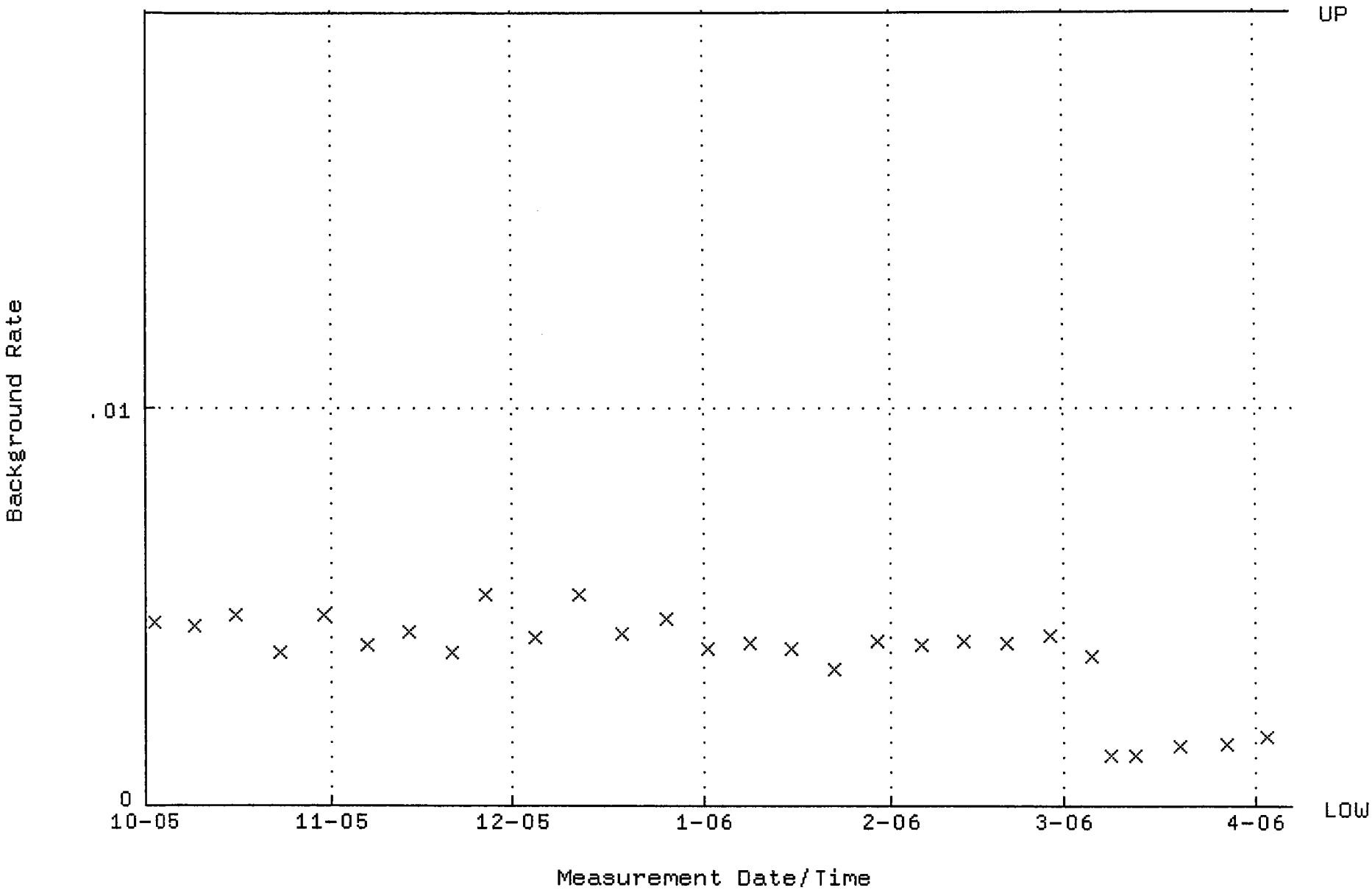
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.300000 through 0.330000



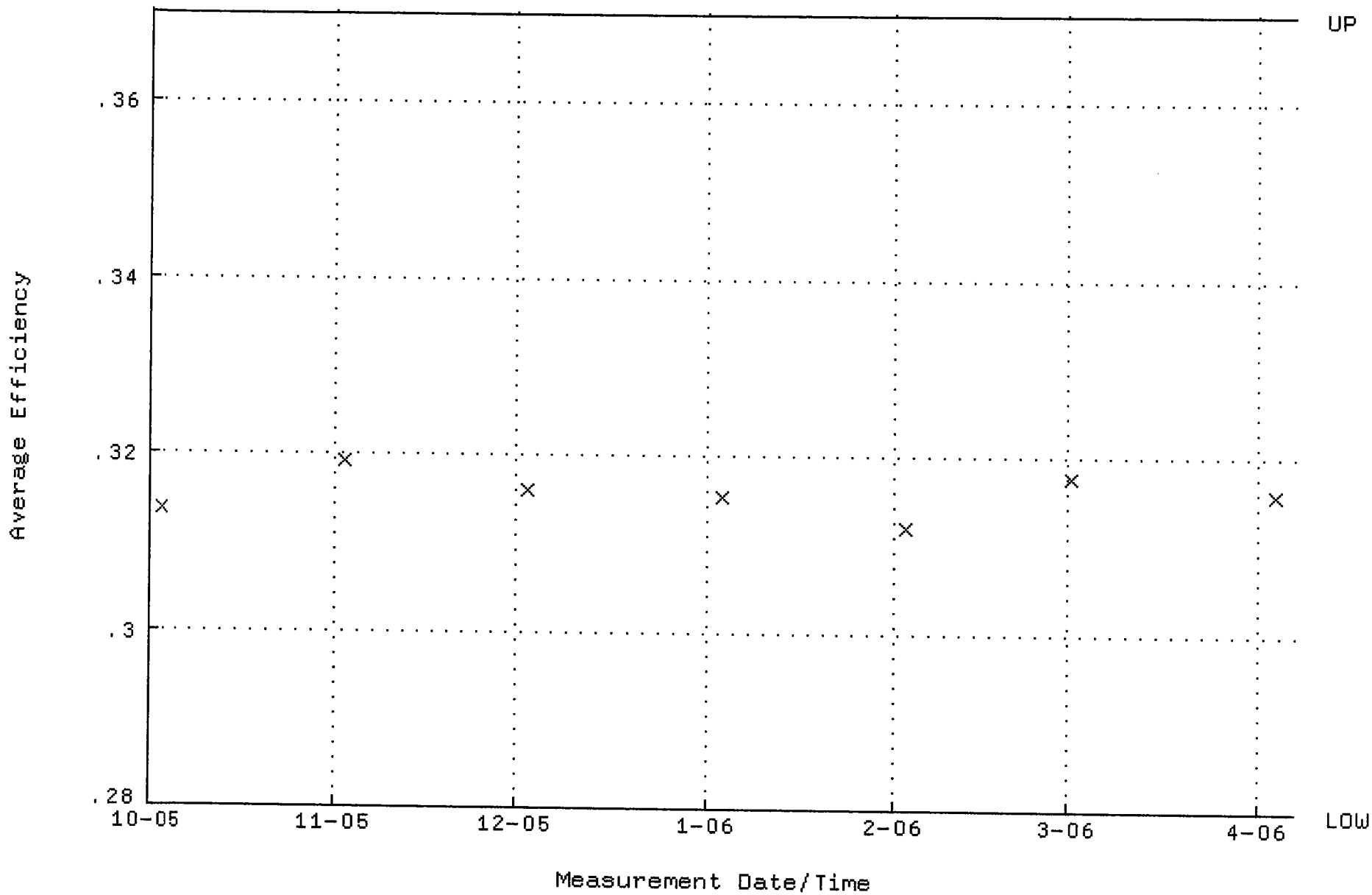
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



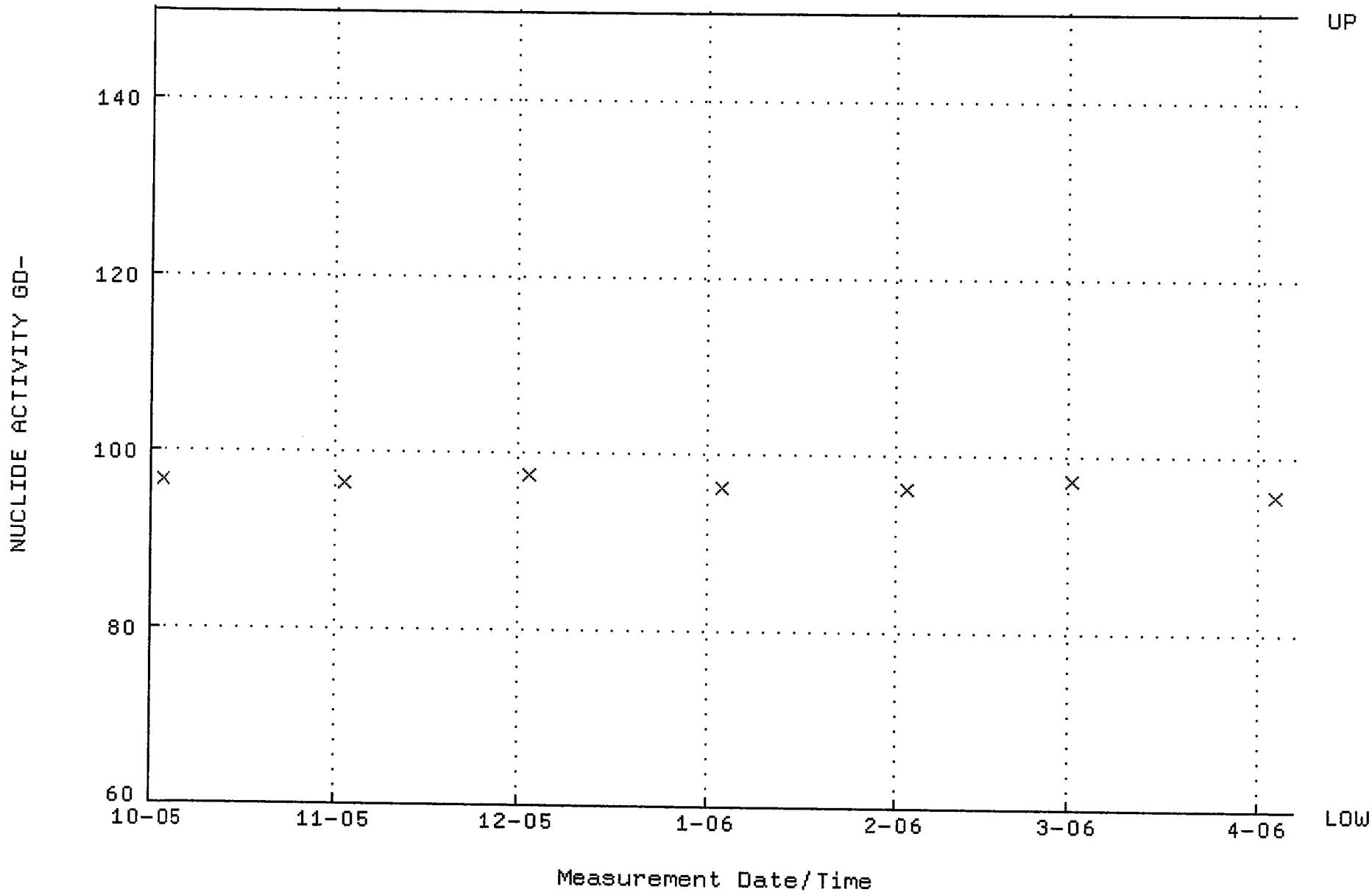
QA filename : DKA100:[ENV_ALPHA.QA.B]B004.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:38 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



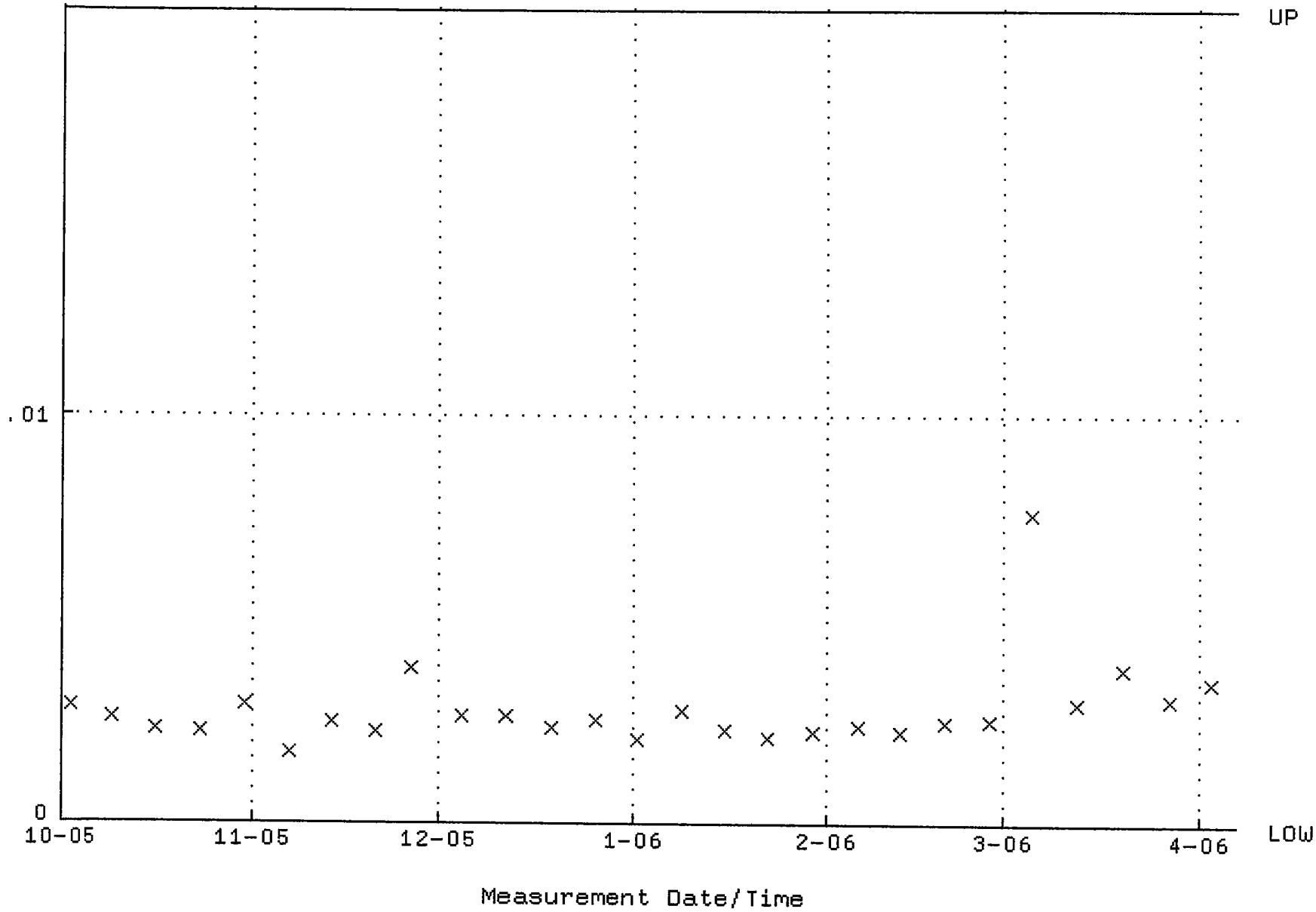
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



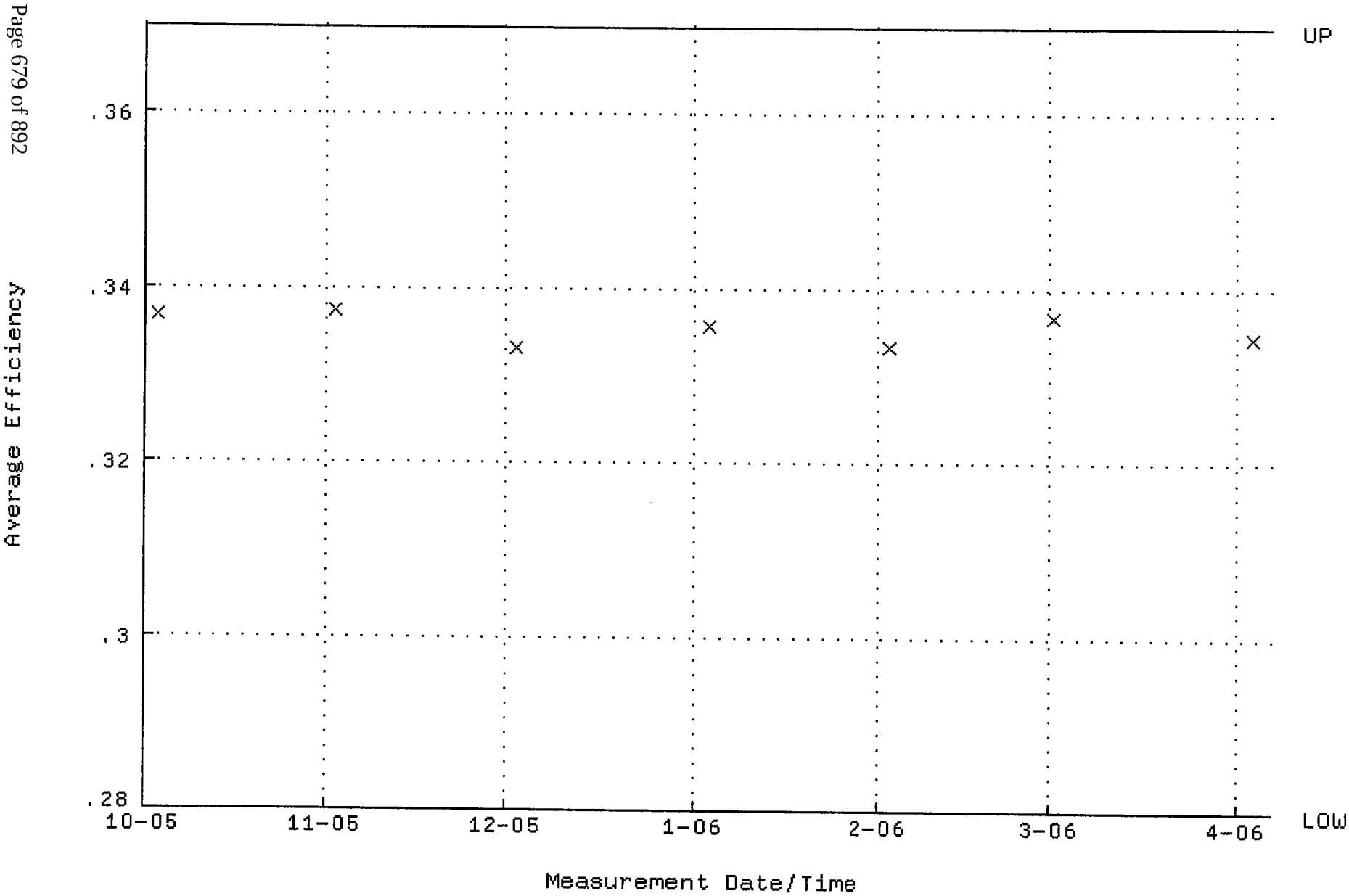
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:37 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



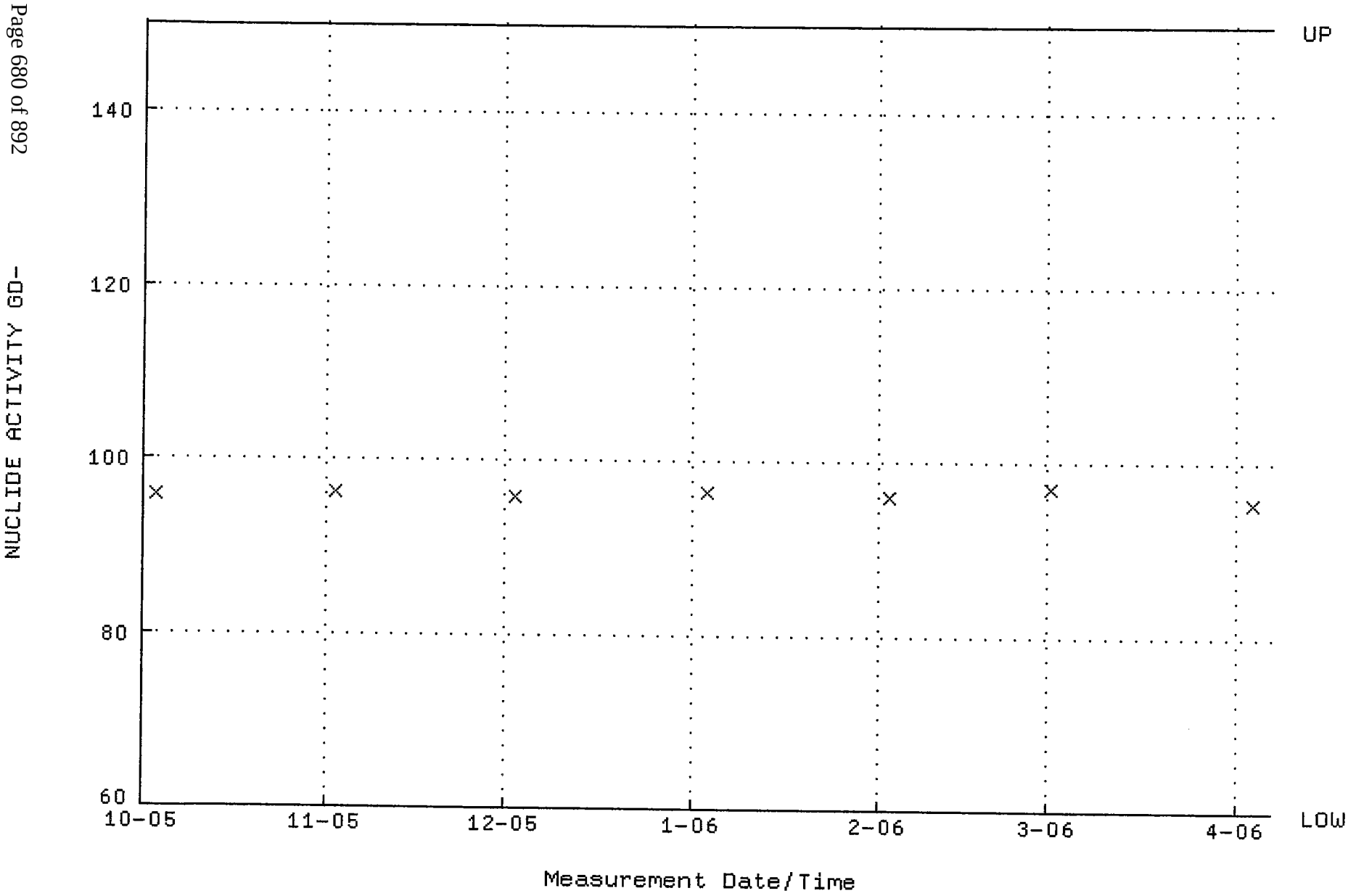
QA filename : DKA100:[ENV_ALPHA.QA.B]B005.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:38 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



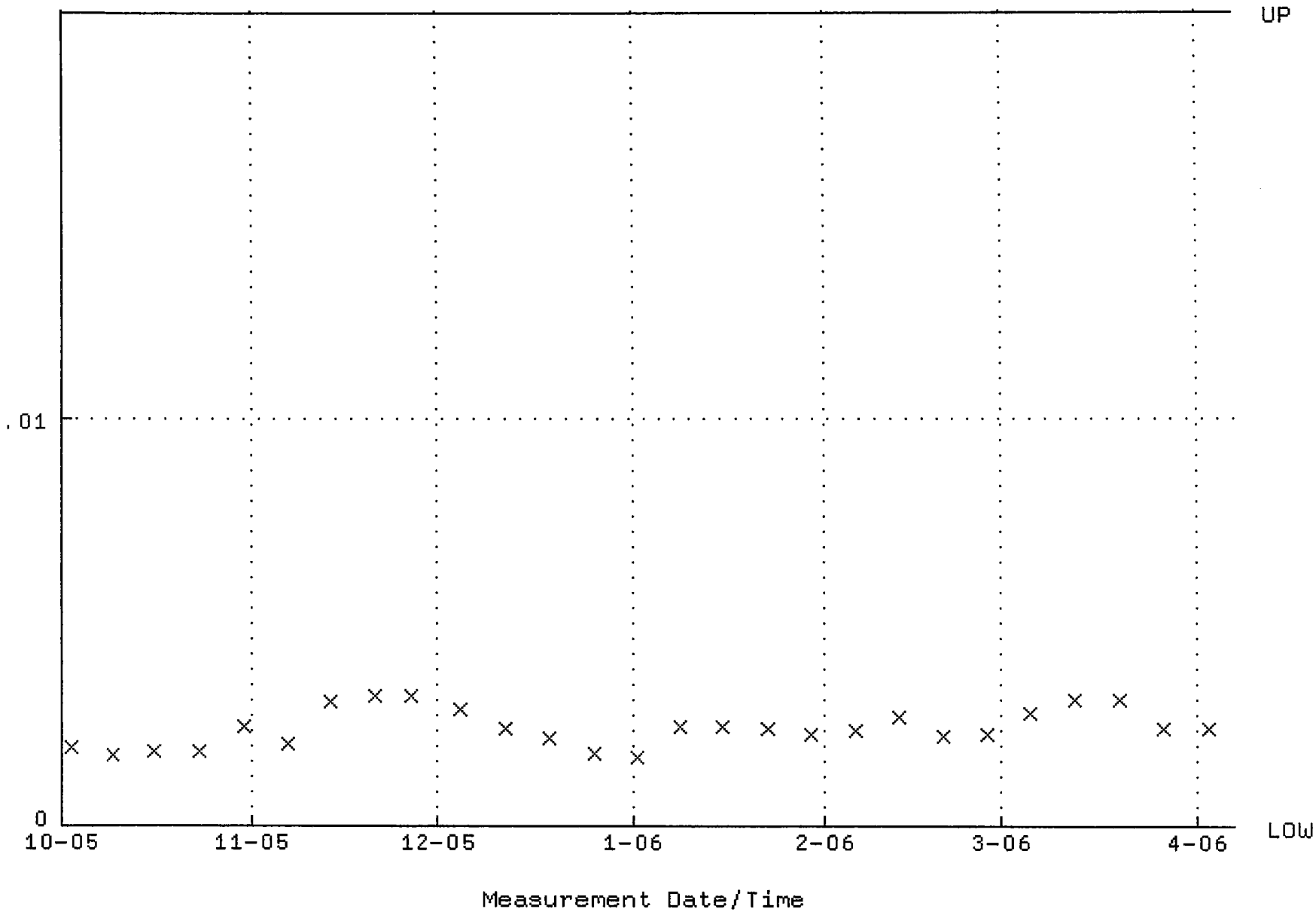
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



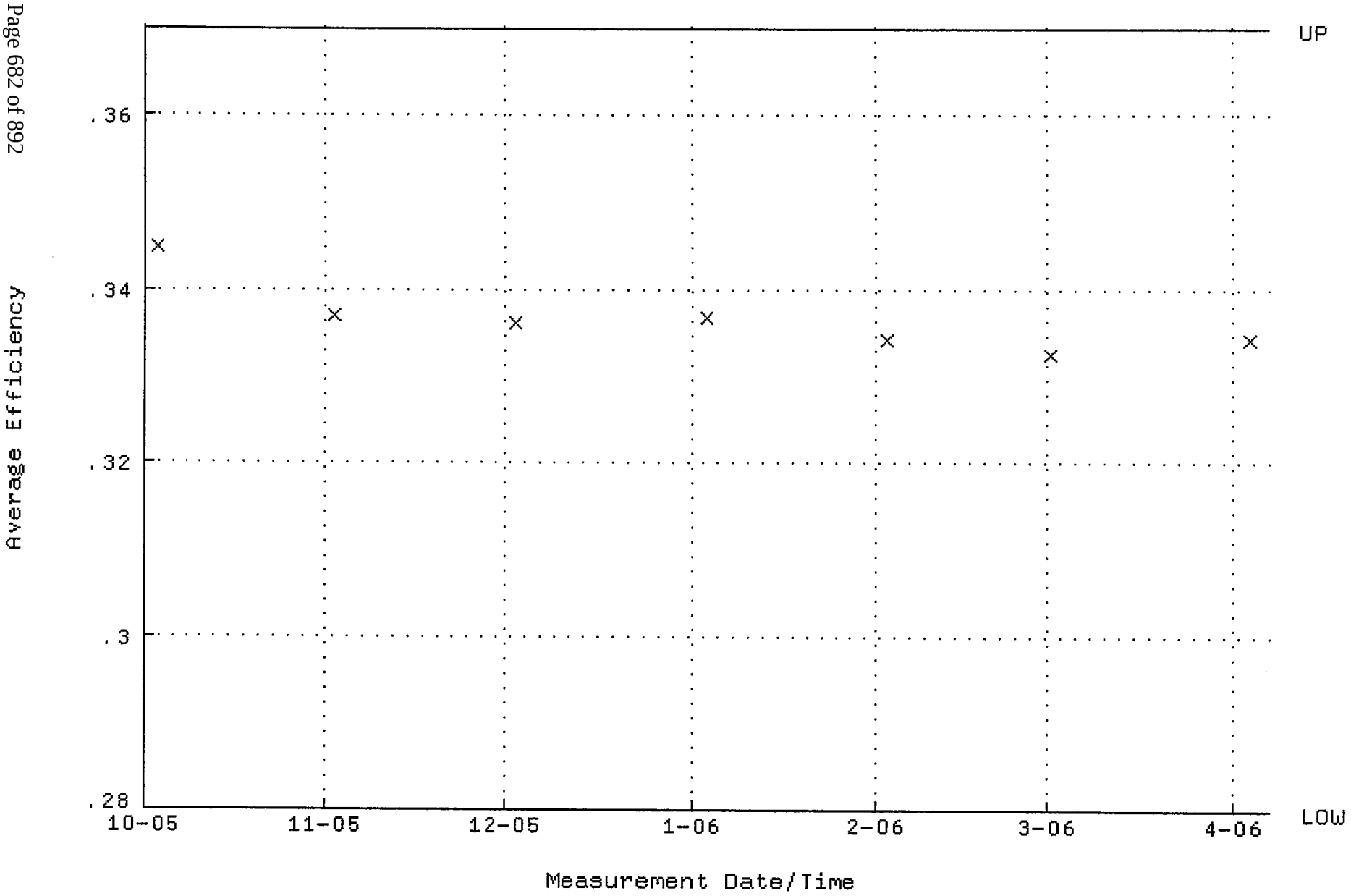
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



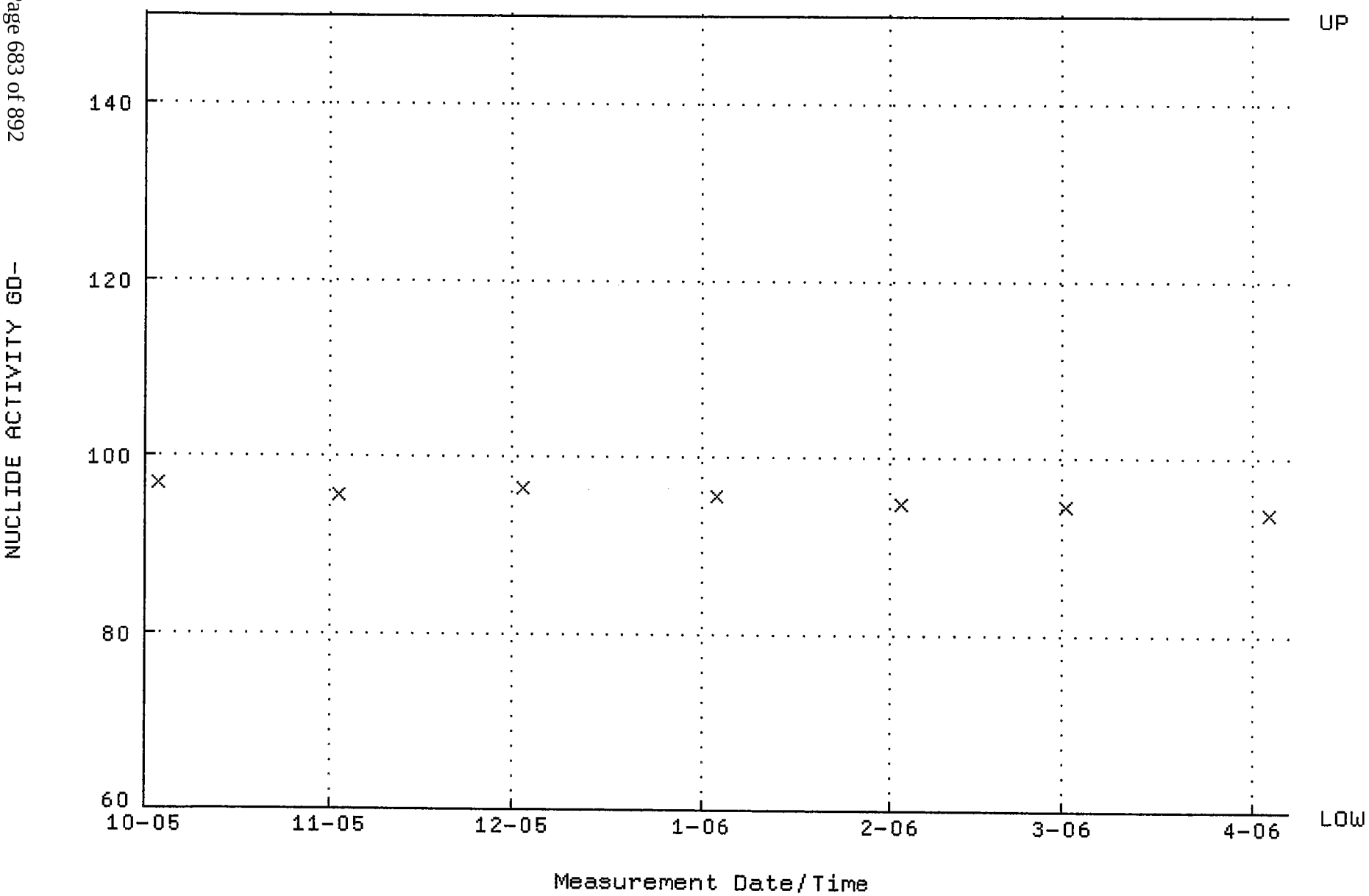
QA filename : DKA100:[ENV_ALPHA.QA.B]B009.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



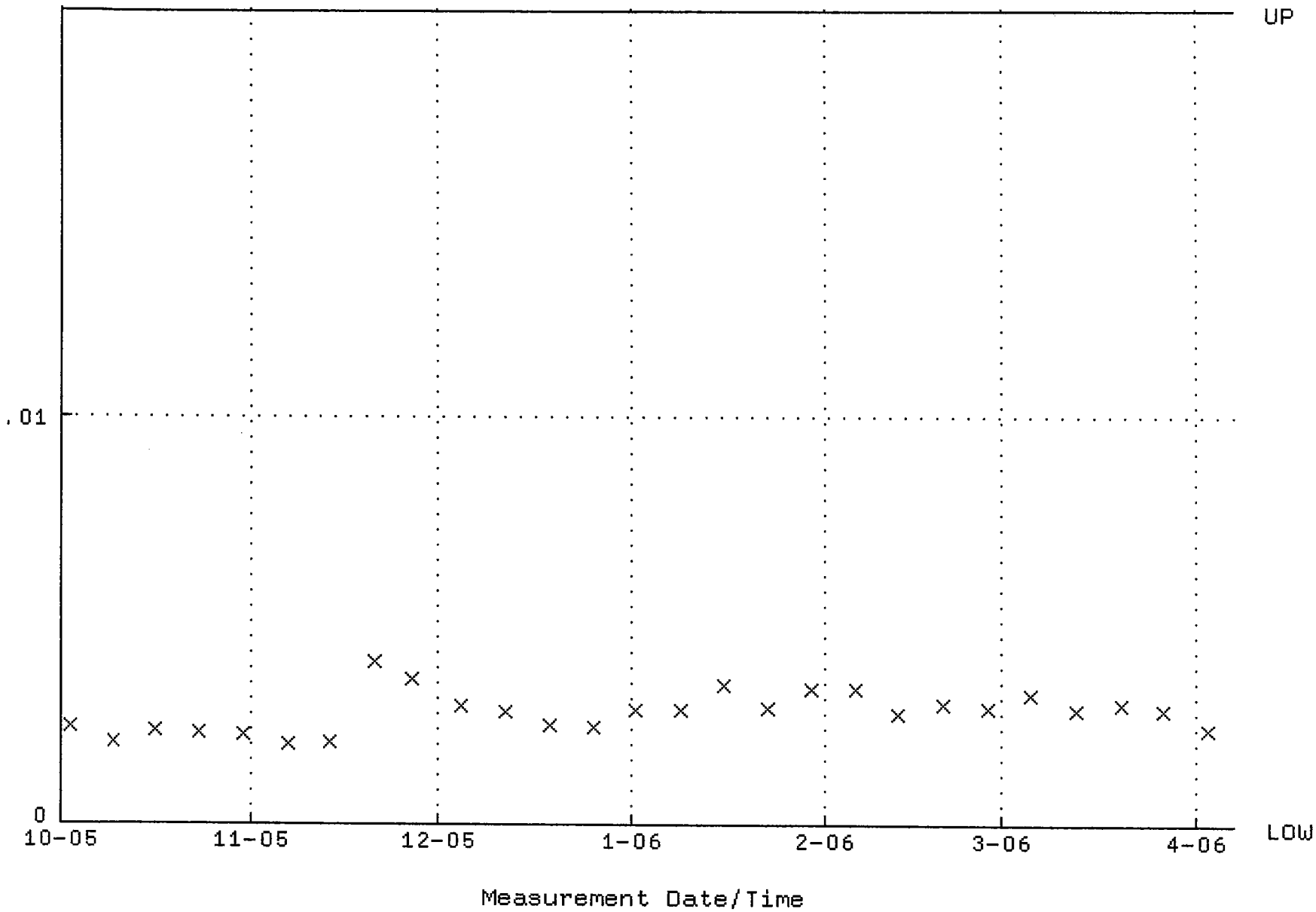
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



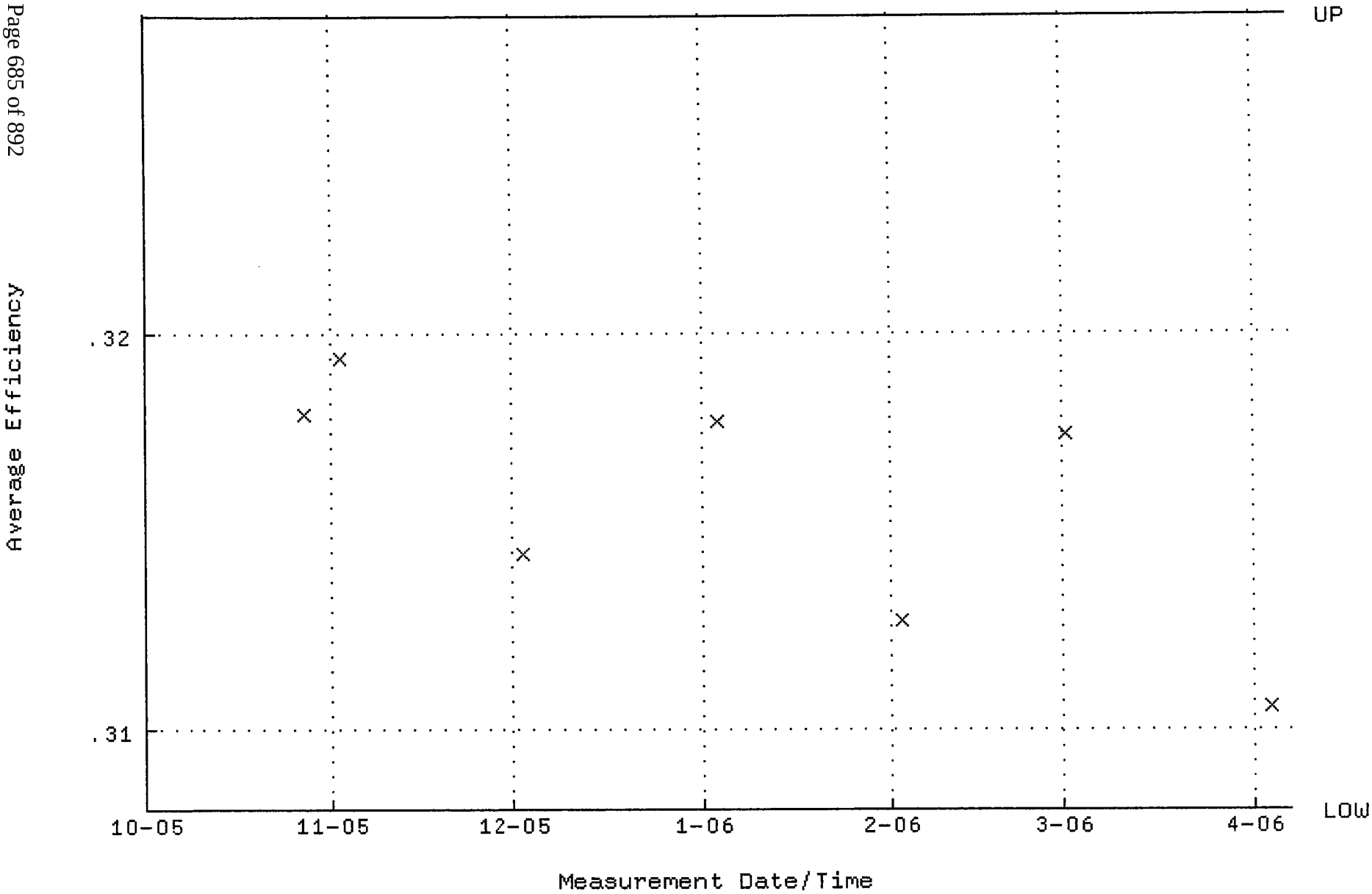
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



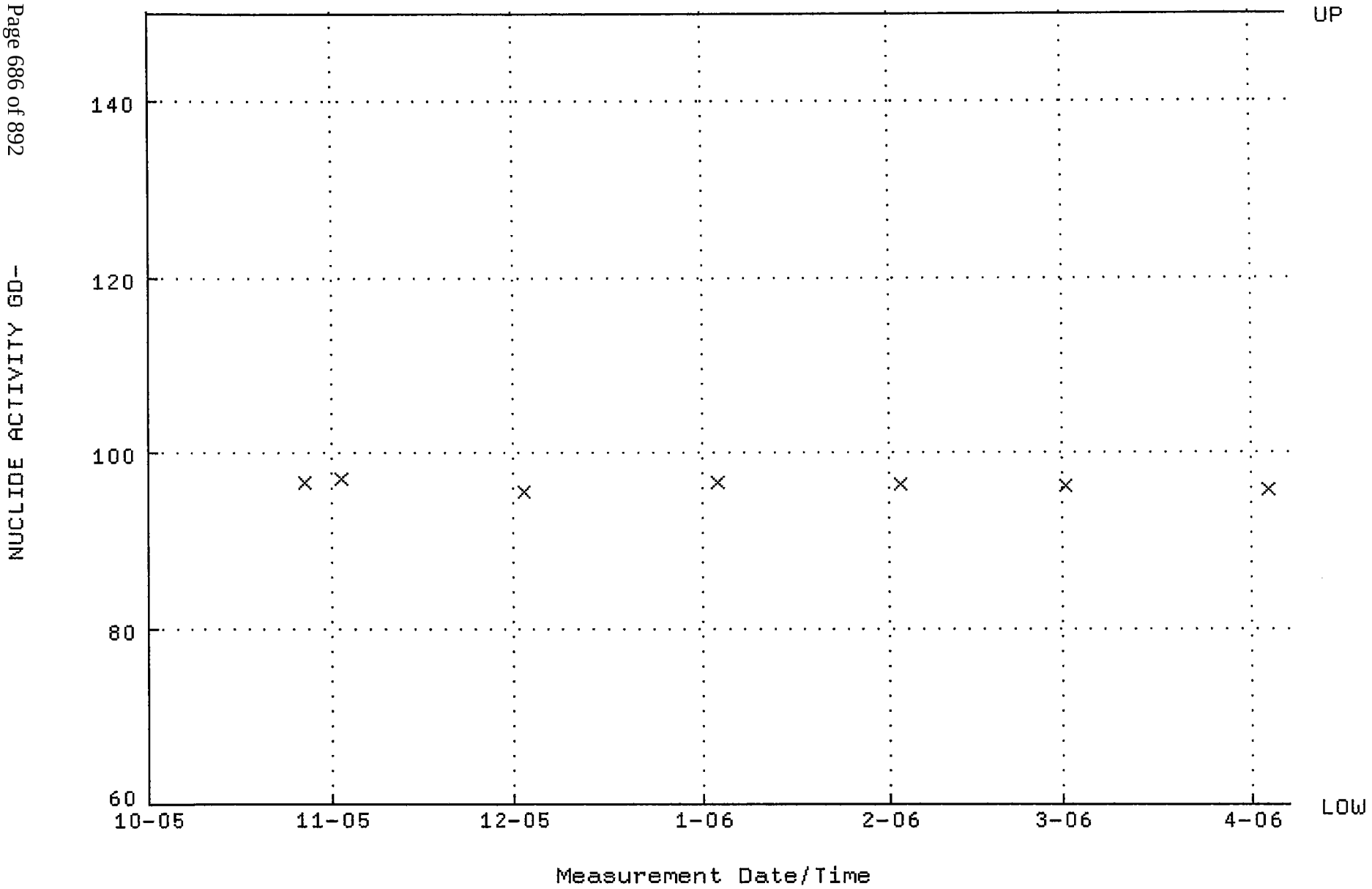
QA filename : DKA100:[ENV_ALPHA.QA.B]B010.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



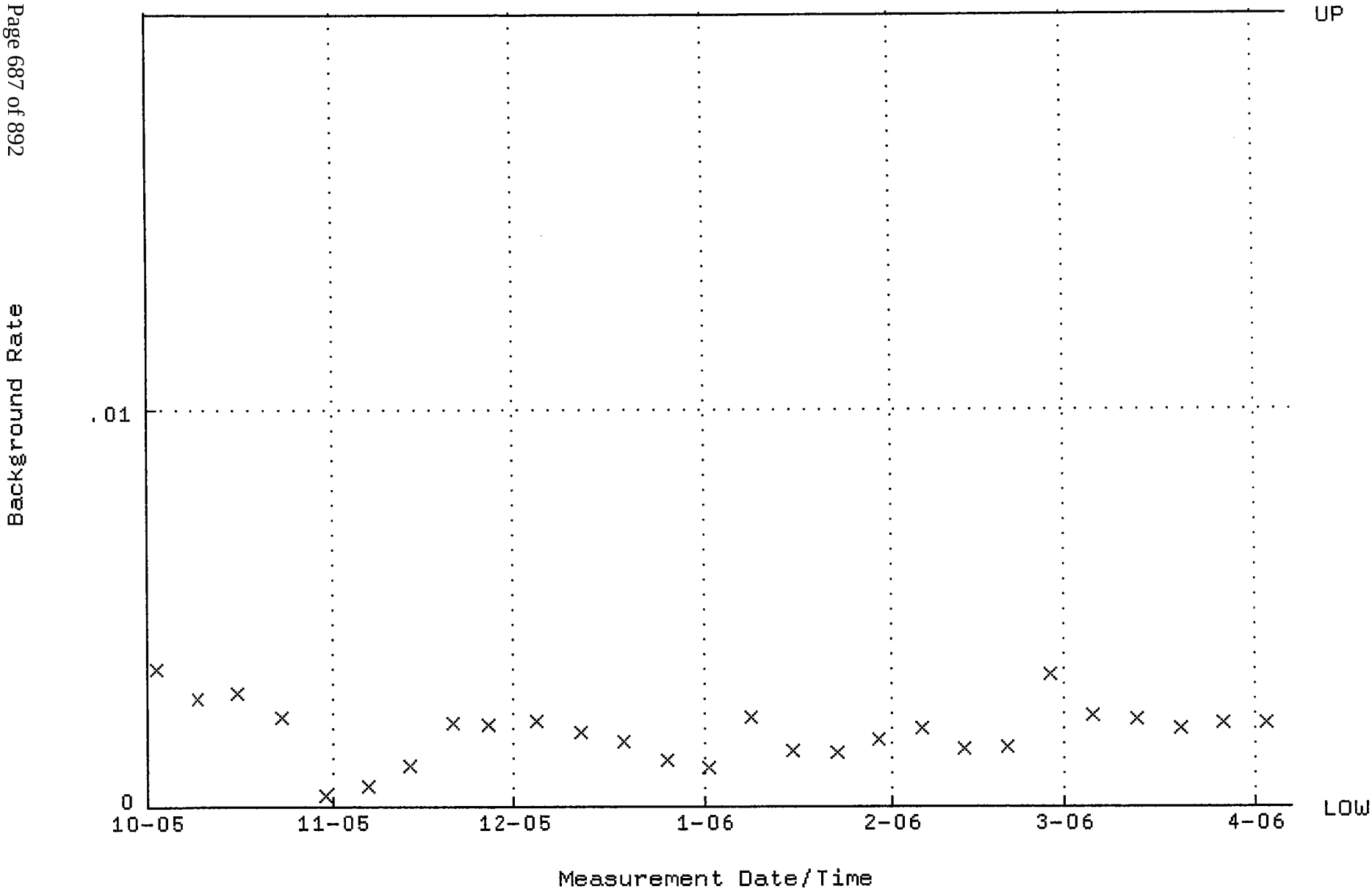
QA filename : DKA100:[ENV_ALPHA.QA.W]W011.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 27-OCT-2005 08:48:47 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.308000 through 0.328000



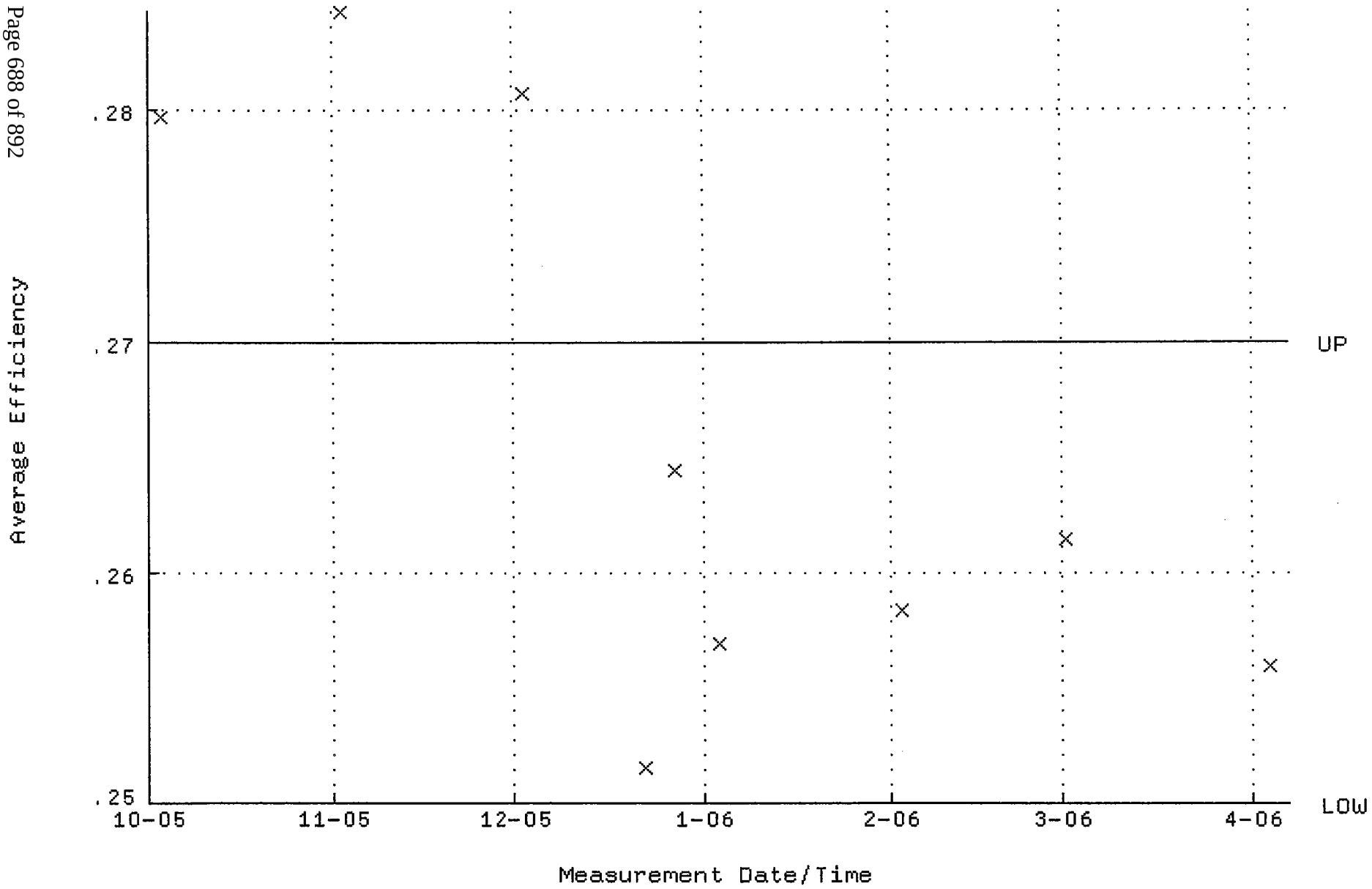
QA filename : DKA100:[ENV_ALPHA.QA.W]W011.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 27-OCT-2005 08:48:47 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



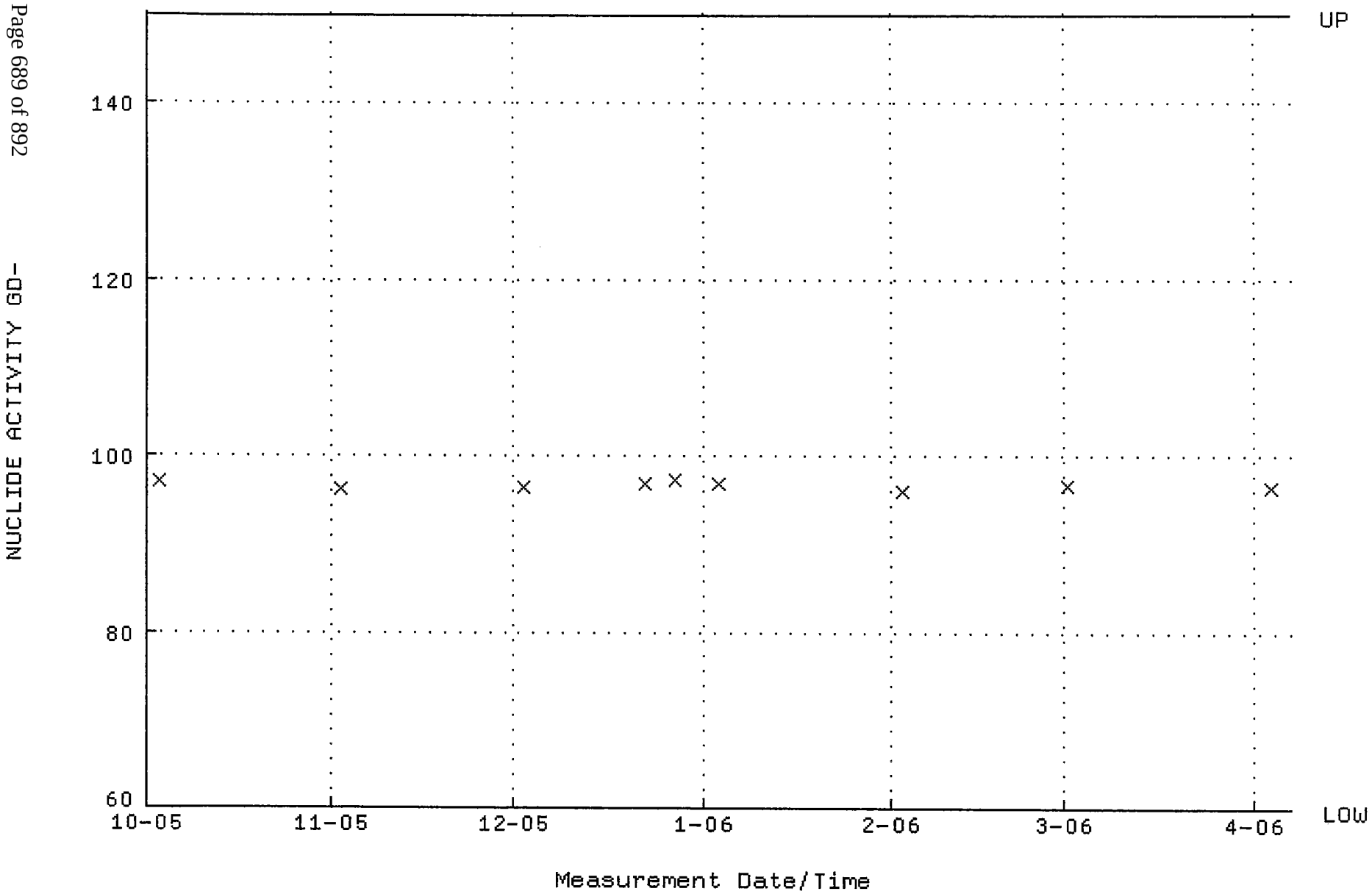
QA filename : DKA100:[ENV_ALPHA.QA.B]B011.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:39 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



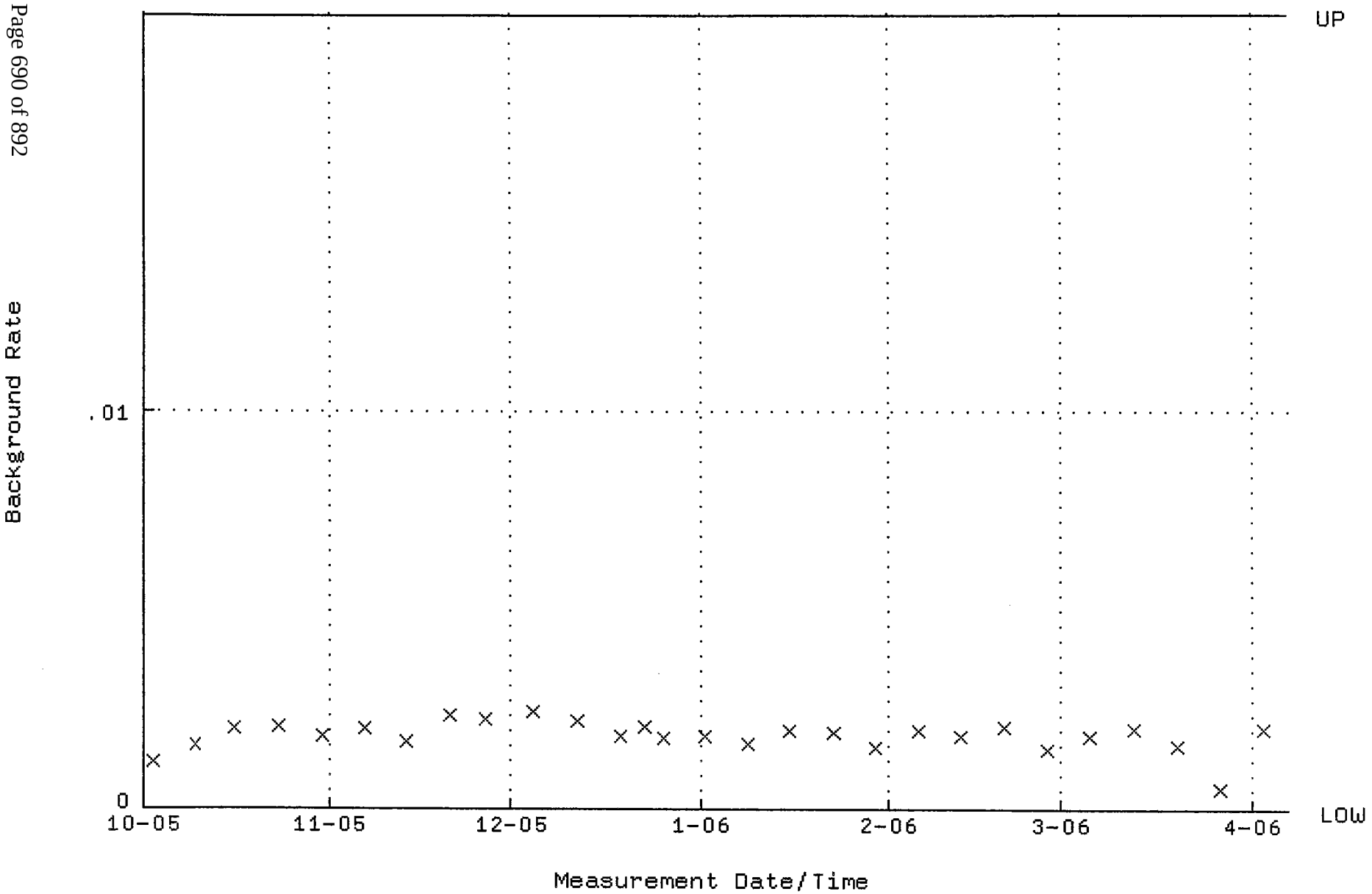
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.250000 through 0.270000



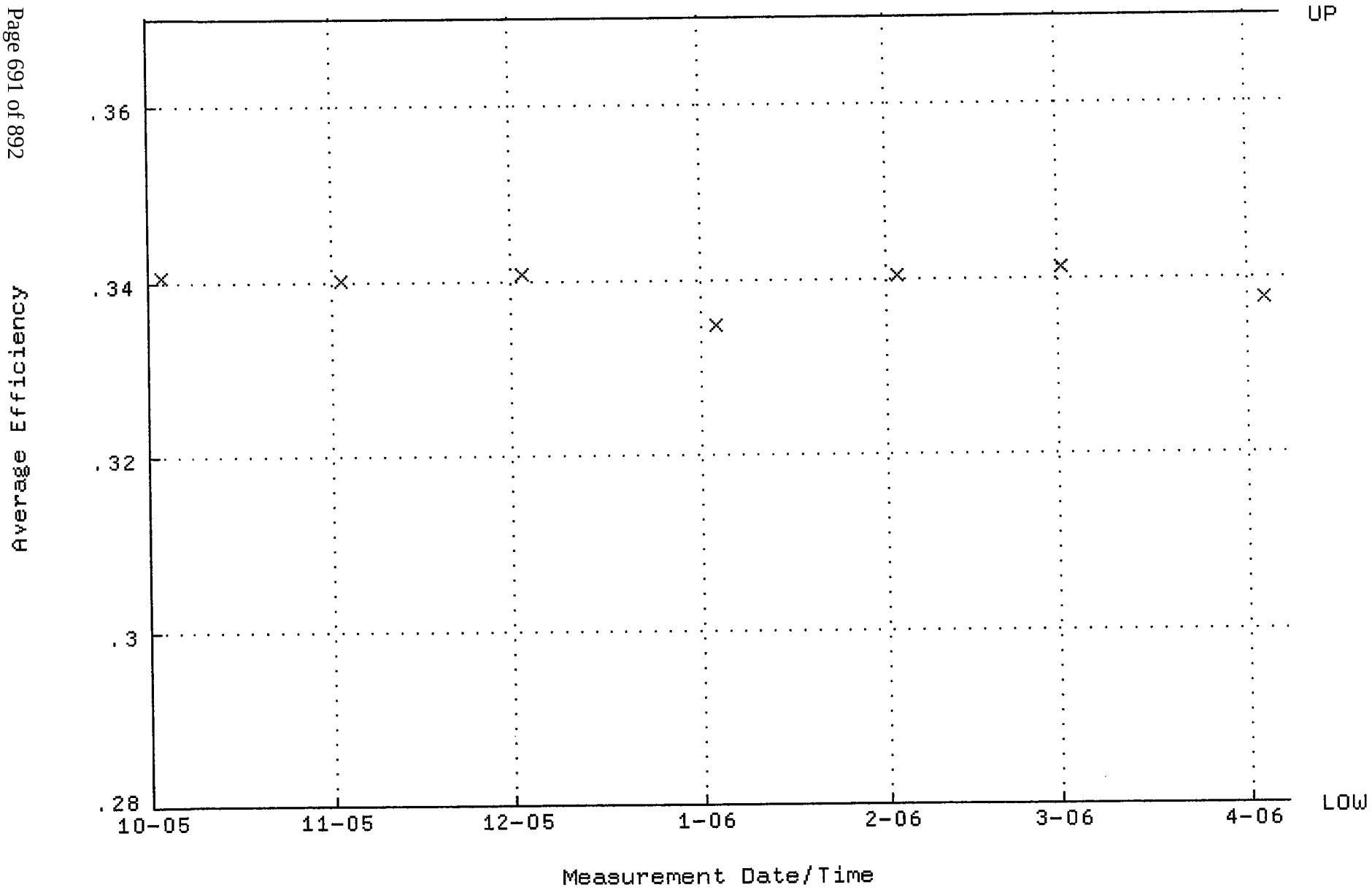
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



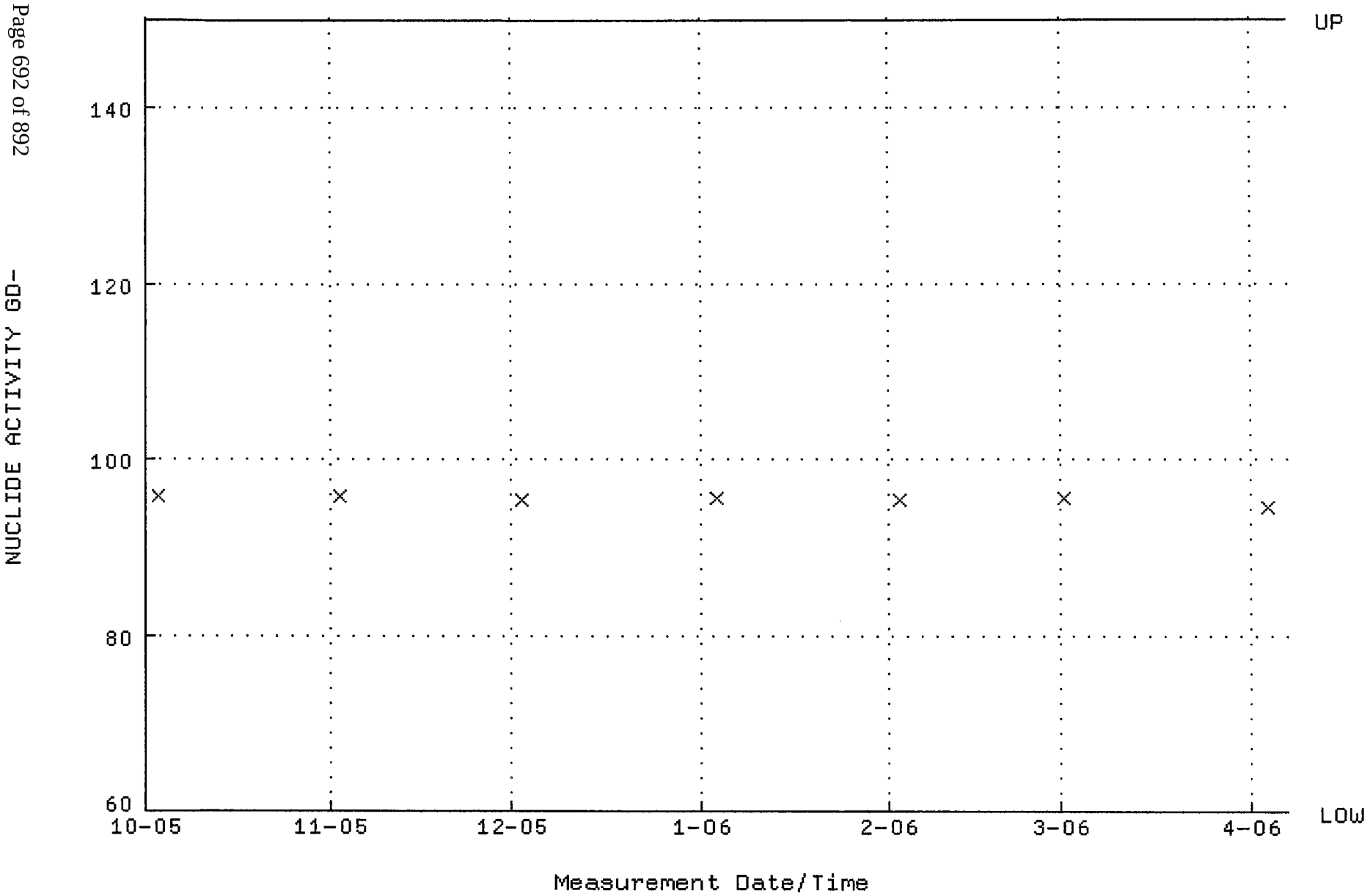
QA filename : DKA100:[ENV_ALPHA.QA.B]B018.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:40 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



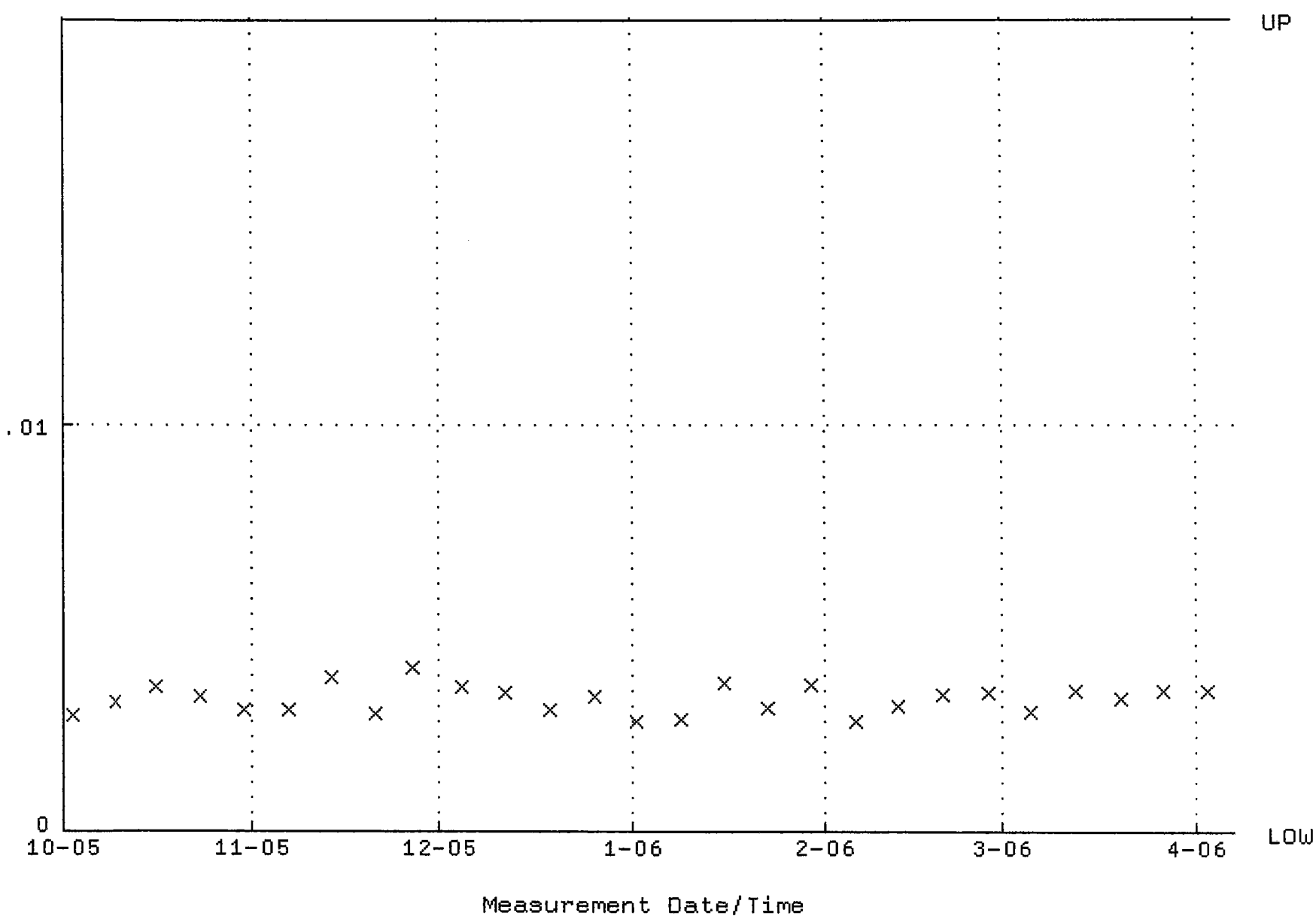
QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



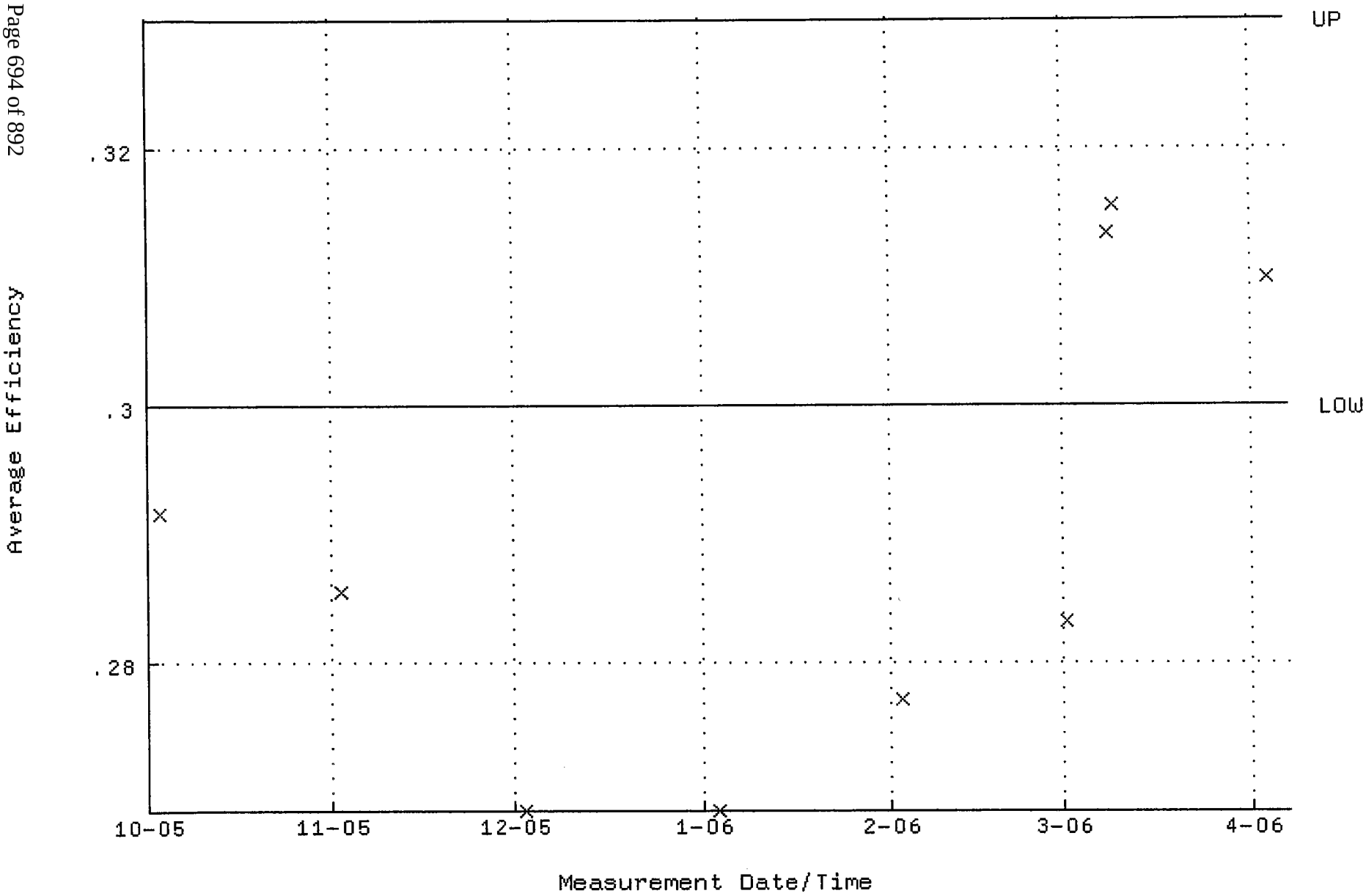
QA filename : DKA100:[ENV_ALPHA.QA.W]W020.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



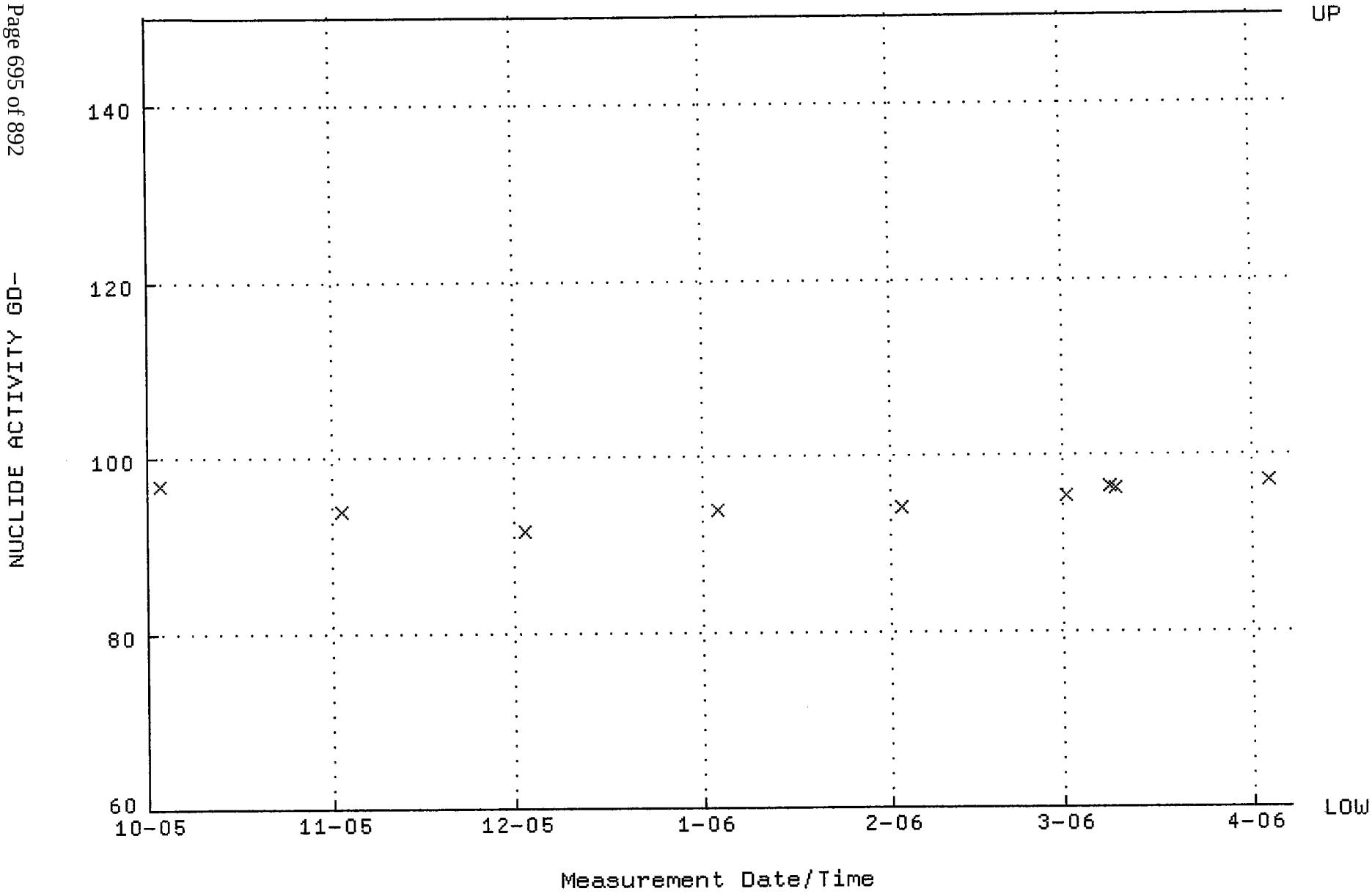
QA filename : DKA100:[ENV_ALPHA.QA.B]B020.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



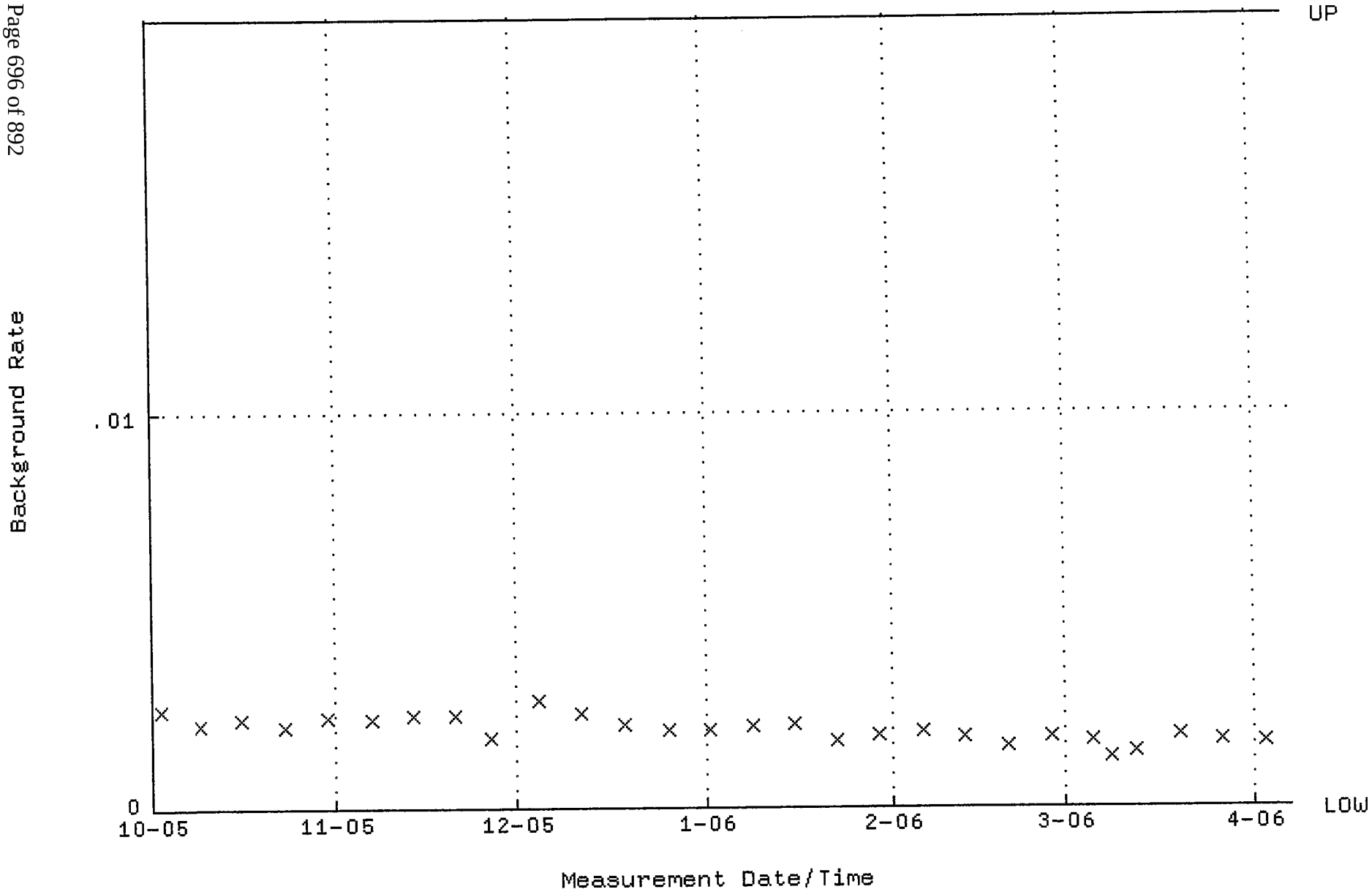
QA filename : DKA100:[ENV_ALPHA.QA.W]W021.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.300000 through 0.330000



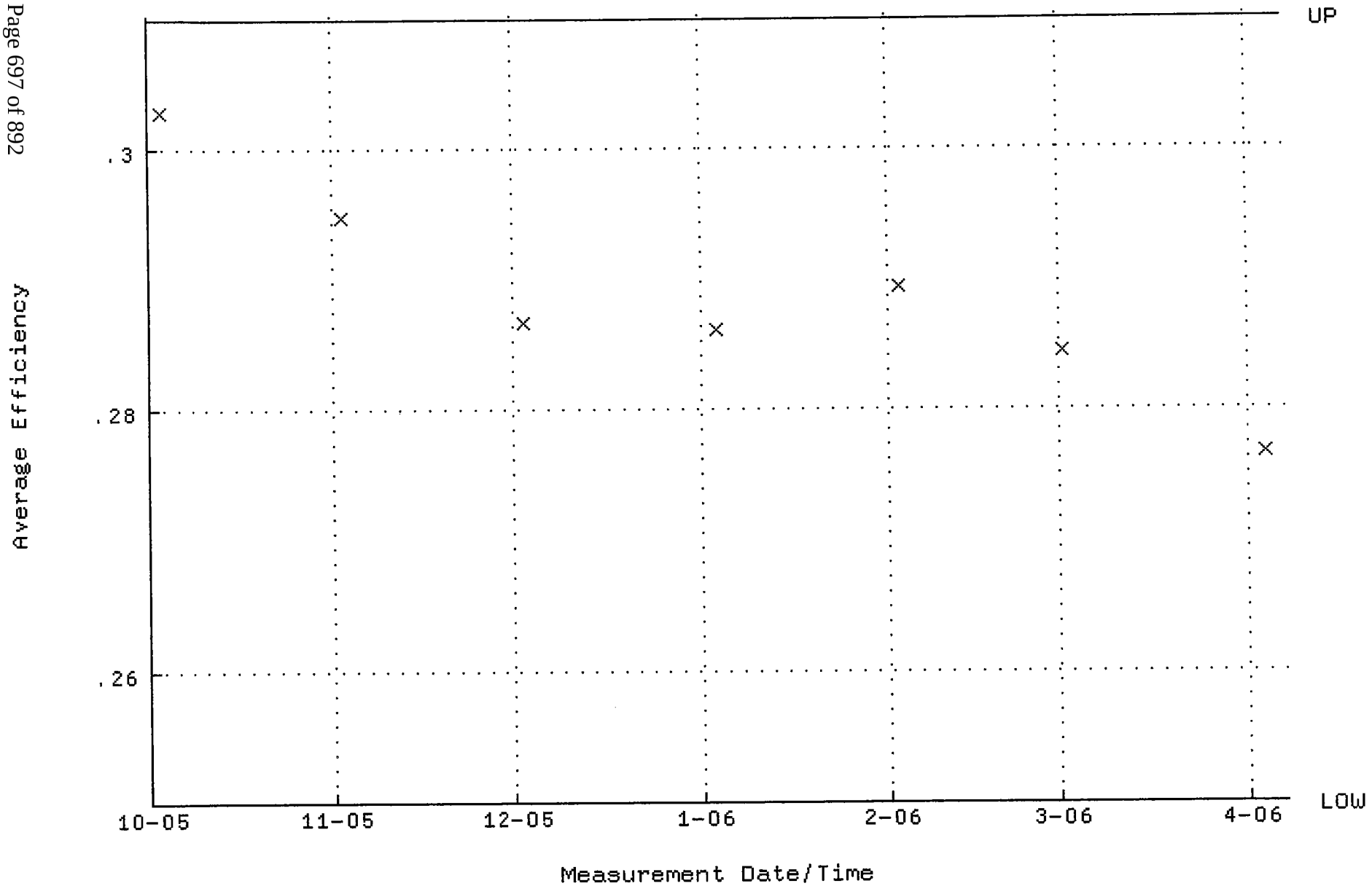
QA filename : DKA100:[ENV_ALPHA.QA.W]W021.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



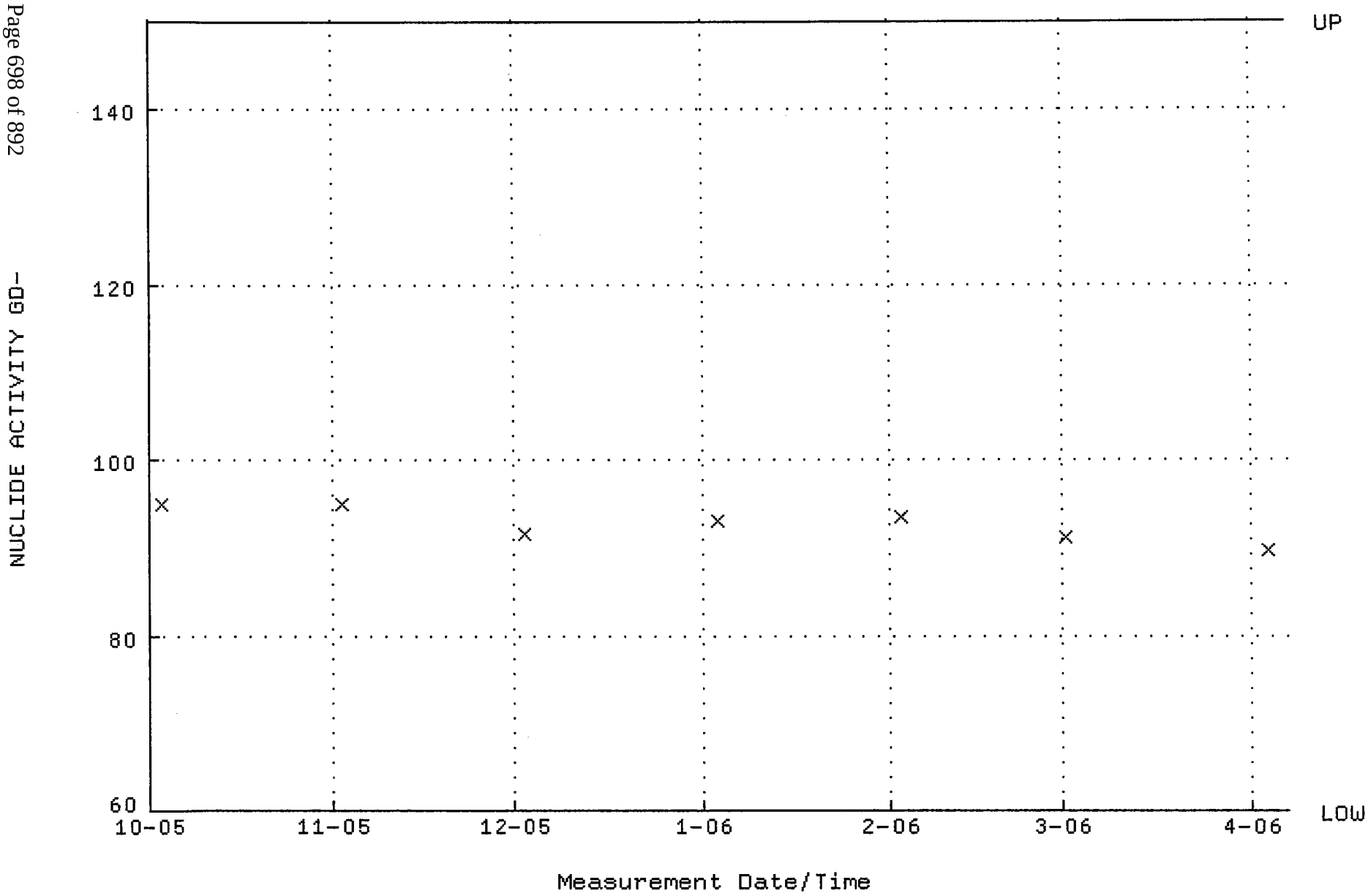
QA filename : DKA100:[ENV_ALPHA.QA.B]B021.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



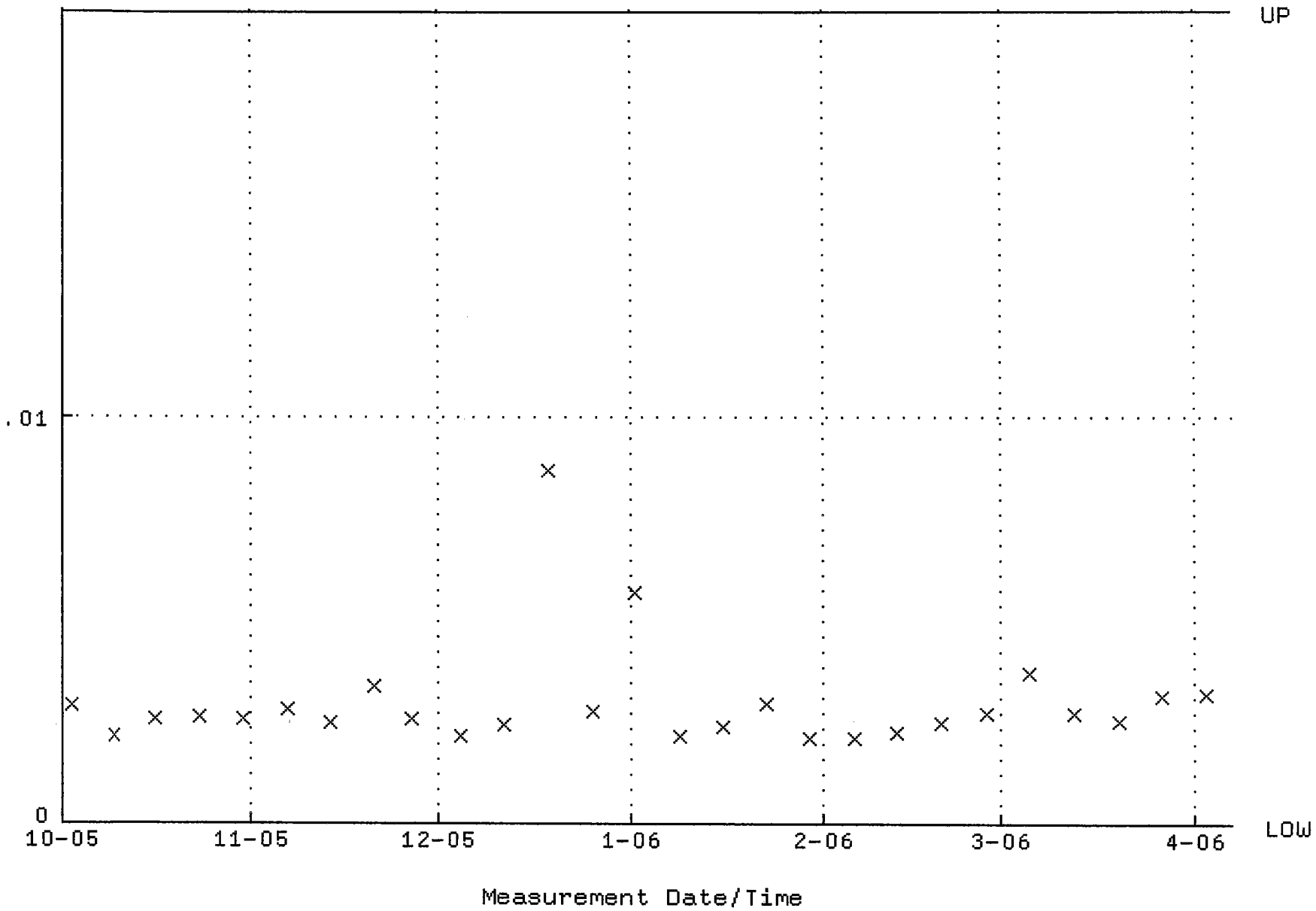
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.250000 through 0.310000



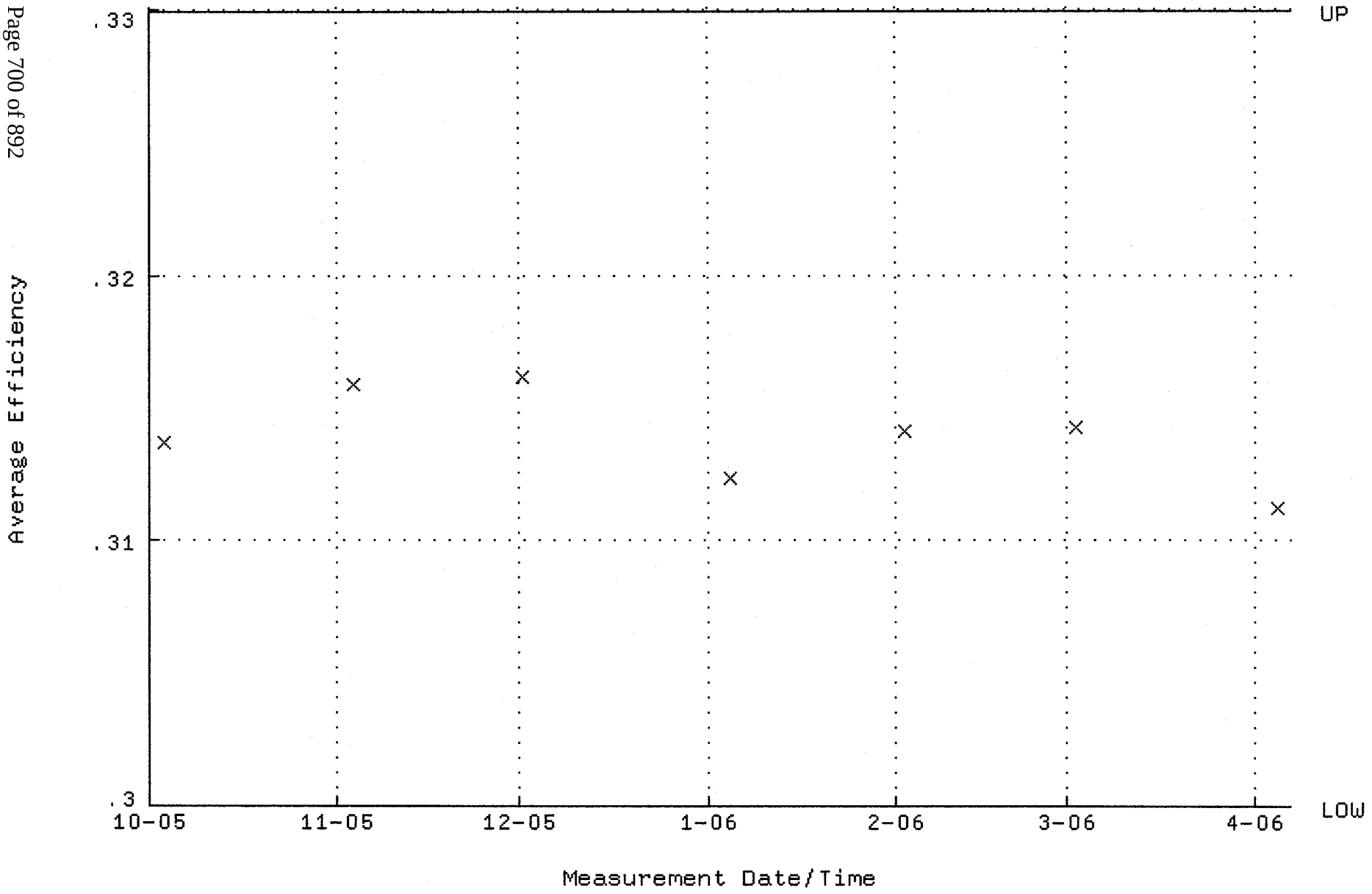
QA filename : DKA100:[ENV_ALPHA.QA.W]W023.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 07:10:43 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



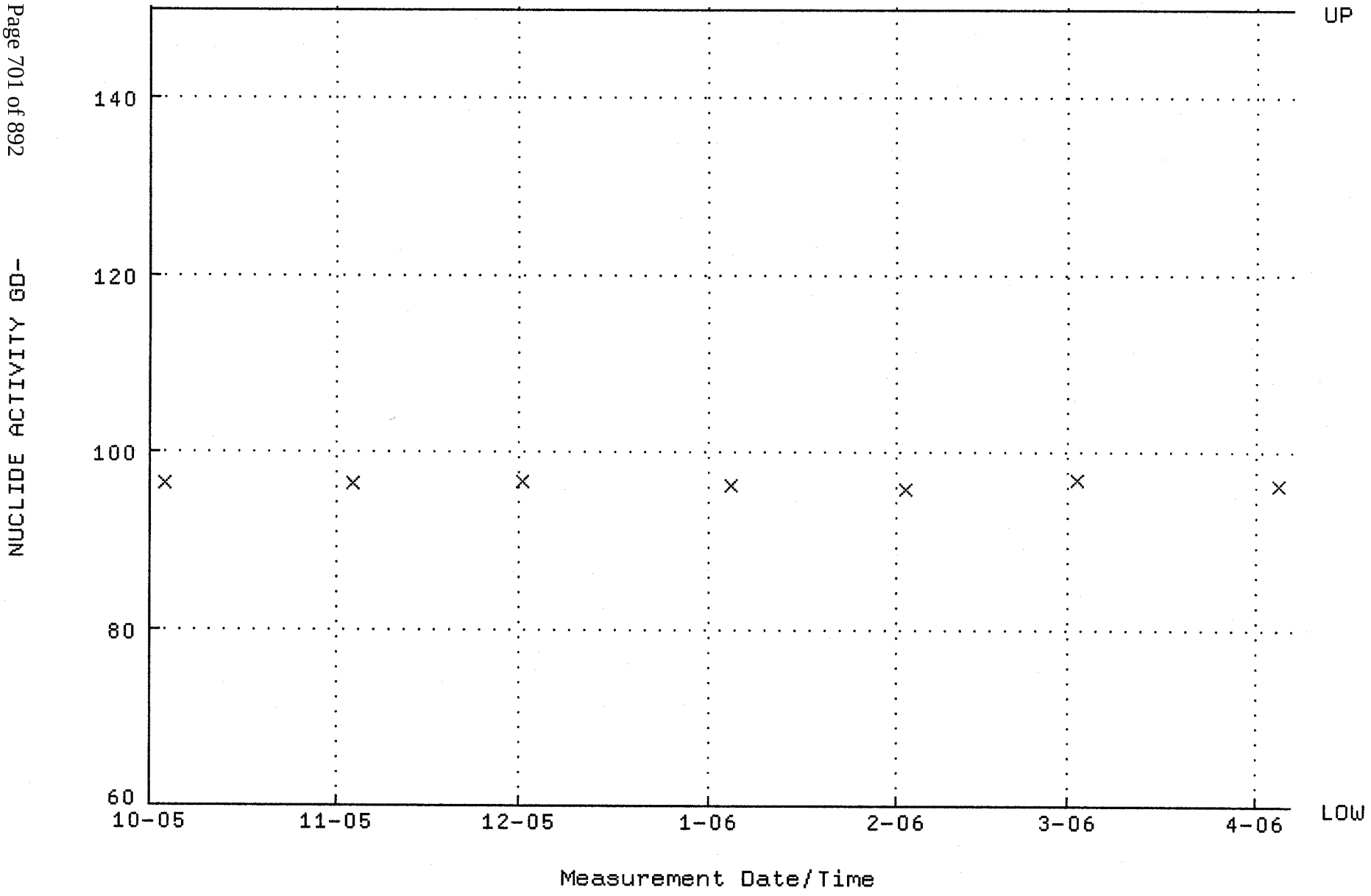
QA filename : DKA100:[ENV_ALPHA.QA.B]B023.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:41 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



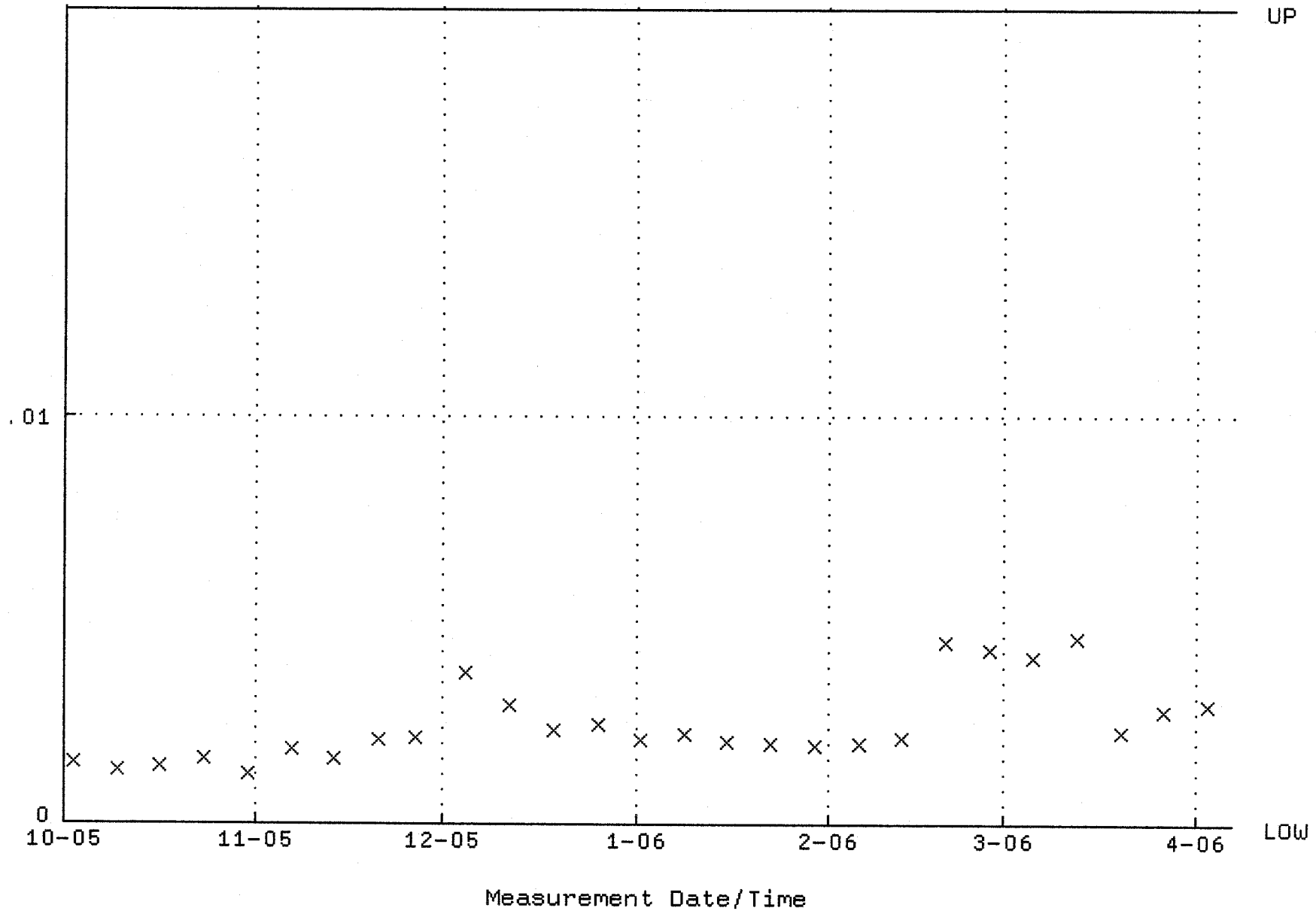
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.300000 through 0.330000



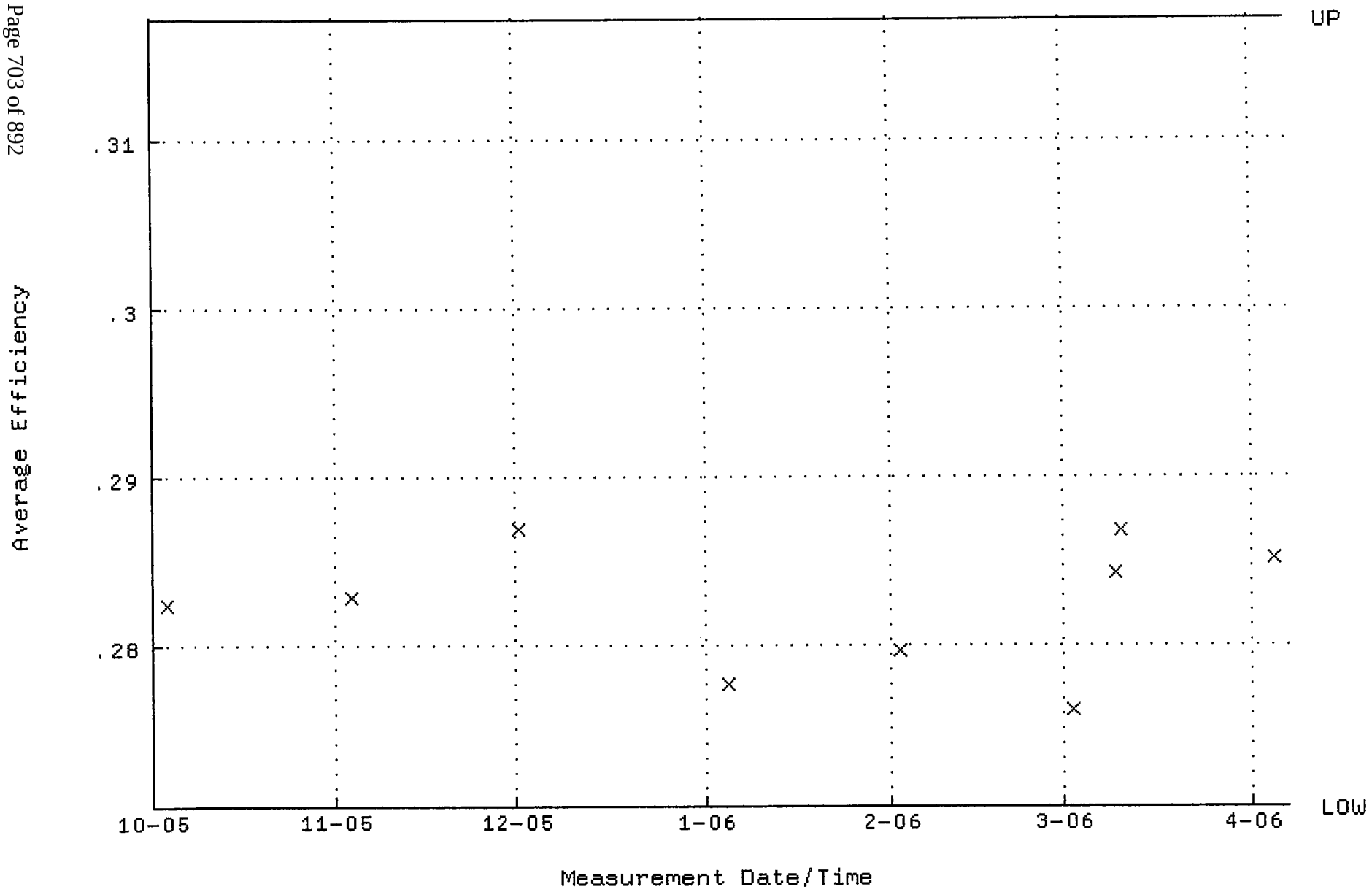
QA filename : DKA100:[ENV_ALPHA.QA.W]W026.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



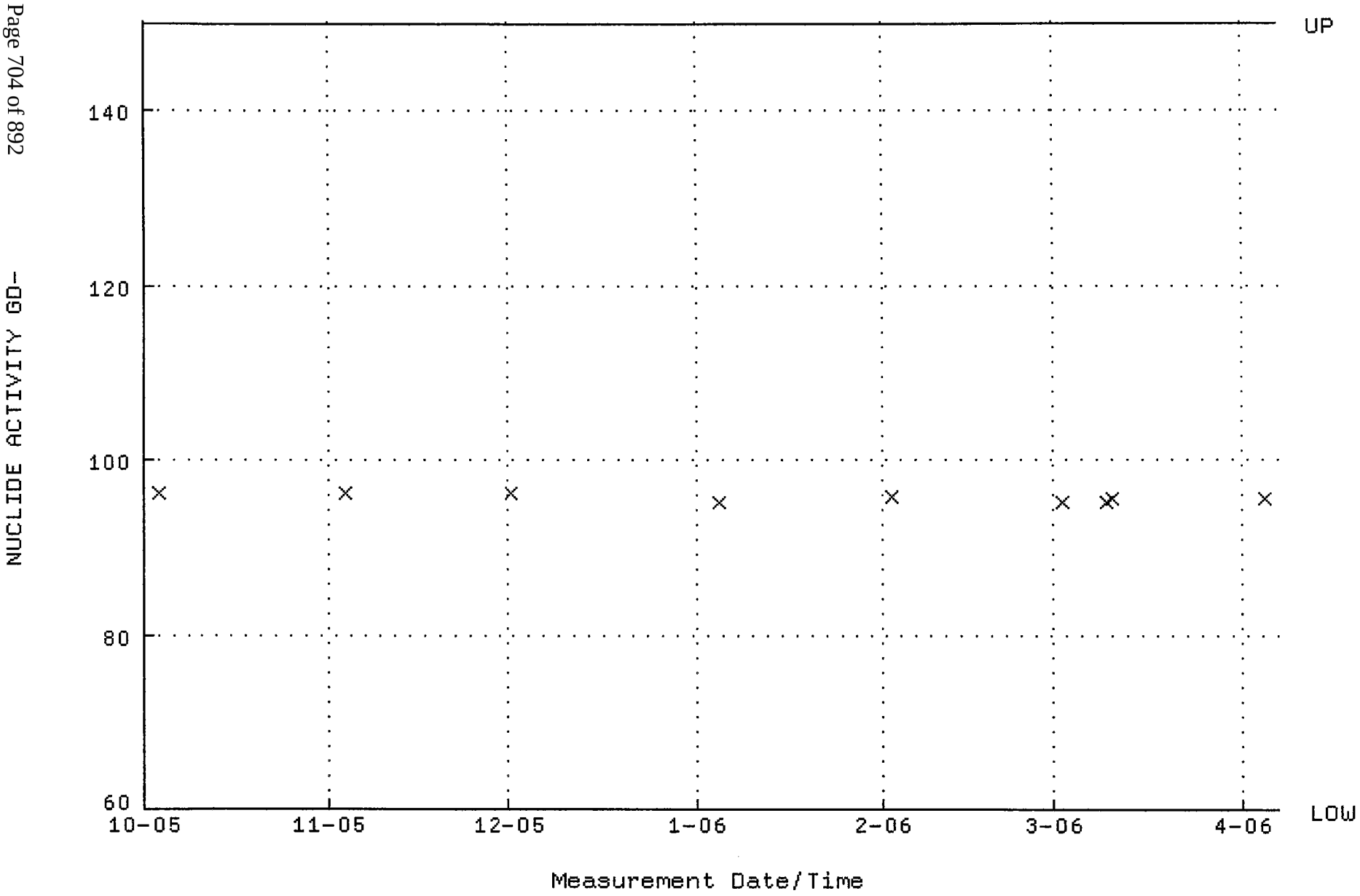
QA filename : DKA100:[ENV_ALPHA.QA.B]B026.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



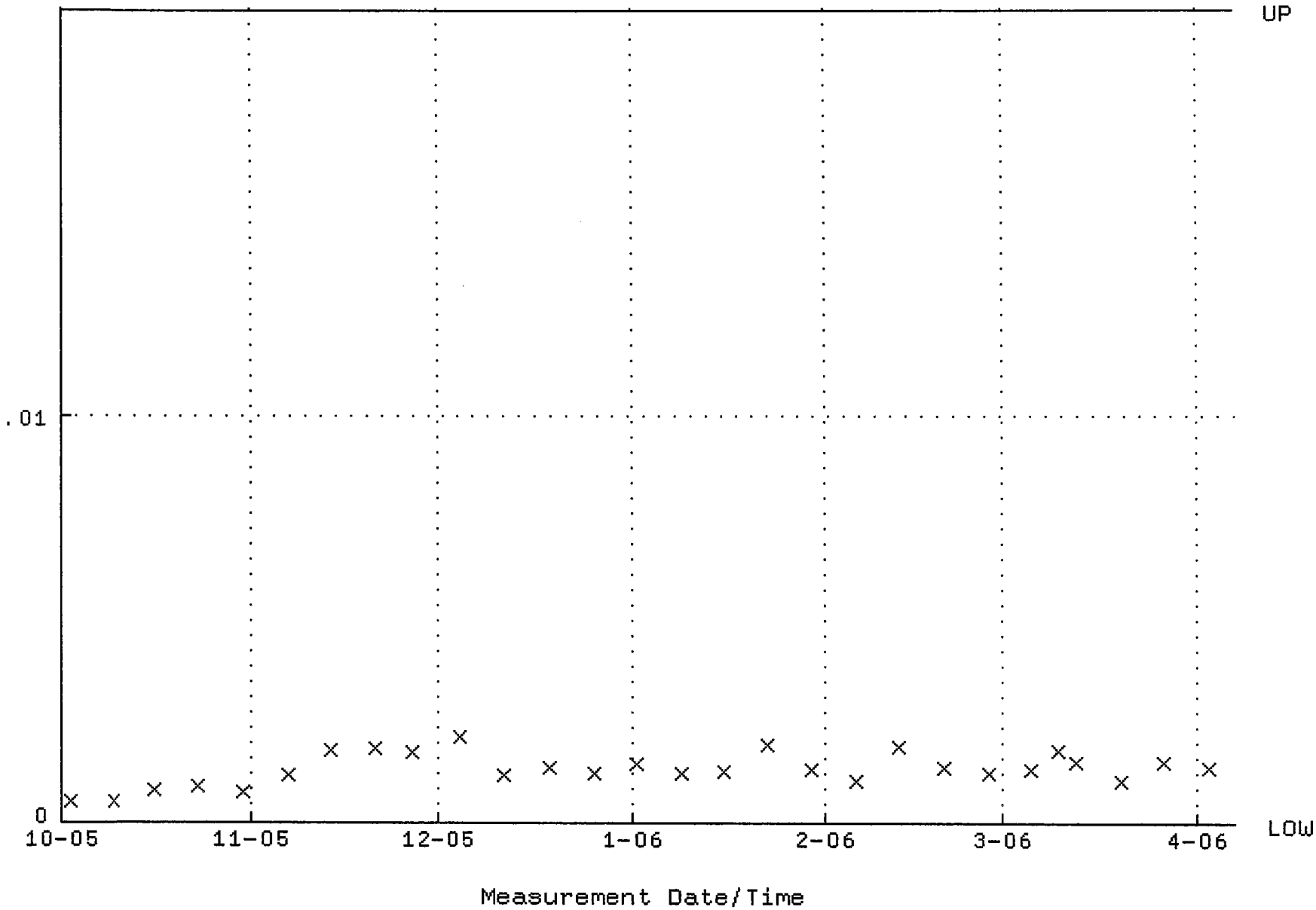
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.270487 through 0.317113



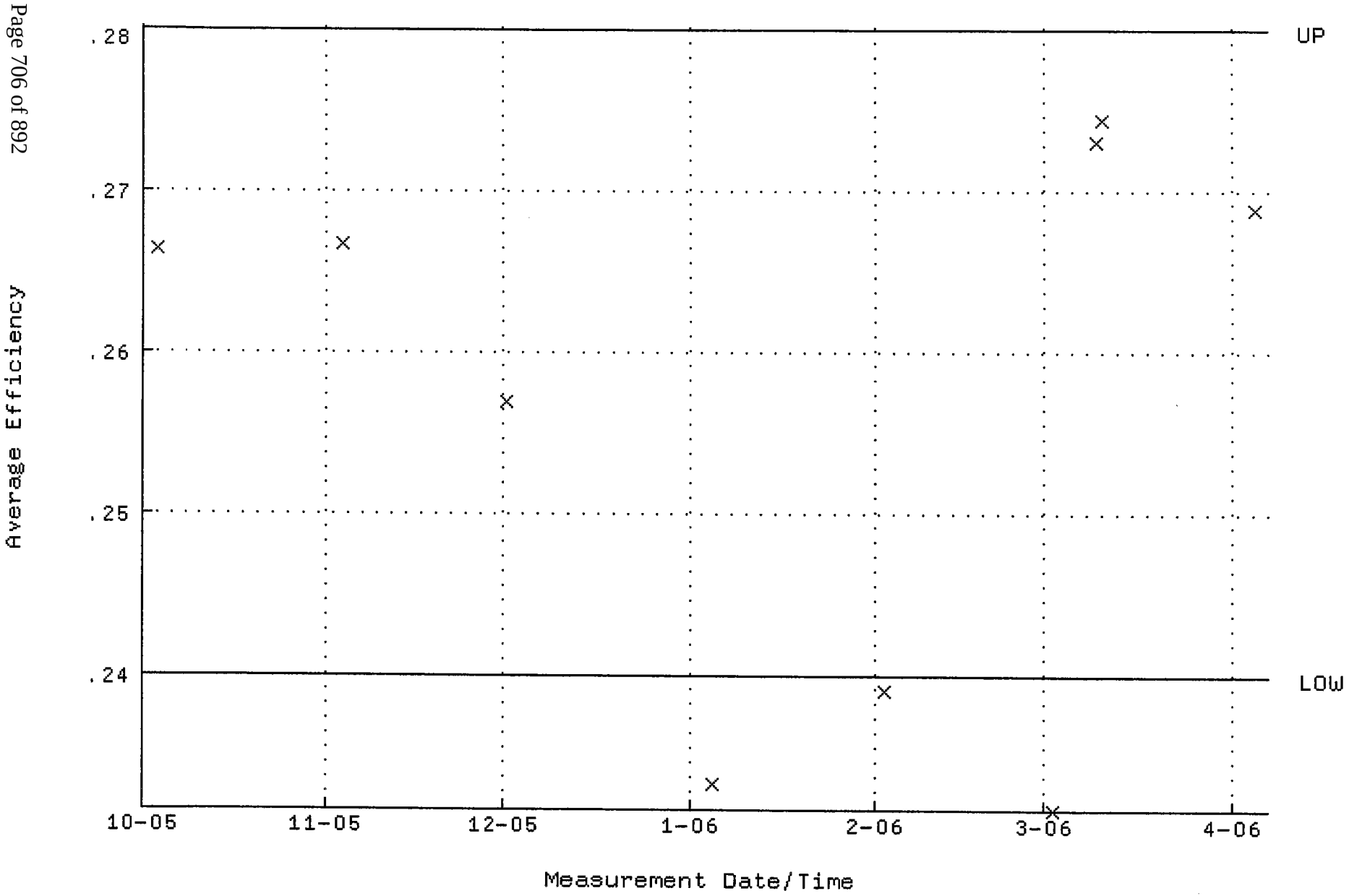
QA filename : DKA100:[ENV_ALPHA.QA.W]W027.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



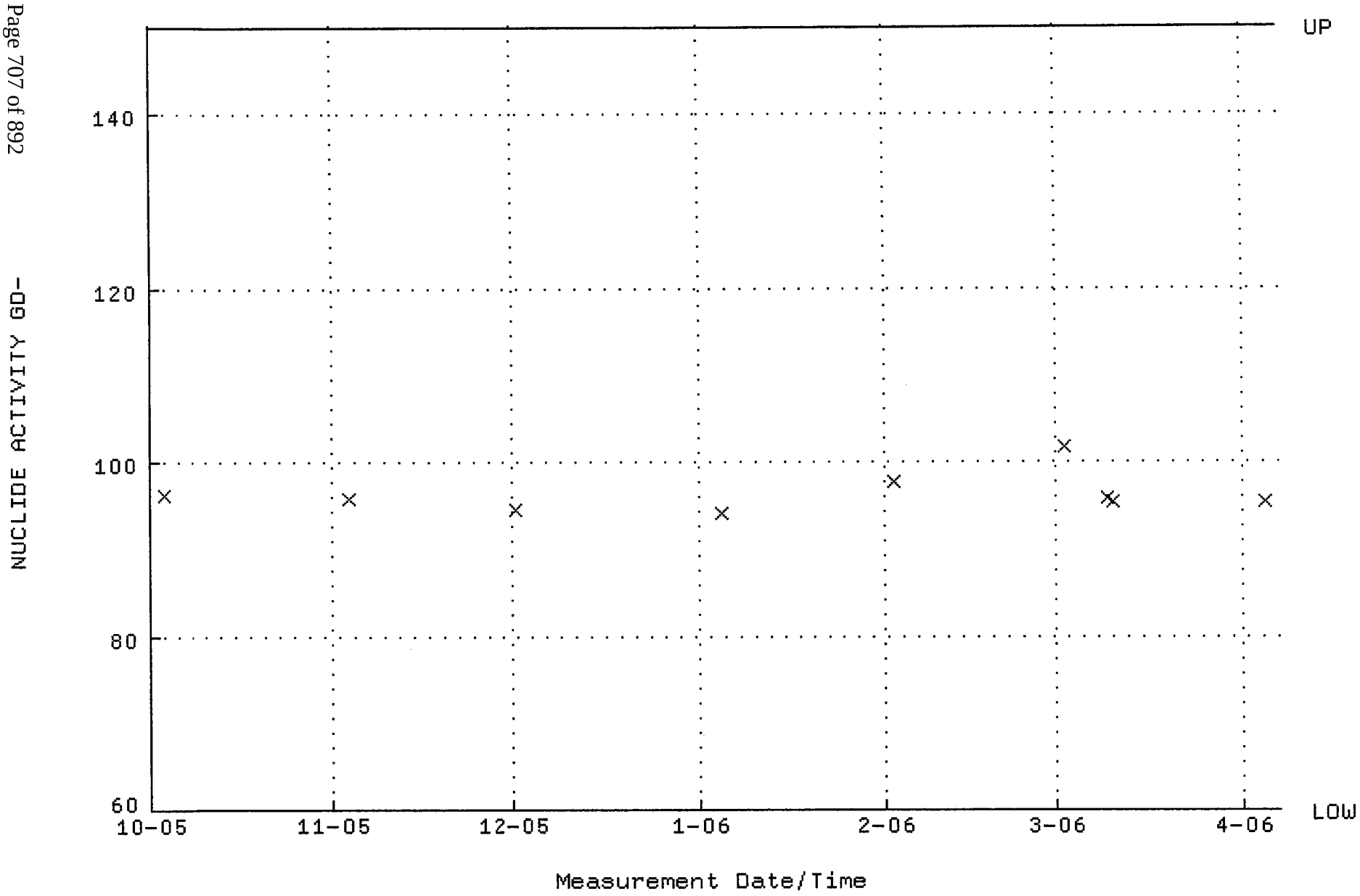
QA filename : DKA100:[ENV_ALPHA.QA.B]B027.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



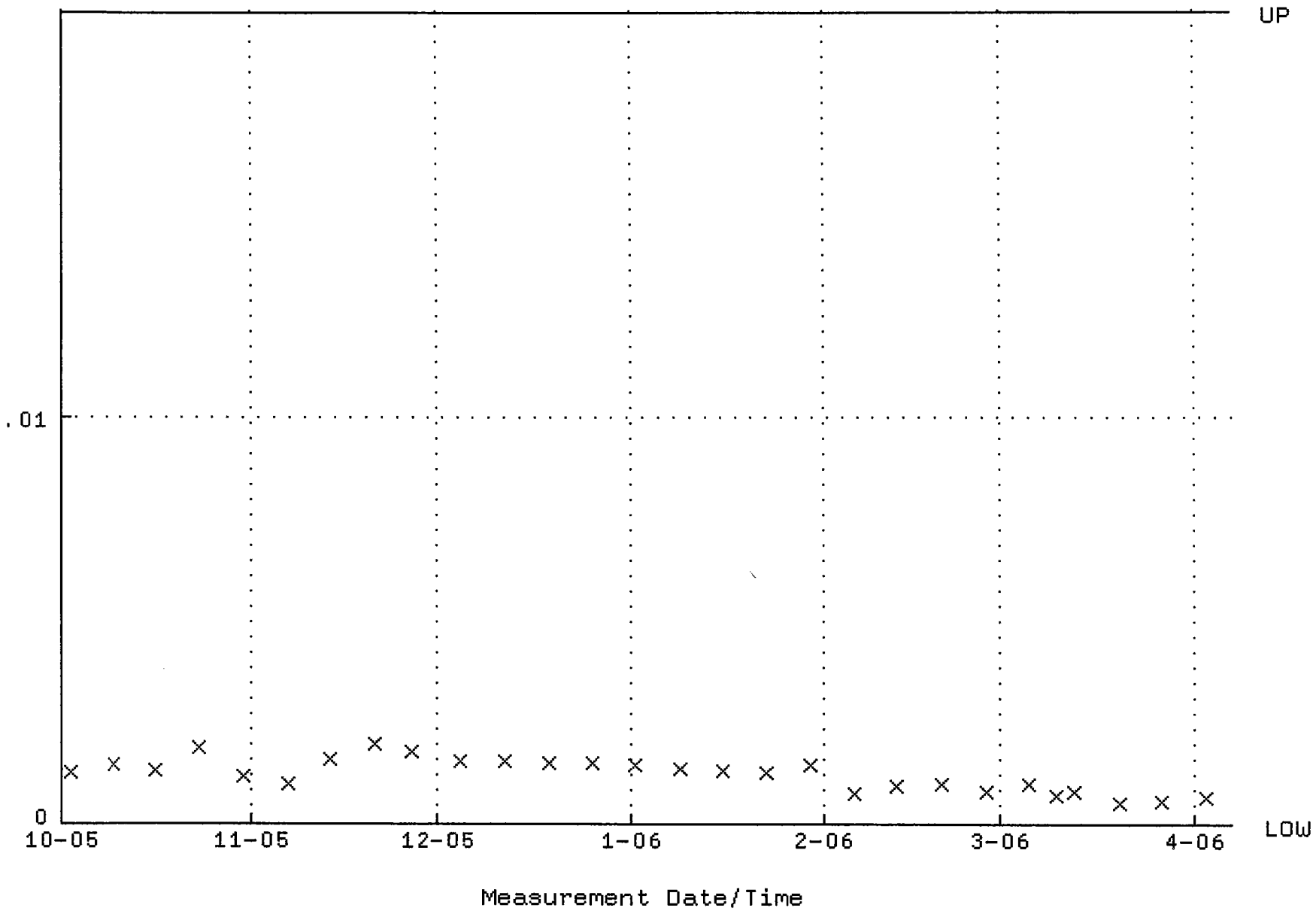
QA filename : DKA100:[ENV_ALPHA.QA.W]W028.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.240000 through 0.280000



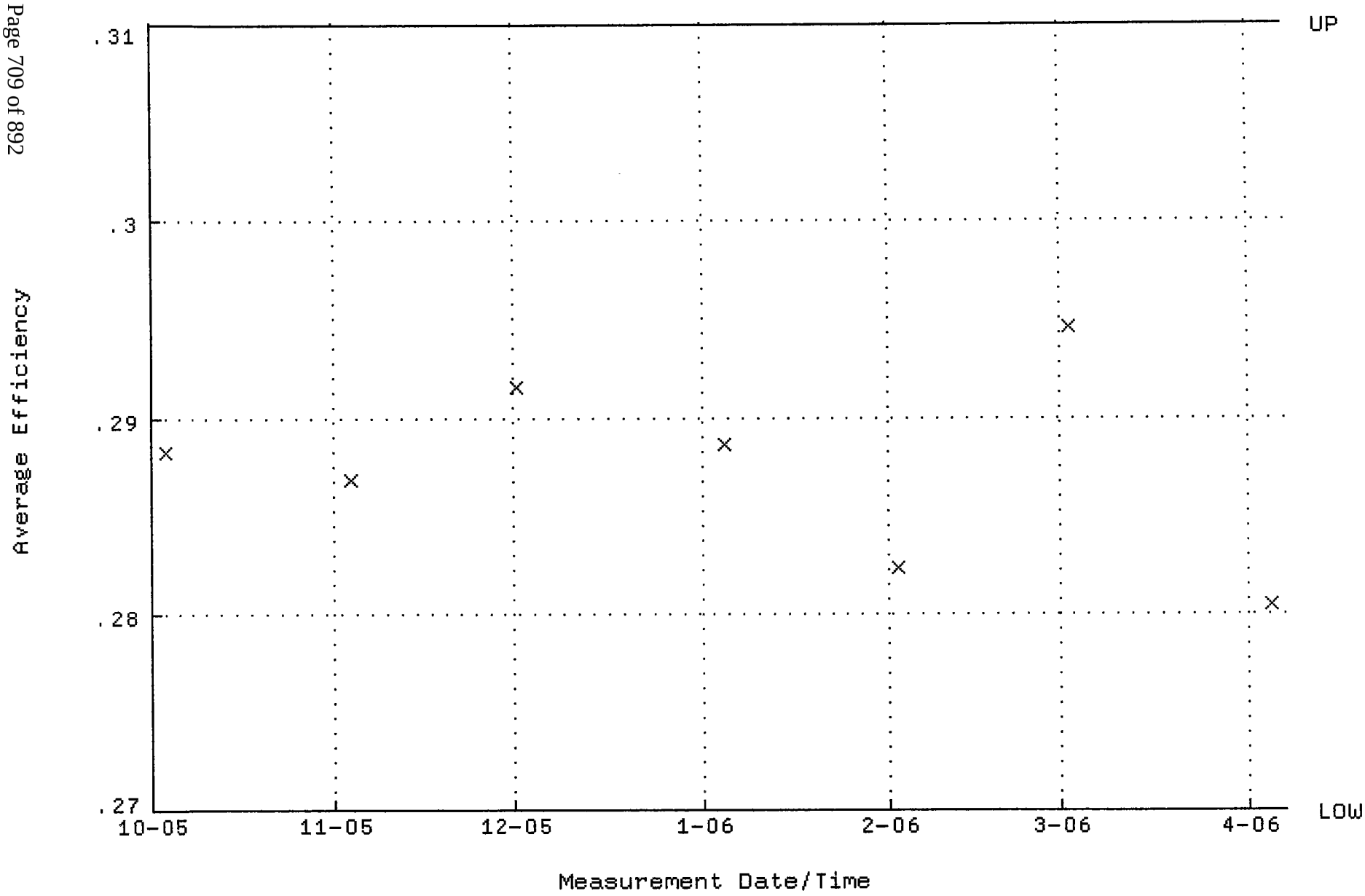
QA filename : DKA100:[ENV_ALPHA.QA.W]W028.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



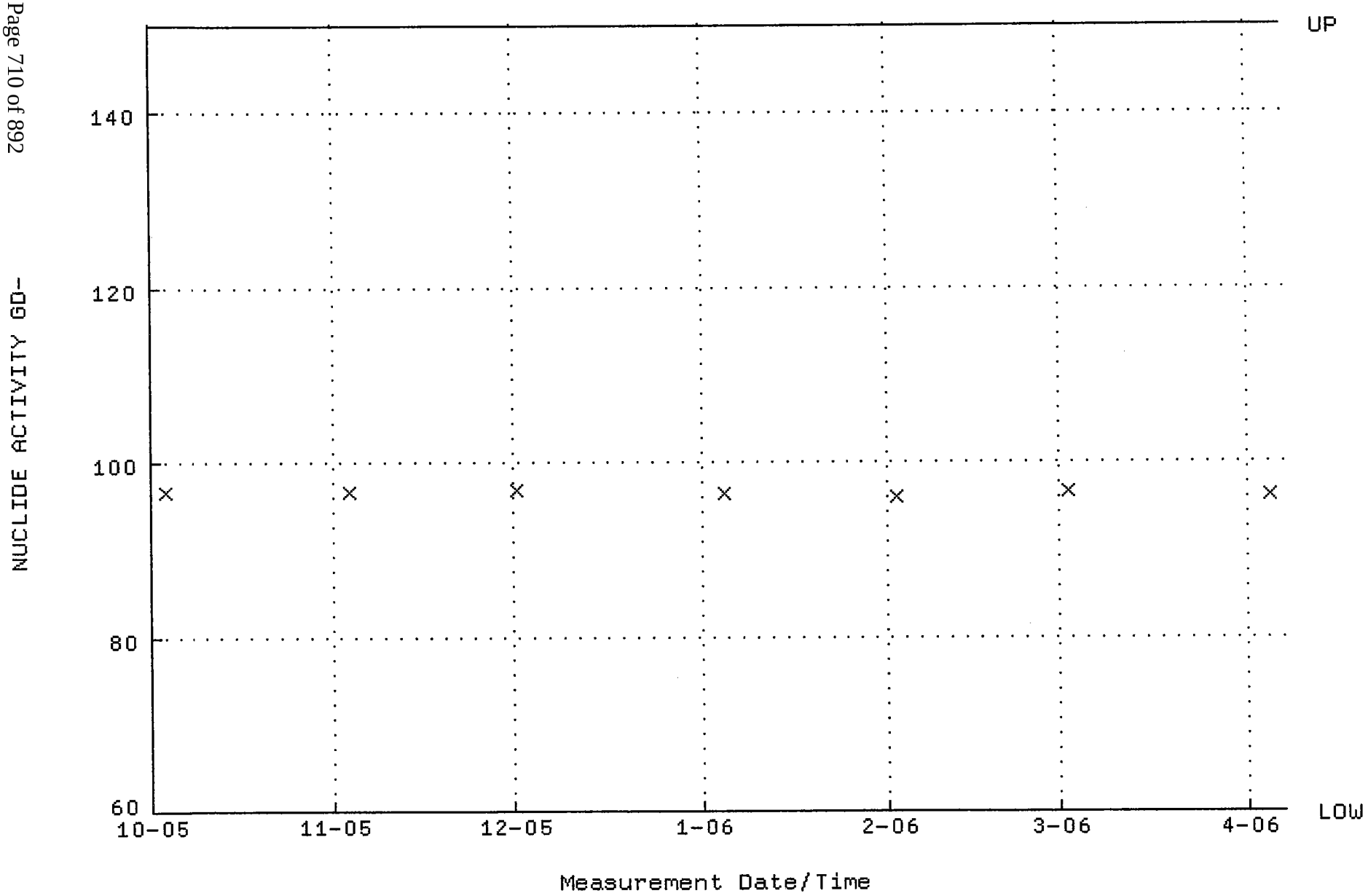
QA filename : DKA100:[ENV_ALPHA.QA.B]B028.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



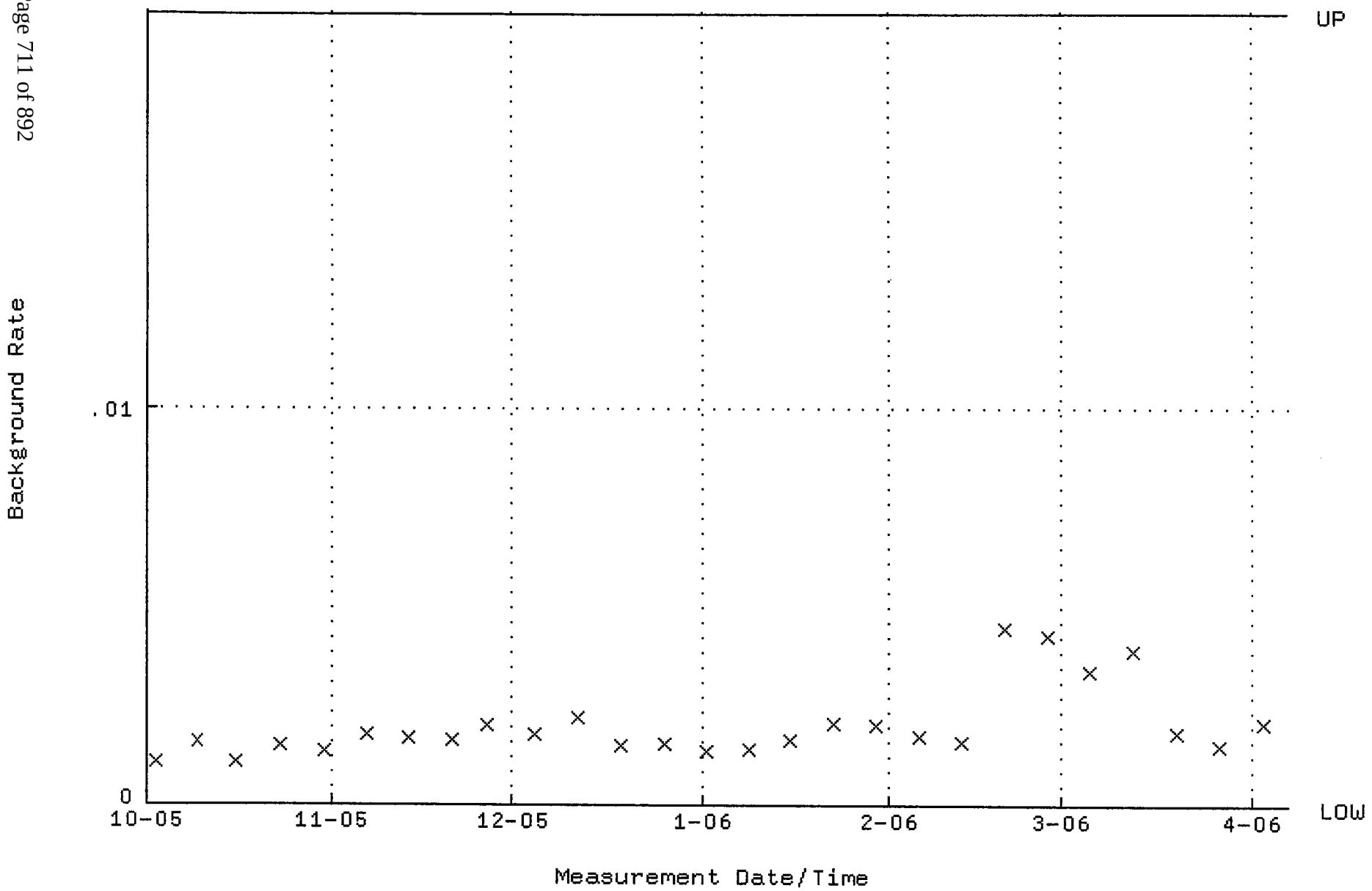
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.270000 through 0.310000



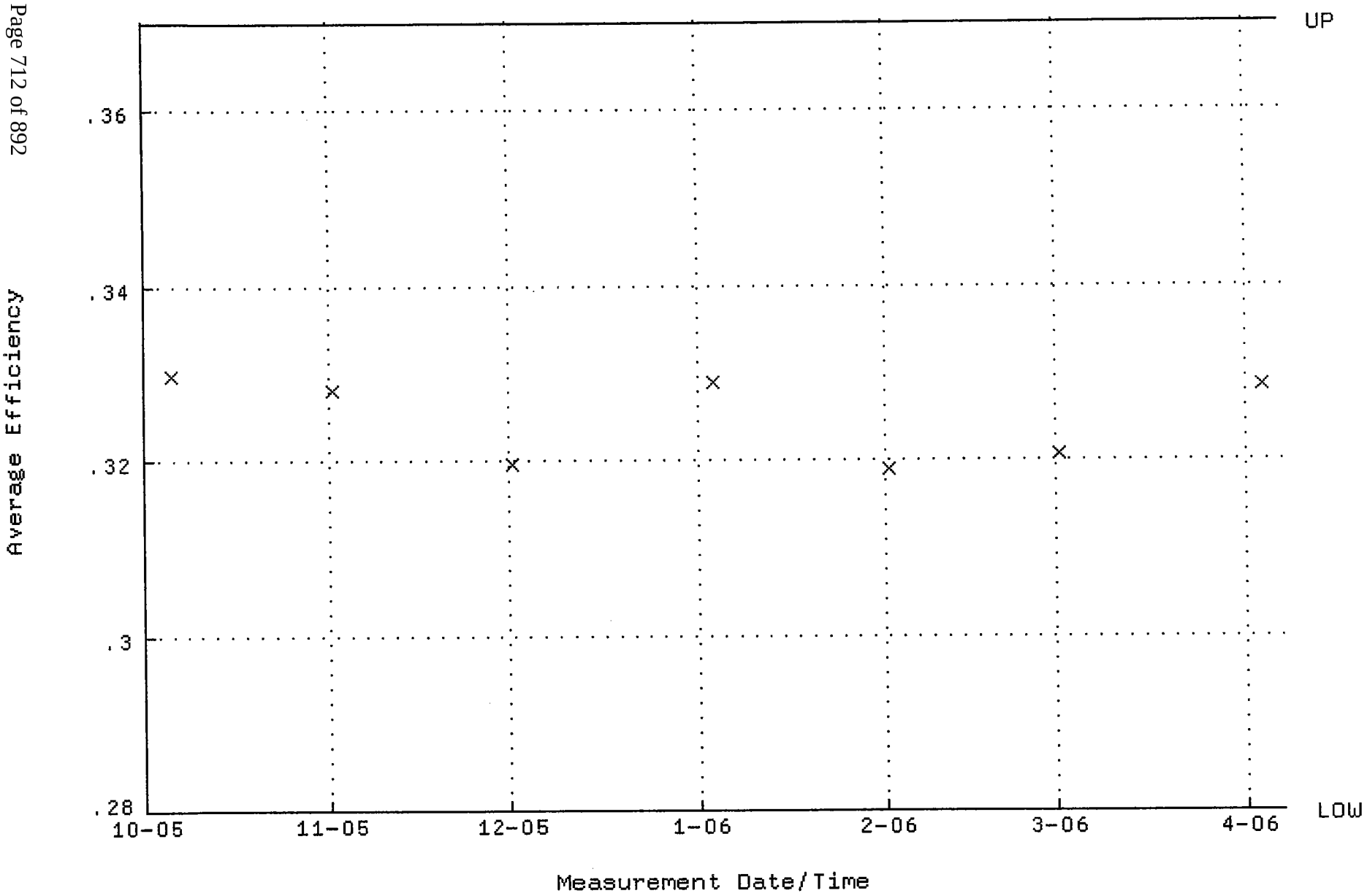
QA filename : DKA100:[ENV_ALPHA.QA.W]W029.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 3-OCT-2005 12:02:07 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



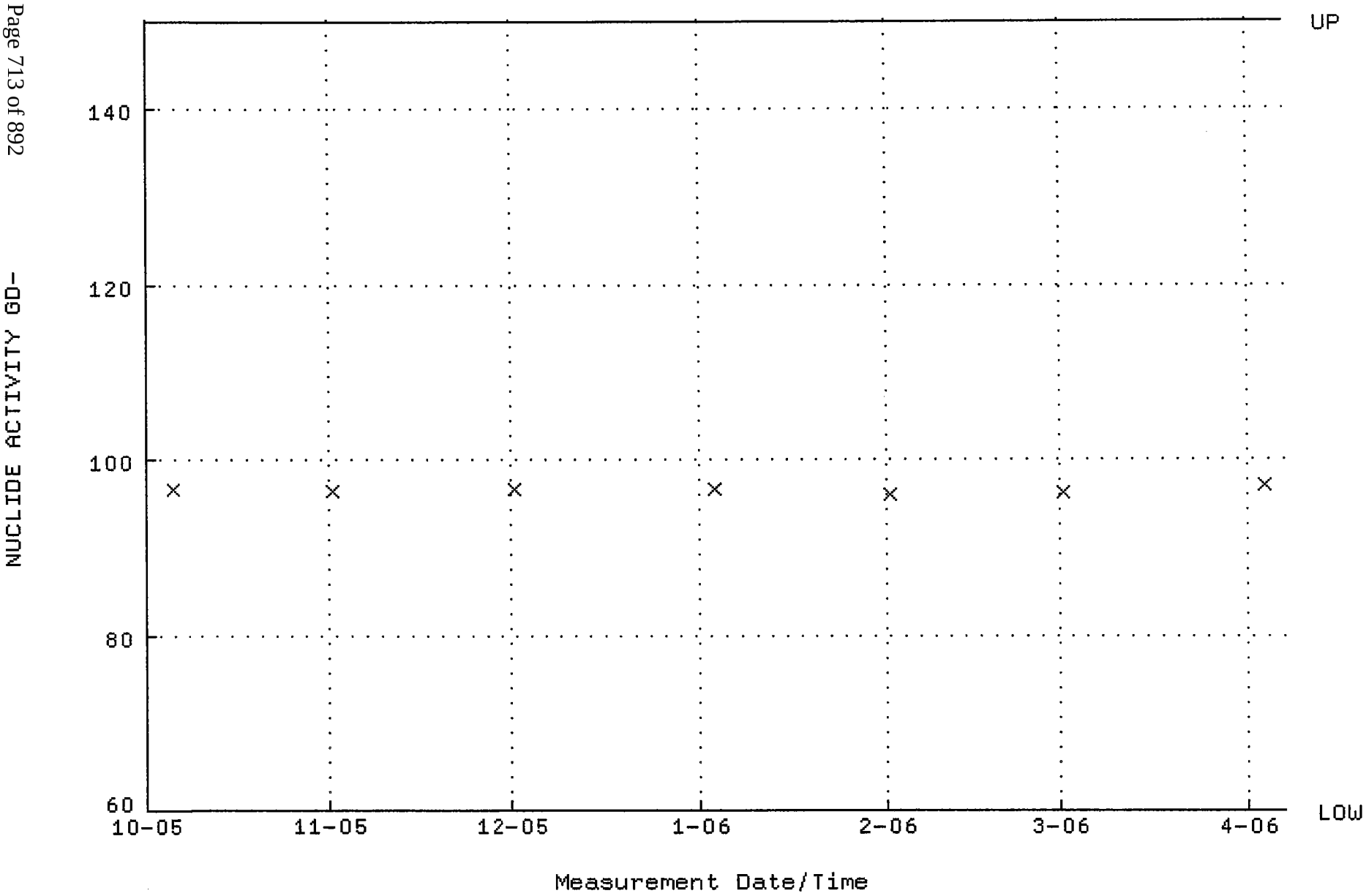
QA filename : DKA100:[ENV_ALPHA.QA.B]B029.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:25:42 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



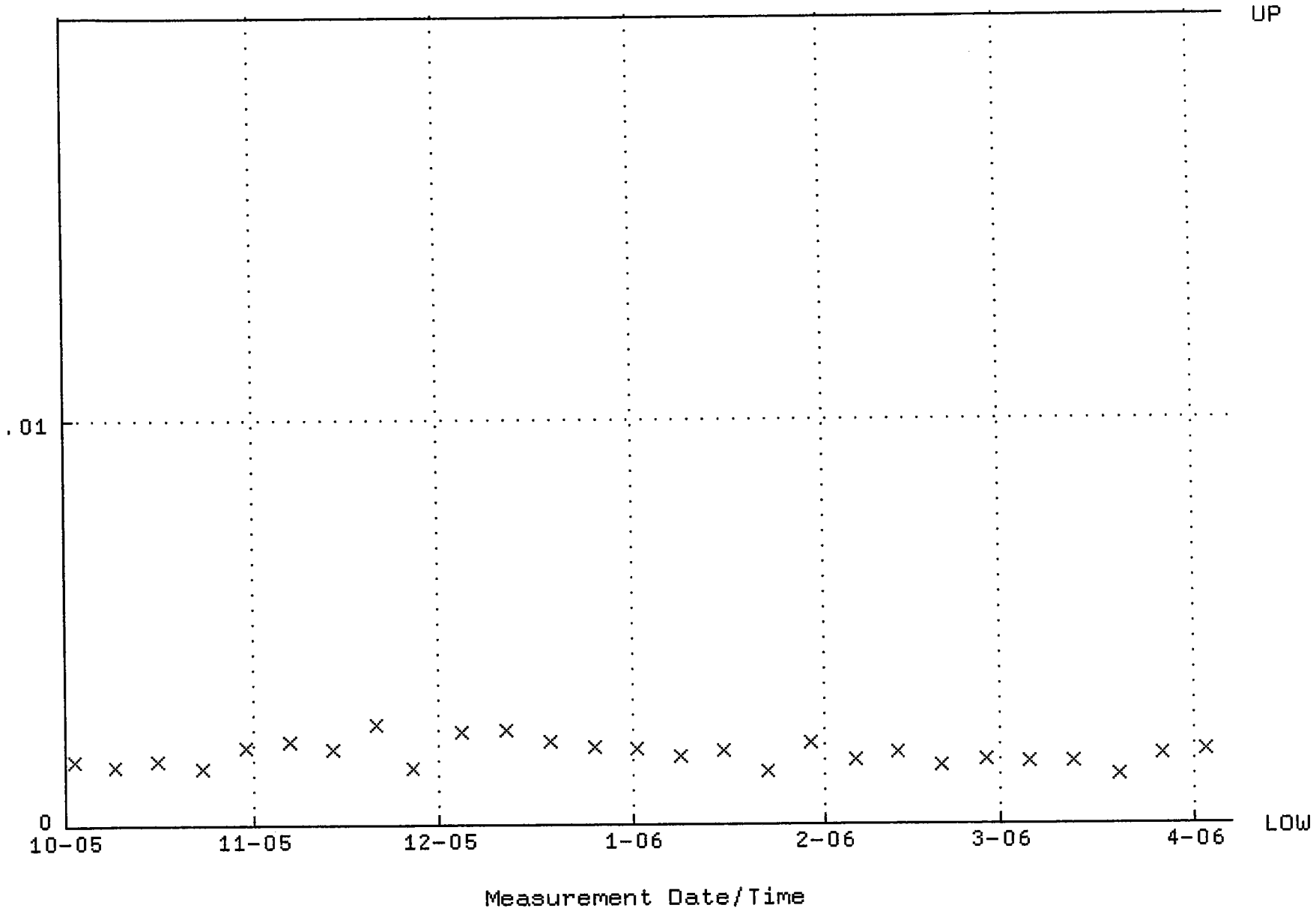
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



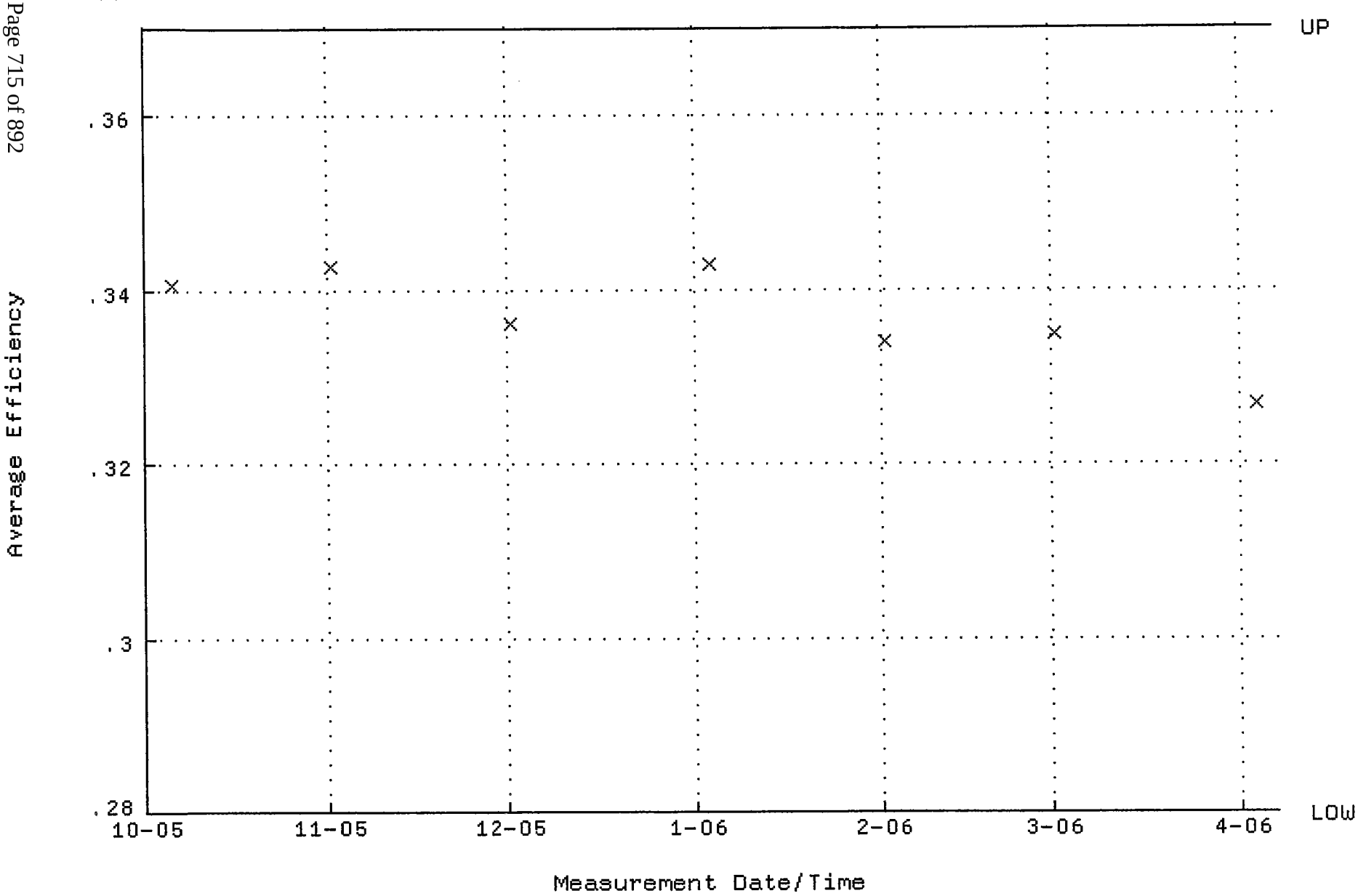
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



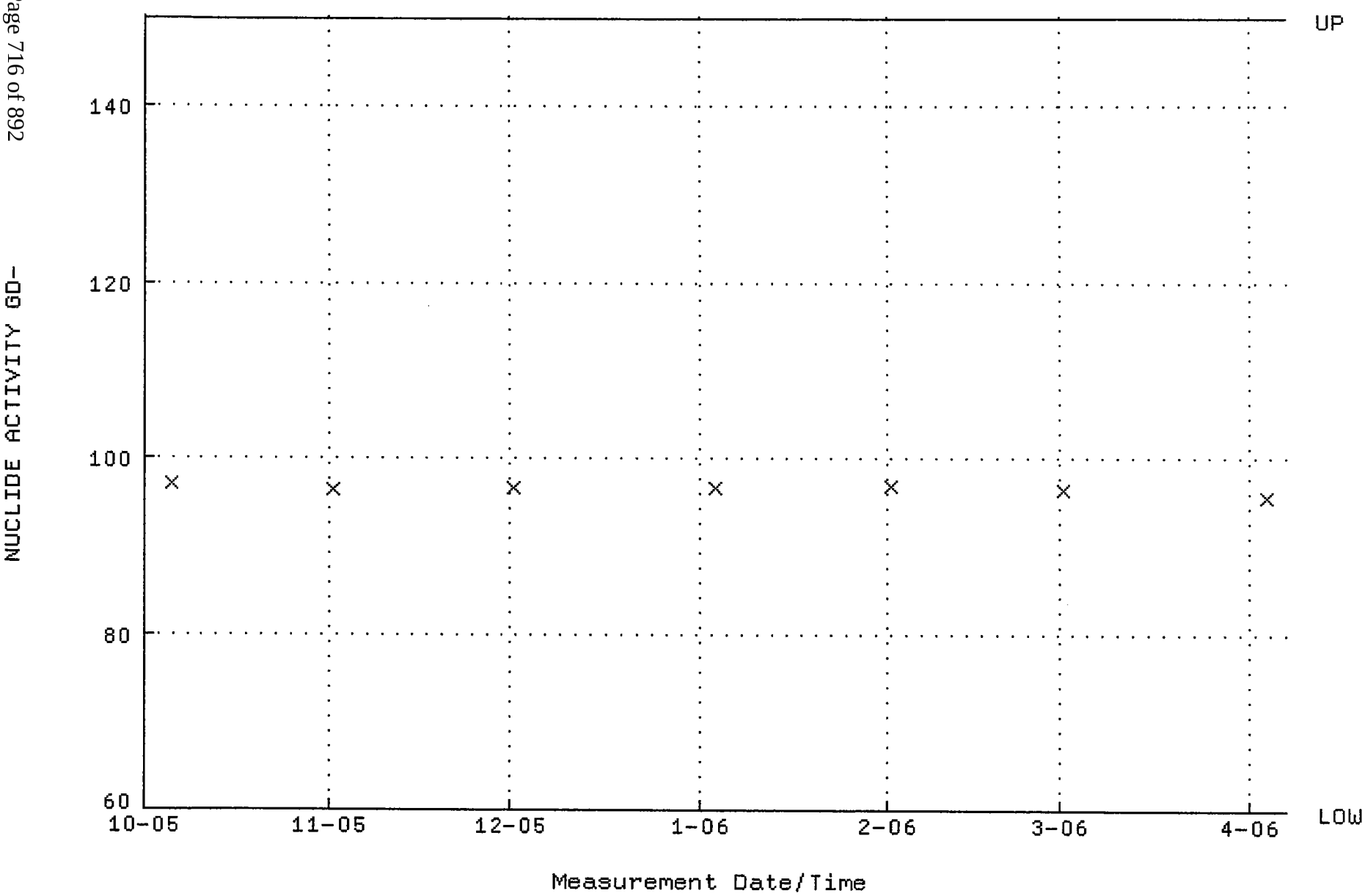
QA filename : DKA100:[ENV_ALPHA.QA.B]B077.QAF;3
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



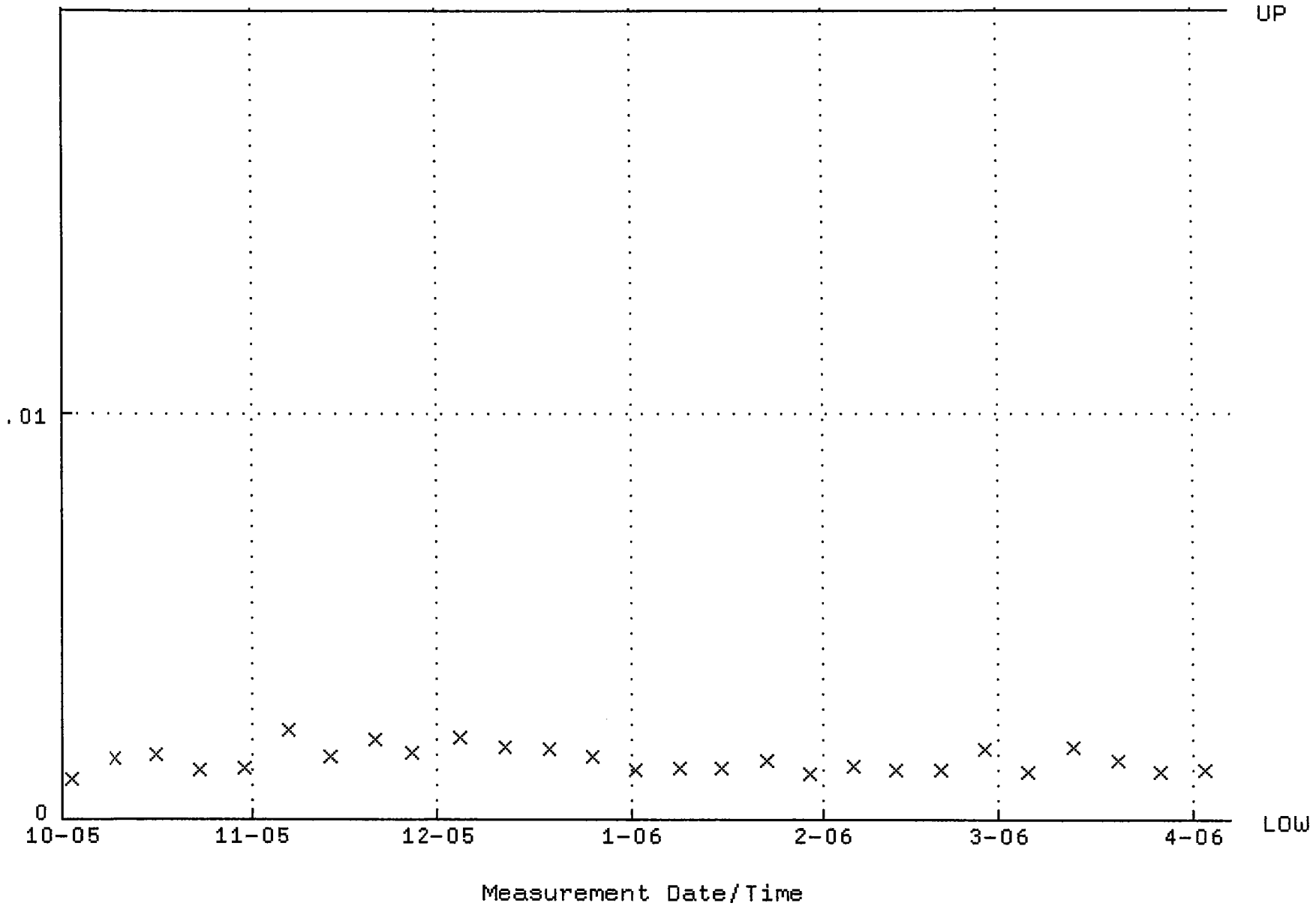
QA filename : DKA100:[ENV_ALPHA.QA.W]W078.QAF;6
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



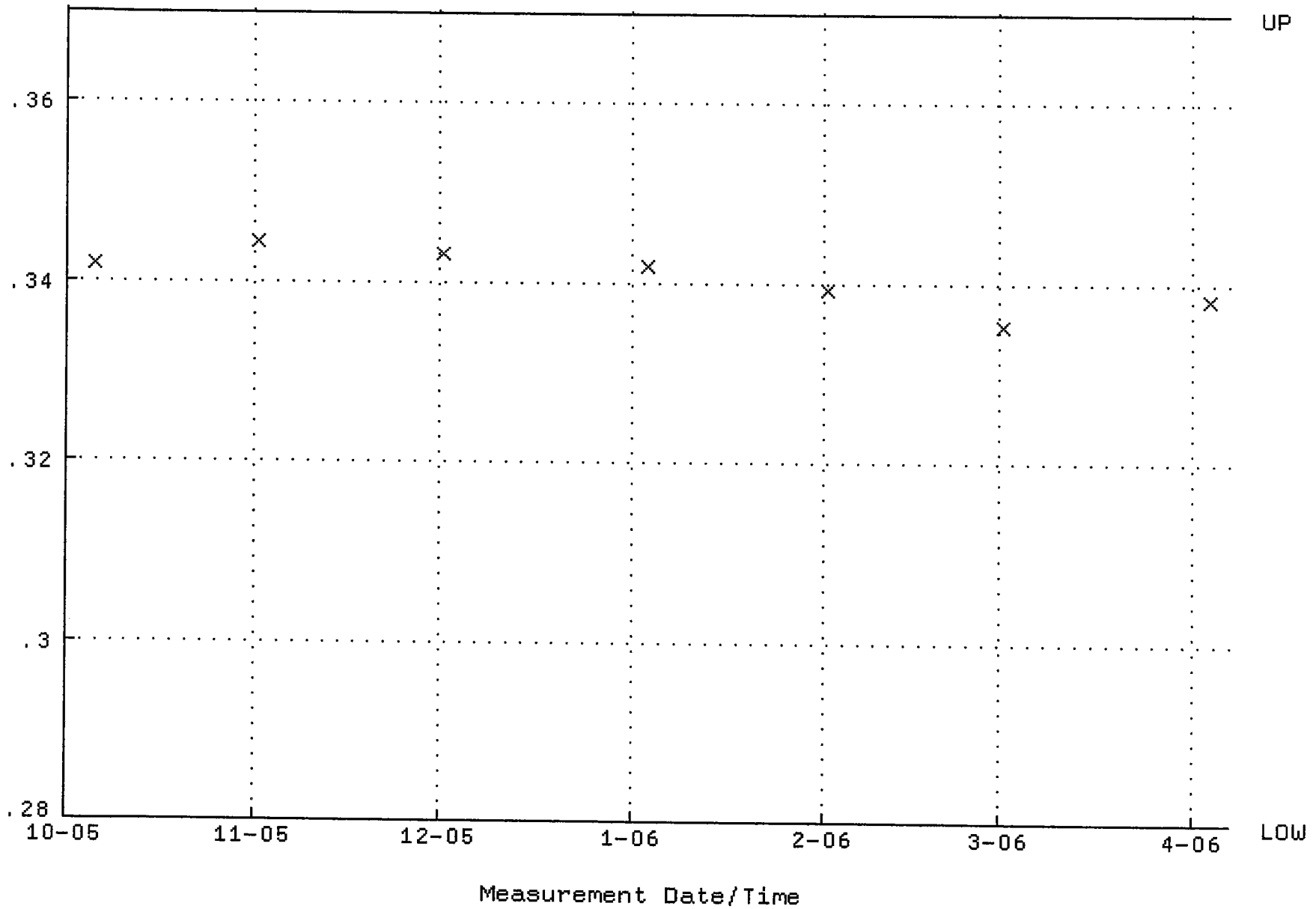
QA filename : DKA100:[ENV_ALPHA.QA.W]W078.QAF;6
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



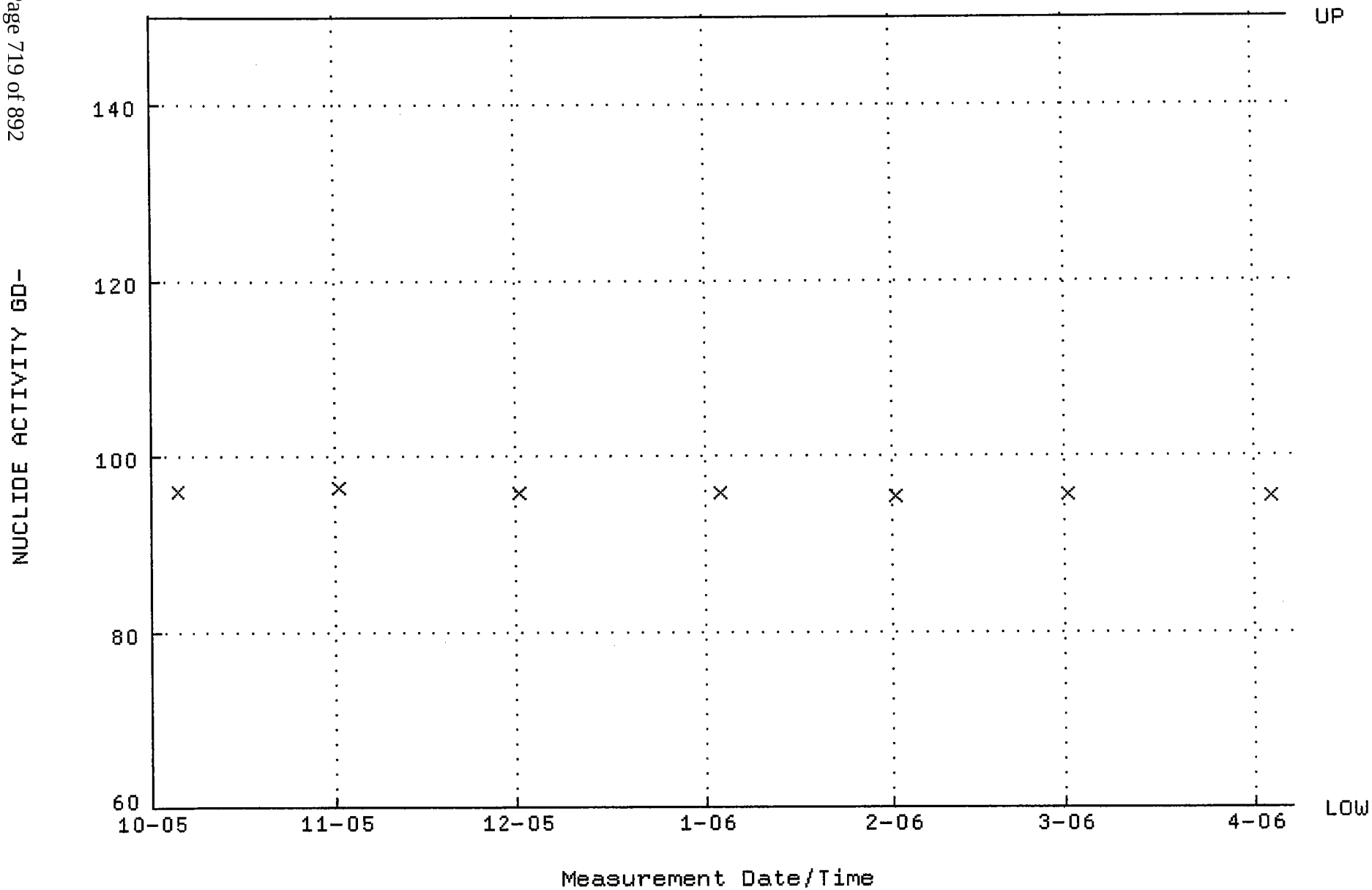
QA filename : DKA100:[ENV_ALPHA.QA.B]B078.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



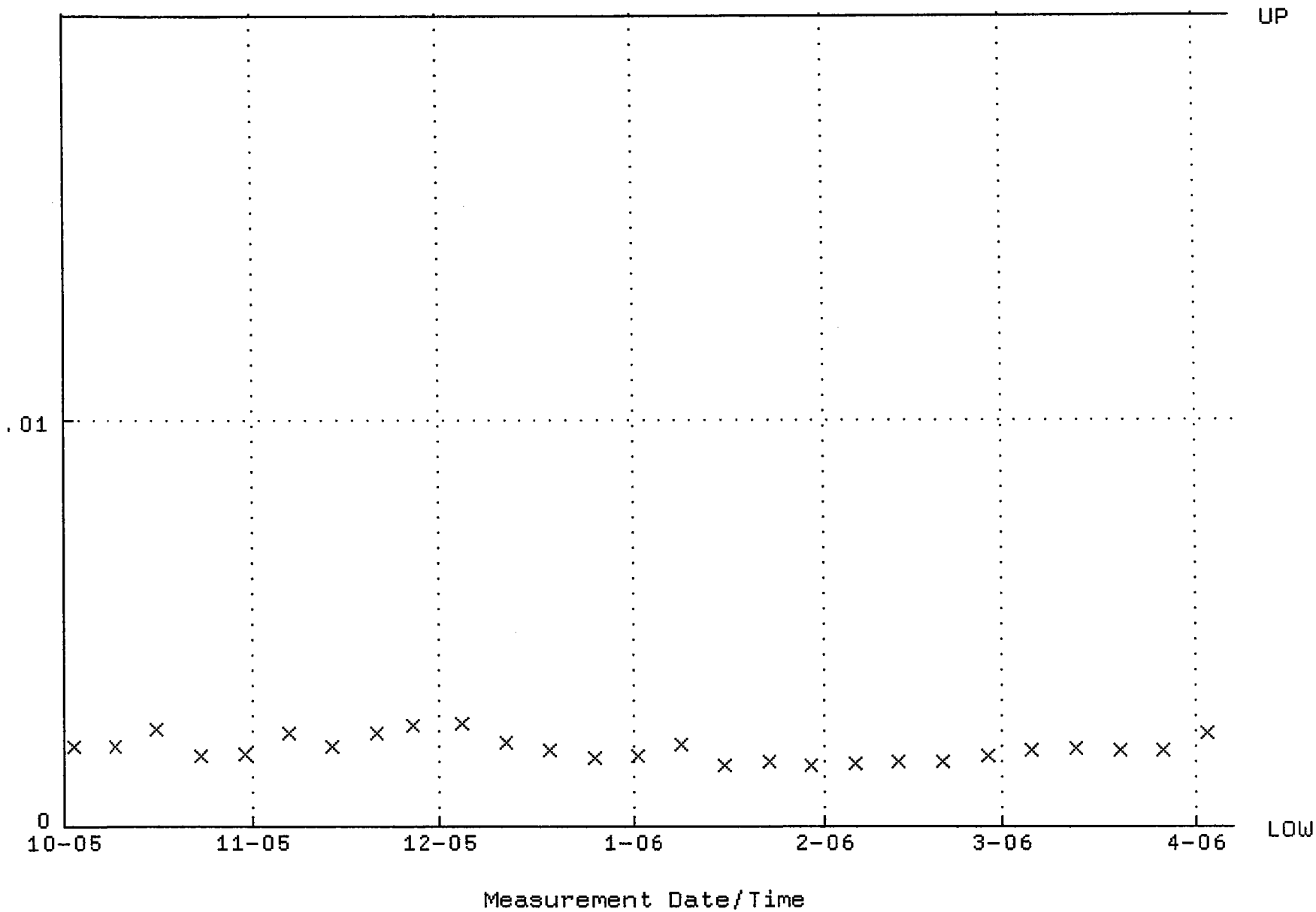
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



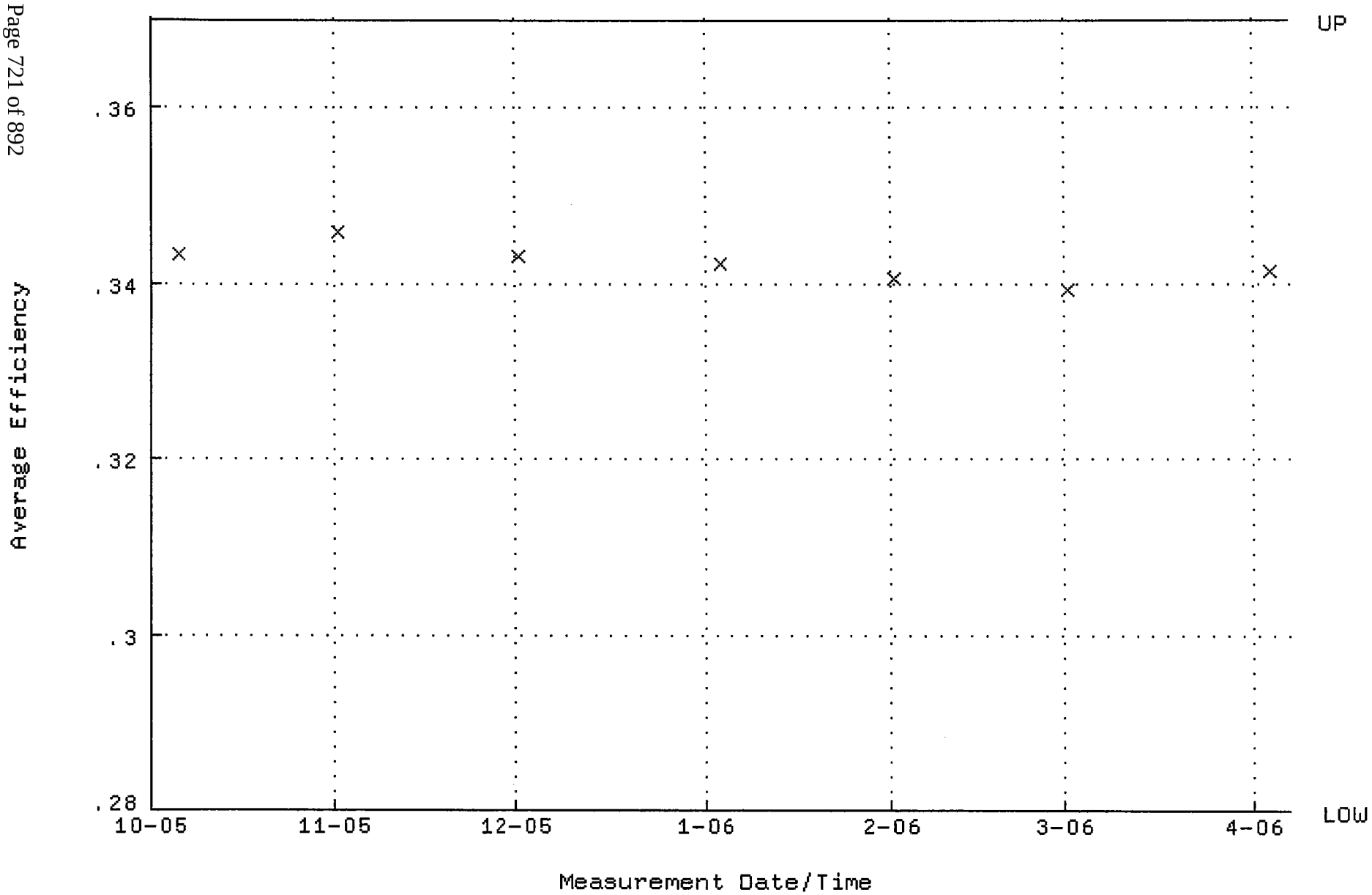
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



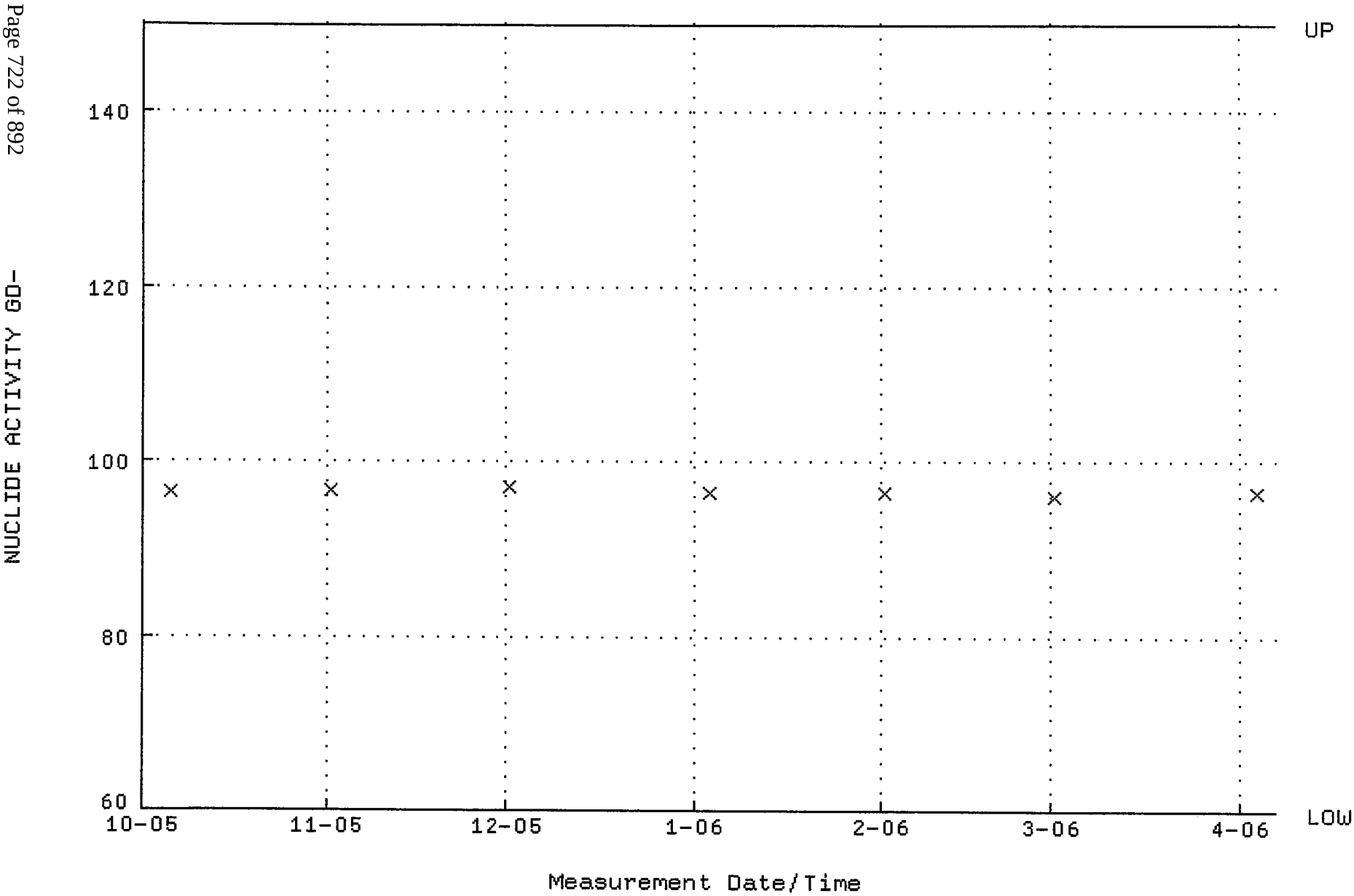
QA filename : DKA100:[ENV_ALPHA.QA.B]B079.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



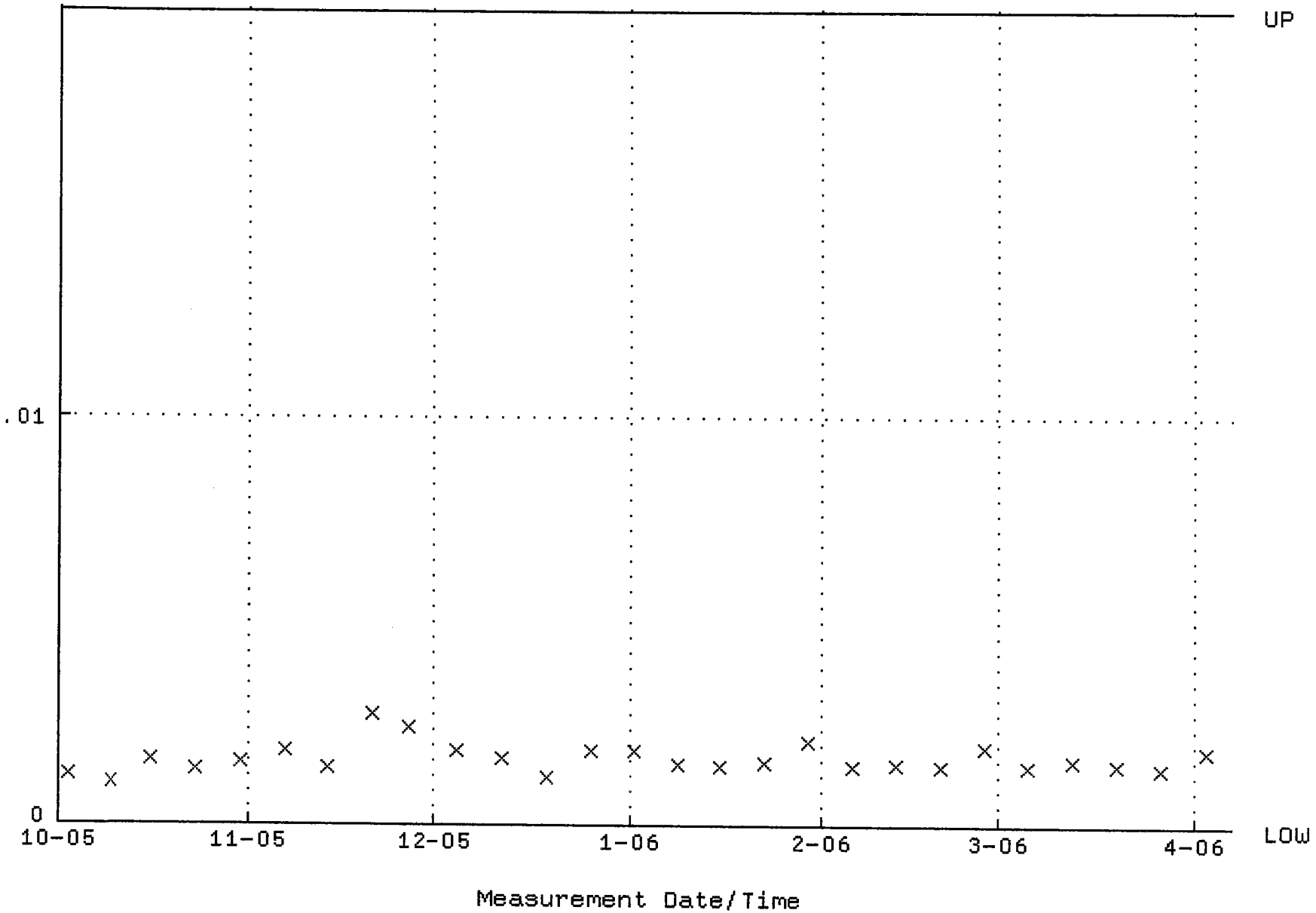
QA filename : DKA100:[ENV_ALPHA.QA.W]W080.QAF;4
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



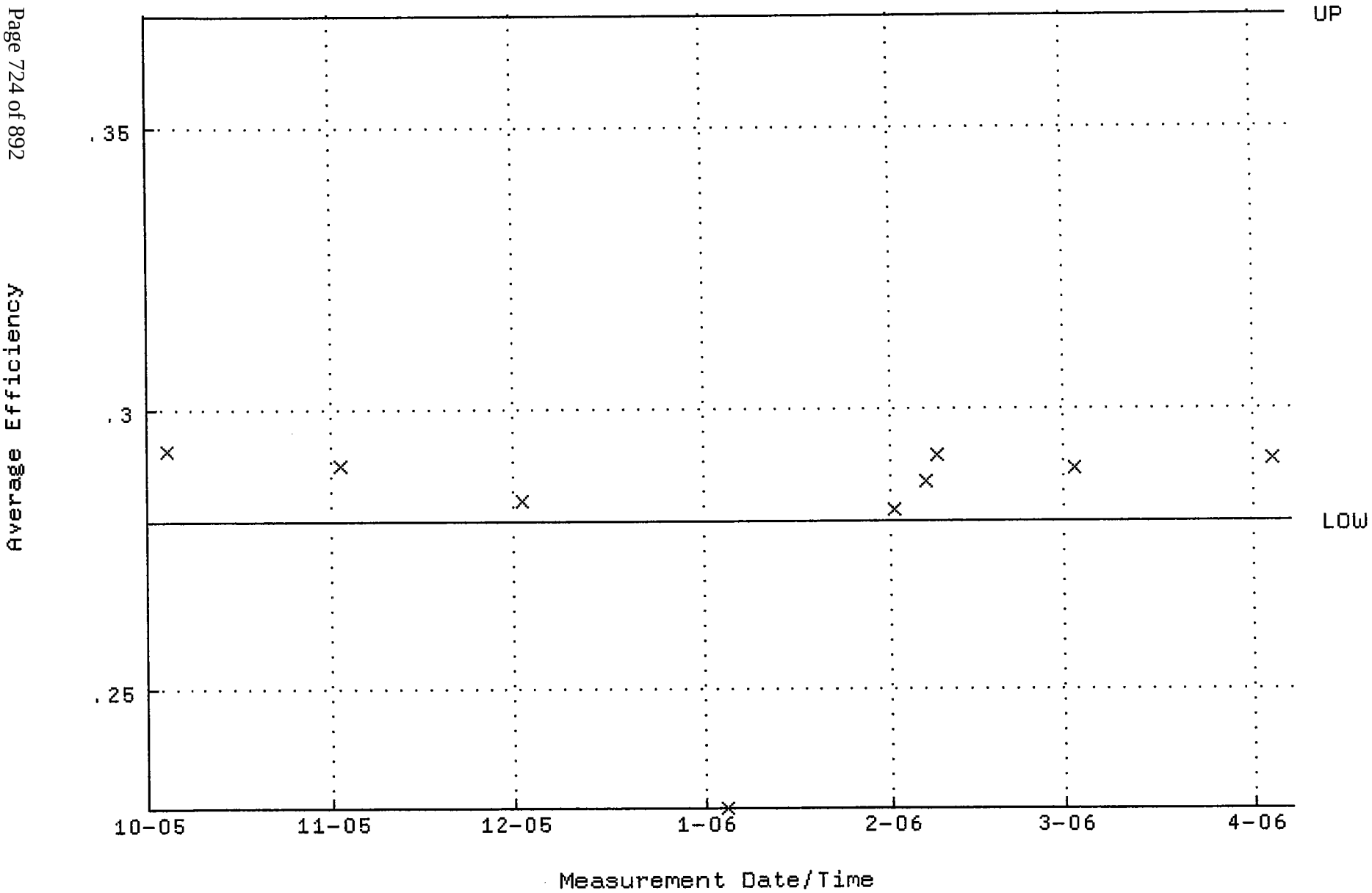
QA filename : DKA100:[ENV_ALPHA.QA.W]W080.QAF;4
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 5-OCT-2005 12:08:53 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



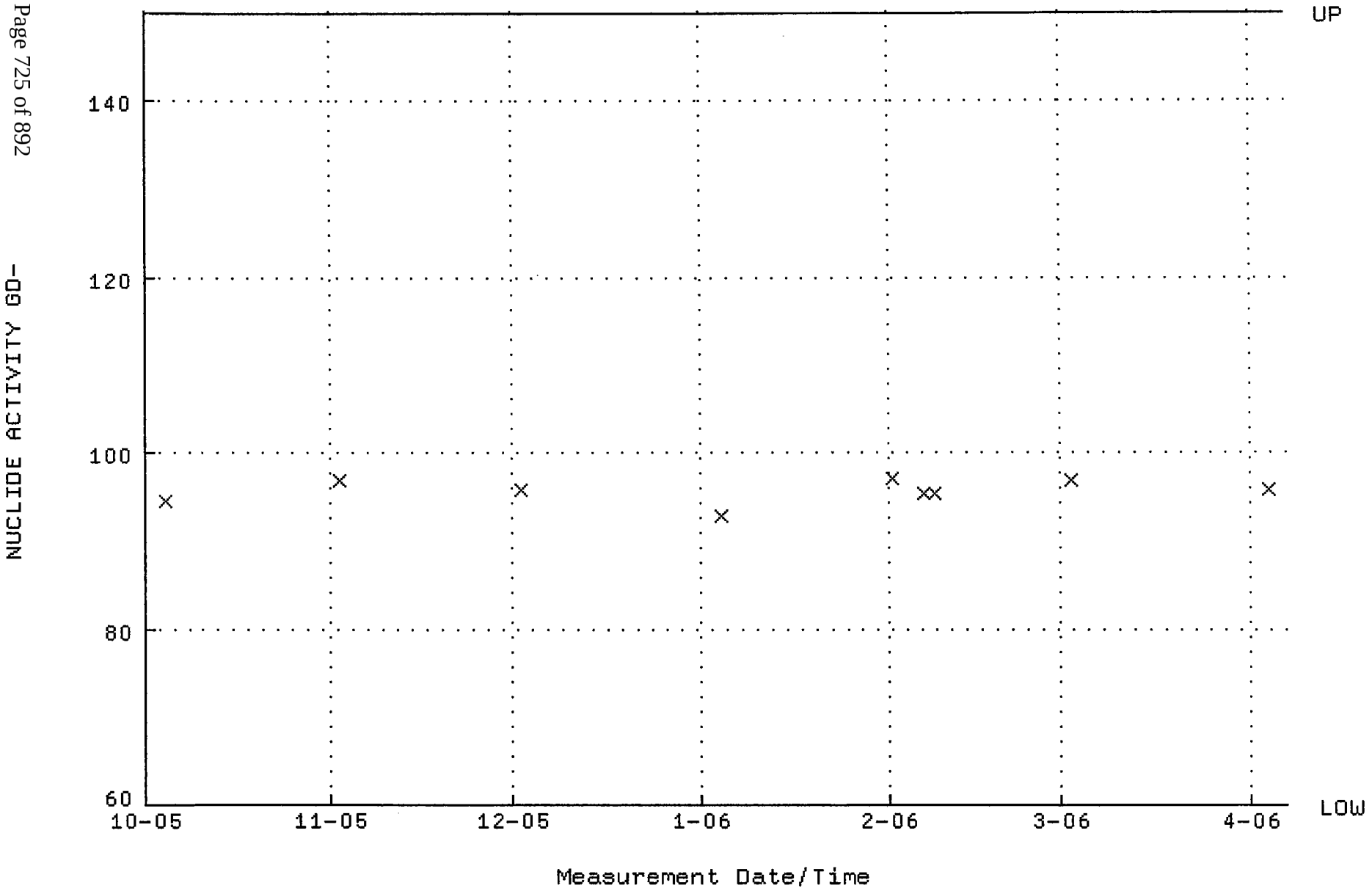
QA filename : DKA100:[ENV_ALPHA.QA.B]B080.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:57:18 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



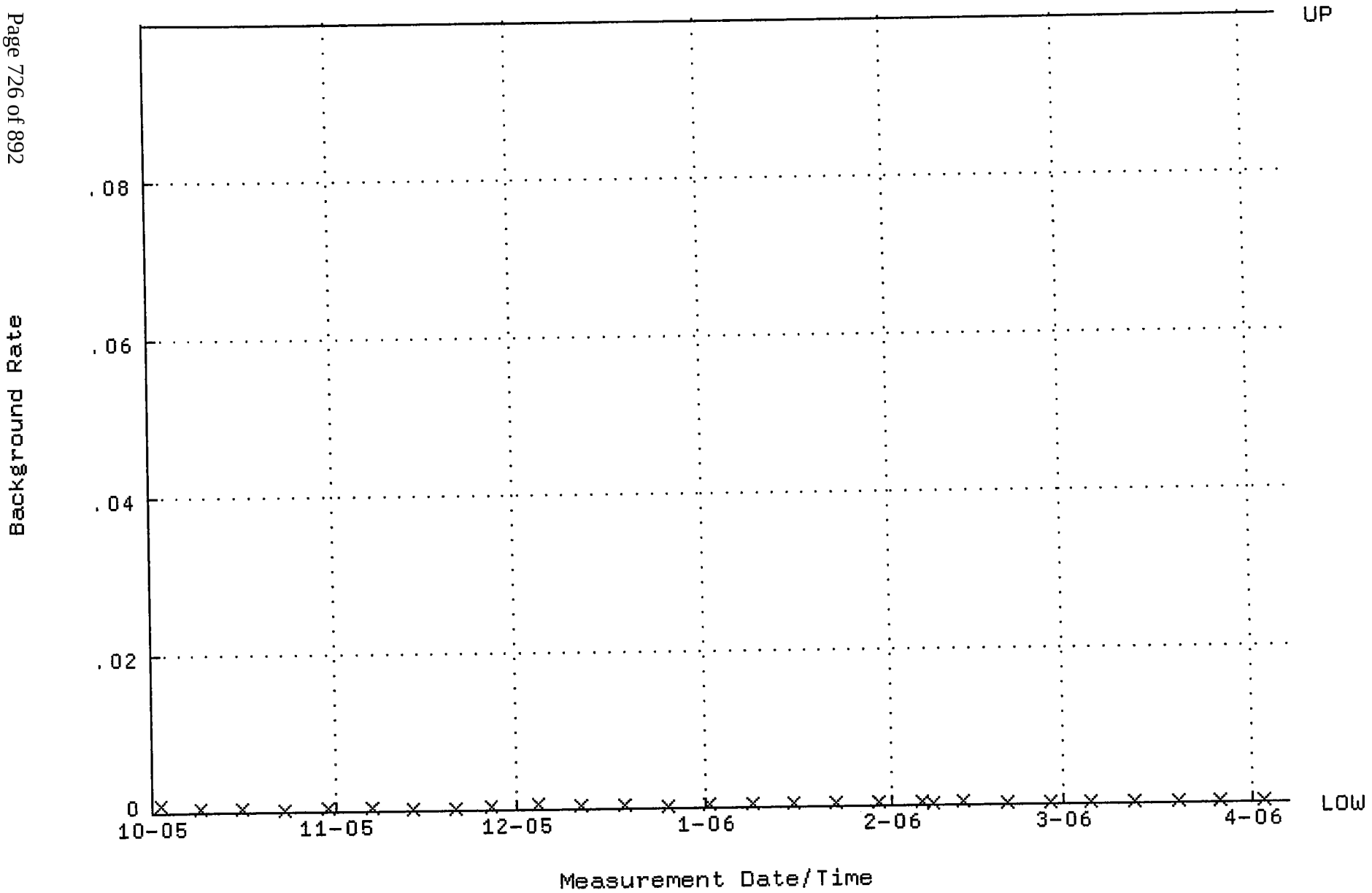
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



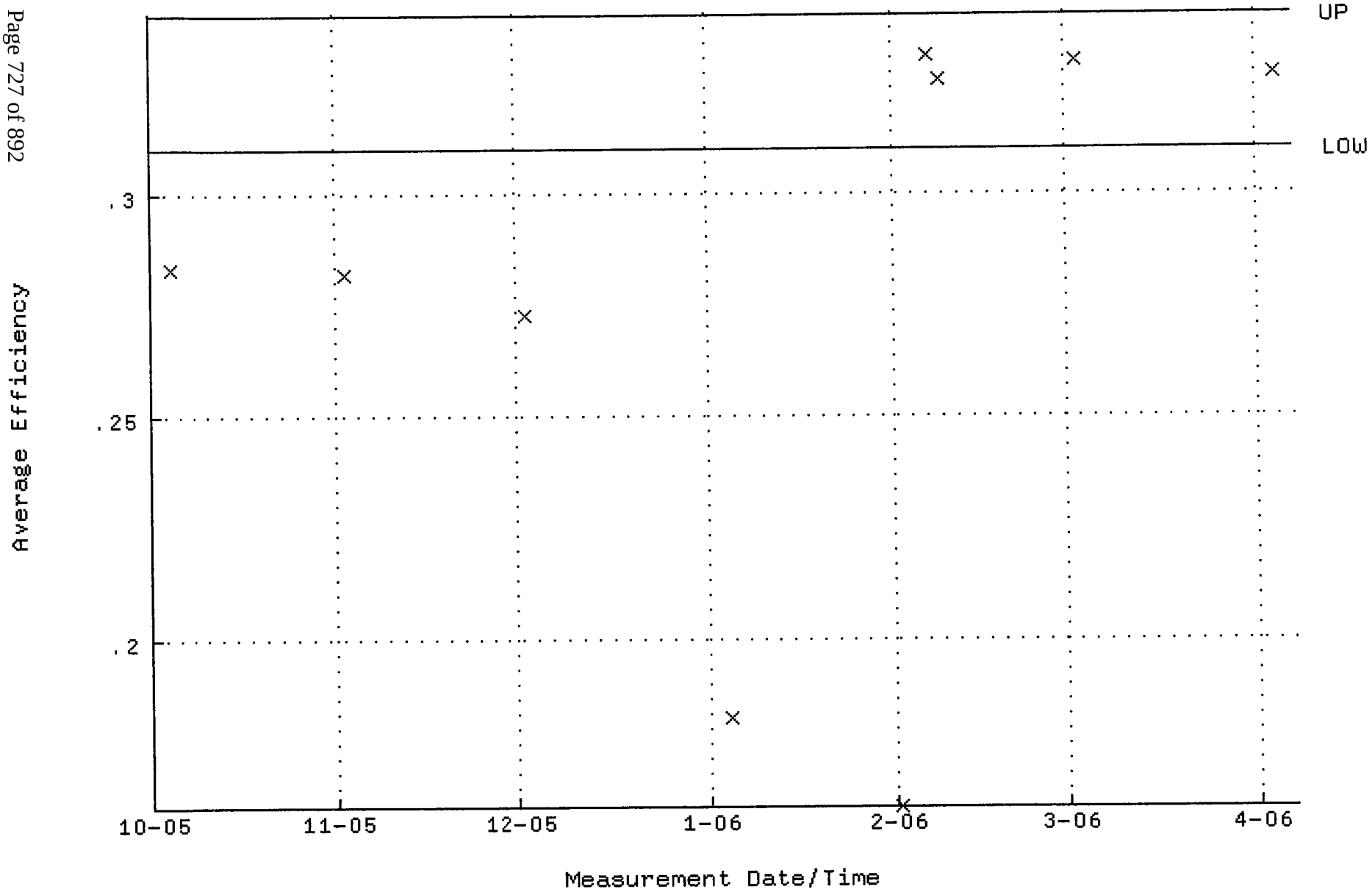
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



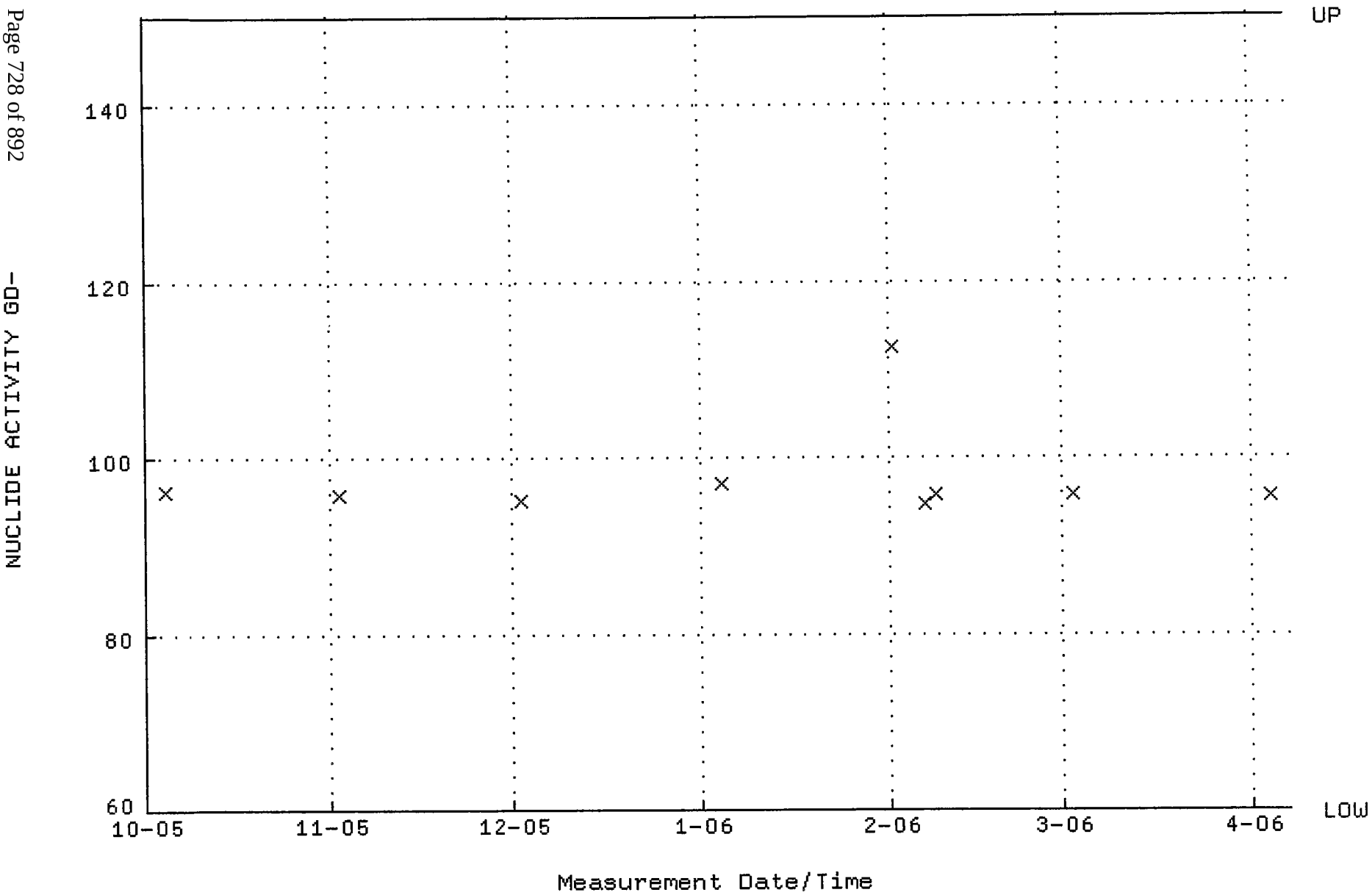
QA filename : DKA100:[ENV_ALPHA.QA.B]B089.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:08 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



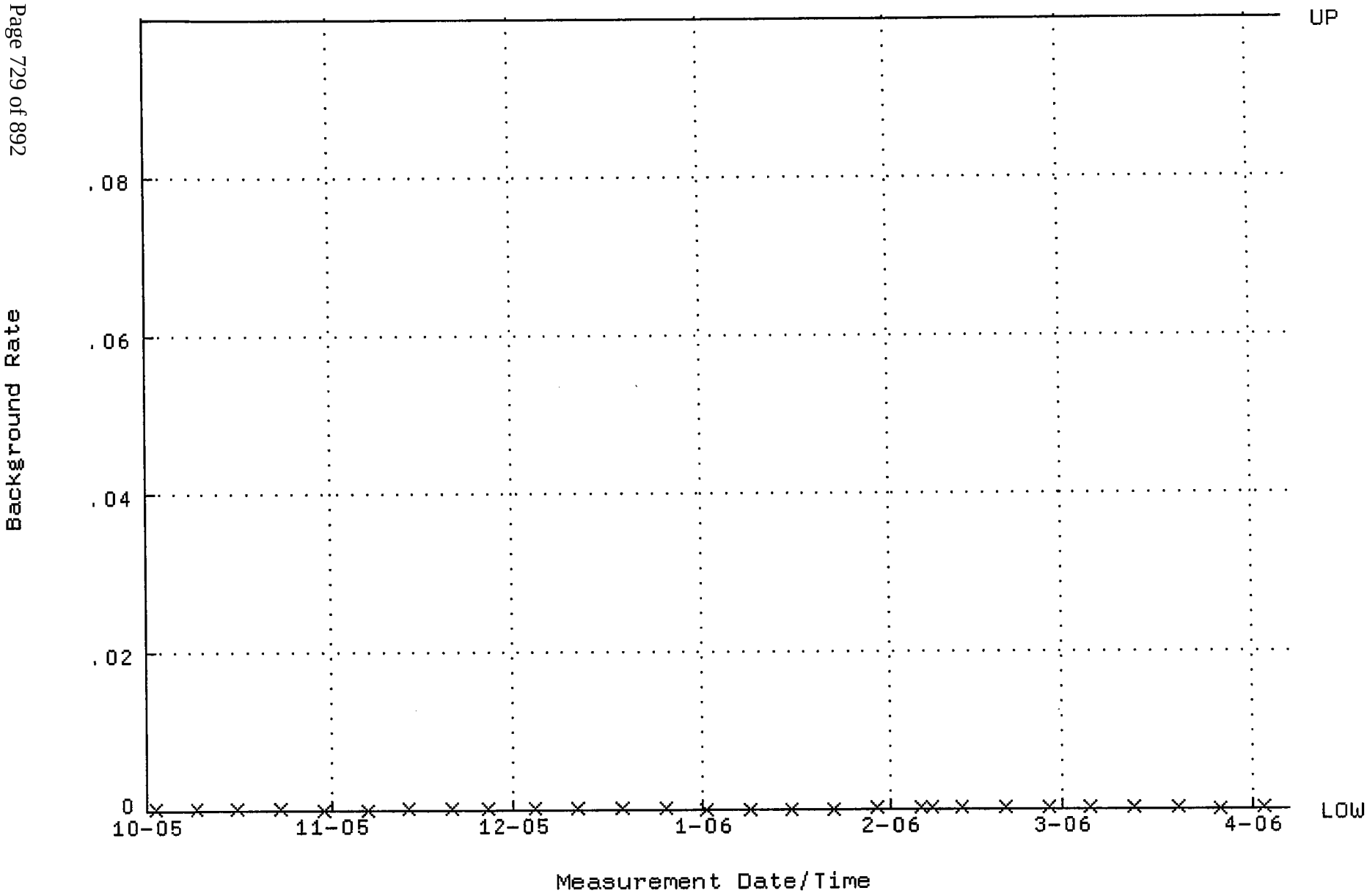
QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.310000 through 0.340000



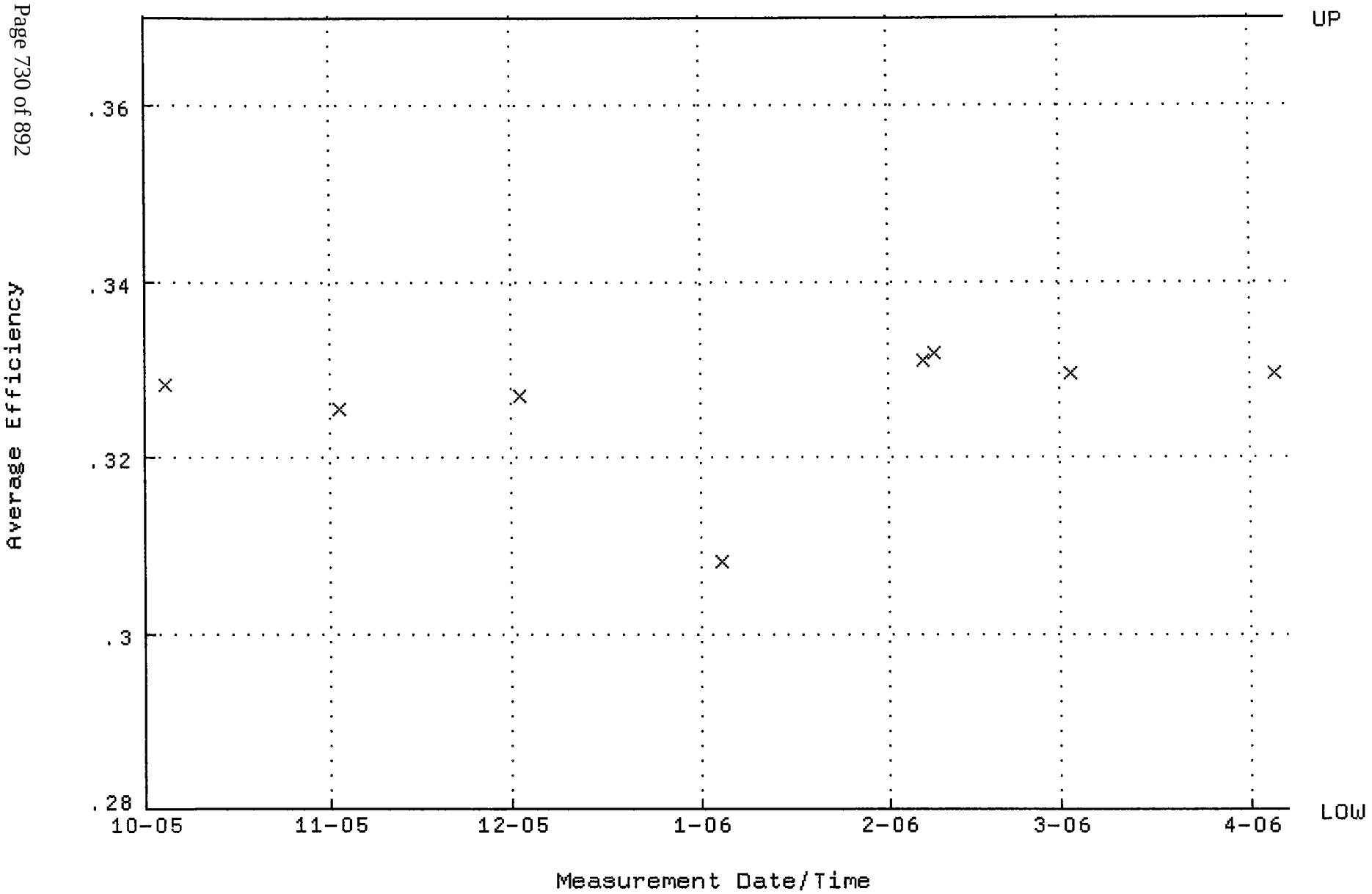
QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



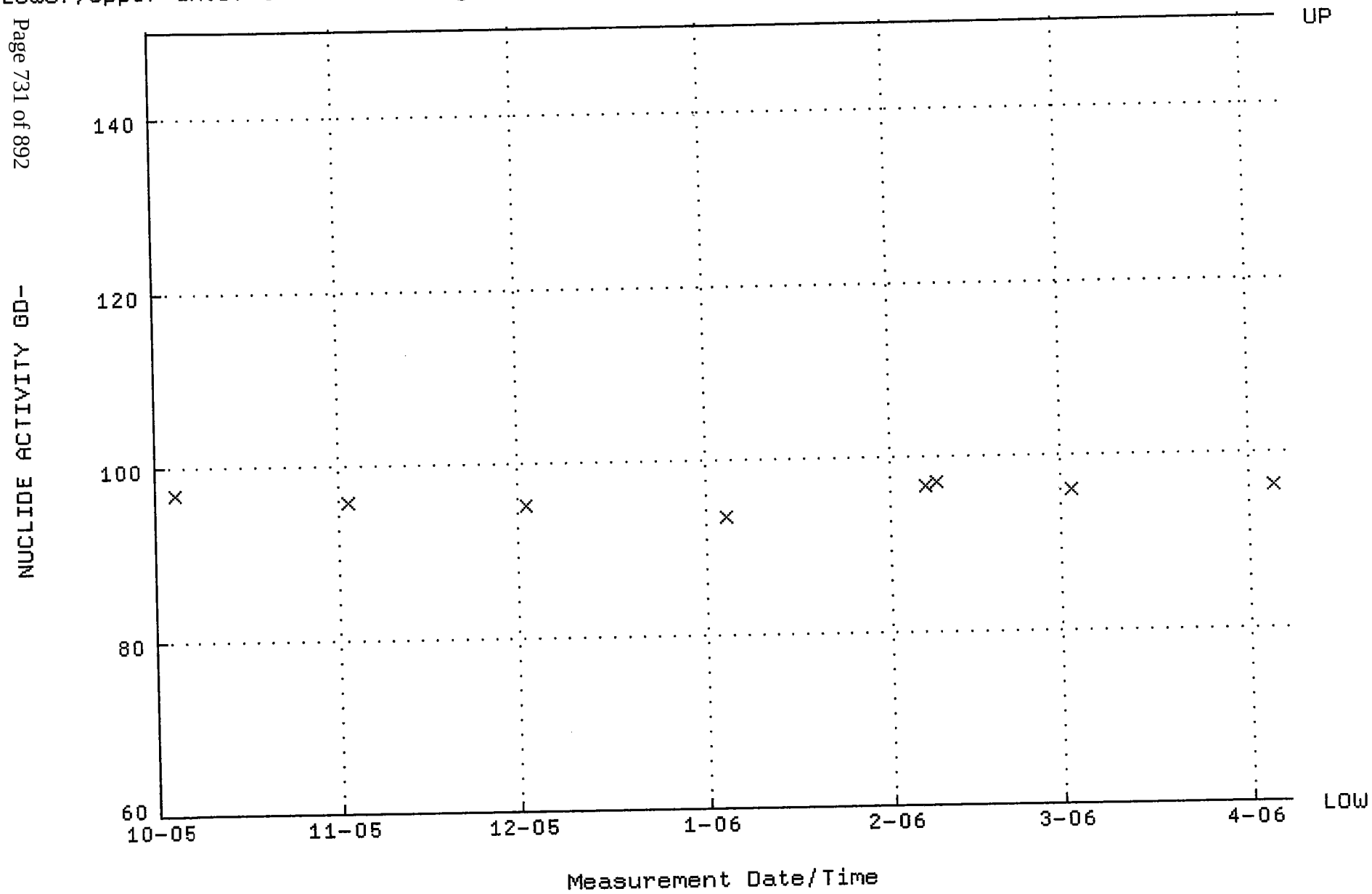
QA filename : DKA100:[ENV_ALPHA.QA.B]B090.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:08 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



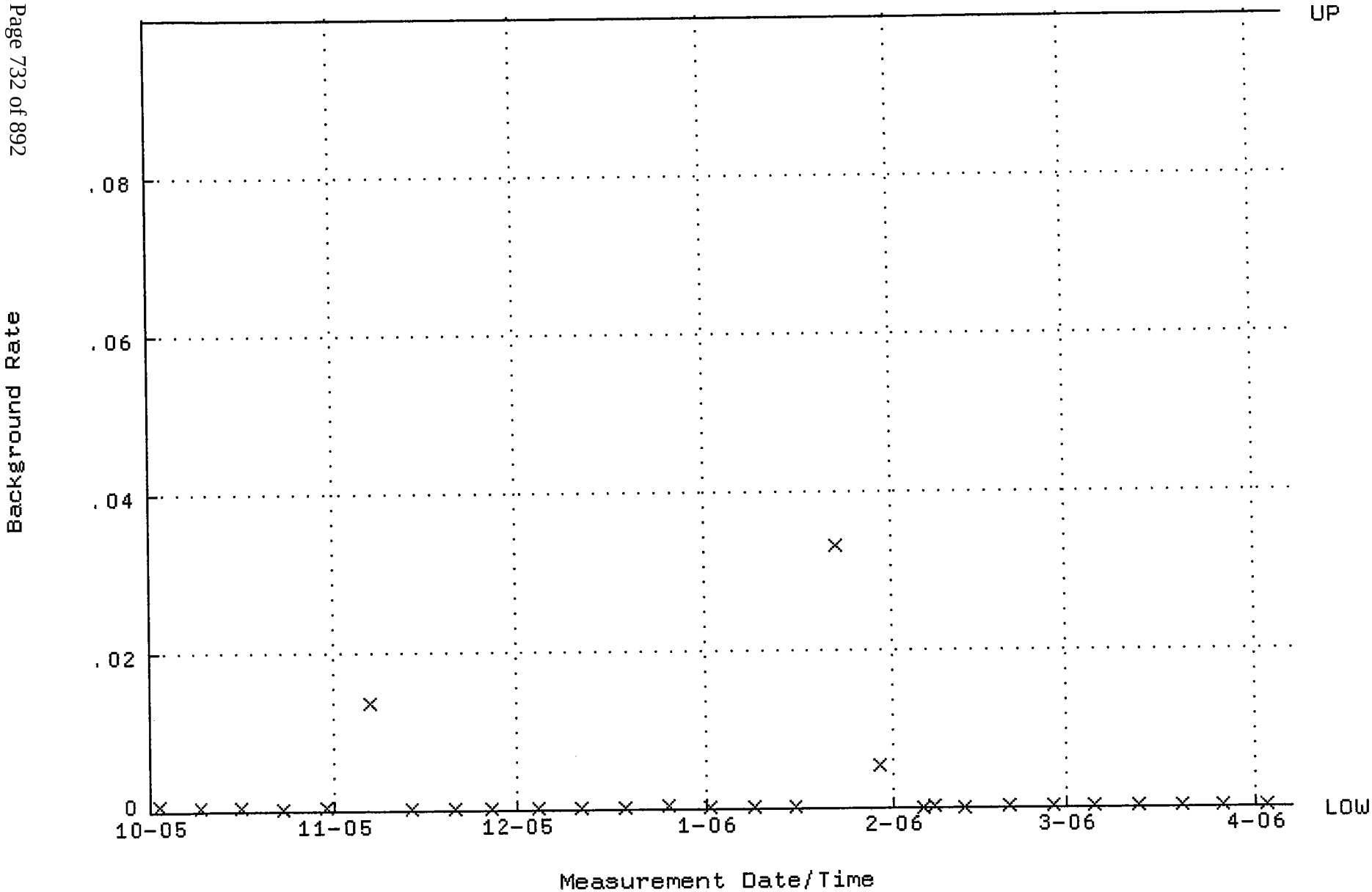
QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



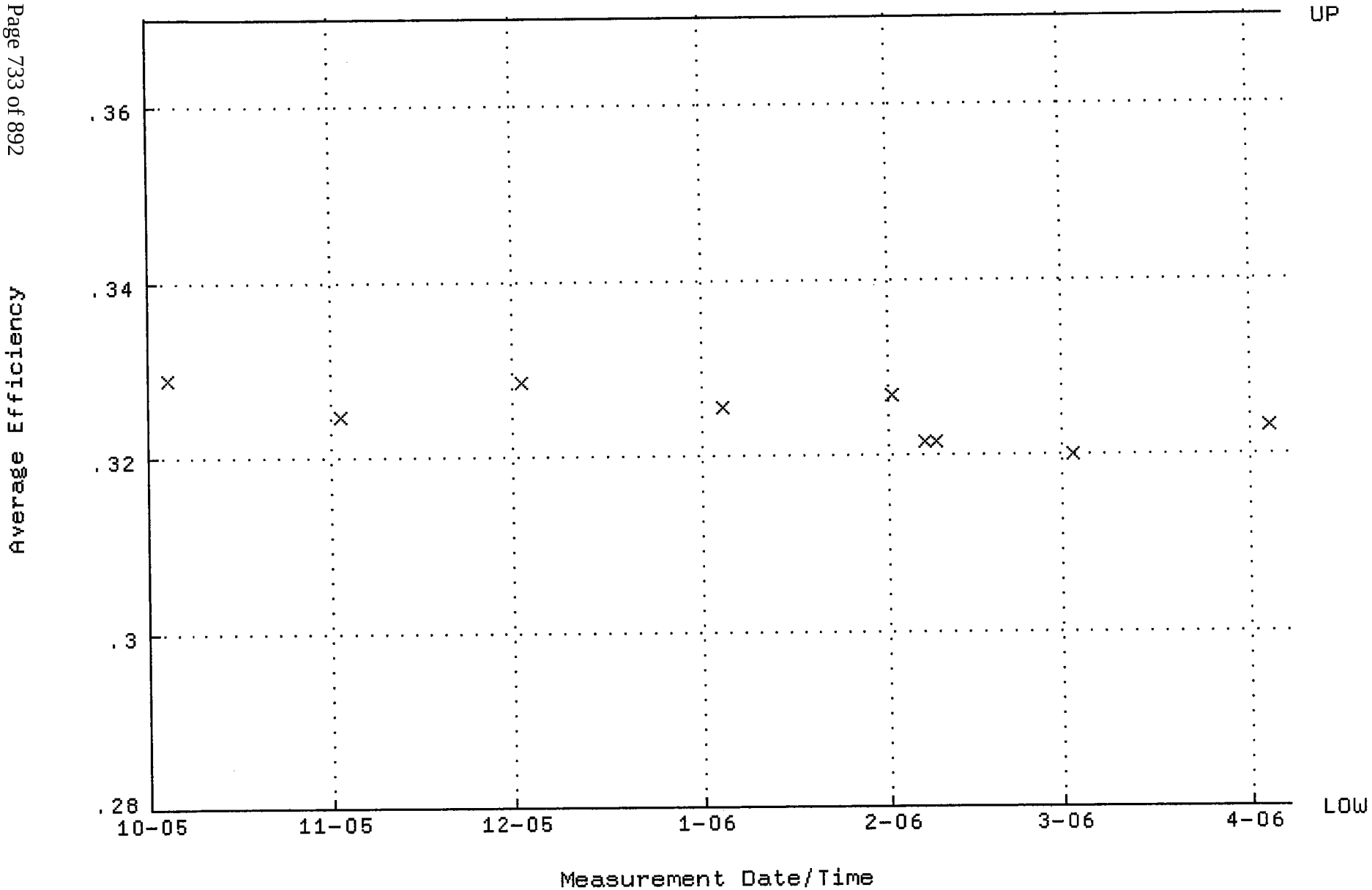
QA filename : DKA100:[ENV_ALPHA.QA.W]W091.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



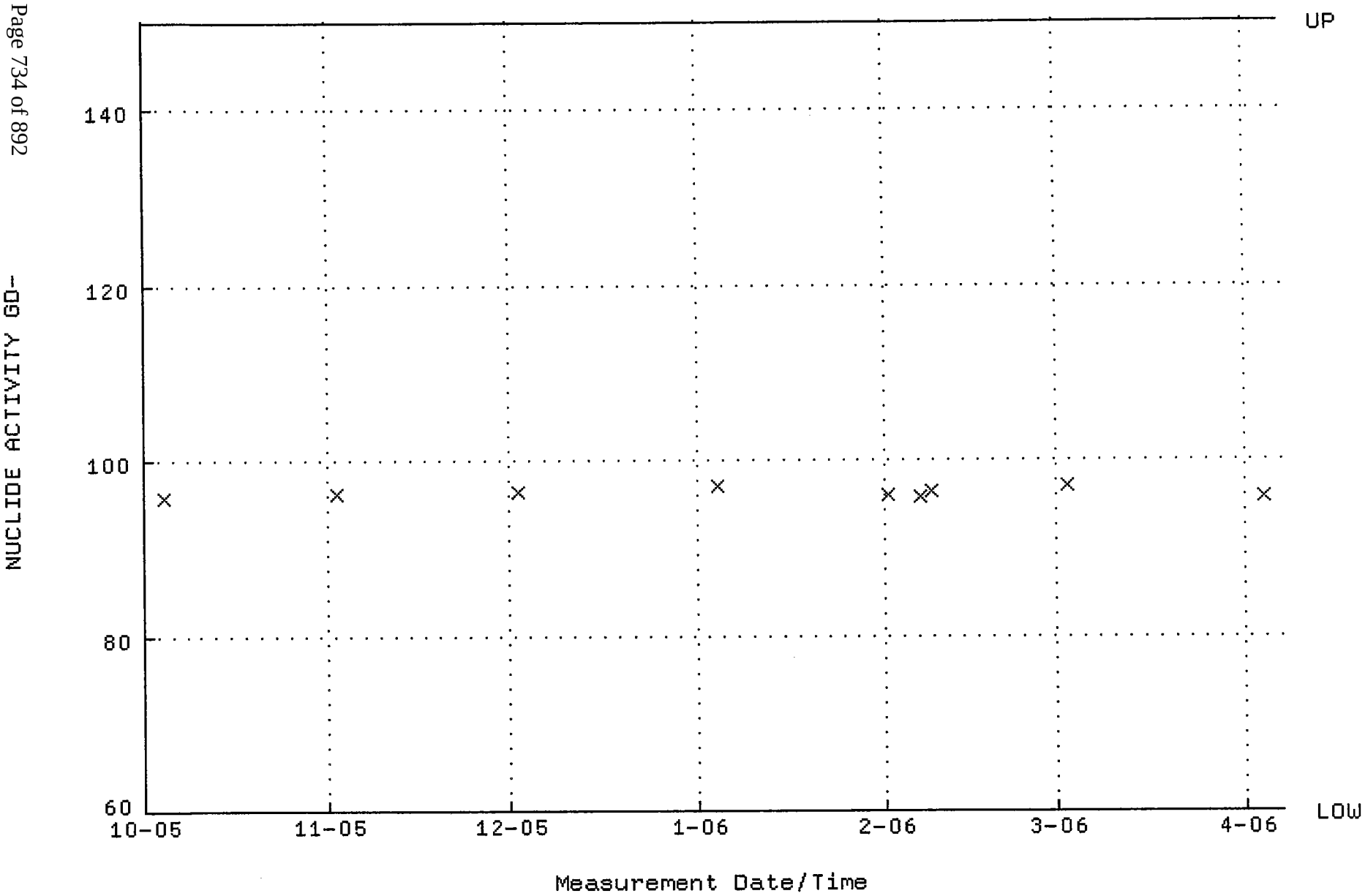
QA filename : DKA100:[ENV_ALPHA.QA.B]B091.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:08 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



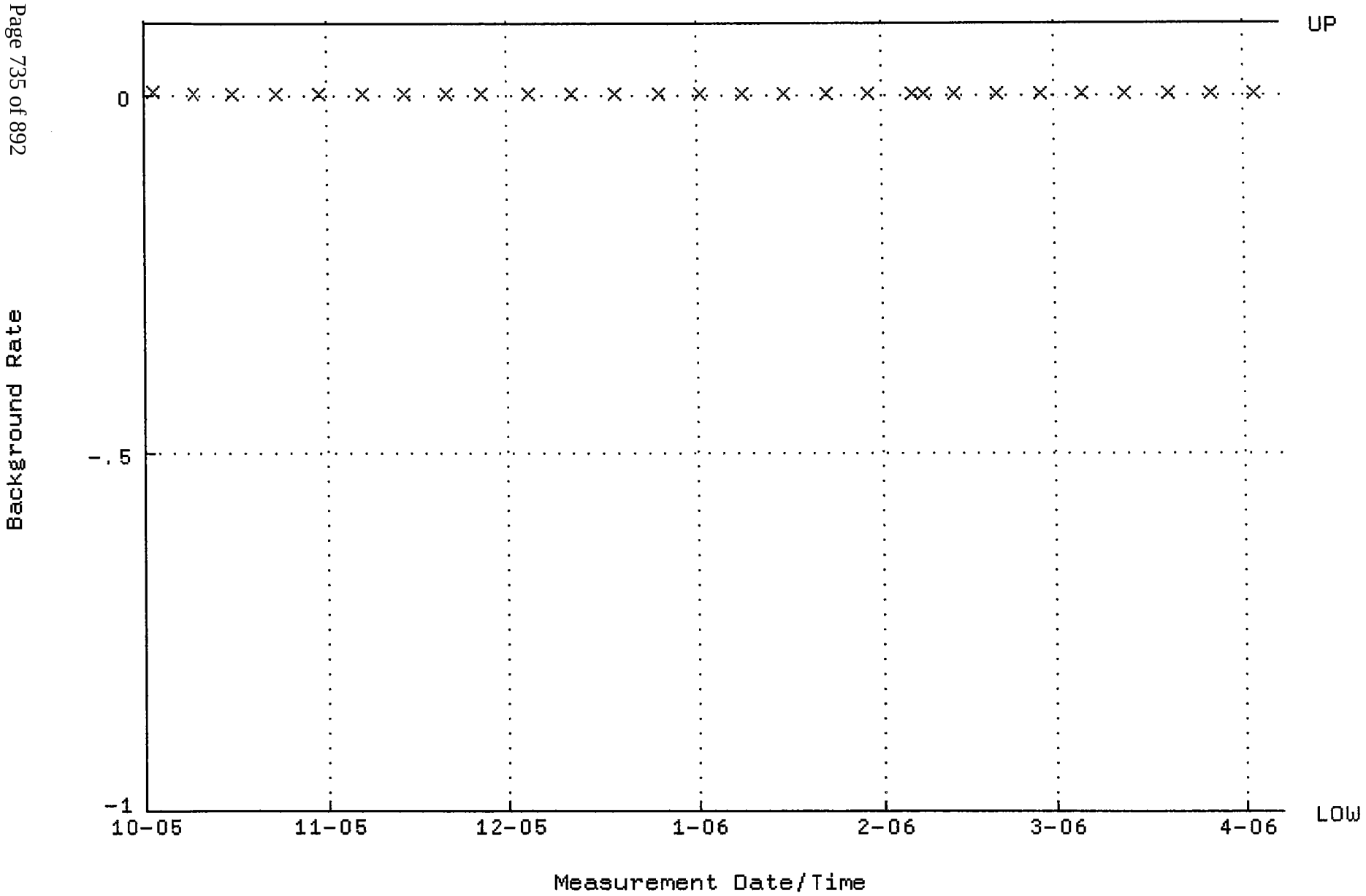
QA filename : DKA100:[ENV_ALPHA.QA.W]W092.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



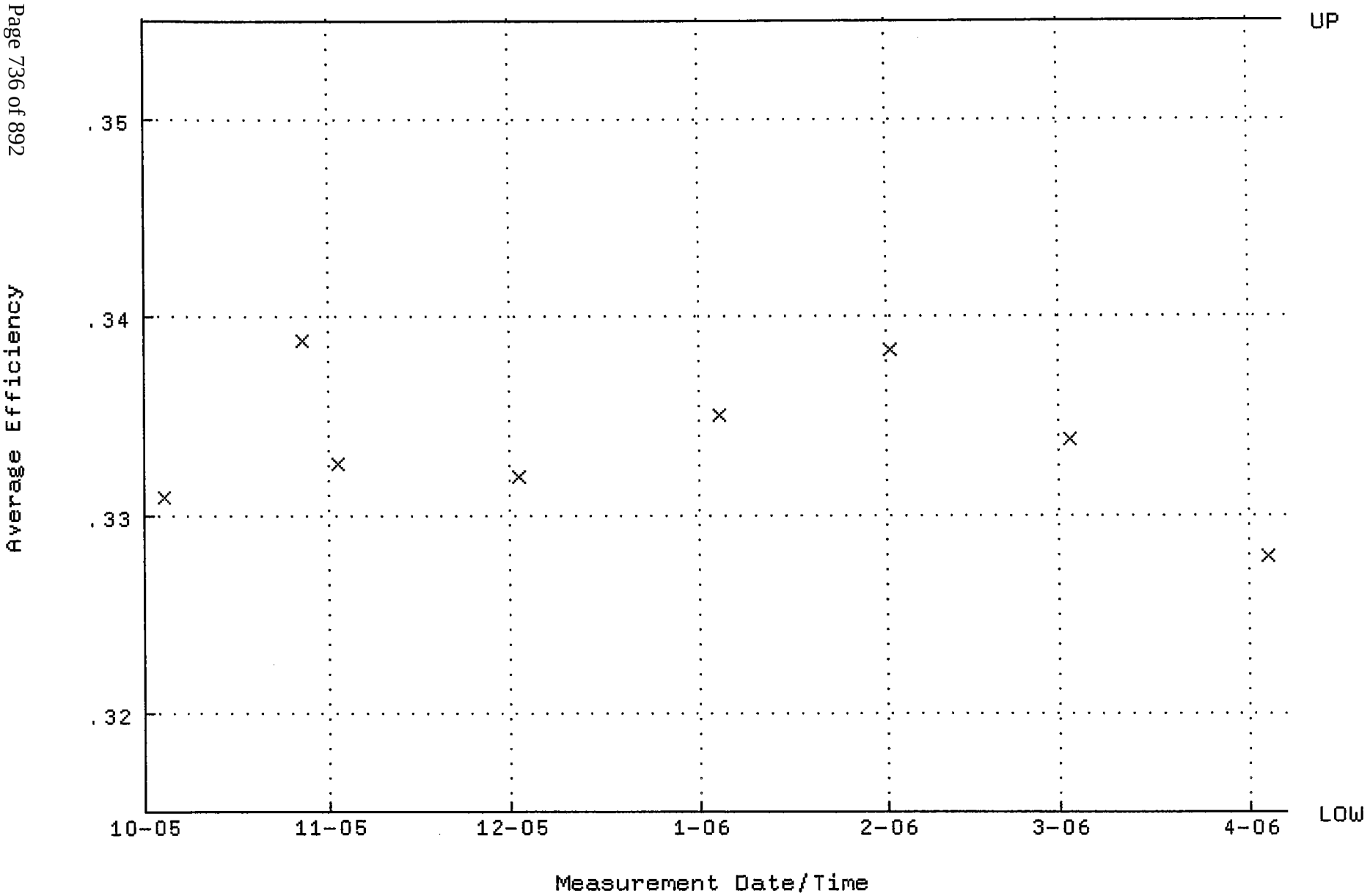
QA filename : DKA100:[ENV_ALPHA.QA.W]W092.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



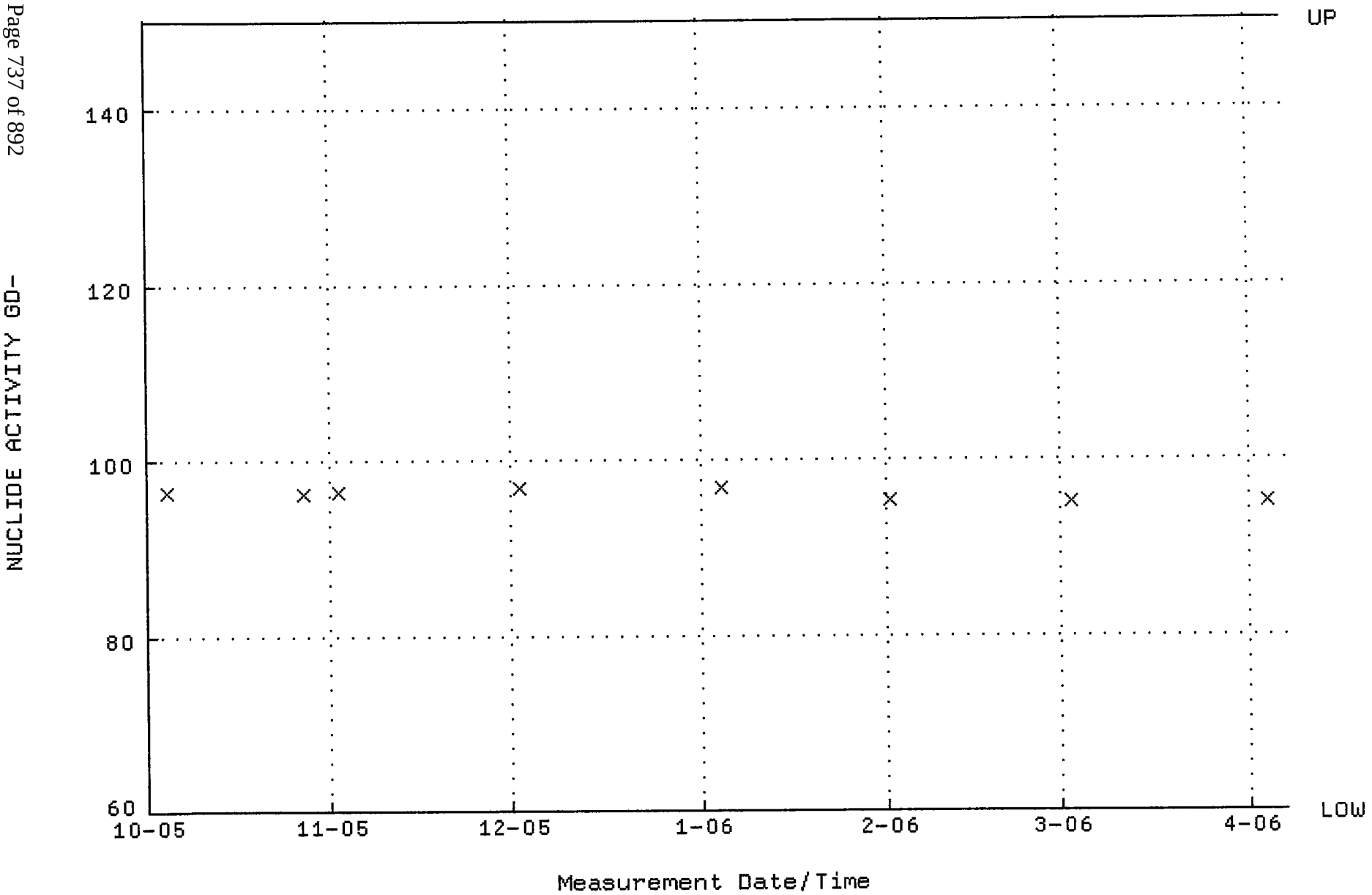
QA filename : DKA100:[ENV_ALPHA.QA.B]B092.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:08 through 6-APR-2006 12:00:00
Lower/Upper Lmts: -1.00000 through 0.100000



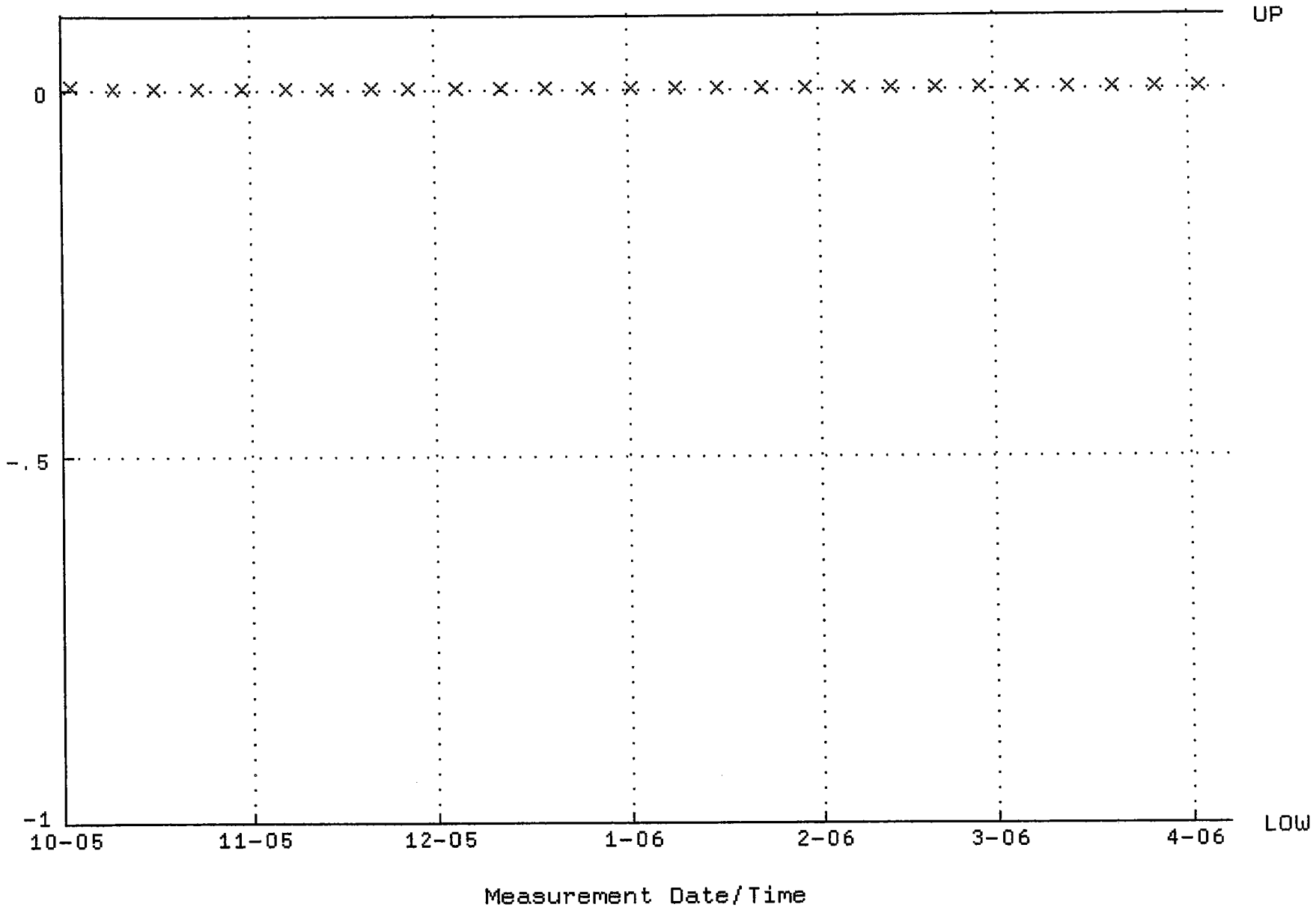
QA filename : DKA100:[ENV_ALPHA.QA.W]W093.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.315000 through 0.355000



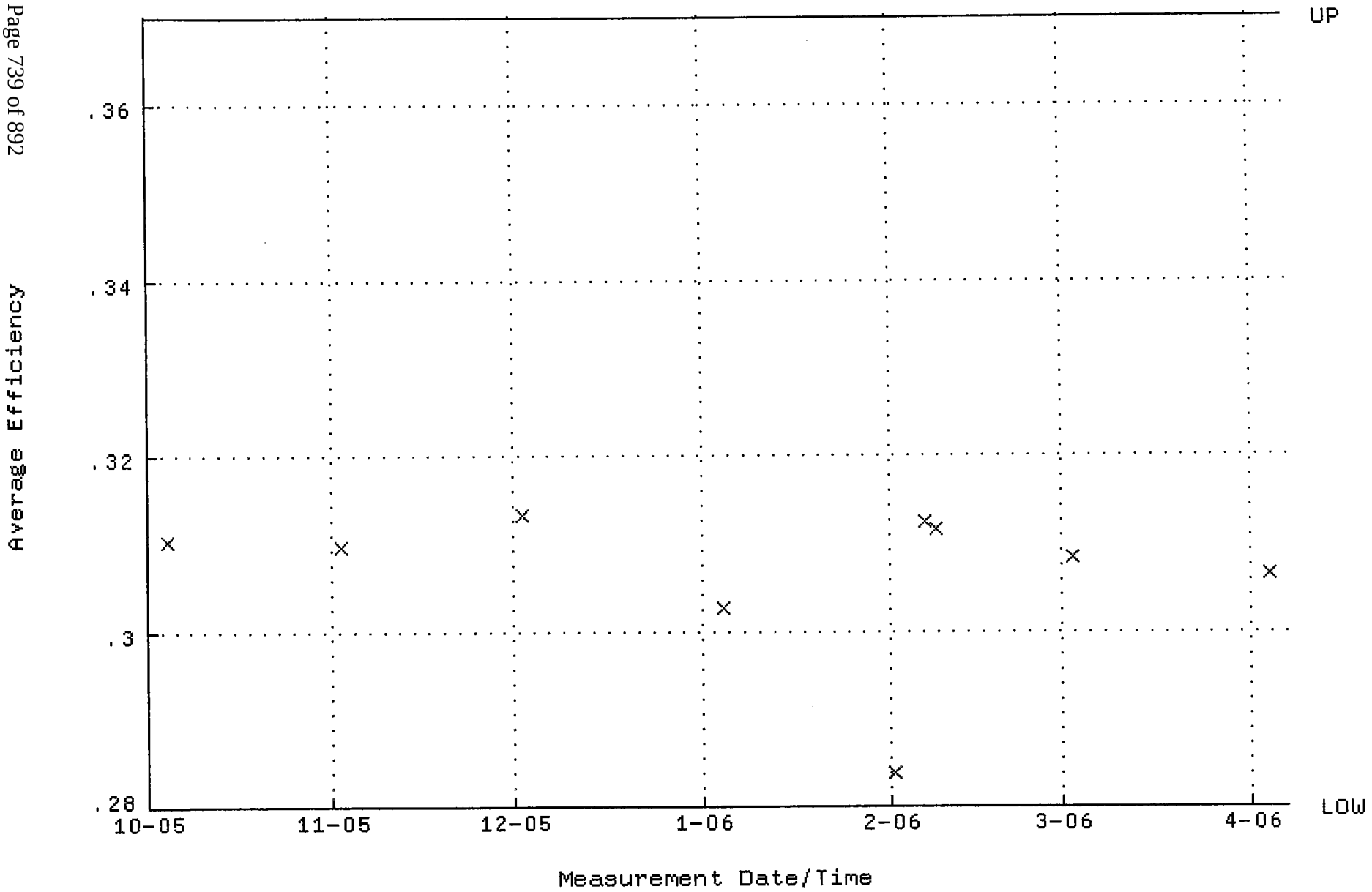
QA filename : DKA100:[ENV_ALPHA.QA.W]W093.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



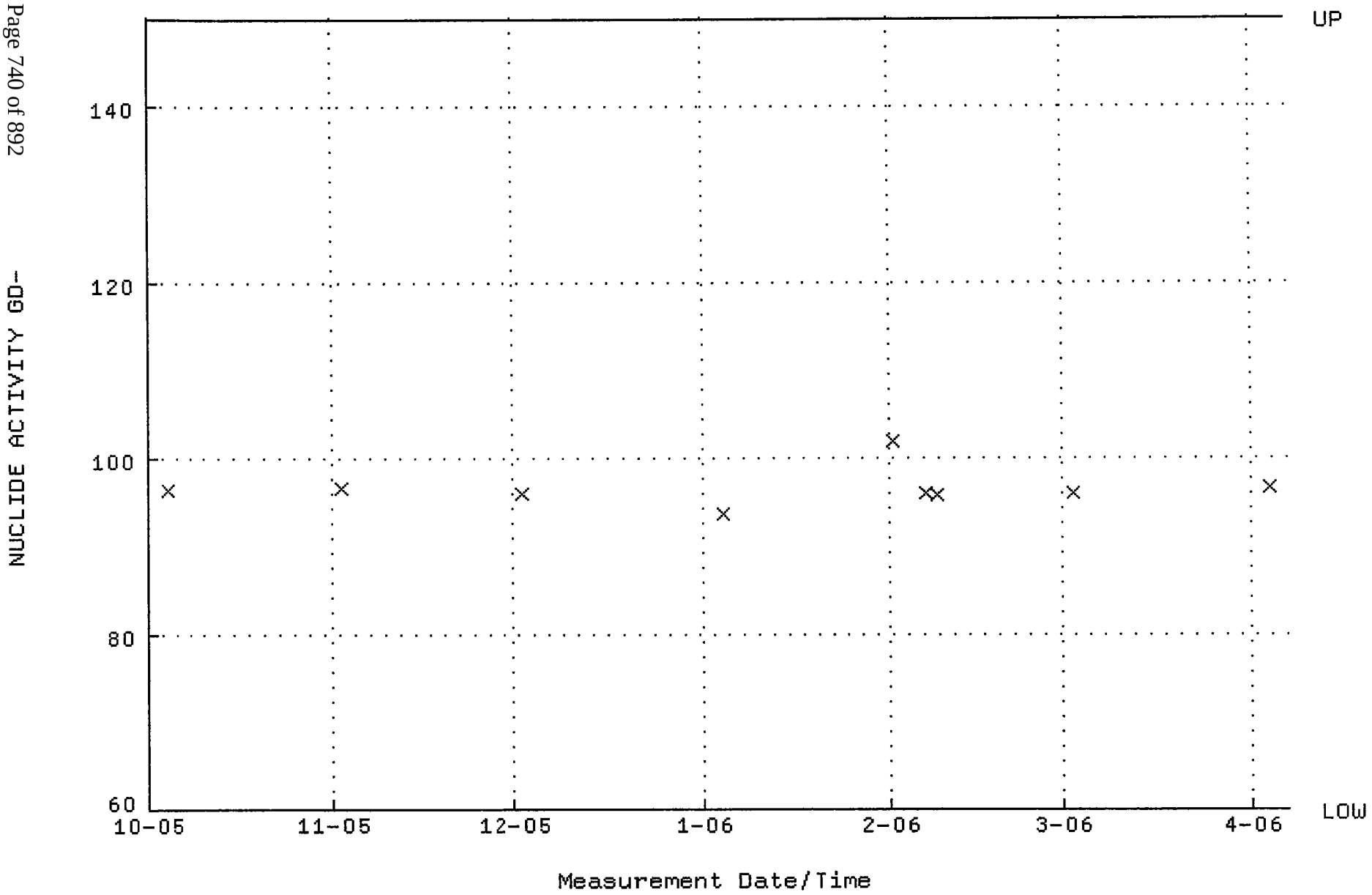
QA filename : DKA100:[ENV_ALPHA.QA.B]B093.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:08 through 6-APR-2006 12:00:00
Lower/Upper Lmts: -1.00000 through 0.100000



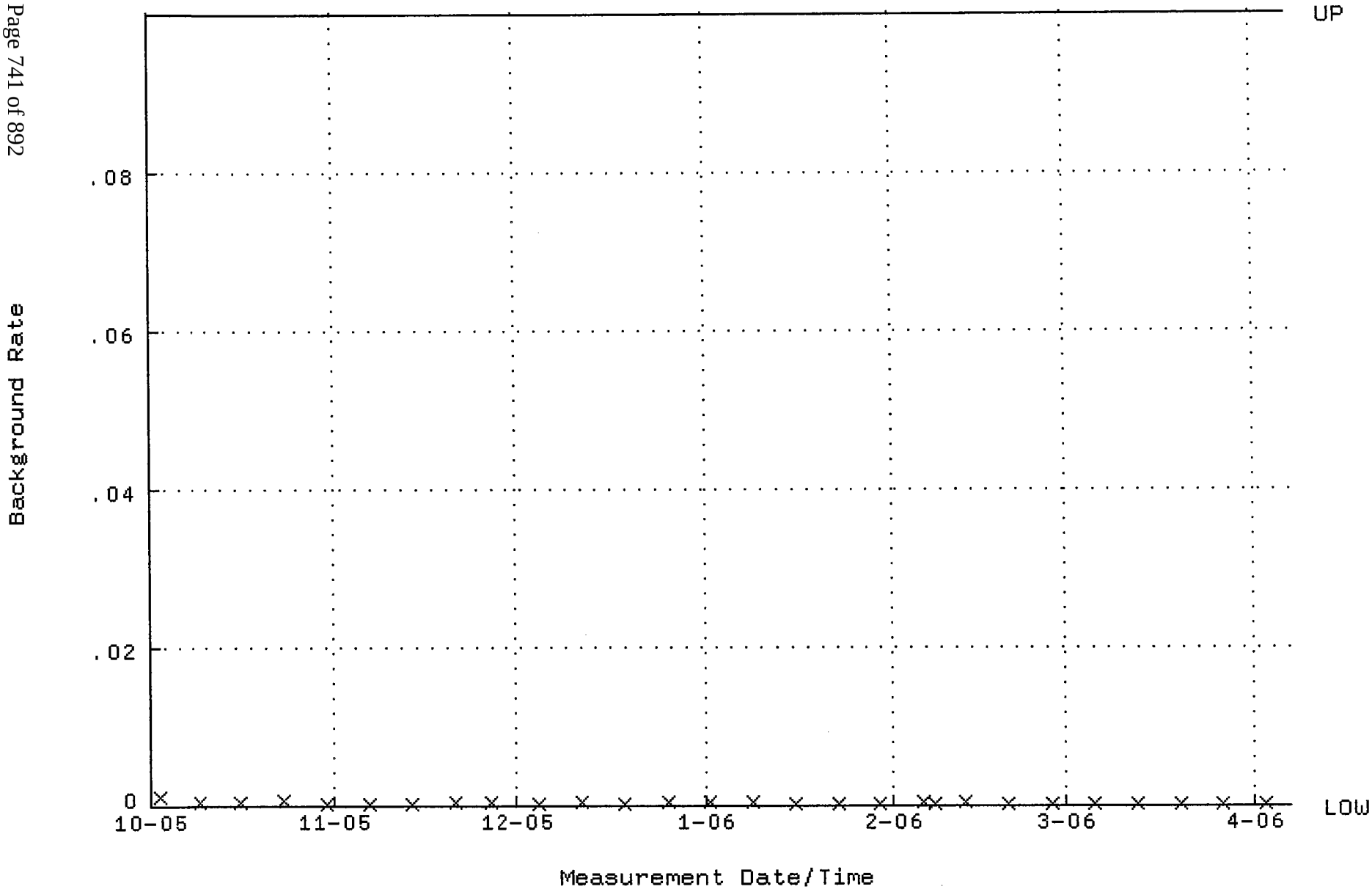
QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.280000 through 0.370000



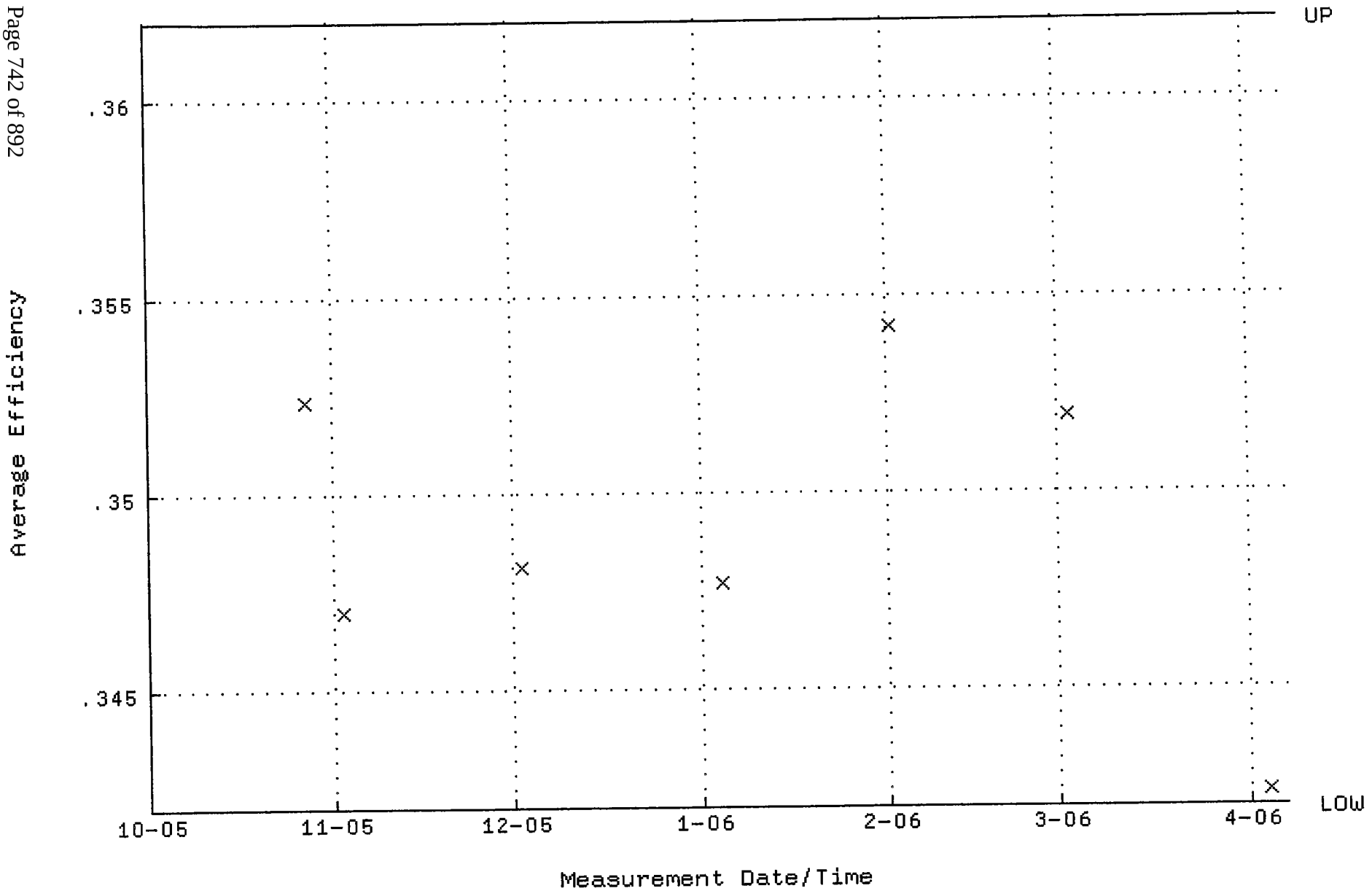
QA filename : DKA100:[ENV_ALPHA.QA.W]W094.QAF;1
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 4-OCT-2005 12:09:54 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



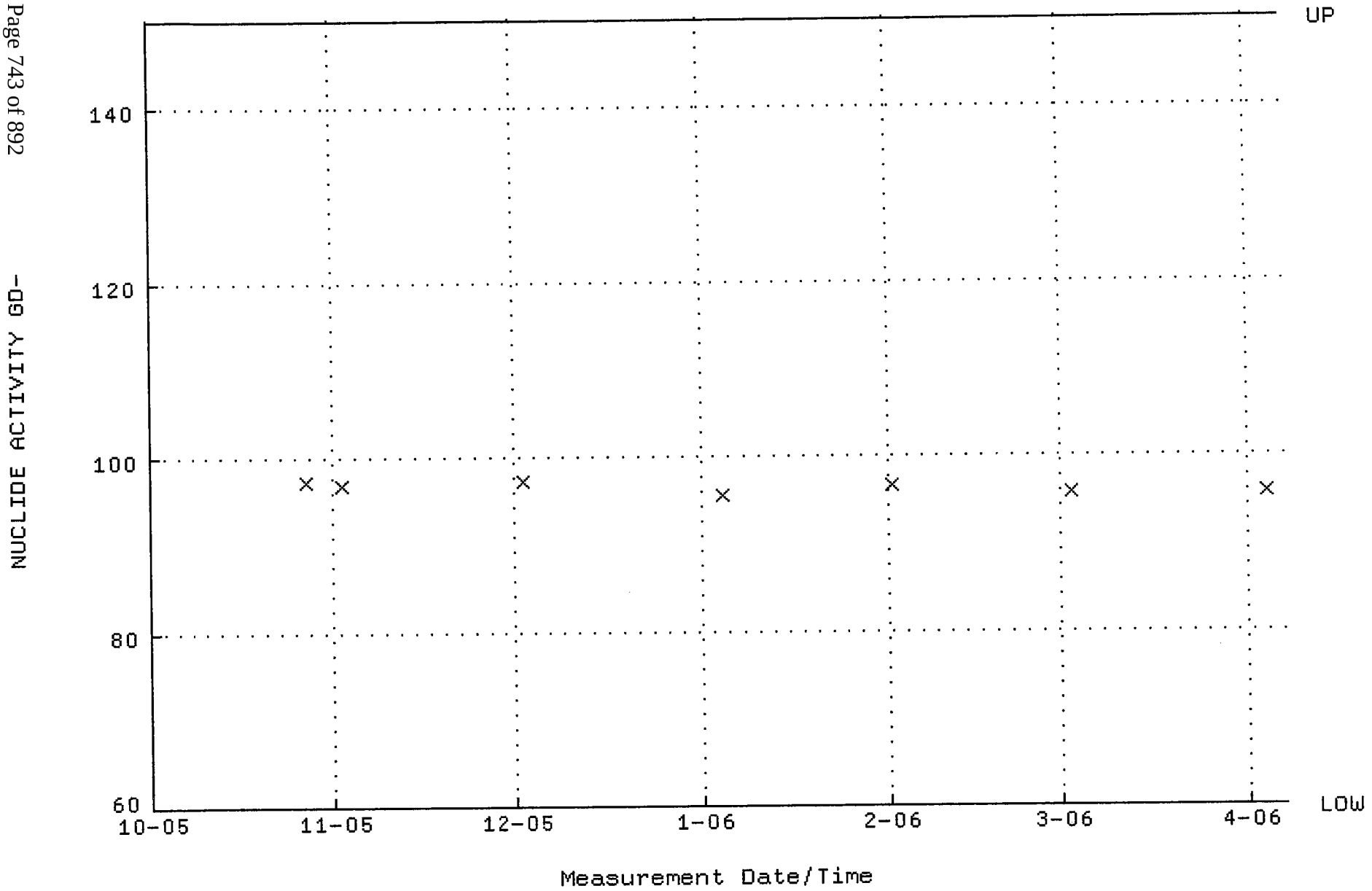
QA filename : DKA100:[ENV_ALPHA.QA.B]B094.QAF;1
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:08 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



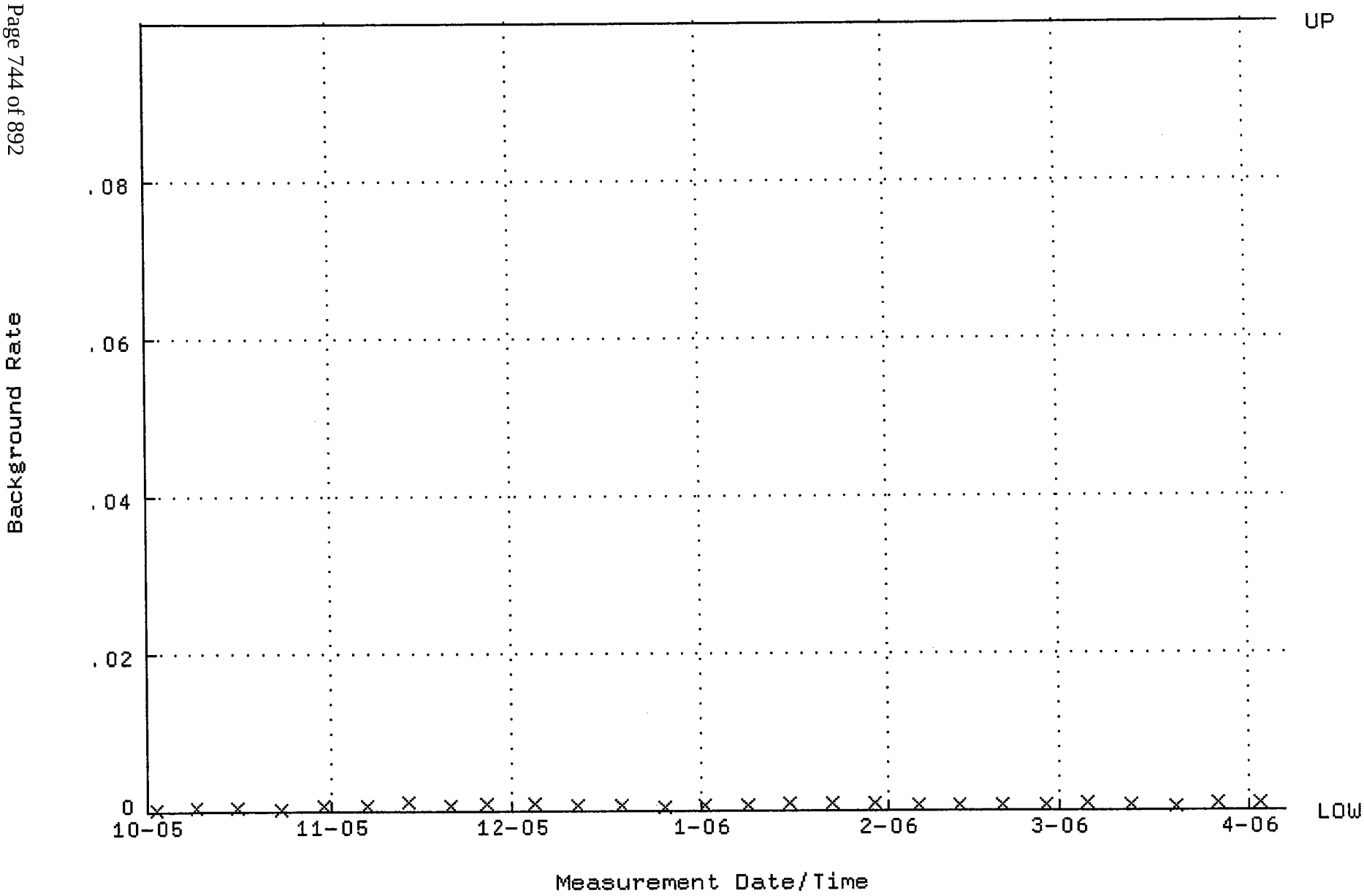
QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
Parameter Name : AVRGEFF (Average Efficiency)
Start/End Dates : 27-OCT-2005 08:48:55 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.342000 through 0.362000



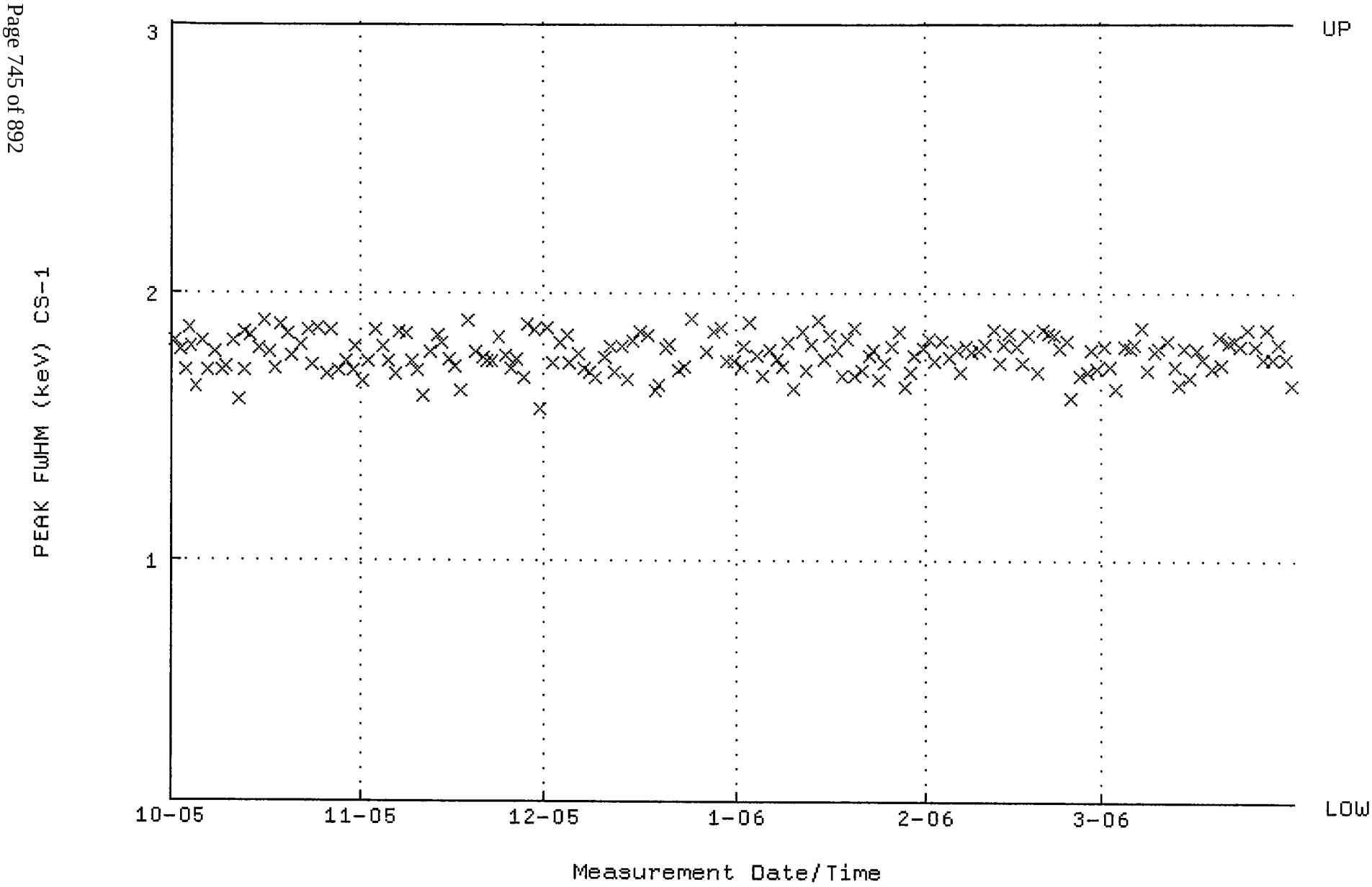
QA filename : DKA100:[ENV_ALPHA.QA.W]W098.QAF;3
Parameter Name : NLACTVTY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 27-OCT-2005 08:48:55 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 60.0000 through 150.000



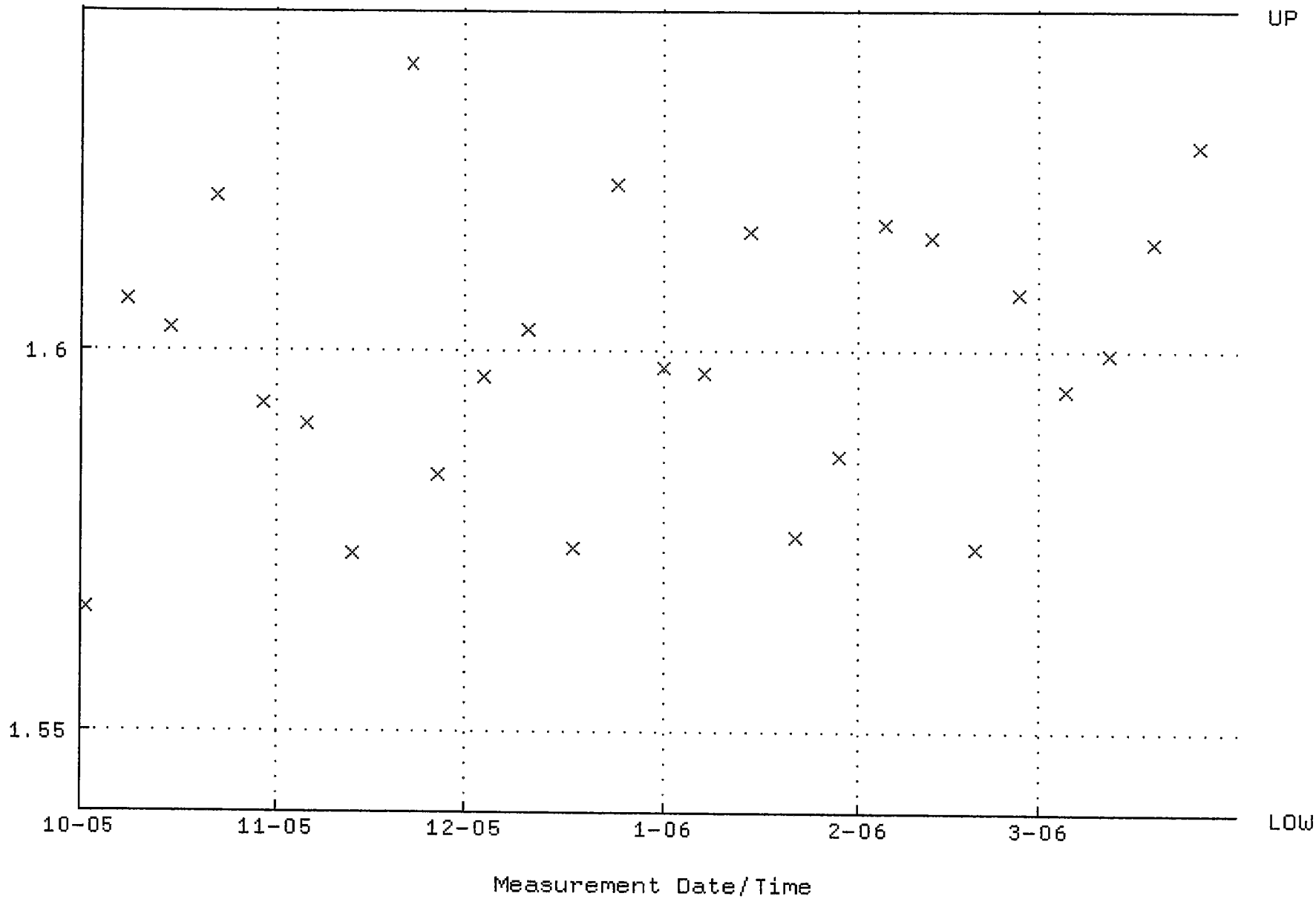
QA filename : DKA100:[ENV_ALPHA.QA.B]B098.QAF;2
Parameter Name : BACKRATE (Background Rate)
Start/End Dates : 2-OCT-2005 13:26:09 through 6-APR-2006 12:00:00
Lower/Upper Lmts: 0.000000E+00 through 0.100000



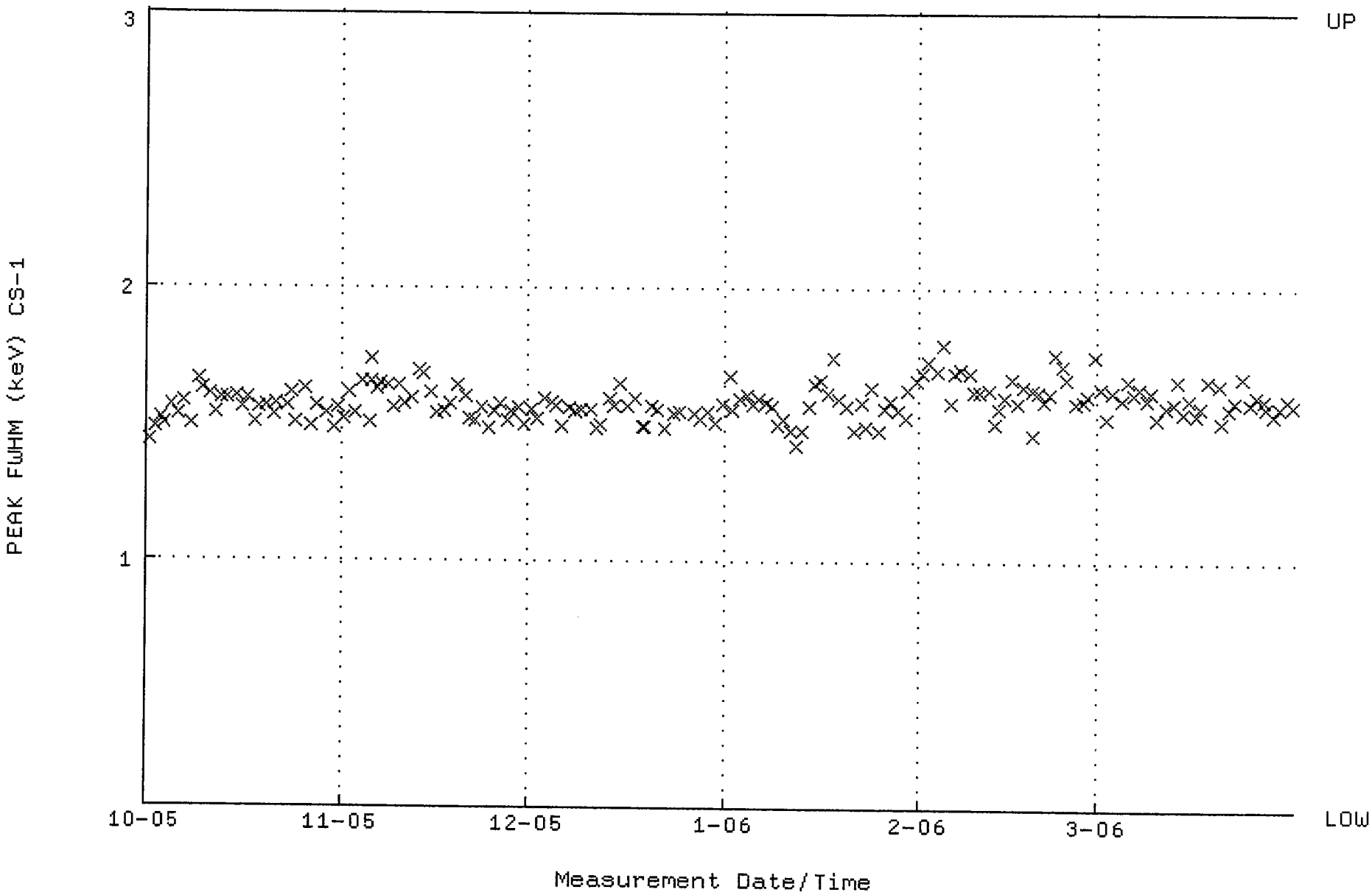
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA3.QAF;3
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 12:16:03 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



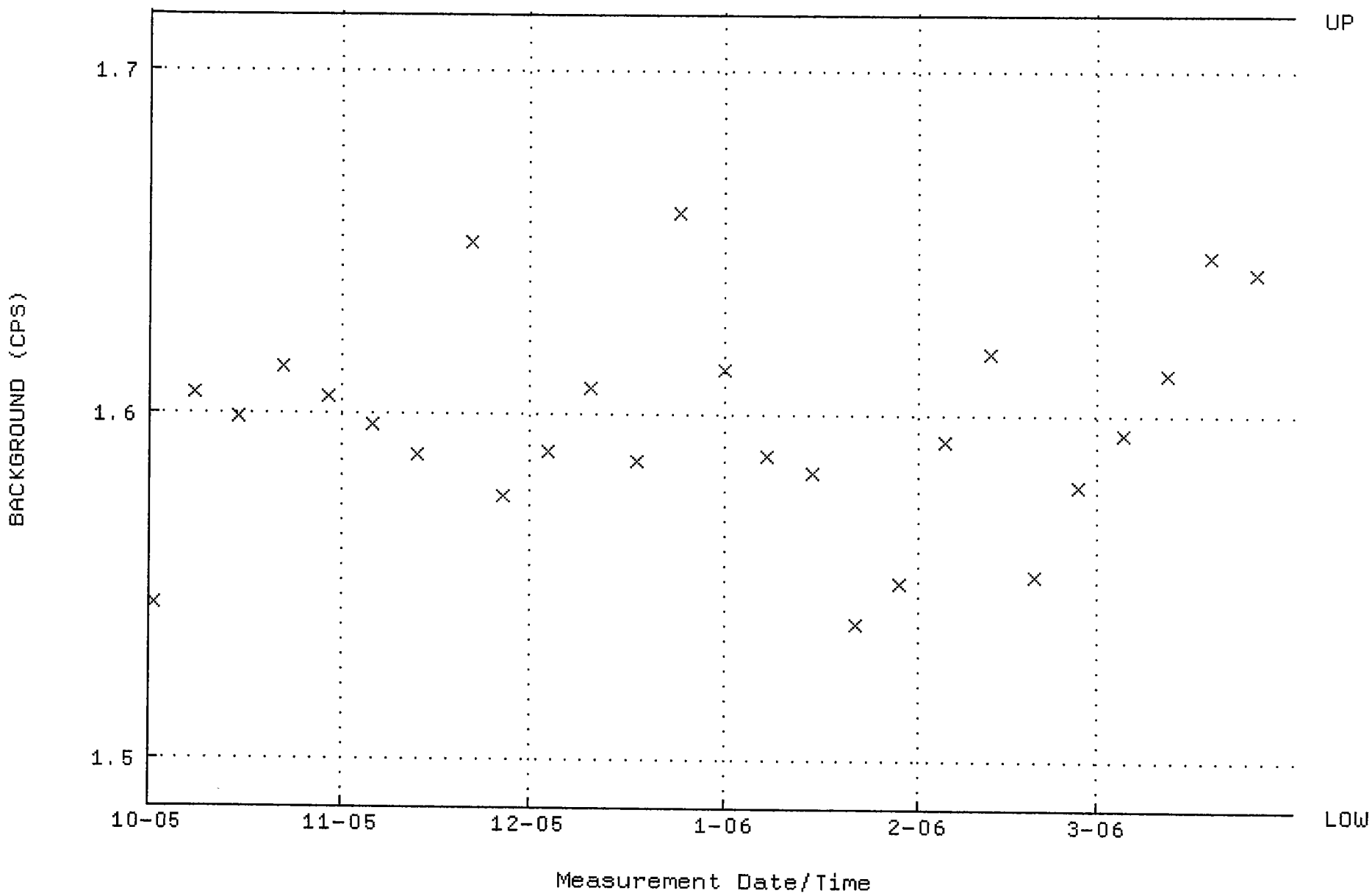
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA3.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:07:57 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.53950 through 1.64450



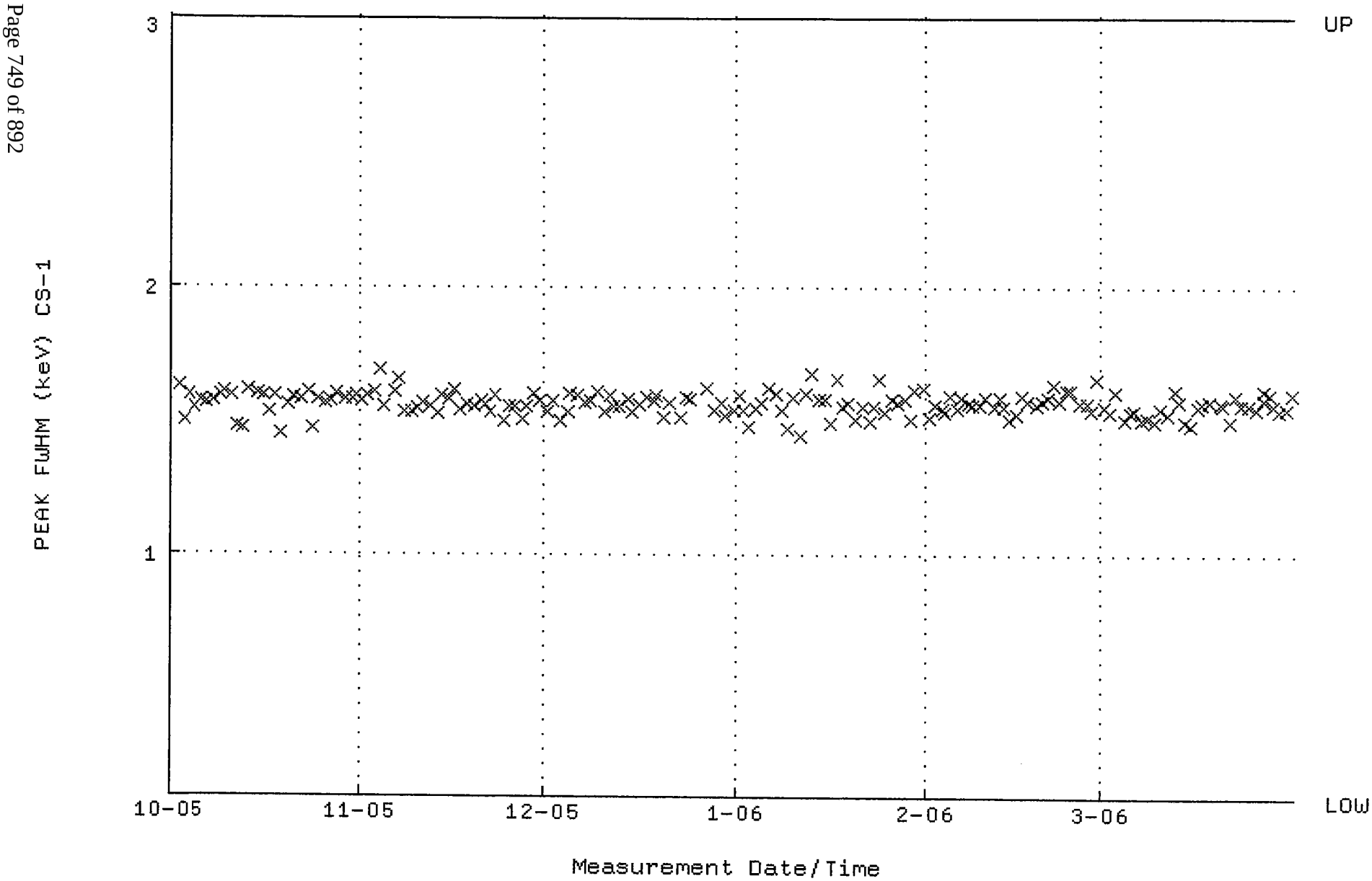
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA12.QAF;5
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 12:26:34 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



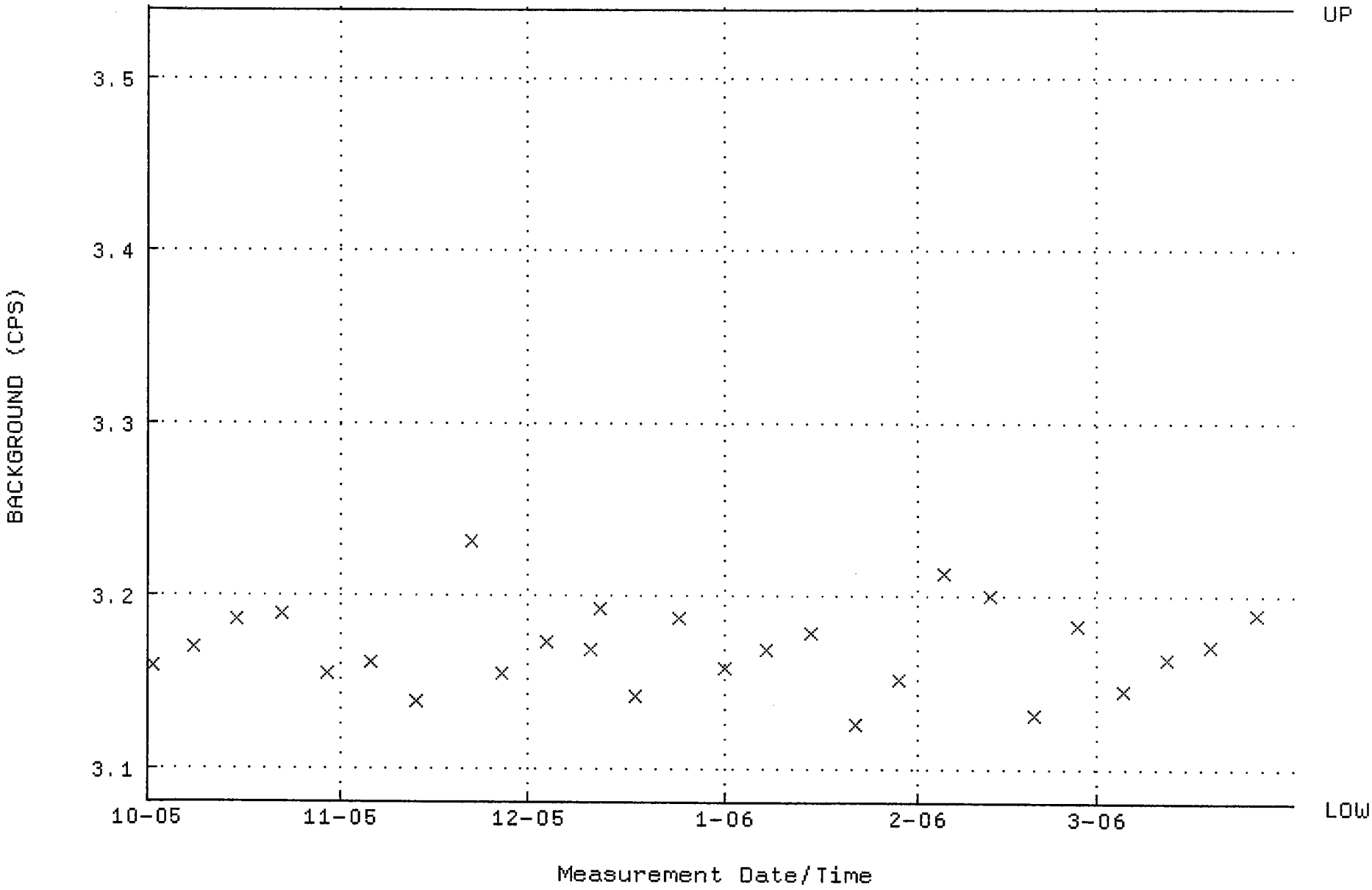
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA12.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:13 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.48571 through 1.71629



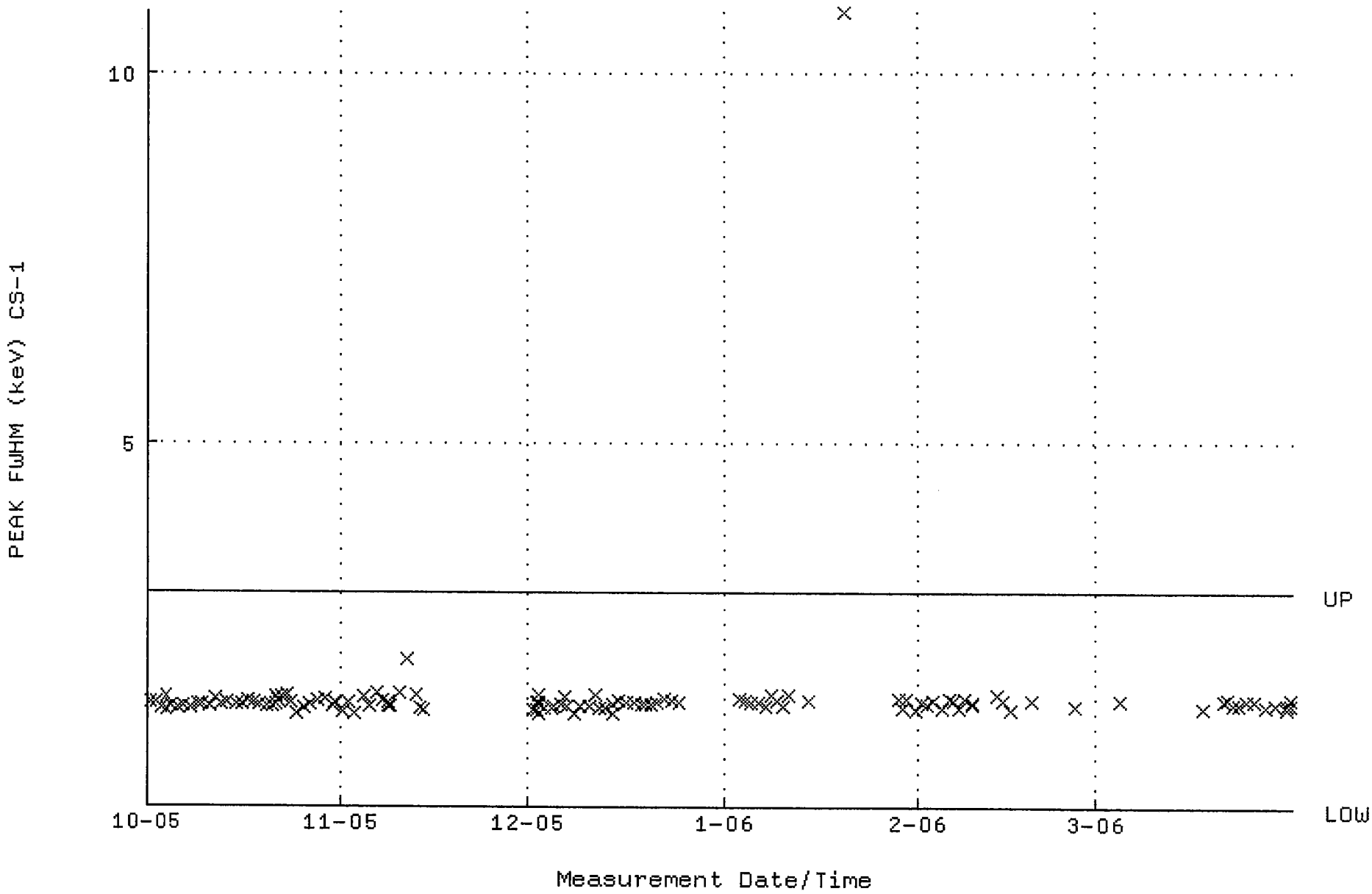
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA13.QAF;3
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 2-OCT-2005 14:56:36 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



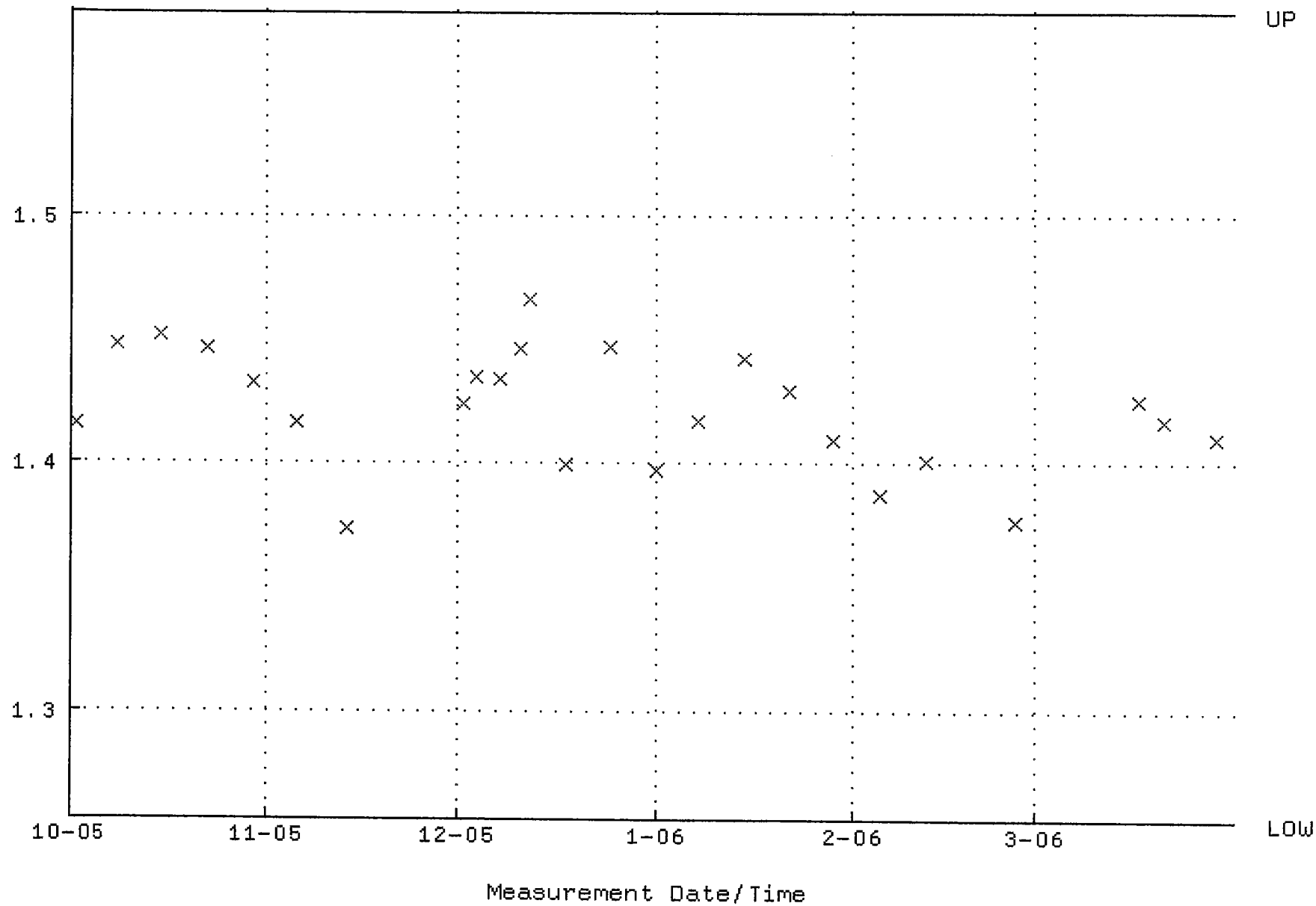
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA13.QAF;2
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:20 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 3.08008 through 3.53992



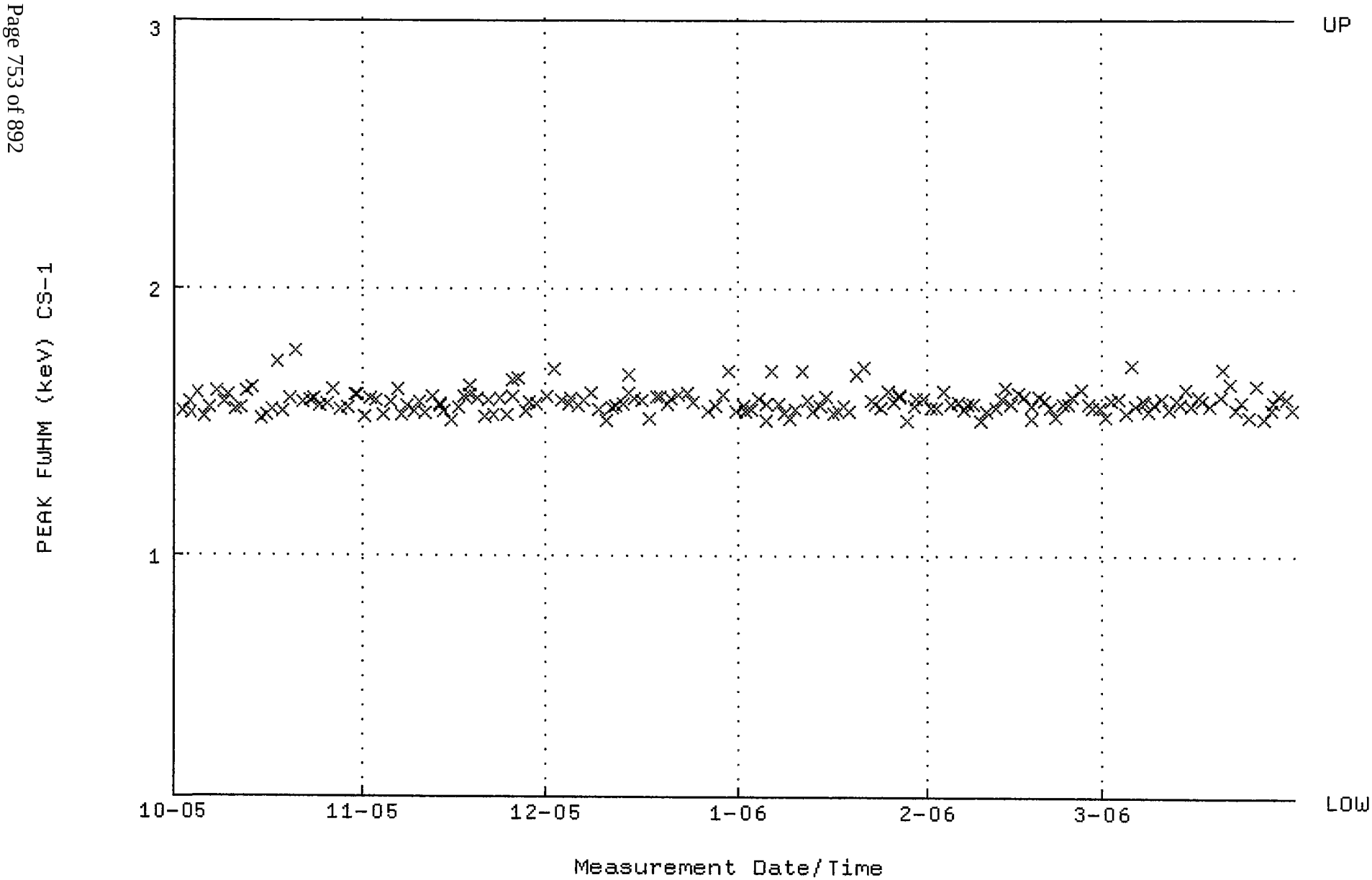
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA16.QAF;2
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 12:08:06 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



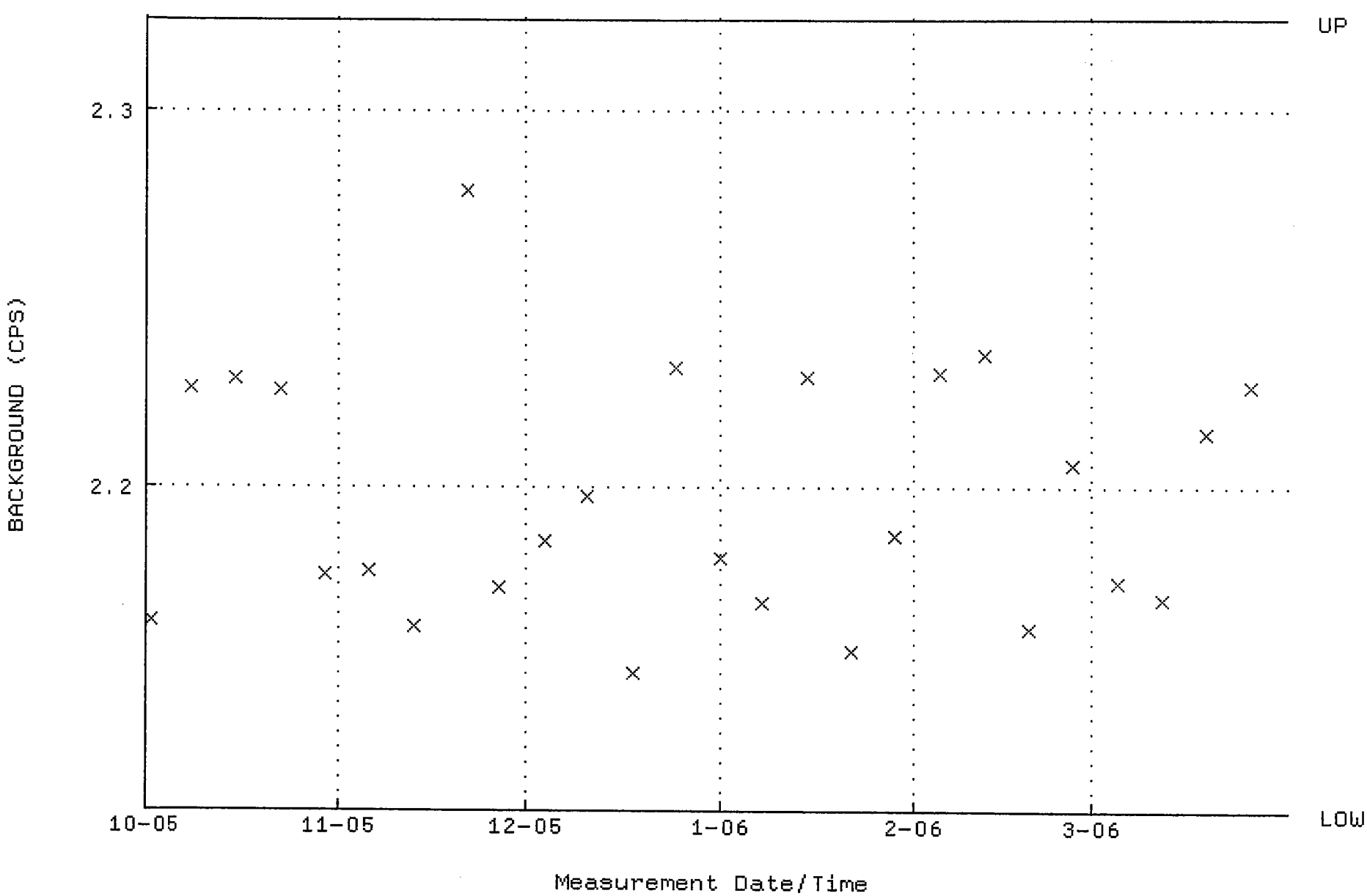
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA16.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:34 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.25600 through 1.58211



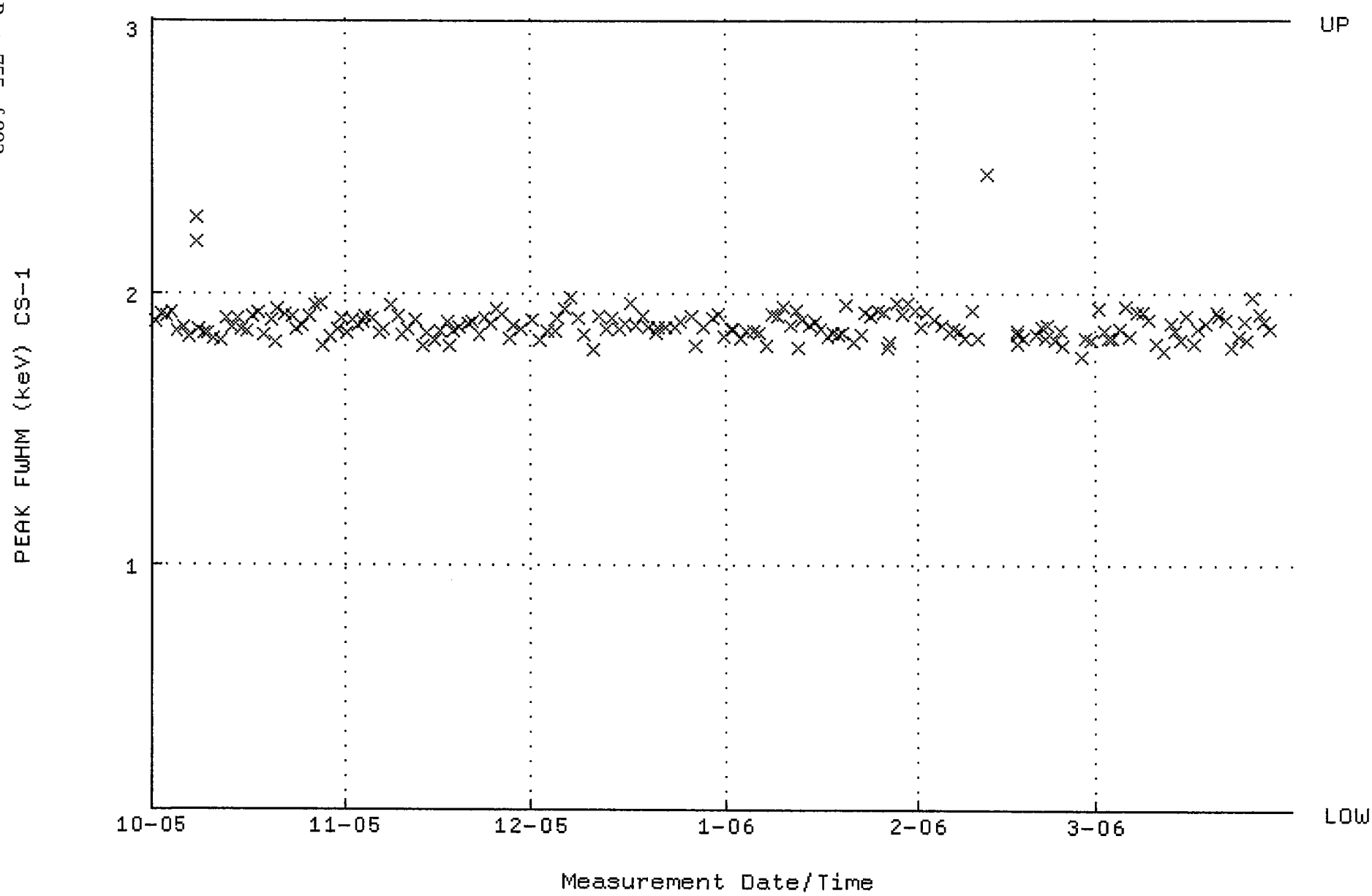
QA filename : DKA100:[ENV_ALPHA]QC_GAMMA18.QAF;2
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 2-OCT-2005 15:18:42 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



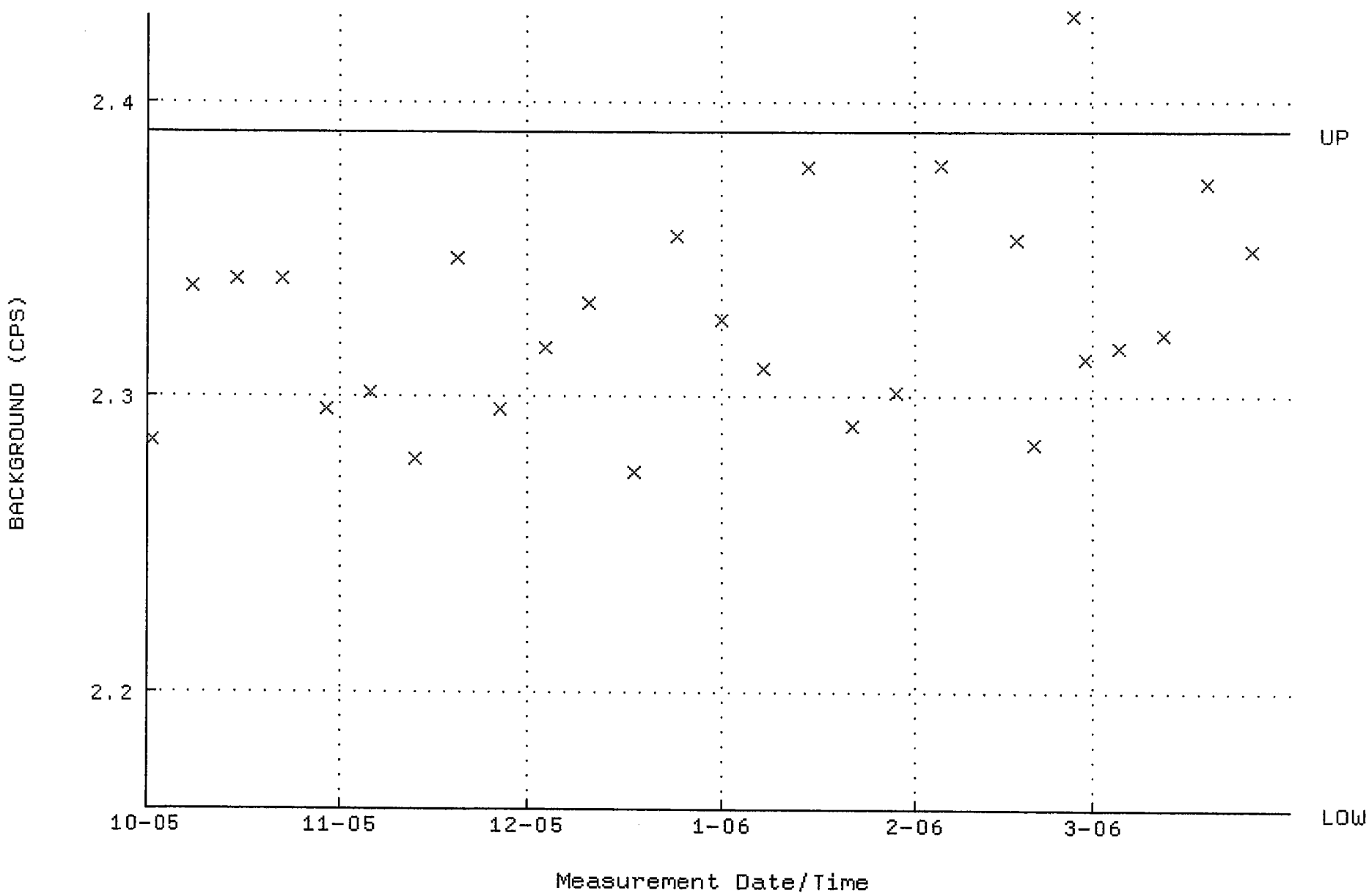
QA filename : DKA100:[ENV_ALPHA]QC_BKG_GAMMA18.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:49 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 2.11373 through 2.32412



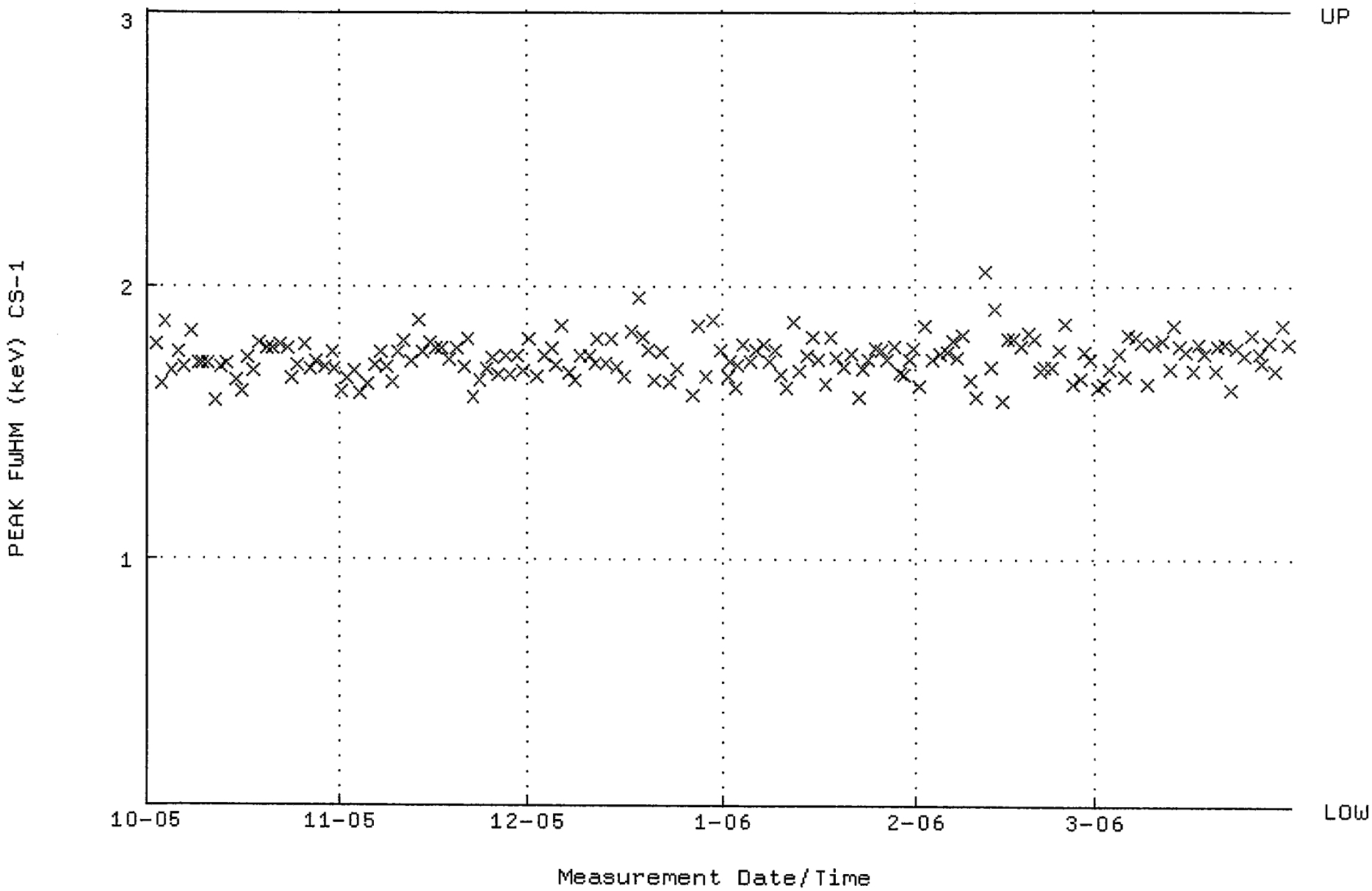
QA filename : DKA100:[ENV_ALPHA]QC_HP.QAF;4
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 1-OCT-2005 17:40:35 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



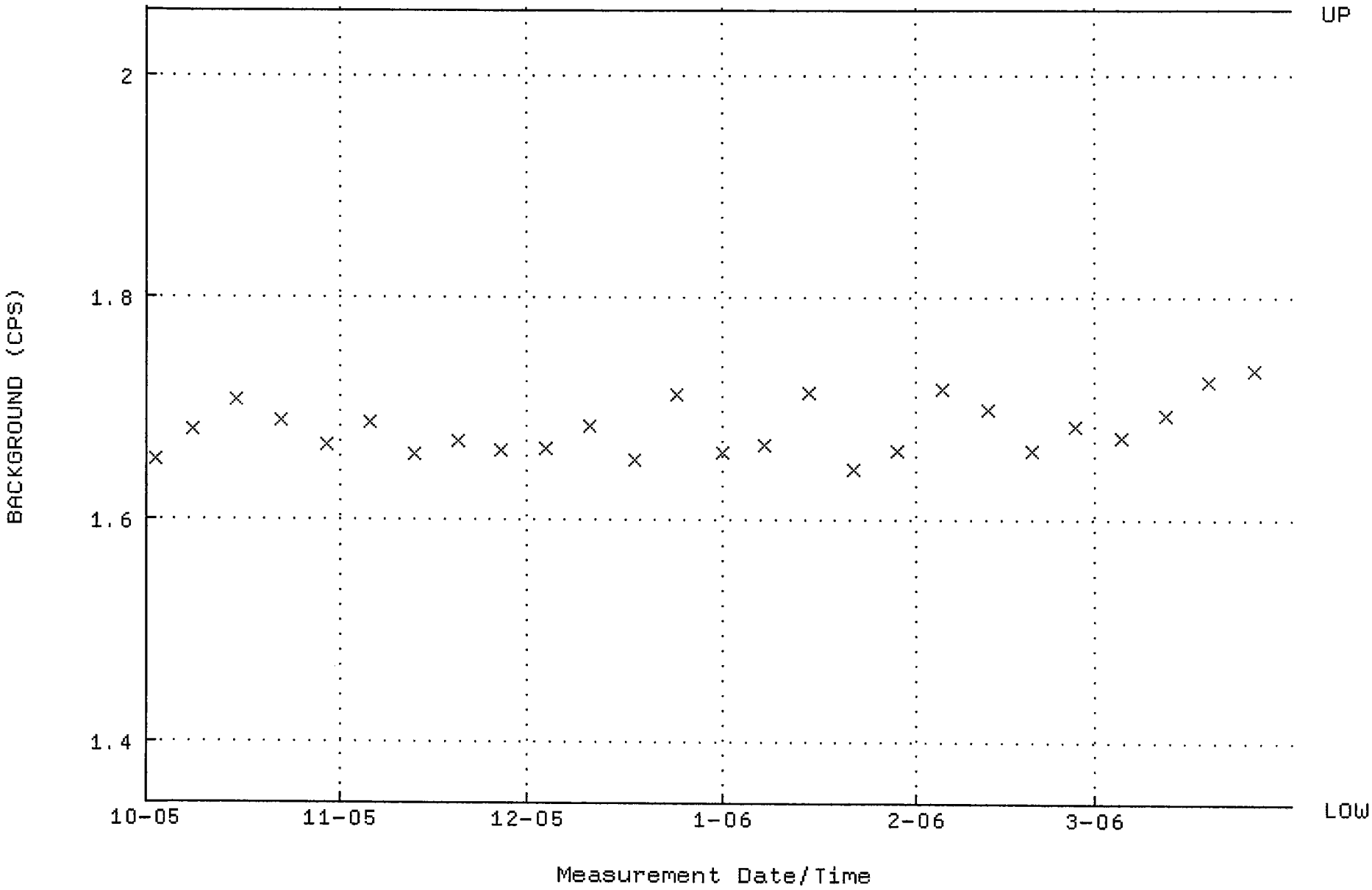
QA filename : DKA100:[ENV_ALPHA]QC_BKG_HP.QAF;1
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 1-OCT-2005 21:09:56 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 2.16000 through 2.39000



QA filename : DKA100:[ENV_ALPHA]QC_WELL.QAF;4
Parameter Name : PSFWHM-661 (PEAK FWHM (keV) CS-137)
Start/End Dates : 2-OCT-2005 11:34:54 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 0.100000 through 3.00000



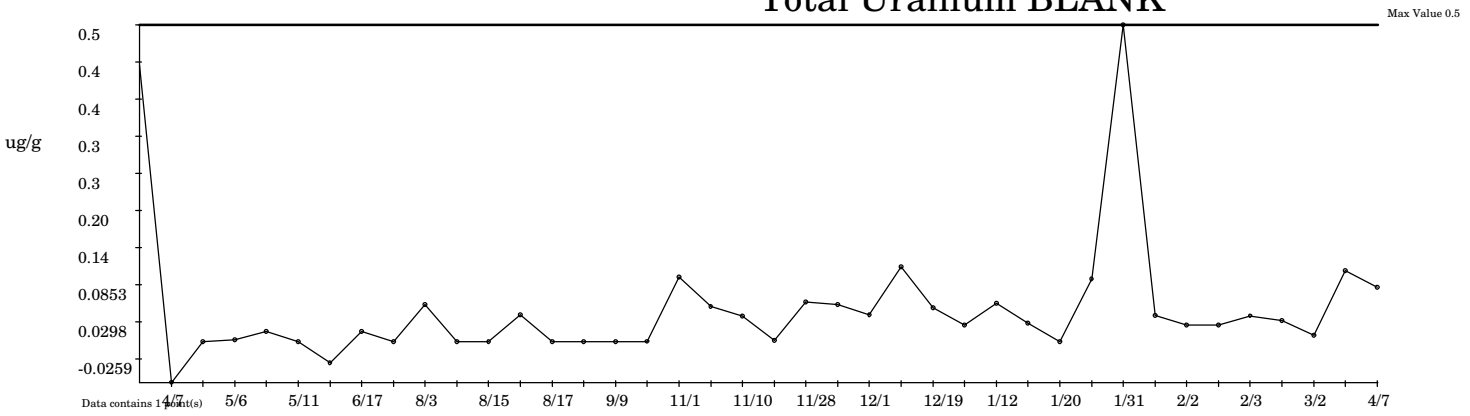
QA filename : DKA100:[ENV_ALPHA]QC_BKG_WELL.QAF;2
Parameter Name : BACKRATE (BACKGROUND (CPS))
Start/End Dates : 2-OCT-2005 11:46:24 through 31-MAR-2006 12:00:00
Lower/Upper Lmts: 1.34470 through 2.05930



QUALITY CONTROL CHARTS

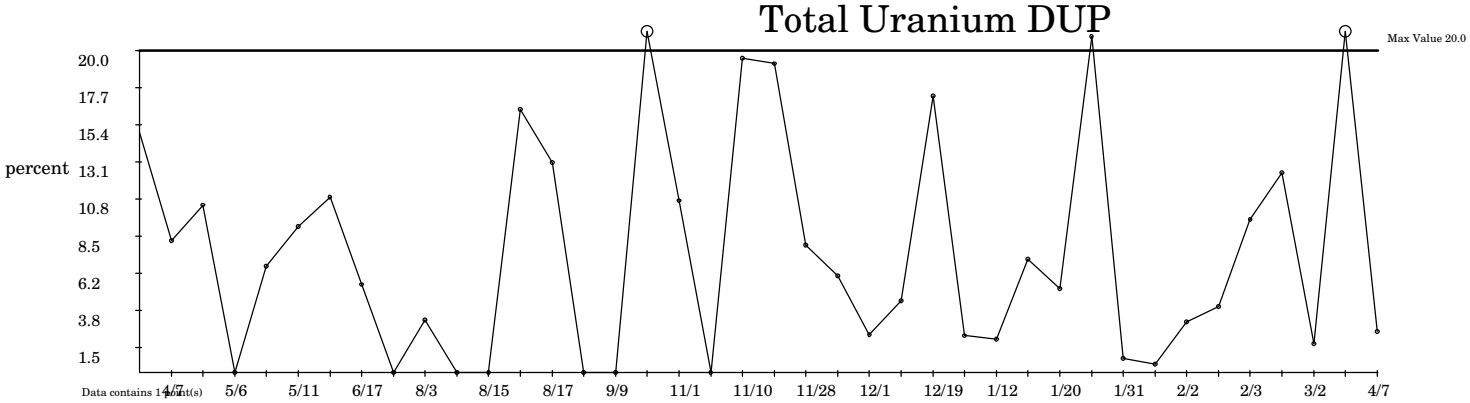
SPC Graph for Total Uranium KPA in Solids 4/2/2006

Total Uranium BLANK



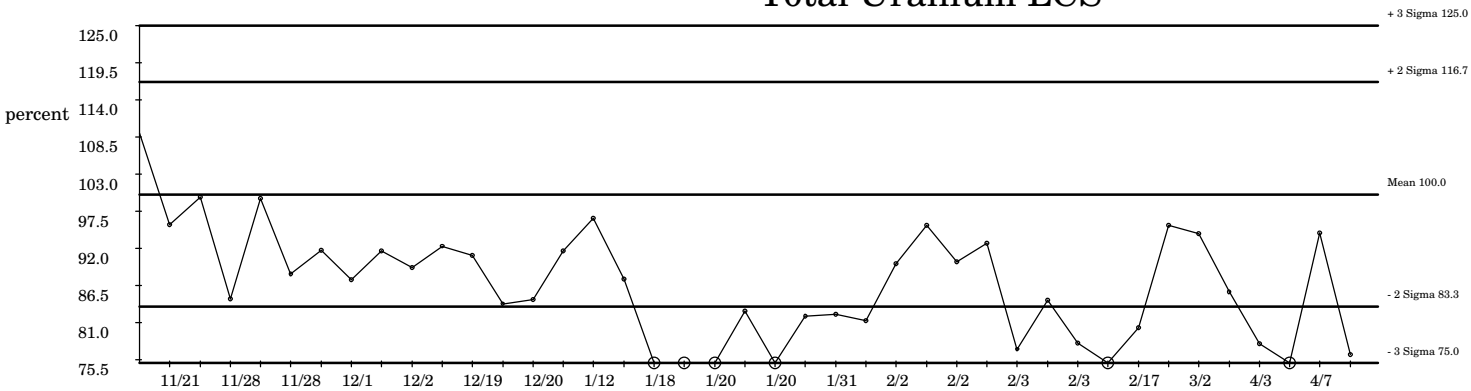
DATE

Total Uranium DUP



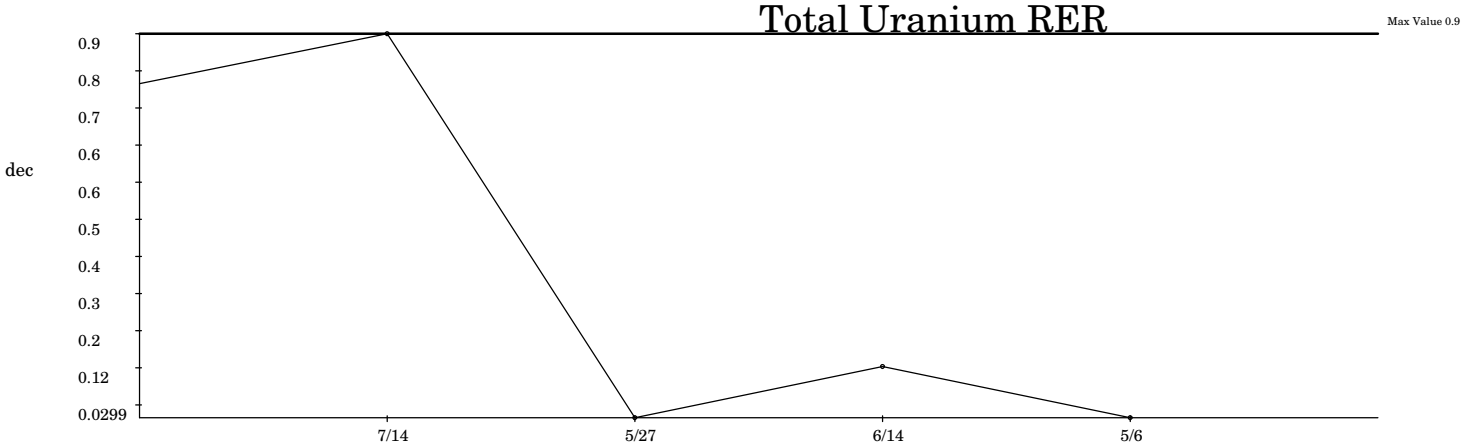
DATE

Total Uranium LCS



DATE

Total Uranium RER

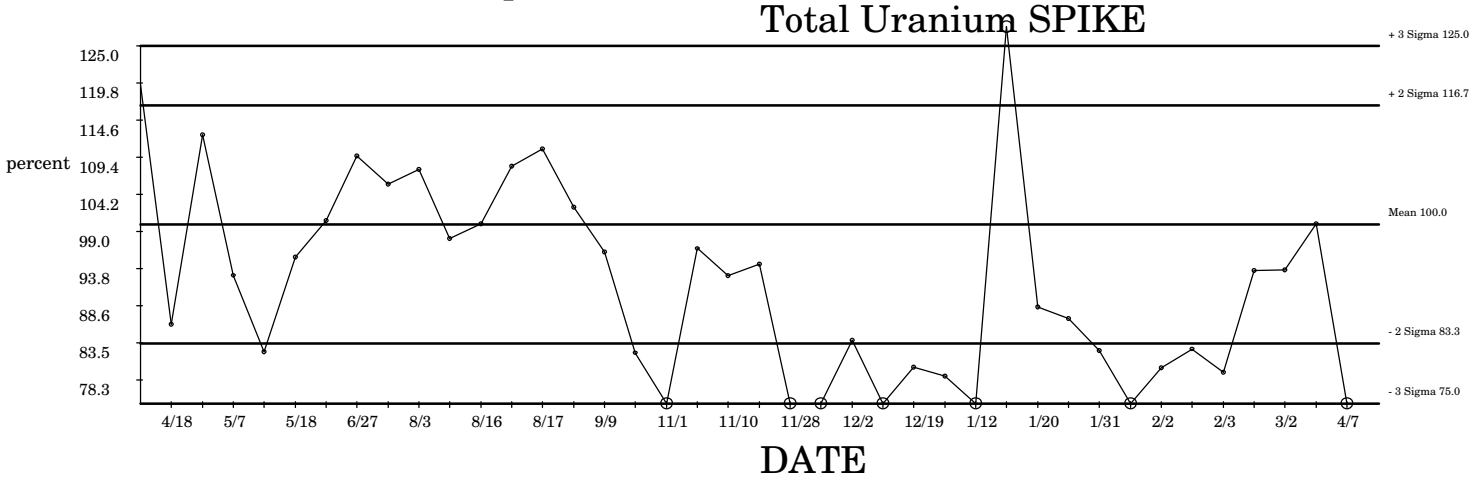


DATE

○ Denotes Outlier

SPC Graph for Total Uranium KPA in Solids 4/2/2006

Total Uranium SPIKE



DATE

○ Denotes Outlier

Data used for Total Uranium KPA in Solids 12-APR-2006

Total Uranium BLANK: Limits LCL = -.2 UCL = .3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
410234	1200809525	24-MAR-2005 23:43	DONE	0	-0.48	ug/g	0.04	-0.202	-0.122	0.2	0.28	0.08
414190	1200818863	07-APR-2005 12:28	DONE	0	-1	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
415717	1200822479	18-APR-2005 22:58	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
421670	1200836903	06-MAY-2005 12:26	DONE	0	-0.46	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
421102	1200835552	07-MAY-2005 00:39	DONE	0	-0.31	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
424185	1200843331	11-MAY-2005 12:10	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
420391	1200833796	18-MAY-2005 14:21	DONE	0	-0.9	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
429272	1200855720	17-JUN-2005 18:04	DONE	0	-0.3	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
430203	1200857962	27-JUN-2005 13:54	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
446259	1200896601	03-AUG-2005 17:55	DONE	0	0.21	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
447166	1200898787	10-AUG-2005 16:18	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
451842	1200909760	15-AUG-2005 17:11	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
447168	1200898802	17-AUG-2005 12:45	DONE	0	0.01	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
446080	1200896101	17-AUG-2005 14:13	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
453990	1200914871	29-AUG-2005 22:01	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
454945	1200917230	09-SEP-2005 15:47	DONE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
464004	1200939171	29-SEP-2005 15:04	DONE	0	-0.49	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
474880	1200965033	01-NOV-2005 12:15	DONE	0	0.72	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
474896	1200965073	03-NOV-2005 08:34	DONE	0	0.17	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
478743	1200974481	10-NOV-2005 11:02	DONE	0	-0.02	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
476804	1200969659	21-NOV-2005 08:27	DONE	0	-0.47	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
479766	1200977094	28-NOV-2005 09:48	DUSE	0	0.25	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
479767	1200977099	28-NOV-2005 13:39	DONE	0	0.2	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
484063	1200987134	01-DEC-2005 09:55	DONE	0	00	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
484064	1200987139	02-DEC-2005 11:36	DUSE	0	0.91	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
486197	1200992420	19-DEC-2005 09:23	DONE	0	0.14	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
486208	1200992464	20-DEC-2005 09:33	DONE	0	-0.19	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
492781	1201007372	12-JAN-2006 13:38	DONE	0	0.22	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
494246	1201010694	18-JAN-2006 10:17	DUSE	0	-0.14	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
493748	1201009625	20-JAN-2006 11:52	DUSE	0	-0.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
493750	1201009630	20-JAN-2006 12:06	DUSE	0	0.69	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
496204	1201015077	31-JAN-2006 13:42	DONE	0	5.5	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
499915	1201023682	02-FEB-2006 13:17	DONE	0	-0	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
495063	1201012509	02-FEB-2006 14:02	DONE	0	-0.18	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
496854	1201016615	03-FEB-2006 10:55	DONE	0	-0.18	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
496856	1201016624	03-FEB-2006 14:13	DONE	0	-0.01	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
503736	1201032423	17-FEB-2006 15:58	DONE	0	-0.1	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
504168	1201033463	02-MAR-2006 09:57	DONE	0	-0.38	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
515698	1201059829	03-APR-2006 10:06	DUSE	0	0.84	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08
517556	1201063863	07-APR-2006 13:10	DONE	0	0.53	ug/g	0.04	-0.199	-0.12	0.2	0.28	0.08

Total Uranium DUP: Limits LCL = -19.5 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
410234	1200809526	24-MAR-2005 23:44	DONE	5	-0.34	percent	8.2	-19	-10	26.6	20.0	9.22
414190	1200818864	07-APR-2005 12:34	DONE	8	0.01	percent	8.06	-19	-10	26.4	20.0	9.15
415717	1200822480	18-APR-2005 22:59	DONE	10	0.26	percent	8.06	-19	-10	26.4	20.0	9.15

421670	1200836904	06-MAY-2005 14:21	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
421102	1200835553	07-MAY-2005 00:42	DONE	7	-0.16	percent	8.06	-19	-10	26.4	20.0	9.15
424185	1200843332	11-MAY-2005 14:00	DONE	9	0.11	percent	8.06	-19	-10	26.4	20.0	9.15
420391	1200833797	18-MAY-2005 14:23	DONE	11	0.31	percent	8.06	-19	-10	26.4	20.0	9.15
429272	1200855721	17-JUN-2005 18:16	DONE	5	-0.28	percent	8.06	-19	-10	26.4	20.0	9.15
430203	1200857963	27-JUN-2005 13:57	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
446259	1200896602	03-AUG-2005 17:56	DONE	3	-0.53	percent	8.06	-19	-10	26.4	20.0	9.15
447166	1200898788	10-AUG-2005 16:19	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
451842	1200909761	15-AUG-2005 17:38	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
447168	1200898803	17-AUG-2005 12:58	DONE	16	0.91	percent	8.06	-19	-10	26.4	20.0	9.15
446080	1200896102	17-AUG-2005 14:16	DONE	13	0.54	percent	8.06	-19	-10	26.4	20.0	9.15
453990	1200914872	29-AUG-2005 22:03	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
454945	1200917231	09-SEP-2005 15:50	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
464004	1200939172	29-SEP-2005 15:07	DONE	31	2.5	percent	8.06	-19	-10	26.4	20.0	9.15
474880	1200965034	01-NOV-2005 12:18	DONE	11	0.29	percent	8.06	-19	-10	26.4	20.0	9.15
474896	1200965074	03-NOV-2005 08:37	DONE	0	-0.88	percent	8.06	-19	-10	26.4	20.0	9.15
478743	1200974482	10-NOV-2005 11:05	DONE	20	1.3	percent	8.06	-19	-10	26.4	20.0	9.15
476804	1200969660	21-NOV-2005 09:07	DONE	19	1.2	percent	8.06	-19	-10	26.4	20.0	9.15
479766	1200977095	28-NOV-2005 09:51	DUSE	8	-0.02	percent	8.06	-19	-10	26.4	20.0	9.15
479767	1200977100	28-NOV-2005 13:44	DONE	6	-0.23	percent	8.06	-19	-10	26.4	20.0	9.15
484063	1200987135	01-DEC-2005 09:58	DONE	2	-0.62	percent	8.06	-19	-10	26.4	20.0	9.15
484064	1200987140	02-DEC-2005 11:37	DUSE	4	-0.39	percent	8.06	-19	-10	26.4	20.0	9.15
486197	1200992421	19-DEC-2005 09:26	DONE	17	01	percent	8.06	-19	-10	26.4	20.0	9.15
486208	1200992465	20-DEC-2005 09:36	DONE	2	-0.63	percent	8.06	-19	-10	26.4	20.0	9.15
492781	1201007373	12-JAN-2006 13:43	DONE	2	-0.66	percent	8.06	-19	-10	26.4	20.0	9.15
494246	1201010695	18-JAN-2006 10:22	DUSE	7	-0.11	percent	8.06	-19	-10	26.4	20.0	9.15
493748	1201009626	20-JAN-2006 11:57	DUSE	5	-0.31	percent	8.06	-19	-10	26.4	20.0	9.15
493750	1201009631	20-JAN-2006 12:09	DUSE	21	1.4	percent	8.06	-19	-10	26.4	20.0	9.15
496204	1201015078	31-JAN-2006 12:18	DONE	1	-0.79	percent	8.06	-19	-10	26.4	20.0	9.15
499915	1201023683	02-FEB-2006 13:22	DONE	1	-0.82	percent	8.06	-19	-10	26.4	20.0	9.15
495063	1201012510	02-FEB-2006 14:07	DONE	3	-0.54	percent	8.06	-19	-10	26.4	20.0	9.15
496854	1201016616	03-FEB-2006 10:58	DONE	4	-0.44	percent	8.06	-19	-10	26.4	20.0	9.15
496856	1201016625	03-FEB-2006 14:17	DONE	9	0.16	percent	8.06	-19	-10	26.4	20.0	9.15
503736	1201032424	17-FEB-2006 16:03	DONE	12	0.48	percent	8.06	-19	-10	26.4	20.0	9.15
504168	1201033464	02-MAR-2006 10:01	DONE	2	-0.69	percent	8.06	-19	-10	26.4	20.0	9.15
515698	1201059830	03-APR-2006 10:09	DUSE	43	3.9	percent	8.06	-19	-10	26.4	20.0	9.15
517556	1201063864	07-APR-2006 13:14	DONE	3	-0.6	percent	8.06	-19	-10	26.4	20.0	9.15

Total Uranium LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
478743	1200974485	10-NOV-2005 11:14	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
476804	1200969662	21-NOV-2005 08:37	DONE	96	-0.54	percent	100	75.0	83.3	117	125	8.33
476804	1200969663	21-NOV-2005 08:39	DONE	100	-0.05	percent	100	75.0	83.3	117	125	8.33
479766	1200977097	28-NOV-2005 09:59	DUSE	84	-2	percent	100	75.0	83.3	117	125	8.33
479766	1200977098	28-NOV-2005 10:01	DUSE	99	-0.07	percent	100	75.0	83.3	117	125	8.33
479767	1200977102	28-NOV-2005 13:51	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
479767	1200977103	28-NOV-2005 13:52	DONE	92	-0.99	percent	100	75.0	83.3	117	125	8.33
484063	1200987137	01-DEC-2005 10:06	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
484063	1200987138	01-DEC-2005 10:07	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
484064	1200987142	02-DEC-2005 11:42	DUSE	89	-1	percent	100	75.0	83.3	117	125	8.33

484064	1200987143	02-DEC-2005 11:47	DUSE	92	-0.92	percent	100	75.0	83.3	117	125	8.33
486197	1200992424	19-DEC-2005 09:35	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
486197	1200992423	19-DEC-2005 10:33	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
486208	1200992467	20-DEC-2005 09:43	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
486208	1200992468	20-DEC-2005 09:45	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
492781	1201007376	12-JAN-2006 13:52	DONE	96	-0.43	percent	100	75.0	83.3	117	125	8.33
492781	1201007375	12-JAN-2006 14:39	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
494246	1201010697	18-JAN-2006 10:28	DUSE	64	-4	percent	100	75.0	83.3	117	125	8.33
494246	1201010698	18-JAN-2006 10:30	DUSE	66	-4	percent	100	75.0	83.3	117	125	8.33
493748	1201009628	20-JAN-2006 12:01	DUSE	71	-3	percent	100	75.0	83.3	117	125	8.33
493748	1201009629	20-JAN-2006 12:05	DUSE	83	-2	percent	100	75.0	83.3	117	125	8.33
493750	1201009633	20-JAN-2006 12:17	DUSE	70	-4	percent	100	75.0	83.3	117	125	8.33
493750	1201009634	20-JAN-2006 12:19	DUSE	82	-2	percent	100	75.0	83.3	117	125	8.33
496204	1201015081	31-JAN-2006 12:31	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
496204	1201015080	31-JAN-2006 13:21	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
499915	1201023685	02-FEB-2006 13:29	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
499915	1201023686	02-FEB-2006 13:31	DONE	95	-0.55	percent	100	75.0	83.3	117	125	8.33
495063	1201012512	02-FEB-2006 14:15	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
495063	1201012513	02-FEB-2006 14:19	DONE	93	-0.87	percent	100	75.0	83.3	117	125	8.33
496854	1201016618	03-FEB-2006 11:06	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33
496854	1201016619	03-FEB-2006 11:07	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
496856	1201016627	03-FEB-2006 14:24	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
496856	1201016628	03-FEB-2006 14:26	DONE	75	-3	percent	100	75.0	83.3	117	125	8.33
503736	1201032426	17-FEB-2006 16:09	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33
503736	1201032427	17-FEB-2006 16:11	DONE	95	-0.55	percent	100	75.0	83.3	117	125	8.33
504168	1201033466	02-MAR-2006 10:08	DONE	94	-0.7	percent	100	75.0	83.3	117	125	8.33
504168	1201033467	02-MAR-2006 10:12	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
515698	1201059833	03-APR-2006 10:15	DUSE	78	-3	percent	100	75.0	83.3	117	125	8.33
515698	1201059832	03-APR-2006 10:20	DUSE	65	-4	percent	100	75.0	83.3	117	125	8.33
517556	1201063867	07-APR-2006 13:19	DONE	94	-0.69	percent	100	75.0	83.3	117	125	8.33
517556	1201063866	07-APR-2006 13:24	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33

Total Uranium RER: Limits LCL = -.9 UCL = 1.4

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
254298	1200432046	16-JUN-2003 15:06	DONE	0.12	-0.29	dec	0.23	-0.912	-0.532	0.99	1.36	0.38
260858	1200449089	14-JUL-2003 16:06	DONE	0.9	1.8	dec	0.23	-0.912	-0.532	0.99	1.36	0.38
336421	1200632567	27-MAY-2004 13:17	DONE	0	-0.6	dec	0.23	-0.912	-0.532	0.99	1.36	0.38
339655	1200640318	14-JUN-2004 14:43	DONE	0.12	-0.28	dec	0.23	-0.912	-0.532	0.99	1.36	0.38
421670	1200836904	06-MAY-2005 14:21	DONE	0	-0.6	dec	0.23	-0.912	-0.532	0.99	1.36	0.38

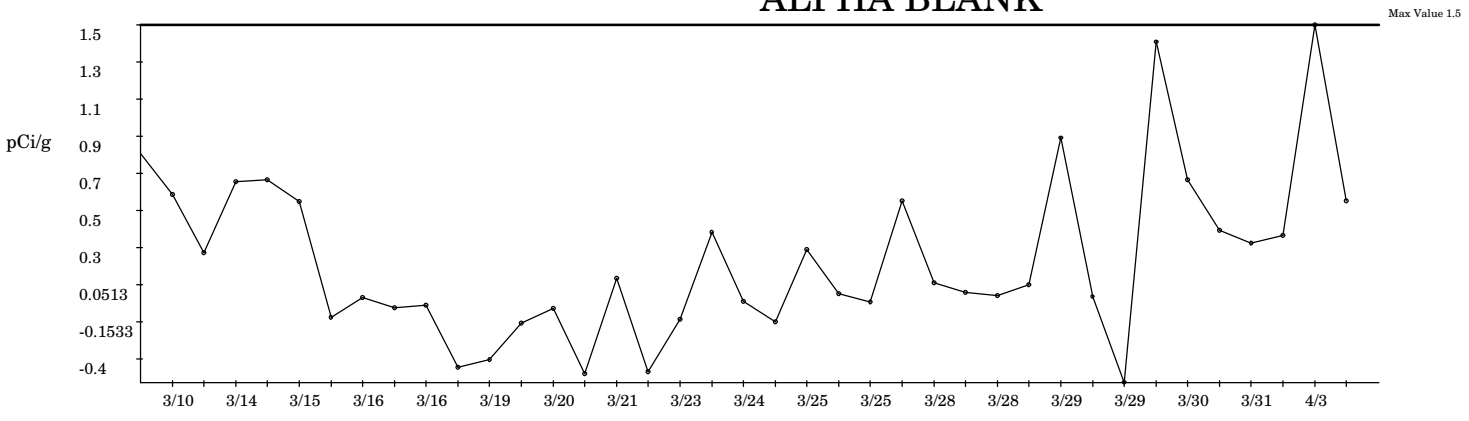
Total Uranium SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
414190	1200818865	07-APR-2005 13:38	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
415717	1200822481	18-APR-2005 23:02	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
421670	1200836905	06-MAY-2005 14:24	DONE	113	1.5	percent	100	75.0	83.3	117	125	8.33
421102	1200835554	07-MAY-2005 00:45	DONE	93	-0.85	percent	100	75.0	83.3	117	125	8.33
424185	1200843333	11-MAY-2005 12:14	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
420391	1200833798	18-MAY-2005 14:24	DONE	95	-0.55	percent	100	75.0	83.3	117	125	8.33
429272	1200855722	17-JUN-2005 21:17	DONE	101	0.06	percent	100	75.0	83.3	117	125	8.33
430203	1200857964	27-JUN-2005 14:46	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33

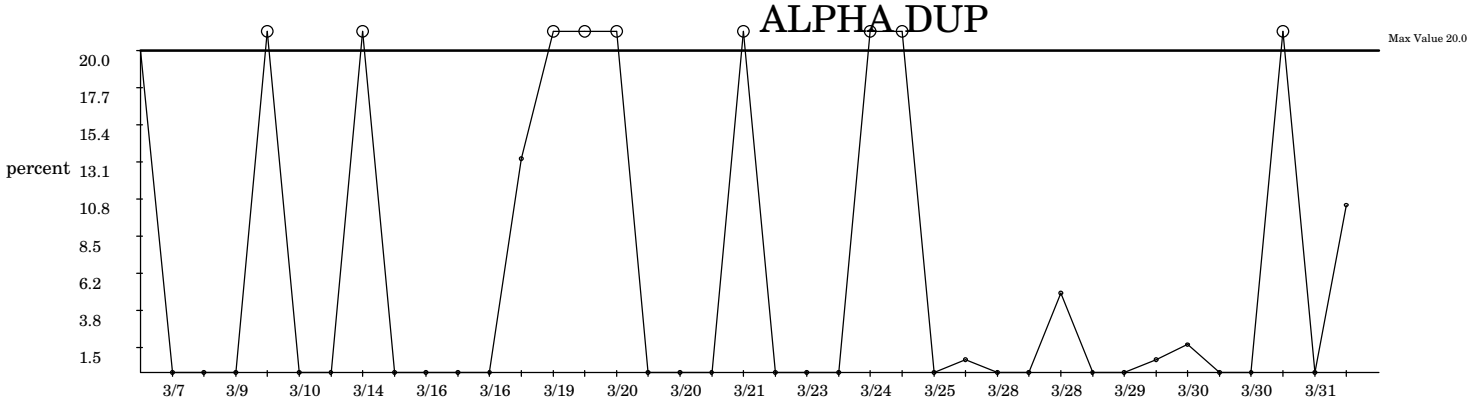
430203	1200869959	27-JUN-2005 14:48	DONE	106	0.68	percent	100	75.0	83.3	117	125	8.33
446259	1200896603	03-AUG-2005 18:00	DONE	108	0.92	percent	100	75.0	83.3	117	125	8.33
447166	1200898789	10-AUG-2005 16:22	DONE	98	-0.24	percent	100	75.0	83.3	117	125	8.33
451842	1200909762	16-AUG-2005 12:32	DONE	100	0.01	percent	100	75.0	83.3	117	125	8.33
447168	1200898804	17-AUG-2005 13:27	DONE	108	0.98	percent	100	75.0	83.3	117	125	8.33
446080	1200896103	17-AUG-2005 14:19	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
453990	1200914873	29-AUG-2005 22:09	DONE	102	0.3	percent	100	75.0	83.3	117	125	8.33
454945	1200917232	09-SEP-2005 15:52	DONE	96	-0.46	percent	100	75.0	83.3	117	125	8.33
464004	1200939173	29-SEP-2005 15:11	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
474880	1200965035	01-NOV-2005 12:22	DONE	67	-4	percent	100	75.0	83.3	117	125	8.33
474896	1200965075	03-NOV-2005 08:41	DONE	97	-0.4	percent	100	75.0	83.3	117	125	8.33
478743	1200974483	10-NOV-2005 11:09	DONE	93	-0.86	percent	100	75.0	83.3	117	125	8.33
476804	1200969661	21-NOV-2005 08:34	DONE	94	-0.66	percent	100	75.0	83.3	117	125	8.33
479766	1200977096	28-NOV-2005 09:56	DUSE	59	-5	percent	100	75.0	83.3	117	125	8.33
479767	1200977101	28-NOV-2005 13:47	DONE	56	-5	percent	100	75.0	83.3	117	125	8.33
484063	1200987136	02-DEC-2005 10:05	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
484064	1200987141	02-DEC-2005 11:40	DUSE	-53	-20	percent	100	75.0	83.3	117	125	8.33
486197	1200992422	19-DEC-2005 09:30	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33
486208	1200992466	20-DEC-2005 09:40	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
492781	1201007374	12-JAN-2006 13:46	DONE	39	-7	percent	100	75.0	83.3	117	125	8.33
494246	1201010696	18-JAN-2006 10:25	DUSE	168	8.2	percent	100	75.0	83.3	117	125	8.33
493748	1201009627	20-JAN-2006 11:58	DUSE	88	-1	percent	100	75.0	83.3	117	125	8.33
493750	1201009632	20-JAN-2006 12:13	DUSE	87	-2	percent	100	75.0	83.3	117	125	8.33
496204	1201015079	31-JAN-2006 13:18	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
499915	1201023684	02-FEB-2006 13:26	DONE	56	-5	percent	100	75.0	83.3	117	125	8.33
495063	1201012511	02-FEB-2006 14:11	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33
496854	1201016617	03-FEB-2006 11:02	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
496856	1201016626	03-FEB-2006 14:21	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
503736	1201032425	20-FEB-2006 10:29	DONE	94	-0.77	percent	100	75.0	83.3	117	125	8.33
504168	1201033465	02-MAR-2006 10:05	DONE	94	-0.76	percent	100	75.0	83.3	117	125	8.33
515698	1201059831	03-APR-2006 11:04	DUSE	100	0.02	percent	100	75.0	83.3	117	125	8.33
517556	1201063865	07-APR-2006 13:18	DONE	67	-4	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Gross AlphaNon Vol Beta in Solids 4/6/2006

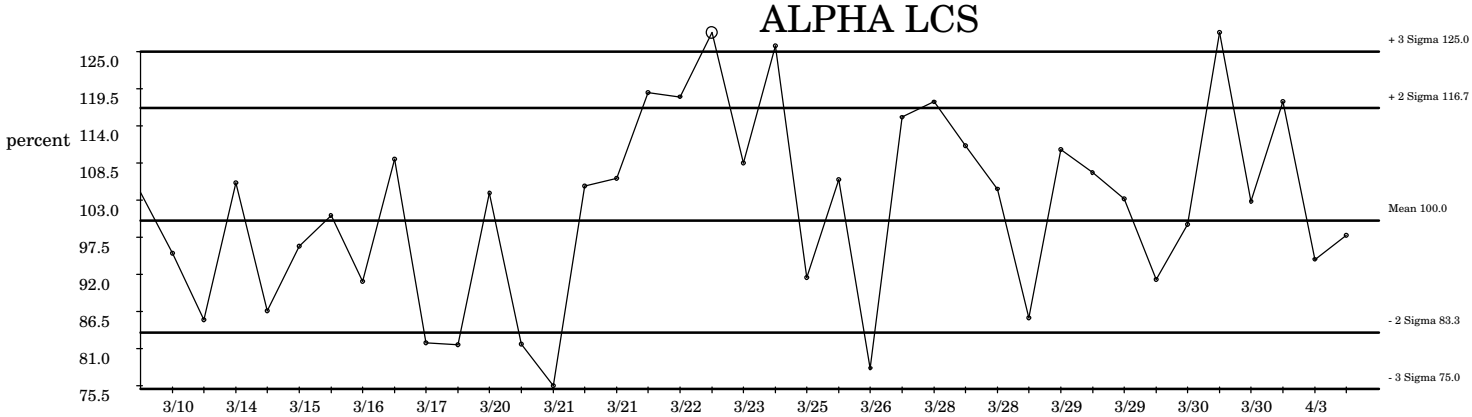
ALPHA BLANK



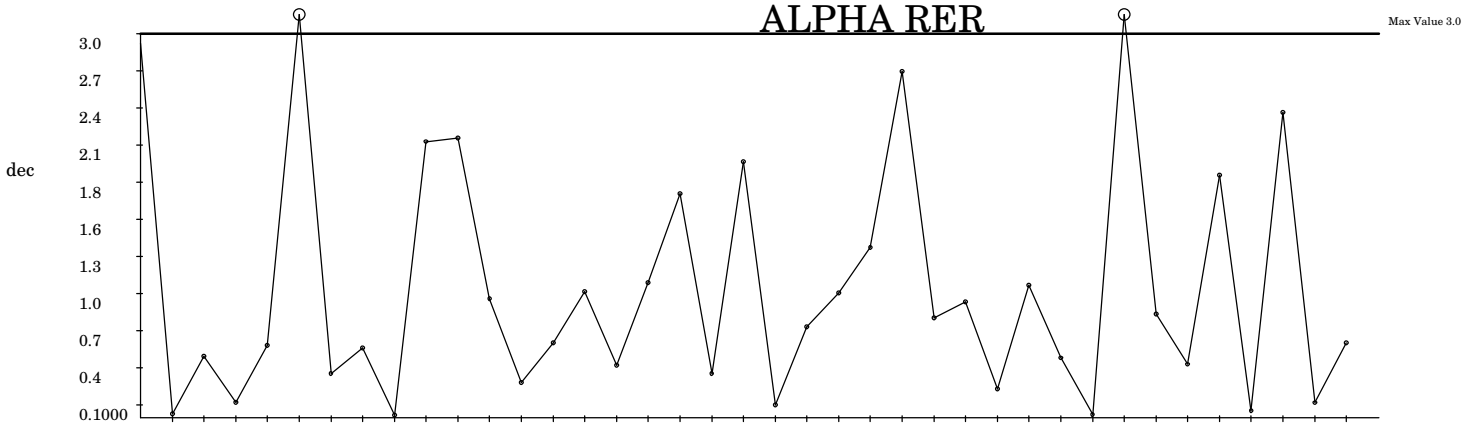
ALPHA DUP



ALPHA LCS

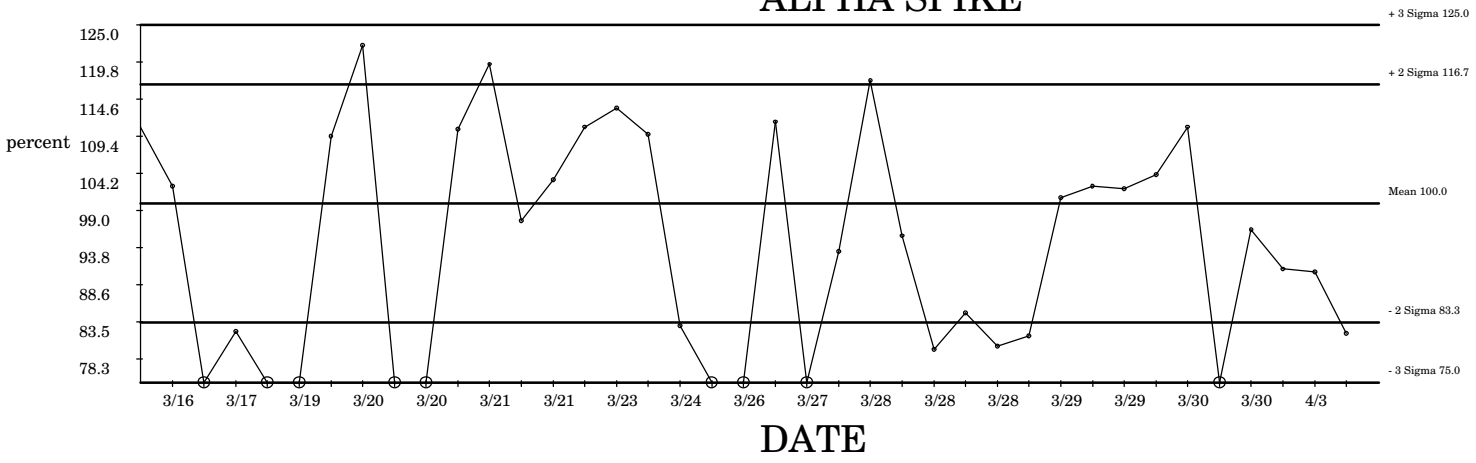


ALPHA RER



○ Denotes Outlier

SPC Graph for Gross AlphaNon Vol Beta in Solids 4/6/2006
ALPHA SPIKE



DATE

○ Denotes Outlier

Data used for Gross AlphaNon Vol Beta in Solids 07-APR-2006

ALPHA BLANK: Limits LCL = -1.2 UCL = 1.5

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508239	1201043164	09-MAR-2006 22:35	DONE	0	-0.86	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
509854	1201046839	10-MAR-2006 21:40	DONE	1	0.85	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
509857	1201046846	14-MAR-2006 13:51	DONE	0	0.14	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
510391	1201048076	14-MAR-2006 18:28	DUSE	1	1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
509057	1201045069	15-MAR-2006 14:02	DONE	1	1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511055	1201049560	15-MAR-2006 15:40	DONE	1	0.77	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511068	1201049598	15-MAR-2006 23:28	DONE	0	-0.65	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511600	1201050841	16-MAR-2006 11:32	DONE	0	-0.4	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511474	1201050525	16-MAR-2006 16:16	DONE	0	-0.54	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511057	1201049569	16-MAR-2006 22:40	DONE	0	-0.5	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511479	1201050539	17-MAR-2006 22:49	DONE	0	-1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512677	1201053289	19-MAR-2006 20:56	DONE	0	-1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512844	1201053654	19-MAR-2006 23:21	DONE	0	-0.72	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512316	1201052512	20-MAR-2006 19:25	DONE	0	-0.54	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512223	1201052271	20-MAR-2006 22:36	DONE	0	-1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
511061	1201049582	21-MAR-2006 12:49	DONE	0	-0.17	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512323	1201052527	21-MAR-2006 15:20	DONE	0	-1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
513155	1201054331	23-MAR-2006 10:36	DONE	0	-0.68	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512321	1201052521	23-MAR-2006 20:46	DONE	0	0.39	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
513828	1201055651	24-MAR-2006 16:06	DONE	0	-0.46	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
513429	1201054901	24-MAR-2006 19:27	DUSE	0	-0.7	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
513433	1201054908	25-MAR-2006 08:31	DUSE	0	0.18	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
514212	1201056430	25-MAR-2006 08:36	DUSE	0	-0.36	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
514216	1201056449	25-MAR-2006 16:47	DONE	0	-0.46	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
512324	1201052530	27-MAR-2006 21:08	DONE	1	0.77	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
514628	1201057379	28-MAR-2006 18:44	DONE	0	-0.23	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515226	1201058640	28-MAR-2006 20:07	DONE	0	-0.35	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
514629	1201057402	28-MAR-2006 23:27	DONE	0	-0.39	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515223	1201058627	28-MAR-2006 23:28	DONE	0	-0.25	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515767	1201060000	29-MAR-2006 18:20	DONE	1	1.5	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
514895	1201057871	29-MAR-2006 20:16	DONE	0	-0.4	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515874	1201060188	29-MAR-2006 23:50	DONE	0	-1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
514642	1201057428	30-MAR-2006 12:43	DUSE	1	2.7	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515666	1201059756	30-MAR-2006 20:03	DONE	1	1	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515225	1201058635	31-MAR-2006 09:09	DONE	0	0.41	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515771	1201060017	31-MAR-2006 09:18	DONE	0	0.26	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
515798	1201060082	31-MAR-2006 09:38	DONE	0	0.35	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
516264	1201060992	03-APR-2006 16:33	DONE	1	2.9	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45
516630	1201061724	03-APR-2006 19:01	DONE	1	0.77	pCi/g	0.16	-1.2	-0.737	1.07	1.52	0.45

ALPHA DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507315	1201040930	07-MAR-2006 10:12	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
507337	1201041017	07-MAR-2006 14:47	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5

507337	1201041018	07-MAR-2006 14:51	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
508239	1201043165	09-MAR-2006 22:35	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
508239	1201043166	09-MAR-2006 22:36	DONE	33	0.8	percent	13	0	-36	62	20.0	24.5
509854	1201046840	10-MAR-2006 21:40	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
509857	1201046847	14-MAR-2006 13:51	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
510391	1201048077	14-MAR-2006 18:28	DUSE	69	2.3	percent	13	0	-36	62	20.0	24.5
511600	1201050842	16-MAR-2006 11:32	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
511055	1201049561	16-MAR-2006 11:43	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
511474	1201050526	16-MAR-2006 16:16	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
511057	1201049570	16-MAR-2006 22:40	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
511479	1201050540	17-MAR-2006 22:49	DONE	13	0.01	percent	13	0	-36	62	20.0	24.5
512677	1201053290	19-MAR-2006 20:56	DONE	56	1.8	percent	13	0	-36	62	20.0	24.5
512844	1201053655	20-MAR-2006 11:01	DONE	24	0.47	percent	13	0	-36	62	20.0	24.5
512316	1201052513	20-MAR-2006 19:25	DONE	35	0.9	percent	13	0	-36	62	20.0	24.5
512316	1201052514	20-MAR-2006 19:25	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
512223	1201052272	20-MAR-2006 22:36	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
511061	1201049583	21-MAR-2006 12:49	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
512323	1201052528	21-MAR-2006 15:20	DONE	48	1.4	percent	13	0	-36	62	20.0	24.5
512321	1201052522	22-MAR-2006 13:06	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
513155	1201054332	23-MAR-2006 10:36	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
512321	1201052523	23-MAR-2006 20:45	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
513429	1201054902	24-MAR-2006 19:27	DUSE	97	3.4	percent	13	0	-36	62	20.0	24.5
514212	1201056431	25-MAR-2006 08:36	DUSE	51	1.6	percent	13	0	-36	62	20.0	24.5
514216	1201056450	25-MAR-2006 16:47	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
512324	1201052531	27-MAR-2006 21:08	DONE	1	-0.5	percent	13	0	-36	62	20.0	24.5
515226	1201058641	28-MAR-2006 20:07	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
515223	1201058628	28-MAR-2006 23:28	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
514629	1201057403	28-MAR-2006 23:28	DONE	5	-0.33	percent	13	0	-36	62	20.0	24.5
515225	1201058636	29-MAR-2006 11:00	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
515767	1201060001	29-MAR-2006 18:20	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
515874	1201060189	29-MAR-2006 23:50	DONE	1	-0.5	percent	13	0	-36	62	20.0	24.5
514642	1201057429	30-MAR-2006 12:43	DUSE	2	-0.46	percent	13	0	-36	62	20.0	24.5
514895	1201057872	30-MAR-2006 13:57	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
515666	1201059757	30-MAR-2006 20:03	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
515771	1201060018	31-MAR-2006 09:18	DONE	64	2.1	percent	13	0	-36	62	20.0	24.5
515798	1201060083	31-MAR-2006 09:38	DONE	0	-0.53	percent	13	0	-36	62	20.0	24.5
516630	1201061725	03-APR-2006 19:01	DONE	10	-0.11	percent	13	0	-36	62	20.0	24.5

ALPHA LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508239	1201043169	09-MAR-2006 22:33	DONE	96	-0.5	percent	100	75.0	83.3	117	125	8.33
509854	1201046841	10-MAR-2006 21:40	DONE	95	-0.59	percent	100	75.0	83.3	117	125	8.33
509857	1201046849	14-MAR-2006 12:26	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
510391	1201048079	14-MAR-2006 18:28	DUSE	106	0.67	percent	100	75.0	83.3	117	125	8.33
509057	1201045072	15-MAR-2006 14:03	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
511600	1201050844	15-MAR-2006 19:44	DONE	96	-0.46	percent	100	75.0	83.3	117	125	8.33
511068	1201049600	16-MAR-2006 10:21	DONE	101	0.08	percent	100	75.0	83.3	117	125	8.33
511055	1201049563	16-MAR-2006 10:26	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
511474	1201050528	16-MAR-2006 16:21	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
511057	1201049572	17-MAR-2006 10:32	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33

511479	1201050541	17-MAR-2006 22:51	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
512677	1201053292	20-MAR-2006 10:50	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
512844	1201053657	20-MAR-2006 11:01	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
512223	1201052274	21-MAR-2006 11:21	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33
511061	1201049585	21-MAR-2006 13:35	DONE	105	0.61	percent	100	75.0	83.3	117	125	8.33
512323	1201052529	21-MAR-2006 13:35	DONE	106	0.75	percent	100	75.0	83.3	117	125	8.33
512321	1201052526	21-MAR-2006 14:39	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
512316	1201052515	22-MAR-2006 13:00	DONE	118	2.2	percent	100	75.0	83.3	117	125	8.33
513155	1201054334	23-MAR-2006 11:35	DONE	133	3.9	percent	100	75.0	83.3	117	125	8.33
513828	1201055653	23-MAR-2006 16:07	DONE	108	1	percent	100	75.0	83.3	117	125	8.33
513429	1201054904	24-MAR-2006 19:27	DUSE	126	3.1	percent	100	75.0	83.3	117	125	8.33
513433	1201054910	25-MAR-2006 08:33	DUSE	92	-1	percent	100	75.0	83.3	117	125	8.33
514212	1201056433	25-MAR-2006 08:33	DUSE	106	0.72	percent	100	75.0	83.3	117	125	8.33
514216	1201056452	26-MAR-2006 09:12	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
512324	1201052532	27-MAR-2006 21:32	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
515223	1201058630	28-MAR-2006 16:04	DONE	118	2.1	percent	100	75.0	83.3	117	125	8.33
514628	1201057382	28-MAR-2006 18:48	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
515226	1201058643	28-MAR-2006 20:07	DONE	105	0.56	percent	100	75.0	83.3	117	125	8.33
514629	1201057404	29-MAR-2006 10:16	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
515225	1201058638	29-MAR-2006 11:04	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
515666	1201059759	29-MAR-2006 16:13	DONE	107	0.85	percent	100	75.0	83.3	117	125	8.33
515767	1201060002	29-MAR-2006 18:20	DONE	103	0.39	percent	100	75.0	83.3	117	125	8.33
514895	1201057873	29-MAR-2006 20:16	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
515874	1201060190	30-MAR-2006 10:33	DONE	99	-0.08	percent	100	75.0	83.3	117	125	8.33
514642	1201057431	30-MAR-2006 10:35	DUSE	128	3.3	percent	100	75.0	83.3	117	125	8.33
515771	1201060020	30-MAR-2006 20:10	DONE	103	0.33	percent	100	75.0	83.3	117	125	8.33
515798	1201060084	31-MAR-2006 09:42	DONE	118	2.1	percent	100	75.0	83.3	117	125	8.33
516630	1201061727	03-APR-2006 19:01	DONE	94	-0.69	percent	100	75.0	83.3	117	125	8.33
516264	1201060994	03-APR-2006 20:57	DONE	98	-0.27	percent	100	75.0	83.3	117	125	8.33

ALPHA RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
501335	1201027061	13-FEB-2006 10:28	DONE	0.08	-0.76	dec	1.04	0	-1.5	3.6	3.00	1.28
498145	1201019491	13-FEB-2006 14:13	DONE	0.03	-0.79	dec	1.04	0	-1.5	3.6	3.00	1.28
501912	1201028438	14-FEB-2006 23:26	DONE	0.48	-0.44	dec	1.04	0	-1.5	3.6	3.00	1.28
503549	1201031952	16-FEB-2006 13:36	DONE	0.12	-0.72	dec	1.04	0	-1.5	3.6	3.00	1.28
504500	1201034239	17-FEB-2006 12:00	DONE	0.57	-0.37	dec	1.04	0	-1.5	3.6	3.00	1.28
501881	1201028356	18-FEB-2006 13:08	DUSE	3.44	1.9	dec	1.04	0	-1.5	3.6	3.00	1.28
504938	1201035253	21-FEB-2006 22:10	DONE	0.34	-0.55	dec	1.04	0	-1.5	3.6	3.00	1.28
506561	1201039109	22-FEB-2006 22:04	DONE	0.54	-0.39	dec	1.04	0	-1.5	3.6	3.00	1.28
504731	1201034709	23-FEB-2006 12:29	DONE	0.02	-0.8	dec	1.04	0	-1.5	3.6	3.00	1.28
505764	1201037276	23-FEB-2006 14:37	DONE	2.16	0.87	dec	1.04	0	-1.5	3.6	3.00	1.28
505397	1201036381	23-FEB-2006 18:54	DONE	2.19	0.89	dec	1.04	0	-1.5	3.6	3.00	1.28
504785	1201034916	24-FEB-2006 23:48	DONE	0.93	-0.09	dec	1.04	0	-1.5	3.6	3.00	1.28
504776	1201034895	25-FEB-2006 19:33	DONE	0.28	-0.6	dec	1.04	0	-1.5	3.6	3.00	1.28
504778	1201034904	26-FEB-2006 11:14	DONE	0.58	-0.36	dec	1.04	0	-1.5	3.6	3.00	1.28
504805	1201034963	01-MAR-2006 14:11	DONE	0.98	-0.05	dec	1.04	0	-1.5	3.6	3.00	1.28
507048	1201040223	02-MAR-2006 12:18	DONE	0.41	-0.5	dec	1.04	0	-1.5	3.6	3.00	1.28
504173	1201033479	02-MAR-2006 18:50	DONE	1.05	0.01	dec	1.04	0	-1.5	3.6	3.00	1.28
507360	1201041086	03-MAR-2006 22:55	DONE	1.75	0.55	dec	1.04	0	-1.5	3.6	3.00	1.28

507859	1201042334	08-MAR-2006 18:57	DONE	0.35	-0.55	dec	1.04	0	-1.5	3.6	3.00	1.28
508239	1201043166	09-MAR-2006 22:36	DONE	2	0.75	dec	1.04	0	-1.5	3.6	3.00	1.28
509854	1201046840	10-MAR-2006 21:40	DONE	0.1	-0.74	dec	1.04	0	-1.5	3.6	3.00	1.28
509057	1201045070	16-MAR-2006 15:43	DONE	0.71	-0.26	dec	1.04	0	-1.5	3.6	3.00	1.28
511479	1201050540	17-MAR-2006 22:49	DONE	0.98	-0.05	dec	1.04	0	-1.5	3.6	3.00	1.28
512677	1201053290	19-MAR-2006 20:56	DONE	1.33	0.22	dec	1.04	0	-1.5	3.6	3.00	1.28
511068	1201049599	20-MAR-2006 10:49	DONE	2.7	1.3	dec	1.04	0	-1.5	3.6	3.00	1.28
512844	1201053655	20-MAR-2006 11:01	DONE	0.78	-0.21	dec	1.04	0	-1.5	3.6	3.00	1.28
512316	1201052513	20-MAR-2006 19:25	DONE	0.9	-0.11	dec	1.04	0	-1.5	3.6	3.00	1.28
512316	1201052514	20-MAR-2006 19:25	DONE	0.23	-0.64	dec	1.04	0	-1.5	3.6	3.00	1.28
512323	1201052528	21-MAR-2006 15:20	DONE	1.04	-0.01	dec	1.04	0	-1.5	3.6	3.00	1.28
513828	1201055652	24-MAR-2006 16:06	DONE	0.47	-0.45	dec	1.04	0	-1.5	3.6	3.00	1.28
512324	1201052531	27-MAR-2006 21:08	DONE	0.03	-0.8	dec	1.04	0	-1.5	3.6	3.00	1.28
513433	1201054909	28-MAR-2006 10:38	DUSE	6.92	4.6	dec	1.04	0	-1.5	3.6	3.00	1.28
514628	1201057380	28-MAR-2006 18:48	DONE	0.81	-0.18	dec	1.04	0	-1.5	3.6	3.00	1.28
514629	1201057403	28-MAR-2006 23:28	DONE	0.42	-0.49	dec	1.04	0	-1.5	3.6	3.00	1.28
515767	1201060001	29-MAR-2006 18:20	DONE	1.9	0.67	dec	1.04	0	-1.5	3.6	3.00	1.28
515874	1201060189	29-MAR-2006 23:50	DONE	0.05	-0.77	dec	1.04	0	-1.5	3.6	3.00	1.28
514895	1201057872	30-MAR-2006 13:57	DONE	2.38	1	dec	1.04	0	-1.5	3.6	3.00	1.28
515798	1201060083	31-MAR-2006 09:38	DONE	0.12	-0.73	dec	1.04	0	-1.5	3.6	3.00	1.28
516630	1201061725	03-APR-2006 19:01	DONE	0.59	-0.36	dec	1.04	0	-1.5	3.6	3.00	1.28

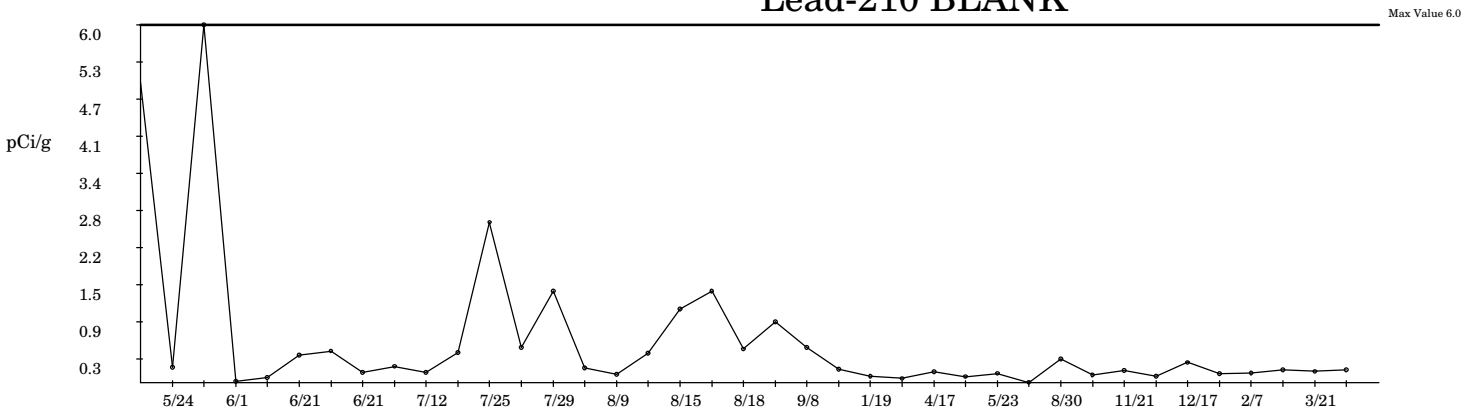
ALPHA SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511055	1201049562	16-MAR-2006 10:26	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
511474	1201050527	16-MAR-2006 16:21	DONE	102	0.3	percent	100	75.0	83.3	117	125	8.33
511057	1201049573	17-MAR-2006 10:32	DONE	68	-4	percent	100	75.0	83.3	117	125	8.33
511057	1201049571	17-MAR-2006 20:58	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
512677	1201053291	19-MAR-2006 20:56	DONE	38	-7	percent	100	75.0	83.3	117	125	8.33
512677	1201053806	19-MAR-2006 20:56	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
512677	1201053296	19-MAR-2006 20:56	DONE	37	-8	percent	100	75.0	83.3	117	125	8.33
512677	1201053807	20-MAR-2006 10:50	DONE	122	2.7	percent	100	75.0	83.3	117	125	8.33
512844	1201053656	20-MAR-2006 11:01	DONE	27	-9	percent	100	75.0	83.3	117	125	8.33
512844	1201053658	20-MAR-2006 11:01	DONE	34	-8	percent	100	75.0	83.3	117	125	8.33
512223	1201052273	21-MAR-2006 11:21	DONE	110	1.3	percent	100	75.0	83.3	117	125	8.33
512223	1201052275	21-MAR-2006 11:21	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
511061	1201049584	21-MAR-2006 13:35	DONE	98	-0.29	percent	100	75.0	83.3	117	125	8.33
512321	1201052524	21-MAR-2006 14:39	DONE	103	0.4	percent	100	75.0	83.3	117	125	8.33
512321	1201052525	21-MAR-2006 14:39	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
513155	1201054333	23-MAR-2006 11:35	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
513155	1201054335	23-MAR-2006 11:35	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
513429	1201054918	24-MAR-2006 19:27	DUSE	83	-2	percent	100	75.0	83.3	117	125	8.33
513429	1201054903	24-MAR-2006 19:27	DUSE	62	-5	percent	100	75.0	83.3	117	125	8.33
514216	1201056451	26-MAR-2006 09:12	DONE	55	-5	percent	100	75.0	83.3	117	125	8.33
514212	1201056432	27-MAR-2006 21:32	DUSE	111	1.4	percent	100	75.0	83.3	117	125	8.33
514212	1201057929	27-MAR-2006 21:32	DUSE	35	-8	percent	100	75.0	83.3	117	125	8.33
515223	1201058629	28-MAR-2006 16:04	DONE	93	-0.8	percent	100	75.0	83.3	117	125	8.33
515223	1201058631	28-MAR-2006 16:04	DONE	117	2.1	percent	100	75.0	83.3	117	125	8.33
514628	1201057381	28-MAR-2006 18:48	DONE	95	-0.54	percent	100	75.0	83.3	117	125	8.33
514628	1201057427	28-MAR-2006 18:48	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33

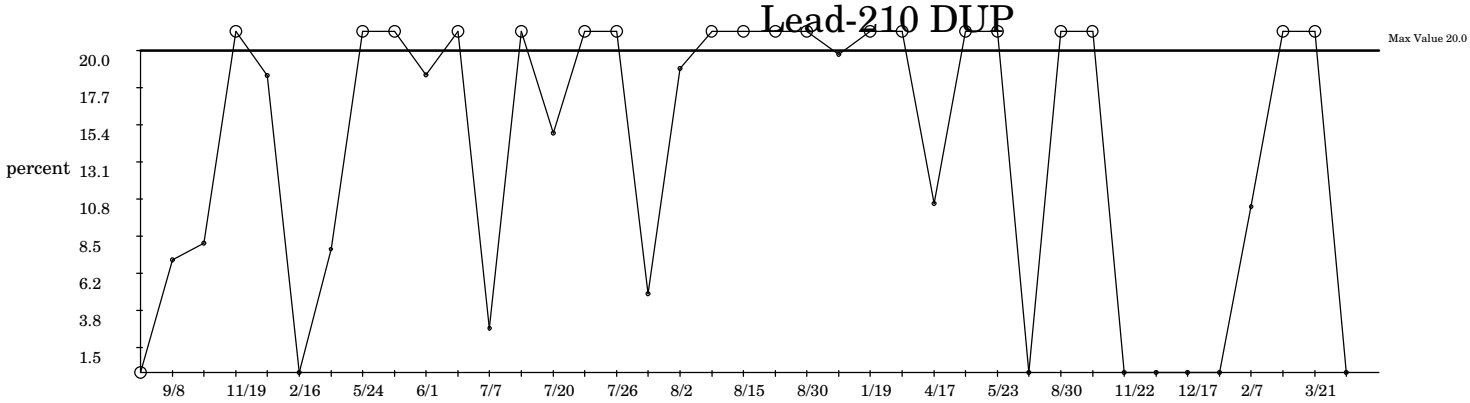
515226	1201058642	28-MAR-2006 20:07	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
515226	1201058644	28-MAR-2006 20:07	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33
515225	1201058637	29-MAR-2006 11:04	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
515225	1201058639	29-MAR-2006 11:04	DONE	101	0.1	percent	100	75.0	83.3	117	125	8.33
515666	1201059758	29-MAR-2006 16:13	DONE	102	0.29	percent	100	75.0	83.3	117	125	8.33
515666	1201059760	29-MAR-2006 16:13	DONE	102	0.25	percent	100	75.0	83.3	117	125	8.33
514642	1201057430	30-MAR-2006 10:35	DUSE	104	0.48	percent	100	75.0	83.3	117	125	8.33
514642	1201057524	30-MAR-2006 10:35	DUSE	111	1.3	percent	100	75.0	83.3	117	125	8.33
514216	1201057917	30-MAR-2006 10:41	DONE	66	-4	percent	100	75.0	83.3	117	125	8.33
515771	1201060019	30-MAR-2006 20:10	DONE	96	-0.44	percent	100	75.0	83.3	117	125	8.33
515771	1201060025	30-MAR-2006 20:10	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
516630	1201061726	03-APR-2006 19:01	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
516630	1201061728	03-APR-2006 19:01	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Gas Flow Lead-210 in Solids 4/9/2006

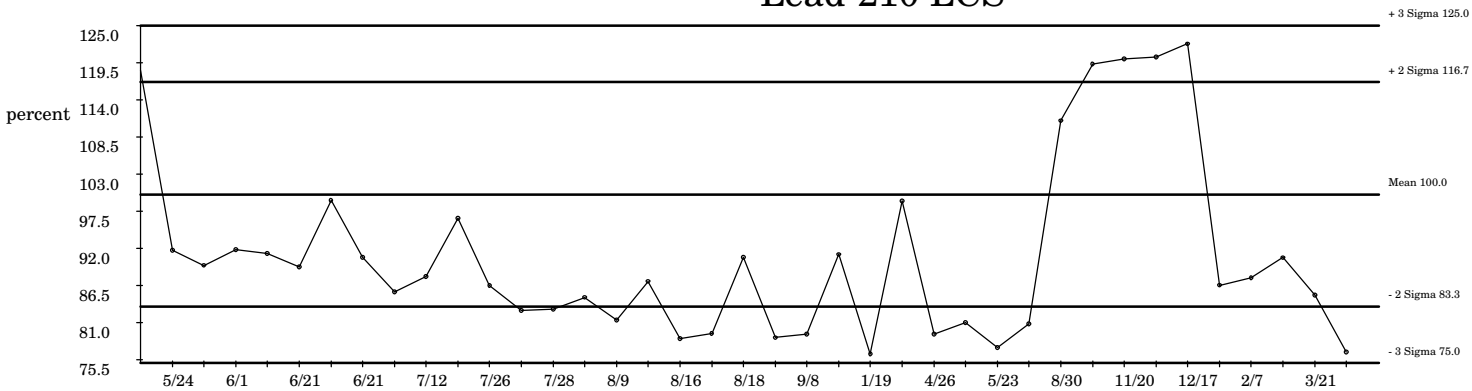
Lead-210 BLANK



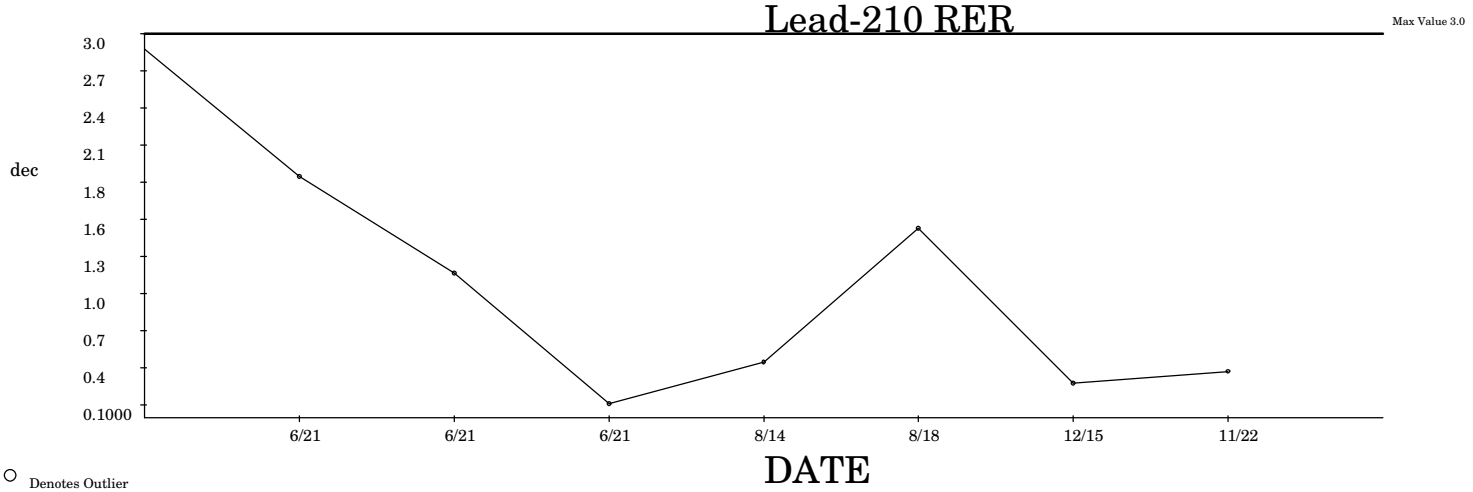
Lead-210 DUP



Lead-210 LCS

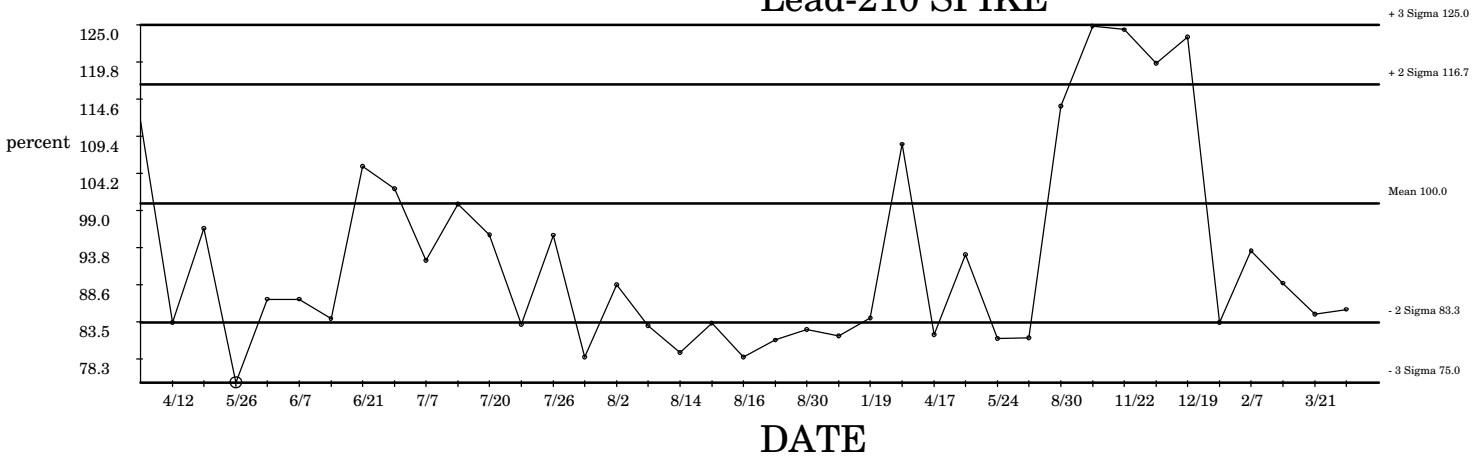


Lead-210 RER



○ Denotes Outlier

SPC Graph for Gas Flow Lead-210 in Solids 4/9/2006
Lead-210 SPIKE



○ Denotes Outlier

Data used for Gas Flow Lead-210 in Solids 10-APR-2006

Lead-210 BLANK: Limits LCL = -2.7 UCL = 3.6

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
322628	1200600727	13-APR-2004 16:03	DONE	1	0.37	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
330965	1200620138	24-MAY-2004 10:37	DONE	0	-0.32	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
333934	1200626932	26-MAY-2004 12:22	DUSE	6	5.2	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
336451	1200632647	01-JUN-2004 17:50	DONE	0	-0.55	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
337155	1200634385	07-JUN-2004 08:16	DONE	0	-0.49	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
340853	1200643312	21-JUN-2004 09:04	DONE	0	-0.12	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
340852	1200643308	21-JUN-2004 10:24	DONE	0	-0.06	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
340854	1200643316	21-JUN-2004 12:48	DONE	0	-0.41	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
344683	1200652605	07-JUL-2004 11:05	DONE	0	-0.3	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
345863	1200655310	12-JUL-2004 12:24	DONE	0	-0.4	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
346907	1200657807	20-JUL-2004 06:31	DONE	0	-0.09	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
349408	1200663951	25-JUL-2004 20:10	DONE	3	2	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
348807	1200662463	26-JUL-2004 04:52	DONE	0	-0	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
350666	1200666973	29-JUL-2004 05:47	DONE	1	0.91	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
350579	1200666738	02-AUG-2004 12:51	DONE	0	-0.33	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
352502	1200671517	09-AUG-2004 09:06	DONE	0	-0.43	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
352503	1200671521	14-AUG-2004 03:38	DONE	0	-0.09	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
355295	1200678069	15-AUG-2004 22:03	DONE	1	0.62	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
355768	1200679185	17-AUG-2004 02:18	DONE	1	0.91	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
353310	1200673377	18-AUG-2004 10:42	DONE	0	-0.02	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
359688	1200688226	30-AUG-2004 04:45	DONE	1	0.41	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
361952	1200693376	08-SEP-2004 16:10	DONE	0	-0	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
385979	1200751688	15-DEC-2004 09:29	DONE	0	-0.35	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
392820	1200768316	19-JAN-2005 09:26	DONE	0	-0.47	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
405418	1200798077	10-MAR-2005 18:58	DONE	0	-0.5	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
415574	1200822203	17-APR-2005 22:49	DONE	0	-0.4	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
418355	1200829064	01-MAY-2005 22:50	DONE	0	-0.47	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
424026	1200842937	23-MAY-2005 06:55	DONE	0	-0.42	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
429603	1200856585	20-JUN-2005 20:32	DONE	0	-0.56	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
455860	1200919487	30-AUG-2005 07:26	DONE	0	-0.19	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
470738	1200955079	19-OCT-2005 10:43	DONE	0	-0.45	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
479184	1200975538	21-NOV-2005 12:52	DONE	0	-0.38	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
482517	1200983367	06-DEC-2005 10:33	DONE	0	-0.47	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
485401	1200990518	17-DEC-2005 20:40	DONE	0	-0.24	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
491487	1201004535	17-JAN-2006 10:22	DONE	0	-0.43	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
498367	1201020049	07-FEB-2006 10:38	DONE	0	-0.41	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
511471	1201050513	15-MAR-2006 23:30	DONE	0	-0.36	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
511473	1201050521	21-MAR-2006 11:51	DONE	0	-0.39	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05
517517	1201063764	09-APR-2006 09:57	DONE	0	-0.36	pCi/g	0.47	-2.7	-1.6	2.58	3.63	1.05

Lead-210 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
264844	1200459098	04-AUG-2003 12:24	DONE	33	0.08	percent	30.7	0	-26	87.3	20.0	28.3
273724	1200481614	08-SEP-2003 13:12	DONE	7	-0.84	percent	30.7	0	-26	87.3	20.0	28.3
288690	1200518946	10-NOV-2003 14:40	DONE	8	-0.8	percent	30.7	0	-26	87.3	20.0	28.3
288976	1200519739	19-NOV-2003 14:31	DONE	62	1.1	percent	30.7	0	-26	87.3	20.0	28.3

305923	1200560409	01-FEB-2004 15:46	DONE	18	-0.43	percent	30.7	0	-26	87.3	20.0	28.3
307587	1200564193	16-FEB-2004 12:32	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3
322629	1200600730	12-APR-2004 11:07	DONE	8	-0.81	percent	30.7	0	-26	87.3	20.0	28.3
330965	1200620139	24-MAY-2004 10:37	DONE	39	0.3	percent	30.7	0	-26	87.3	20.0	28.3
333934	1200626933	26-MAY-2004 12:22	DUSE	92	2.2	percent	30.7	0	-26	87.3	20.0	28.3
336451	1200632648	01-JUN-2004 17:50	DONE	19	-0.43	percent	30.7	0	-26	87.3	20.0	28.3
337155	1200634386	07-JUN-2004 08:16	DONE	42	0.41	percent	30.7	0	-26	87.3	20.0	28.3
344683	1200652606	07-JUL-2004 11:05	DONE	3	-0.99	percent	30.7	0	-26	87.3	20.0	28.3
345863	1200655311	12-JUL-2004 12:24	DONE	27	-0.15	percent	30.7	0	-26	87.3	20.0	28.3
346907	1200657808	20-JUL-2004 06:31	DONE	15	-0.56	percent	30.7	0	-26	87.3	20.0	28.3
349408	1200663952	25-JUL-2004 20:10	DONE	28	-0.1	percent	30.7	0	-26	87.3	20.0	28.3
348807	1200662464	26-JUL-2004 04:52	DONE	52	0.74	percent	30.7	0	-26	87.3	20.0	28.3
350666	1200666974	29-JUL-2004 05:47	DONE	5	-0.91	percent	30.7	0	-26	87.3	20.0	28.3
350579	1200666739	02-AUG-2004 12:51	DONE	19	-0.42	percent	30.7	0	-26	87.3	20.0	28.3
352502	1200671518	09-AUG-2004 09:06	DONE	80	1.7	percent	30.7	0	-26	87.3	20.0	28.3
355295	1200678070	15-AUG-2004 22:03	DONE	63	1.1	percent	30.7	0	-26	87.3	20.0	28.3
355768	1200679186	15-AUG-2004 22:03	DONE	62	1.1	percent	30.7	0	-26	87.3	20.0	28.3
359688	1200688227	30-AUG-2004 04:45	DONE	95	2.3	percent	30.7	0	-26	87.3	20.0	28.3
361952	1200693377	08-SEP-2004 16:10	DONE	20	-0.38	percent	30.7	0	-26	87.3	20.0	28.3
392820	1200768317	19-JAN-2005 09:26	DONE	39	0.29	percent	30.7	0	-26	87.3	20.0	28.3
405418	1200798078	10-MAR-2005 18:58	DONE	54	0.84	percent	30.7	0	-26	87.3	20.0	28.3
415574	1200822204	17-APR-2005 22:49	DONE	11	-0.71	percent	30.7	0	-26	87.3	20.0	28.3
418355	1200829065	01-MAY-2005 22:50	DONE	30	-0.03	percent	30.7	0	-26	87.3	20.0	28.3
424026	1200842938	23-MAY-2005 06:55	DONE	26	-0.18	percent	30.7	0	-26	87.3	20.0	28.3
429603	1200856586	20-JUN-2005 20:32	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3
455860	1200919488	30-AUG-2005 07:26	DONE	28	-0.1	percent	30.7	0	-26	87.3	20.0	28.3
470738	1200955080	19-OCT-2005 10:43	DONE	57	0.93	percent	30.7	0	-26	87.3	20.0	28.3
479184	1200975539	22-NOV-2005 09:38	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3
482517	1200983368	06-DEC-2005 10:34	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3
485401	1200990519	17-DEC-2005 20:40	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3
491487	1201004536	17-JAN-2006 10:22	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3
498367	1201020050	07-FEB-2006 10:38	DONE	10	-0.72	percent	30.7	0	-26	87.3	20.0	28.3
511471	1201050514	15-MAR-2006 23:34	DONE	63	1.1	percent	30.7	0	-26	87.3	20.0	28.3
511473	1201050522	21-MAR-2006 11:52	DONE	84	1.9	percent	30.7	0	-26	87.3	20.0	28.3
517517	1201063765	09-APR-2006 09:57	DONE	0	-1	percent	30.7	0	-26	87.3	20.0	28.3

Lead-210 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
322628	1200600728	13-APR-2004 16:03	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
330965	1200620141	24-MAY-2004 10:37	DONE	92	-01	percent	100	75.0	83.3	117	125	8.33
333934	1200626935	26-MAY-2004 12:22	DUSE	89	-1	percent	100	75.0	83.3	117	125	8.33
336451	1200632650	01-JUN-2004 10:35	DONE	92	-0.98	percent	100	75.0	83.3	117	125	8.33
337155	1200634388	07-JUN-2004 08:16	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
340853	1200643315	21-JUN-2004 09:04	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
340852	1200643311	21-JUN-2004 10:24	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
340854	1200643319	21-JUN-2004 14:14	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
344683	1200652608	07-JUL-2004 11:05	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
345863	1200655313	12-JUL-2004 15:05	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
346907	1200657810	20-JUL-2004 12:08	DONE	96	-0.43	percent	100	75.0	83.3	117	125	8.33
348807	1200662466	26-JUL-2004 09:43	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33

349408	1200663954	26-JUL-2004 09:43	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
350666	1200666976	28-JUL-2004 18:25	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
350579	1200666741	02-AUG-2004 12:51	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
352502	1200671520	09-AUG-2004 09:06	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
352503	1200671524	14-AUG-2004 03:39	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
355295	1200678072	16-AUG-2004 08:54	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
355768	1200679188	16-AUG-2004 08:57	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
353310	1200673380	18-AUG-2004 10:42	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
359688	1200688229	30-AUG-2004 11:32	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
361952	1200693379	08-SEP-2004 08:49	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
385979	1200751690	15-DEC-2004 09:29	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
392820	1200768319	19-JAN-2005 07:26	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33
405418	1200798080	10-MAR-2005 18:58	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
415574	1200822206	26-APR-2005 08:20	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
418355	1200829067	01-MAY-2005 22:49	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
424026	1200842940	23-MAY-2005 06:55	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33
429603	1200856588	20-JUN-2005 21:37	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
455860	1200919490	30-AUG-2005 07:26	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
470738	1200955082	19-OCT-2005 10:43	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
479184	1200975541	20-NOV-2005 23:00	DONE	120	2.4	percent	100	75.0	83.3	117	125	8.33
482517	1200983370	06-DEC-2005 10:34	DONE	120	2.4	percent	100	75.0	83.3	117	125	8.33
485401	1200990521	17-DEC-2005 21:33	DONE	122	2.7	percent	100	75.0	83.3	117	125	8.33
491487	1201004538	17-JAN-2006 10:23	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
498367	1201020052	07-FEB-2006 12:13	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
511471	1201050516	15-MAR-2006 23:30	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
511473	1201050524	21-MAR-2006 11:52	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
517517	1201063767	09-APR-2006 09:57	DONE	77	-3	percent	100	75.0	83.3	117	125	8.33

Lead-210 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
273724	1200481614	08-SEP-2003 13:12	DONE	0.12	-0.89	dec	0.72	0	-0.638	2.09	3.00	0.68
340853	1200643313	21-JUN-2004 09:04	DONE	1.89	1.7	dec	0.72	0	-0.638	2.09	3.00	0.68
340852	1200643309	21-JUN-2004 10:24	DONE	1.13	0.6	dec	0.72	0	-0.638	2.09	3.00	0.68
340854	1200643317	21-JUN-2004 12:48	DONE	0.11	-0.9	dec	0.72	0	-0.638	2.09	3.00	0.68
352503	1200671522	14-AUG-2004 03:39	DONE	0.44	-0.42	dec	0.72	0	-0.638	2.09	3.00	0.68
353310	1200673378	18-AUG-2004 10:42	DONE	1.48	1.1	dec	0.72	0	-0.638	2.09	3.00	0.68
385979	1200751689	15-DEC-2004 09:29	DONE	0.27	-0.67	dec	0.72	0	-0.638	2.09	3.00	0.68
479184	1200975539	22-NOV-2005 09:38	DONE	0.36	-0.53	dec	0.72	0	-0.638	2.09	3.00	0.68

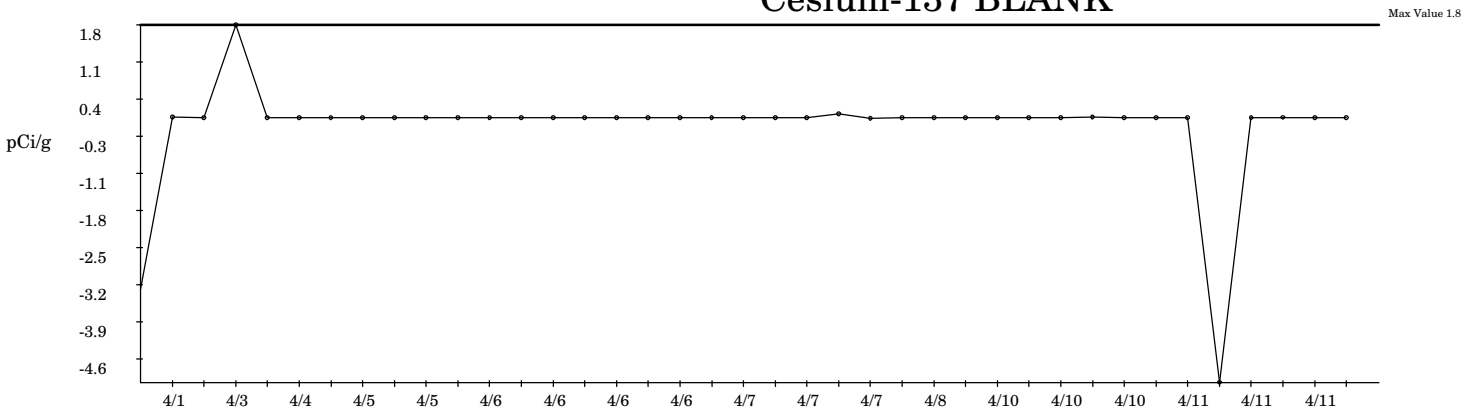
Lead-210 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
322629	1200600731	12-APR-2004 11:07	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
322629	1200600732	12-APR-2004 11:07	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
330965	1200620140	24-MAY-2004 10:37	DONE	97	-0.42	percent	100	75.0	83.3	117	125	8.33
333934	1200626934	26-MAY-2004 12:22	DUSE	-5	-10	percent	100	75.0	83.3	117	125	8.33
336451	1200632649	01-JUN-2004 10:30	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
337155	1200634387	07-JUN-2004 08:16	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
340853	1200643314	21-JUN-2004 09:04	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
340852	1200643310	21-JUN-2004 10:24	DONE	105	0.62	percent	100	75.0	83.3	117	125	8.33
340854	1200643318	21-JUN-2004 14:14	DONE	102	0.25	percent	100	75.0	83.3	117	125	8.33

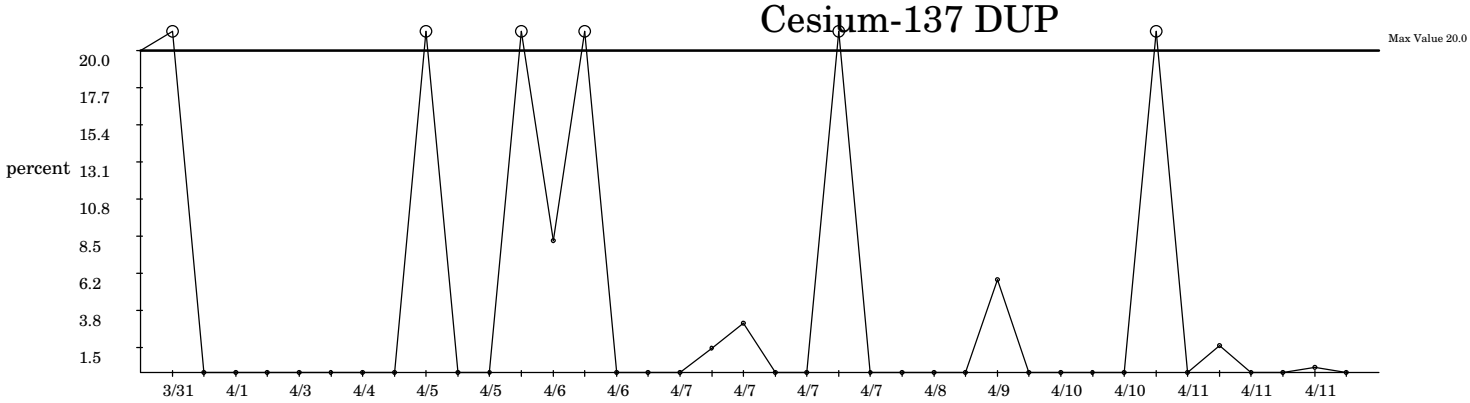
344683	1200652607	07-JUL-2004 11:05	DONE	92	-0.95	percent	100	75.0	83.3	117	125	8.33
345863	1200655312	12-JUL-2004 15:05	DONE	100	-0.01	percent	100	75.0	83.3	117	125	8.33
346907	1200657809	20-JUL-2004 12:08	DONE	96	-0.52	percent	100	75.0	83.3	117	125	8.33
348807	1200662465	26-JUL-2004 09:43	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
349408	1200663953	26-JUL-2004 09:43	DONE	96	-0.53	percent	100	75.0	83.3	117	125	8.33
350666	1200666975	28-JUL-2004 18:25	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
350579	1200666740	02-AUG-2004 12:51	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
352502	1200671519	09-AUG-2004 09:06	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
352503	1200671523	14-AUG-2004 03:39	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
355295	1200678071	16-AUG-2004 08:53	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
355768	1200679187	16-AUG-2004 08:57	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
353310	1200673379	18-AUG-2004 10:42	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
359688	1200688228	30-AUG-2004 10:23	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
361952	1200693378	08-SEP-2004 08:49	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
392820	1200768318	19-JAN-2005 07:26	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
405418	1200798079	10-MAR-2005 18:58	DONE	108	01	percent	100	75.0	83.3	117	125	8.33
415574	1200822205	17-APR-2005 22:35	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
418355	1200829066	01-MAY-2005 22:49	DONE	93	-0.86	percent	100	75.0	83.3	117	125	8.33
424026	1200842939	24-MAY-2005 18:27	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
429603	1200856587	20-JUN-2005 20:32	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
455860	1200919489	30-AUG-2005 07:26	DONE	114	1.6	percent	100	75.0	83.3	117	125	8.33
470738	1200955081	19-OCT-2005 10:43	DONE	125	3	percent	100	75.0	83.3	117	125	8.33
479184	1200975540	22-NOV-2005 21:58	DONE	124	2.9	percent	100	75.0	83.3	117	125	8.33
482517	1200983369	06-DEC-2005 10:34	DONE	120	2.4	percent	100	75.0	83.3	117	125	8.33
485401	1200990520	19-DEC-2005 10:52	DONE	123	2.8	percent	100	75.0	83.3	117	125	8.33
491487	1201004537	17-JAN-2006 10:22	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
498367	1201020051	07-FEB-2006 10:38	DONE	93	-0.79	percent	100	75.0	83.3	117	125	8.33
511471	1201050515	15-MAR-2006 23:30	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
511473	1201050523	21-MAR-2006 11:52	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
517517	1201063766	09-APR-2006 09:57	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Gamma Spec in Solids 4/11/2006

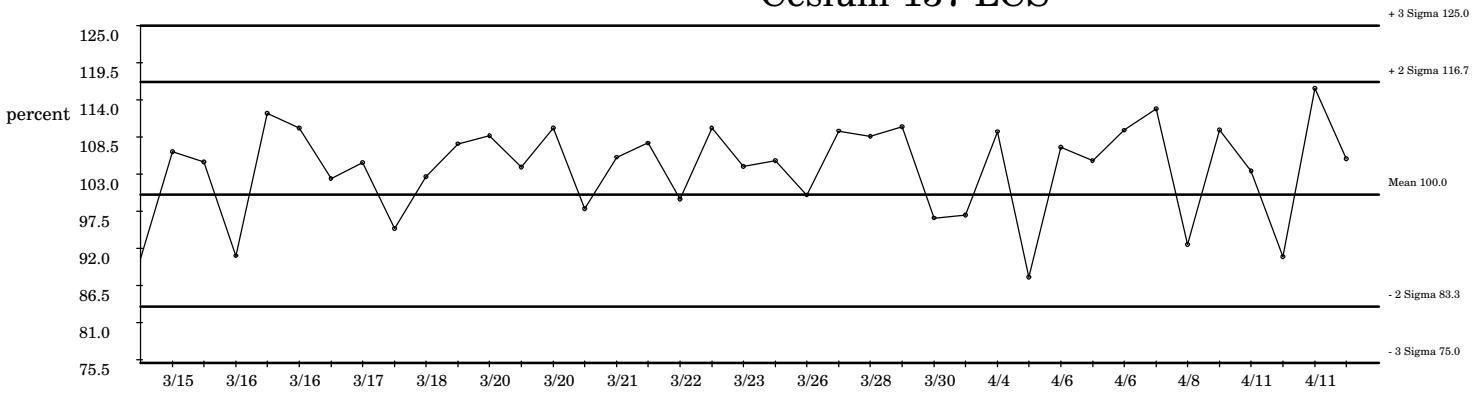
Cesium-137 BLANK



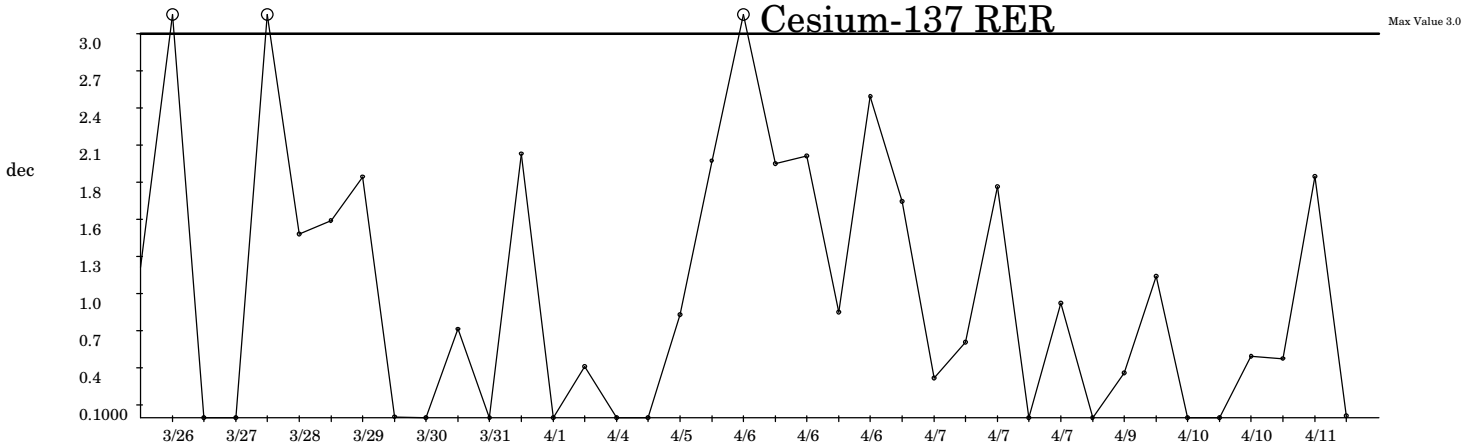
Cesium-137 DUP



Cesium-137 LCS



Cesium-137 RER



○ Denotes Outlier

Data used for Gamma Spec in Solids 12-APR-2006

Actinium-228 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507626	1201041698	16-MAR-2006 15:21	DONE	0.05	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
509666	1201046399	16-MAR-2006 21:46	DONE	0.28	-0.76	dec	0.65	0	-0.318	1.62	3.00	0.48
508605	1201044042	17-MAR-2006 00:39	DONE	0.73	0.18	dec	0.65	0	-0.318	1.62	3.00	0.48
507622	1201041687	17-MAR-2006 00:40	DONE	1.38	1.5	dec	0.65	0	-0.318	1.62	3.00	0.48
508637	1201044144	17-MAR-2006 10:33	DONE	0.41	-0.49	dec	0.65	0	-0.318	1.62	3.00	0.48
498916	1201021255	20-MAR-2006 01:43	DUSE	0.77	0.24	dec	0.65	0	-0.318	1.62	3.00	0.48
498916	1201021256	20-MAR-2006 01:43	DUSE	0.35	-0.61	dec	0.65	0	-0.318	1.62	3.00	0.48
512599	1201053130	20-MAR-2006 10:07	DONE	0.42	-0.48	dec	0.65	0	-0.318	1.62	3.00	0.48
508903	1201044757	20-MAR-2006 14:36	DUSE	0.57	-0.16	dec	0.65	0	-0.318	1.62	3.00	0.48
505207	1201035925	20-MAR-2006 20:56	DONE	0.67	0.03	dec	0.65	0	-0.318	1.62	3.00	0.48
512597	1201053124	20-MAR-2006 22:02	DONE	1.26	1.3	dec	0.65	0	-0.318	1.62	3.00	0.48
499544	1201022691	21-MAR-2006 05:31	DONE	0.79	0.29	dec	0.65	0	-0.318	1.62	3.00	0.48
512598	1201053127	21-MAR-2006 10:48	DONE	0.37	-0.57	dec	0.65	0	-0.318	1.62	3.00	0.48
506206	1201055201	21-MAR-2006 19:40	DONE	0.02	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
498916	1201021257	22-MAR-2006 05:44	DUSE	1.67	2.1	dec	0.65	0	-0.318	1.62	3.00	0.48
509445	1201046016	22-MAR-2006 18:51	DUSE	1.35	1.4	dec	0.65	0	-0.318	1.62	3.00	0.48
509439	1201046012	22-MAR-2006 20:39	DUSE	1.39	1.5	dec	0.65	0	-0.318	1.62	3.00	0.48
509577	1201046235	22-MAR-2006 22:31	DUSE	0.2	-0.93	dec	0.65	0	-0.318	1.62	3.00	0.48
509449	1201046023	23-MAR-2006 05:27	DUSE	1.29	1.3	dec	0.65	0	-0.318	1.62	3.00	0.48
498915	1201021243	24-MAR-2006 16:26	DUSE	0.79	0.28	dec	0.65	0	-0.318	1.62	3.00	0.48
509579	1201046242	25-MAR-2006 12:07	DUSE	1.19	1.1	dec	0.65	0	-0.318	1.62	3.00	0.48
498915	1201021246	26-MAR-2006 23:53	DUSE	0.16	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
513814	1201055631	27-MAR-2006 23:07	DONE	1.01	0.74	dec	0.65	0	-0.318	1.62	3.00	0.48
513815	1201055634	28-MAR-2006 20:48	DONE	0.2	-0.93	dec	0.65	0	-0.318	1.62	3.00	0.48
514959	1201058061	29-MAR-2006 12:17	DUSE	1.03	0.78	dec	0.65	0	-0.318	1.62	3.00	0.48
512778	1201053530	30-MAR-2006 14:52	DUSE	0.07	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
513797	1201055597	31-MAR-2006 06:04	DONE	0.63	-0.05	dec	0.65	0	-0.318	1.62	3.00	0.48
512787	1201053542	01-APR-2006 20:06	DUSE	0.63	-0.03	dec	0.65	0	-0.318	1.62	3.00	0.48
517045	1201062677	05-APR-2006 22:28	DONE	00	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
516236	1201060949	06-APR-2006 06:01	DONE	1.29	1.3	dec	0.65	0	-0.318	1.62	3.00	0.48
513810	1201055628	06-APR-2006 10:52	DUSE	0.46	-0.39	dec	0.65	0	-0.318	1.62	3.00	0.48
517980	1201064809	07-APR-2006 06:16	DONE	0.33	-0.65	dec	0.65	0	-0.318	1.62	3.00	0.48
517983	1201064813	07-APR-2006 06:28	DONE	0.02	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
513432	1201054906	07-APR-2006 21:54	DONE	0.06	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
513162	1201054360	09-APR-2006 21:34	DONE	0.56	-0.18	dec	0.65	0	-0.318	1.62	3.00	0.48
513799	1201055604	10-APR-2006 15:42	DONE	0.15	-1	dec	0.65	0	-0.318	1.62	3.00	0.48
519499	1201068199	11-APR-2006 16:44	DONE	0.35	-0.62	dec	0.65	0	-0.318	1.62	3.00	0.48
519008	1201067117	11-APR-2006 19:22	DUSE	1.04	0.81	dec	0.65	0	-0.318	1.62	3.00	0.48
518359	1201065660	11-APR-2006 21:47	DUSE	1.39	1.5	dec	0.65	0	-0.318	1.62	3.00	0.48

Americium-241 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509664	1201046396	15-MAR-2006 07:07	DONE	106	0.74	percent	100	75.0	83.3	117	125	8.33
509666	1201046400	15-MAR-2006 08:15	DONE	100	0.01	percent	100	75.0	83.3	117	125	8.33
498916	1201021254	15-MAR-2006 10:52	DUSE	96	-0.53	percent	100	75.0	83.3	117	125	8.33
511947	1201051584	16-MAR-2006 03:52	DONE	98	-0.3	percent	100	75.0	83.3	117	125	8.33

507629	1201041705	16-MAR-2006 13:15	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
507626	1201041699	16-MAR-2006 15:21	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
507622	1201041689	17-MAR-2006 06:12	DUSE	111	1.3	percent	100	75.0	83.3	117	125	8.33
508637	1201044145	17-MAR-2006 07:42	DONE	104	0.5	percent	100	75.0	83.3	117	125	8.33
508605	1201044043	17-MAR-2006 09:19	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
505207	1201035926	18-MAR-2006 13:44	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
512599	1201053131	20-MAR-2006 06:21	DONE	99	-0.15	percent	100	75.0	83.3	117	125	8.33
512597	1201053125	20-MAR-2006 07:29	DONE	96	-0.46	percent	100	75.0	83.3	117	125	8.33
508903	1201044758	20-MAR-2006 14:37	DONE	108	0.95	percent	100	75.0	83.3	117	125	8.33
499544	1201022693	20-MAR-2006 19:52	DONE	97	-0.36	percent	100	75.0	83.3	117	125	8.33
512598	1201053128	20-MAR-2006 20:59	DONE	100	-0.04	percent	100	75.0	83.3	117	125	8.33
506206	1201055202	21-MAR-2006 17:35	DONE	96	-0.53	percent	100	75.0	83.3	117	125	8.33
509439	1201046013	22-MAR-2006 17:38	DUSE	104	0.43	percent	100	75.0	83.3	117	125	8.33
509445	1201046017	22-MAR-2006 17:56	DUSE	96	-0.54	percent	100	75.0	83.3	117	125	8.33
509577	1201046236	22-MAR-2006 22:50	DUSE	108	0.96	percent	100	75.0	83.3	117	125	8.33
509449	1201046024	23-MAR-2006 12:45	DUSE	95	-0.64	percent	100	75.0	83.3	117	125	8.33
509579	1201046243	25-MAR-2006 14:21	DUSE	90	-1	percent	100	75.0	83.3	117	125	8.33
498915	1201021245	26-MAR-2006 20:50	DUSE	103	0.41	percent	100	75.0	83.3	117	125	8.33
513814	1201055632	28-MAR-2006 04:36	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
513815	1201055635	28-MAR-2006 20:48	DONE	106	0.77	percent	100	75.0	83.3	117	125	8.33
512778	1201053531	30-MAR-2006 09:25	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
514959	1201058063	30-MAR-2006 14:51	DUSE	88	-1	percent	100	75.0	83.3	117	125	8.33
513797	1201055598	31-MAR-2006 06:06	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
512787	1201053543	04-APR-2006 09:03	DONE	103	0.34	percent	100	75.0	83.3	117	125	8.33
516236	1201060950	05-APR-2006 06:02	DUSE	91	-1	percent	100	75.0	83.3	117	125	8.33
513810	1201055629	06-APR-2006 08:46	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
517045	1201062678	06-APR-2006 11:31	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
517980	1201064811	06-APR-2006 12:37	DONE	102	0.22	percent	100	75.0	83.3	117	125	8.33
517983	1201064814	07-APR-2006 06:28	DONE	104	0.47	percent	100	75.0	83.3	117	125	8.33
513432	1201054907	08-APR-2006 20:51	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
513162	1201054361	09-APR-2006 21:18	DONE	105	0.61	percent	100	75.0	83.3	117	125	8.33
519008	1201067118	11-APR-2006 13:11	DUSE	95	-0.63	percent	100	75.0	83.3	117	125	8.33
519499	1201068200	11-APR-2006 17:47	DUSE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
518359	1201065661	11-APR-2006 20:04	DONE	99	-0.13	percent	100	75.0	83.3	117	125	8.33
513799	1201055605	12-APR-2006 12:22	DONE	100	-0.04	percent	100	75.0	83.3	117	125	8.33

Americium-241 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507626	1201041698	16-MAR-2006 15:21	DONE	1.21	0.86	dec	0.78	0	-0.214	1.78	3.00	0.5
509666	1201046399	16-MAR-2006 21:46	DONE	0.98	0.4	dec	0.78	0	-0.214	1.78	3.00	0.5
508605	1201044042	17-MAR-2006 00:39	DONE	0.43	-0.72	dec	0.78	0	-0.214	1.78	3.00	0.5
507622	1201041687	17-MAR-2006 00:40	DUSE	0.7	-0.17	dec	0.78	0	-0.214	1.78	3.00	0.5
508637	1201044144	17-MAR-2006 10:33	DONE	0.44	-0.69	dec	0.78	0	-0.214	1.78	3.00	0.5
498916	1201021255	20-MAR-2006 01:43	DUSE	0.08	-1	dec	0.78	0	-0.214	1.78	3.00	0.5
498916	1201021256	20-MAR-2006 01:43	DUSE	0.25	-1	dec	0.78	0	-0.214	1.78	3.00	0.5
512599	1201053130	20-MAR-2006 10:07	DONE	0.75	-0.07	dec	0.78	0	-0.214	1.78	3.00	0.5
508903	1201044757	20-MAR-2006 14:36	DONE	0.25	-1	dec	0.78	0	-0.214	1.78	3.00	0.5
505207	1201035925	20-MAR-2006 20:56	DONE	0.39	-0.79	dec	0.78	0	-0.214	1.78	3.00	0.5
512597	1201053124	20-MAR-2006 22:02	DONE	1.54	1.5	dec	0.78	0	-0.214	1.78	3.00	0.5
499544	1201022691	21-MAR-2006 05:31	DONE	1.17	0.78	dec	0.78	0	-0.214	1.78	3.00	0.5

512598	1201053127	21-MAR-2006 10:48	DONE	0.62	-0.32	dec	0.78	0	-0.214	1.78	3.00	0.5
506206	1201055201	21-MAR-2006 19:40	DONE	0.3	-0.96	dec	0.78	0	-0.214	1.78	3.00	0.5
498916	1201021257	22-MAR-2006 05:44	DUSE	1.92	2.3	dec	0.78	0	-0.214	1.78	3.00	0.5
509445	1201046016	22-MAR-2006 18:51	DUSE	1.01	0.46	dec	0.78	0	-0.214	1.78	3.00	0.5
509439	1201046012	22-MAR-2006 20:39	DUSE	0.67	-0.22	dec	0.78	0	-0.214	1.78	3.00	0.5
509577	1201046235	22-MAR-2006 22:31	DUSE	1.1	0.64	dec	0.78	0	-0.214	1.78	3.00	0.5
509449	1201046023	23-MAR-2006 05:27	DUSE	0.41	-0.75	dec	0.78	0	-0.214	1.78	3.00	0.5
498915	1201021243	24-MAR-2006 16:26	DUSE	1.41	1.3	dec	0.78	0	-0.214	1.78	3.00	0.5
509579	1201046242	25-MAR-2006 12:07	DUSE	1.08	0.61	dec	0.78	0	-0.214	1.78	3.00	0.5
498915	1201021246	26-MAR-2006 23:53	DUSE	0.97	0.38	dec	0.78	0	-0.214	1.78	3.00	0.5
513814	1201055631	27-MAR-2006 23:07	DONE	0.28	-1	dec	0.78	0	-0.214	1.78	3.00	0.5
513815	1201055634	28-MAR-2006 20:48	DONE	1.39	1.2	dec	0.78	0	-0.214	1.78	3.00	0.5
514959	1201058061	29-MAR-2006 12:17	DUSE	0.5	-0.57	dec	0.78	0	-0.214	1.78	3.00	0.5
512778	1201053530	30-MAR-2006 14:52	DONE	0.04	-1	dec	0.78	0	-0.214	1.78	3.00	0.5
513797	1201055597	31-MAR-2006 06:04	DONE	0.82	0.08	dec	0.78	0	-0.214	1.78	3.00	0.5
512787	1201053542	01-APR-2006 20:06	DONE	0.29	-0.98	dec	0.78	0	-0.214	1.78	3.00	0.5
517045	1201062677	05-APR-2006 22:28	DONE	1.03	0.5	dec	0.78	0	-0.214	1.78	3.00	0.5
516236	1201060949	06-APR-2006 06:01	DUSE	0.05	-1	dec	0.78	0	-0.214	1.78	3.00	0.5
513810	1201055628	06-APR-2006 10:52	DONE	1.09	0.61	dec	0.78	0	-0.214	1.78	3.00	0.5
517980	1201064809	07-APR-2006 06:16	DONE	1.93	2.3	dec	0.78	0	-0.214	1.78	3.00	0.5
517983	1201064813	07-APR-2006 06:28	DONE	0.88	0.21	dec	0.78	0	-0.214	1.78	3.00	0.5
513432	1201054906	07-APR-2006 21:54	DONE	0.92	0.28	dec	0.78	0	-0.214	1.78	3.00	0.5
513162	1201054360	09-APR-2006 21:34	DONE	0.53	-0.5	dec	0.78	0	-0.214	1.78	3.00	0.5
513799	1201055604	10-APR-2006 15:42	DUSE	0.7	-0.17	dec	0.78	0	-0.214	1.78	3.00	0.5
519499	1201068199	11-APR-2006 16:44	DUSE	1.6	1.6	dec	0.78	0	-0.214	1.78	3.00	0.5
519008	1201067117	11-APR-2006 19:22	DUSE	0.49	-0.6	dec	0.78	0	-0.214	1.78	3.00	0.5
518359	1201065660	11-APR-2006 21:47	DUSE	0.26	-1	dec	0.78	0	-0.214	1.78	3.00	0.5

Bismuth-212 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507626	1201041698	16-MAR-2006 15:21	DONE	1.06	0.42	dec	0.8	0	-0.418	2.02	3.00	0.61
509666	1201046399	16-MAR-2006 21:46	DONE	1.47	1.1	dec	0.8	0	-0.418	2.02	3.00	0.61
508605	1201044042	17-MAR-2006 00:39	DONE	0.01	-1	dec	0.8	0	-0.418	2.02	3.00	0.61
507622	1201041687	17-MAR-2006 00:40	DONE	1.02	0.37	dec	0.8	0	-0.418	2.02	3.00	0.61
508637	1201044144	17-MAR-2006 10:33	DONE	0.74	-0.1	dec	0.8	0	-0.418	2.02	3.00	0.61
498916	1201021255	20-MAR-2006 01:43	DUSE	0.73	-0.12	dec	0.8	0	-0.418	2.02	3.00	0.61
498916	1201021256	20-MAR-2006 01:43	DUSE	0.25	-0.91	dec	0.8	0	-0.418	2.02	3.00	0.61
512599	1201053130	20-MAR-2006 10:07	DONE	1.55	1.2	dec	0.8	0	-0.418	2.02	3.00	0.61
508903	1201044757	20-MAR-2006 14:36	DUSE	0.22	-0.95	dec	0.8	0	-0.418	2.02	3.00	0.61
505207	1201035925	20-MAR-2006 20:56	DONE	0.94	0.23	dec	0.8	0	-0.418	2.02	3.00	0.61
512597	1201053124	20-MAR-2006 22:02	DONE	2.56	2.9	dec	0.8	0	-0.418	2.02	3.00	0.61
499544	1201022691	21-MAR-2006 05:31	DONE	0.32	-0.79	dec	0.8	0	-0.418	2.02	3.00	0.61
512598	1201053127	21-MAR-2006 10:48	DONE	0.69	-0.19	dec	0.8	0	-0.418	2.02	3.00	0.61
506206	1201055201	21-MAR-2006 19:40	DONE	1.7	1.5	dec	0.8	0	-0.418	2.02	3.00	0.61
498916	1201021257	22-MAR-2006 05:44	DUSE	0.52	-0.45	dec	0.8	0	-0.418	2.02	3.00	0.61
509445	1201046016	22-MAR-2006 18:51	DUSE	0.16	-1	dec	0.8	0	-0.418	2.02	3.00	0.61
509439	1201046012	22-MAR-2006 20:39	DUSE	0.49	-0.51	dec	0.8	0	-0.418	2.02	3.00	0.61
509577	1201046235	22-MAR-2006 22:31	DUSE	0.21	-0.97	dec	0.8	0	-0.418	2.02	3.00	0.61
509449	1201046023	23-MAR-2006 05:27	DUSE	0.46	-0.56	dec	0.8	0	-0.418	2.02	3.00	0.61
498915	1201021243	24-MAR-2006 16:26	DUSE	1.69	1.5	dec	0.8	0	-0.418	2.02	3.00	0.61

509579	1201046242	25-MAR-2006 12:07	DUSE	0.84	0.07	dec	0.8	0	-0.418	2.02	3.00	0.61
498915	1201021246	26-MAR-2006 23:53	DUSE	1.14	0.56	dec	0.8	0	-0.418	2.02	3.00	0.61
513814	1201055631	27-MAR-2006 23:07	DONE	0.04	-1	dec	0.8	0	-0.418	2.02	3.00	0.61
513815	1201055634	28-MAR-2006 20:48	DONE	0.52	-0.46	dec	0.8	0	-0.418	2.02	3.00	0.61
514959	1201058061	29-MAR-2006 12:17	DUSE	0.29	-0.84	dec	0.8	0	-0.418	2.02	3.00	0.61
512778	1201053530	30-MAR-2006 14:52	DUSE	0.25	-0.9	dec	0.8	0	-0.418	2.02	3.00	0.61
513797	1201055597	31-MAR-2006 06:04	DONE	1.69	1.5	dec	0.8	0	-0.418	2.02	3.00	0.61
512787	1201053542	01-APR-2006 20:06	DUSE	0.55	-0.41	dec	0.8	0	-0.418	2.02	3.00	0.61
517045	1201062677	05-APR-2006 22:28	DONE	0.71	-0.15	dec	0.8	0	-0.418	2.02	3.00	0.61
516236	1201060949	06-APR-2006 06:01	DONE	1.49	1.1	dec	0.8	0	-0.418	2.02	3.00	0.61
513810	1201055628	06-APR-2006 10:52	DUSE	0.36	-0.72	dec	0.8	0	-0.418	2.02	3.00	0.61
517980	1201064809	07-APR-2006 06:16	DONE	0.47	-0.55	dec	0.8	0	-0.418	2.02	3.00	0.61
517983	1201064813	07-APR-2006 06:28	DONE	2.05	2	dec	0.8	0	-0.418	2.02	3.00	0.61
513432	1201054906	07-APR-2006 21:54	DONE	1.19	0.63	dec	0.8	0	-0.418	2.02	3.00	0.61
513162	1201054360	09-APR-2006 21:34	DONE	0.33	-0.77	dec	0.8	0	-0.418	2.02	3.00	0.61
513799	1201055604	10-APR-2006 15:42	DONE	0.34	-0.76	dec	0.8	0	-0.418	2.02	3.00	0.61
519499	1201068199	11-APR-2006 16:44	DONE	0.33	-0.77	dec	0.8	0	-0.418	2.02	3.00	0.61
519008	1201067117	11-APR-2006 19:22	DUSE	0.53	-0.44	dec	0.8	0	-0.418	2.02	3.00	0.61
518359	1201065660	11-APR-2006 21:47	DUSE	1.29	0.8	dec	0.8	0	-0.418	2.02	3.00	0.61

Cesium-137 BLANK: Limits LCL = -2.7 UCL = 2.5

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510151	1201047468	01-APR-2006 17:55	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
512787	1201053541	01-APR-2006 20:05	DONE	0	0.12	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
510153	1201047482	01-APR-2006 20:23	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516236	1201060948	03-APR-2006 22:12	DONE	2	2.2	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
510153	1201047482	03-APR-2006 23:22	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
510952	1201049298	04-APR-2006 01:43	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
510881	1201049180	04-APR-2006 05:48	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516989	1201062554	05-APR-2006 08:18	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
508902	1201044753	05-APR-2006 09:43	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
508900	1201044747	05-APR-2006 17:35	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517983	1201064812	05-APR-2006 18:28	DONE	0	0.1	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516986	1201062545	06-APR-2006 08:33	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
513810	1201055627	06-APR-2006 09:43	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516987	1201062548	06-APR-2006 10:43	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517045	1201062676	06-APR-2006 10:56	DONE	0	0.1	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516991	1201062560	06-APR-2006 11:51	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516993	1201062566	06-APR-2006 16:35	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
510982	1201049354	06-APR-2006 16:39	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
510976	1201049346	06-APR-2006 18:46	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516996	1201062572	07-APR-2006 06:08	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
516999	1201062578	07-APR-2006 08:19	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
511760	1201051194	07-APR-2006 10:19	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517980	1201064808	07-APR-2006 14:52	DONE	0	0.19	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
513432	1201054905	07-APR-2006 17:03	DONE	0	0.08	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517004	1201062584	08-APR-2006 16:03	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517006	1201062590	08-APR-2006 21:37	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517018	1201062614	09-APR-2006 21:09	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517011	1201062602	10-APR-2006 06:23	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86

513162	1201054359	10-APR-2006 06:36	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517009	1201062596	10-APR-2006 10:47	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
513799	1201055603	10-APR-2006 11:17	DUSE	0	0.12	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
517015	1201062608	10-APR-2006 13:00	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
512595	1201053117	10-APR-2006 13:17	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
513054	1201054080	11-APR-2006 11:51	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
519499	1201068198	11-APR-2006 14:26	DONE	-5	-6	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
519008	1201067116	11-APR-2006 18:52	DONE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
518359	1201065659	11-APR-2006 18:53	DONE	0	0.11	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
513058	1201054086	11-APR-2006 21:43	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86
513780	1201055549	11-APR-2006 23:45	DUSE	0	0.09	pCi/g	-0.08	-2.7	-1.8	1.65	2.51	0.86

Cesium-137 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510114	1201047413	30-MAR-2006 21:20	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
513797	1201055597	31-MAR-2006 06:04	DONE	369	3.7	percent	30.5	0	-150	211	20.0	90.4
510133	1201047438	31-MAR-2006 09:54	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
510151	1201047469	01-APR-2006 17:56	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
510153	1201047483	01-APR-2006 20:23	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
510153	1201047483	03-APR-2006 23:01	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
510952	1201049299	04-APR-2006 01:41	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
510881	1201049181	04-APR-2006 06:40	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
510153	1201047483	04-APR-2006 07:57	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
516989	1201062555	05-APR-2006 08:18	DUSE	26	-0.05	percent	30.5	0	-150	211	20.0	90.4
508902	1201044754	05-APR-2006 09:43	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
508900	1201044748	05-APR-2006 17:36	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517045	1201062677	05-APR-2006 22:28	DONE	31	0.01	percent	30.5	0	-150	211	20.0	90.4
516236	1201060949	06-APR-2006 06:01	DONE	8	-0.25	percent	30.5	0	-150	211	20.0	90.4
513810	1201055628	06-APR-2006 10:52	DONE	248	2.4	percent	30.5	0	-150	211	20.0	90.4
516991	1201062561	06-APR-2006 12:45	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
516993	1201062567	06-APR-2006 16:35	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
516996	1201062573	07-APR-2006 06:09	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517980	1201064809	07-APR-2006 06:16	DONE	2	-0.32	percent	30.5	0	-150	211	20.0	90.4
517983	1201064813	07-APR-2006 06:28	DONE	3	-0.3	percent	30.5	0	-150	211	20.0	90.4
511760	1201051195	07-APR-2006 10:20	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
516996	1201062573	07-APR-2006 10:31	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
513432	1201054906	07-APR-2006 21:54	DONE	359	3.6	percent	30.5	0	-150	211	20.0	90.4
510976	1201049347	07-APR-2006 22:28	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517004	1201062585	08-APR-2006 16:02	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517006	1201062591	08-APR-2006 21:38	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517018	1201062615	09-APR-2006 21:10	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
513162	1201054360	09-APR-2006 21:34	DONE	6	-0.27	percent	30.5	0	-150	211	20.0	90.4
517011	1201062603	10-APR-2006 06:23	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517009	1201062597	10-APR-2006 10:48	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
517015	1201062609	10-APR-2006 10:51	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
512595	1201053118	10-APR-2006 13:18	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
513799	1201055604	10-APR-2006 15:42	DUSE	137	1.2	percent	30.5	0	-150	211	20.0	90.4
513054	1201054081	11-APR-2006 10:21	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
519499	1201068199	11-APR-2006 16:44	DONE	2	-0.32	percent	30.5	0	-150	211	20.0	90.4
519008	1201067117	11-APR-2006 19:22	DONE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4

513058	1201054087	11-APR-2006 21:43	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4
518359	1201065660	11-APR-2006 21:47	DONE	0	-0.33	percent	30.5	0	-150	211	20.0	90.4
513780	1201055550	11-APR-2006 23:45	DUSE	0	-0.34	percent	30.5	0	-150	211	20.0	90.4

Cesium-137 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509664	1201046396	15-MAR-2006 07:07	DONE	110	1.1	percent	100	75.0	83.3	117	125	8.33
509666	1201046400	15-MAR-2006 08:15	DONE	106	0.76	percent	100	75.0	83.3	117	125	8.33
498916	1201021254	15-MAR-2006 10:52	DONE	105	0.58	percent	100	75.0	83.3	117	125	8.33
511947	1201051584	16-MAR-2006 03:52	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
507629	1201041705	16-MAR-2006 13:15	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
507626	1201041699	16-MAR-2006 15:21	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
507622	1201041689	17-MAR-2006 06:12	DONE	102	0.28	percent	100	75.0	83.3	117	125	8.33
508637	1201044145	17-MAR-2006 07:42	DONE	105	0.56	percent	100	75.0	83.3	117	125	8.33
508605	1201044043	17-MAR-2006 09:19	DONE	95	-0.61	percent	100	75.0	83.3	117	125	8.33
505207	1201035926	18-MAR-2006 13:44	DONE	103	0.31	percent	100	75.0	83.3	117	125	8.33
512599	1201053131	20-MAR-2006 06:21	DONE	108	0.9	percent	100	75.0	83.3	117	125	8.33
512597	1201053125	20-MAR-2006 07:29	DONE	109	1	percent	100	75.0	83.3	117	125	8.33
508903	1201044758	20-MAR-2006 14:37	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
499544	1201022693	20-MAR-2006 19:52	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
512598	1201053128	20-MAR-2006 20:59	DONE	98	-0.25	percent	100	75.0	83.3	117	125	8.33
506206	1201055202	21-MAR-2006 17:35	DONE	106	0.66	percent	100	75.0	83.3	117	125	8.33
509439	1201046013	22-MAR-2006 17:38	DONE	108	0.91	percent	100	75.0	83.3	117	125	8.33
509445	1201046017	22-MAR-2006 17:56	DONE	99	-0.08	percent	100	75.0	83.3	117	125	8.33
509577	1201046236	22-MAR-2006 22:50	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
509449	1201046024	23-MAR-2006 12:45	DONE	104	0.49	percent	100	75.0	83.3	117	125	8.33
509579	1201046243	25-MAR-2006 14:21	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
498915	1201021245	26-MAR-2006 20:50	DONE	100	-0.01	percent	100	75.0	83.3	117	125	8.33
513814	1201055632	28-MAR-2006 04:36	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
513815	1201055635	28-MAR-2006 20:48	DONE	109	1	percent	100	75.0	83.3	117	125	8.33
512778	1201053531	30-MAR-2006 09:25	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
514959	1201058063	30-MAR-2006 14:51	DONE	97	-0.42	percent	100	75.0	83.3	117	125	8.33
513797	1201055598	31-MAR-2006 06:06	DONE	97	-0.37	percent	100	75.0	83.3	117	125	8.33
512787	1201053543	04-APR-2006 09:03	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
516236	1201060950	05-APR-2006 06:02	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
513810	1201055629	06-APR-2006 08:46	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
517045	1201062678	06-APR-2006 11:31	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
517980	1201064811	06-APR-2006 12:37	DONE	110	1.1	percent	100	75.0	83.3	117	125	8.33
517983	1201064814	07-APR-2006 06:28	DONE	113	1.5	percent	100	75.0	83.3	117	125	8.33
513432	1201054907	08-APR-2006 20:51	DONE	93	-0.89	percent	100	75.0	83.3	117	125	8.33
513162	1201054361	09-APR-2006 21:18	DONE	110	1.1	percent	100	75.0	83.3	117	125	8.33
519008	1201067118	11-APR-2006 13:11	DONE	103	0.41	percent	100	75.0	83.3	117	125	8.33
519499	1201068200	11-APR-2006 17:47	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
518359	1201065661	11-APR-2006 20:04	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
513799	1201055605	12-APR-2006 12:22	DONE	105	0.64	percent	100	75.0	83.3	117	125	8.33

Cesium-137 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
513071	1201054135	26-MAR-2006 21:51	DUSE	1.83	0.24	dec	1.34	0	-2.7	5.39	3.00	2.03
498915	1201021246	26-MAR-2006 23:53	DONE	5.16	1.9	dec	1.34	0	-2.7	5.39	3.00	2.03

508865	1201044688	27-MAR-2006 20:50	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
513785	1201055565	27-MAR-2006 21:18	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
513814	1201055631	27-MAR-2006 23:07	DONE	8.84	3.7	dec	1.34	0	-2.7	5.39	3.00	2.03
515289	1201058837	28-MAR-2006 10:16	DUSE	1.43	0.05	dec	1.34	0	-2.7	5.39	3.00	2.03
513815	1201055634	28-MAR-2006 20:48	DONE	1.54	0.1	dec	1.34	0	-2.7	5.39	3.00	2.03
514959	1201058061	29-MAR-2006 12:17	DONE	1.88	0.27	dec	1.34	0	-2.7	5.39	3.00	2.03
512778	1201053530	30-MAR-2006 14:52	DONE	0.01	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
510114	1201047413	30-MAR-2006 21:20	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
513797	1201055597	31-MAR-2006 06:04	DONE	0.69	-0.32	dec	1.34	0	-2.7	5.39	3.00	2.03
510133	1201047438	31-MAR-2006 09:54	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
510144	1201047451	31-MAR-2006 18:41	DONE	2.06	0.36	dec	1.34	0	-2.7	5.39	3.00	2.03
510151	1201047469	01-APR-2006 17:56	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
512787	1201053542	01-APR-2006 20:06	DONE	0.4	-0.46	dec	1.34	0	-2.7	5.39	3.00	2.03
510952	1201049299	04-APR-2006 01:41	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
510881	1201049181	04-APR-2006 06:40	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
516989	1201062555	05-APR-2006 08:18	DUSE	0.81	-0.26	dec	1.34	0	-2.7	5.39	3.00	2.03
517045	1201062677	05-APR-2006 22:28	DONE	2.01	0.33	dec	1.34	0	-2.7	5.39	3.00	2.03
516236	1201060949	06-APR-2006 06:01	DONE	8.48	3.5	dec	1.34	0	-2.7	5.39	3.00	2.03
516986	1201062546	06-APR-2006 08:33	DUSE	1.98	0.32	dec	1.34	0	-2.7	5.39	3.00	2.03
516987	1201062549	06-APR-2006 10:43	DUSE	2.05	0.35	dec	1.34	0	-2.7	5.39	3.00	2.03
513810	1201055628	06-APR-2006 10:52	DONE	0.82	-0.25	dec	1.34	0	-2.7	5.39	3.00	2.03
510976	1201049347	06-APR-2006 18:47	DUSE	2.51	0.58	dec	1.34	0	-2.7	5.39	3.00	2.03
510982	1201049355	06-APR-2006 18:47	DONE	1.69	0.18	dec	1.34	0	-2.7	5.39	3.00	2.03
517980	1201064809	07-APR-2006 06:16	DONE	0.31	-0.51	dec	1.34	0	-2.7	5.39	3.00	2.03
517983	1201064813	07-APR-2006 06:28	DONE	0.59	-0.37	dec	1.34	0	-2.7	5.39	3.00	2.03
516999	1201062579	07-APR-2006 08:20	DUSE	1.81	0.23	dec	1.34	0	-2.7	5.39	3.00	2.03
511760	1201051195	07-APR-2006 10:20	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
513432	1201054906	07-APR-2006 21:54	DONE	0.89	-0.22	dec	1.34	0	-2.7	5.39	3.00	2.03
517006	1201062591	08-APR-2006 21:38	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
513162	1201054360	09-APR-2006 21:34	DONE	0.35	-0.49	dec	1.34	0	-2.7	5.39	3.00	2.03
517011	1201062603	10-APR-2006 06:23	DONE	1.11	-0.11	dec	1.34	0	-2.7	5.39	3.00	2.03
517009	1201062597	10-APR-2006 10:48	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
512595	1201053118	10-APR-2006 13:18	DONE	0	-0.66	dec	1.34	0	-2.7	5.39	3.00	2.03
513799	1201055604	10-APR-2006 15:42	DUSE	0.48	-0.42	dec	1.34	0	-2.7	5.39	3.00	2.03
519499	1201068199	11-APR-2006 16:44	DONE	0.46	-0.43	dec	1.34	0	-2.7	5.39	3.00	2.03
519008	1201067117	11-APR-2006 19:22	DONE	1.88	0.27	dec	1.34	0	-2.7	5.39	3.00	2.03
518359	1201065660	11-APR-2006 21:47	DONE	0.01	-0.65	dec	1.34	0	-2.7	5.39	3.00	2.03

Cobalt-60 BLANK: Limits LCL = -12.2 UCL = 13.7

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
511947	1201051582	15-MAR-2006 14:32	DONE	27	6	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509664	1201046394	15-MAR-2006 22:41	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
507629	1201041703	16-MAR-2006 13:14	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
507626	1201041697	16-MAR-2006 15:21	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509666	1201046398	16-MAR-2006 21:46	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
508605	1201044041	17-MAR-2006 00:38	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
507622	1201041686	17-MAR-2006 00:40	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
508637	1201044143	17-MAR-2006 08:21	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
508903	1201044756	17-MAR-2006 22:59	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
505207	1201035924	18-MAR-2006 00:57	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31

498916	1201021252	19-MAR-2006 18:01	DONE	2	0.32	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
512599	1201053129	20-MAR-2006 10:06	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
512597	1201053123	20-MAR-2006 19:22	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
499544	1201022690	20-MAR-2006 21:27	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
512598	1201053126	21-MAR-2006 12:16	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
506206	1201055200	21-MAR-2006 15:02	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509445	1201046015	22-MAR-2006 16:50	DUSE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509439	1201046011	22-MAR-2006 17:38	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509449	1201046022	22-MAR-2006 20:37	DUSE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509577	1201046234	22-MAR-2006 22:47	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
498915	1201021242	23-MAR-2006 10:30	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
509579	1201046241	25-MAR-2006 12:07	DUSE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513814	1201055630	28-MAR-2006 06:09	DONE	0	-0.17	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513815	1201055633	28-MAR-2006 20:47	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
514959	1201058060	28-MAR-2006 22:16	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
512778	1201053529	30-MAR-2006 14:51	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513797	1201055596	30-MAR-2006 23:40	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
512787	1201053541	01-APR-2006 20:05	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
516236	1201060948	03-APR-2006 22:12	DONE	-1	-0.49	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
517983	1201064812	05-APR-2006 18:28	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513810	1201055627	06-APR-2006 09:43	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
517045	1201062676	06-APR-2006 10:56	DONE	0	-0.17	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
517980	1201064808	07-APR-2006 14:52	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513432	1201054905	07-APR-2006 17:03	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513162	1201054359	10-APR-2006 06:36	DONE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
513799	1201055603	10-APR-2006 11:17	DUSE	0	-0.17	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
519499	1201068198	11-APR-2006 14:26	DONE	2	0.39	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
519008	1201067116	11-APR-2006 18:52	DUSE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31
518359	1201065659	11-APR-2006 18:53	DUSE	0	-0.18	pCi/g	0.78	-12	-7.9	9.4	13.7	4.31

Cobalt-60 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507629	1201041704	16-MAR-2006 13:15	DONE	725	0.58	percent	296	0	-1200	1780	20.0	744
507626	1201041698	16-MAR-2006 15:21	DONE	16	-0.38	percent	296	0	-1200	1780	20.0	744
509666	1201046399	16-MAR-2006 21:46	DONE	6	-0.39	percent	296	0	-1200	1780	20.0	744
508605	1201044042	17-MAR-2006 00:39	DONE	2	-0.4	percent	296	0	-1200	1780	20.0	744
507622	1201041687	17-MAR-2006 00:40	DONE	599	0.41	percent	296	0	-1200	1780	20.0	744
508637	1201044144	17-MAR-2006 10:33	DONE	1	-0.4	percent	296	0	-1200	1780	20.0	744
498916	1201021255	20-MAR-2006 01:43	DONE	2	-0.39	percent	296	0	-1200	1780	20.0	744
498916	1201021256	20-MAR-2006 01:43	DONE	4	-0.39	percent	296	0	-1200	1780	20.0	744
512599	1201053130	20-MAR-2006 10:07	DONE	175	-0.16	percent	296	0	-1200	1780	20.0	744
508903	1201044757	20-MAR-2006 14:36	DONE	4264	5.3	percent	296	0	-1200	1780	20.0	744
505207	1201035925	20-MAR-2006 20:56	DONE	60	-0.32	percent	296	0	-1200	1780	20.0	744
512597	1201053124	20-MAR-2006 22:02	DONE	4	-0.39	percent	296	0	-1200	1780	20.0	744
499544	1201022691	21-MAR-2006 05:31	DONE	1088	1.1	percent	296	0	-1200	1780	20.0	744
512598	1201053127	21-MAR-2006 10:48	DONE	23	-0.37	percent	296	0	-1200	1780	20.0	744
506206	1201055201	21-MAR-2006 19:40	DONE	470	0.23	percent	296	0	-1200	1780	20.0	744
498916	1201021257	22-MAR-2006 05:44	DONE	0	-0.4	percent	296	0	-1200	1780	20.0	744
509445	1201046016	22-MAR-2006 18:51	DUSE	1773	2	percent	296	0	-1200	1780	20.0	744
509439	1201046012	22-MAR-2006 20:39	DONE	0	-0.4	percent	296	0	-1200	1780	20.0	744

509577	1201046235	22-MAR-2006 22:31	DONE	0	-0.4	percent	296	0	-1200	1780	20.0	744
509449	1201046023	23-MAR-2006 05:27	DUSE	390	0.13	percent	296	0	-1200	1780	20.0	744
498915	1201021243	24-MAR-2006 16:26	DONE	2	-0.4	percent	296	0	-1200	1780	20.0	744
509579	1201046242	25-MAR-2006 12:07	DUSE	56	-0.32	percent	296	0	-1200	1780	20.0	744
498915	1201021246	26-MAR-2006 23:53	DONE	6	-0.39	percent	296	0	-1200	1780	20.0	744
513814	1201055631	27-MAR-2006 23:07	DONE	5	-0.39	percent	296	0	-1200	1780	20.0	744
513815	1201055634	28-MAR-2006 20:48	DONE	25	-0.36	percent	296	0	-1200	1780	20.0	744
514959	1201058061	29-MAR-2006 12:17	DONE	5	-0.39	percent	296	0	-1200	1780	20.0	744
512778	1201053530	30-MAR-2006 14:52	DONE	202	-0.13	percent	296	0	-1200	1780	20.0	744
513797	1201055597	31-MAR-2006 06:04	DONE	319	0.03	percent	296	0	-1200	1780	20.0	744
517045	1201062677	05-APR-2006 22:28	DONE	153	-0.19	percent	296	0	-1200	1780	20.0	744
516236	1201060949	06-APR-2006 06:01	DONE	2	-0.39	percent	296	0	-1200	1780	20.0	744
513810	1201055628	06-APR-2006 10:52	DONE	27	-0.36	percent	296	0	-1200	1780	20.0	744
517980	1201064809	07-APR-2006 06:16	DONE	103	-0.26	percent	296	0	-1200	1780	20.0	744
517983	1201064813	07-APR-2006 06:28	DONE	625	0.44	percent	296	0	-1200	1780	20.0	744
513432	1201054906	07-APR-2006 21:54	DONE	6	-0.39	percent	296	0	-1200	1780	20.0	744
513162	1201054360	09-APR-2006 21:34	DONE	16	-0.38	percent	296	0	-1200	1780	20.0	744
513799	1201055604	10-APR-2006 15:42	DUSE	221	-0.1	percent	296	0	-1200	1780	20.0	744
519499	1201068199	11-APR-2006 16:44	DONE	1	-0.4	percent	296	0	-1200	1780	20.0	744
519008	1201067117	11-APR-2006 19:22	DUSE	106	-0.26	percent	296	0	-1200	1780	20.0	744
518359	1201065660	11-APR-2006 21:47	DUSE	49	-0.33	percent	296	0	-1200	1780	20.0	744

Cobalt-60 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509664	1201046396	15-MAR-2006 07:07	DONE	106	0.68	percent	100	75.0	83.3	117	125	8.33
509666	1201046400	15-MAR-2006 08:15	DONE	98	-0.25	percent	100	75.0	83.3	117	125	8.33
498916	1201021254	15-MAR-2006 10:52	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
511947	1201051584	16-MAR-2006 03:52	DONE	102	0.26	percent	100	75.0	83.3	117	125	8.33
507629	1201041705	16-MAR-2006 13:15	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
507626	1201041699	16-MAR-2006 15:21	DONE	105	0.59	percent	100	75.0	83.3	117	125	8.33
507622	1201041689	17-MAR-2006 06:12	DONE	99	-0.17	percent	100	75.0	83.3	117	125	8.33
508637	1201044145	17-MAR-2006 07:42	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
508605	1201044043	17-MAR-2006 09:19	DONE	100	-0.06	percent	100	75.0	83.3	117	125	8.33
505207	1201035926	18-MAR-2006 13:44	DONE	102	0.29	percent	100	75.0	83.3	117	125	8.33
512599	1201053131	20-MAR-2006 06:21	DONE	101	0.07	percent	100	75.0	83.3	117	125	8.33
512597	1201053125	20-MAR-2006 07:29	DONE	99	-0.13	percent	100	75.0	83.3	117	125	8.33
508903	1201044758	20-MAR-2006 14:37	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
499544	1201022693	20-MAR-2006 19:52	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
512598	1201053128	20-MAR-2006 20:59	DONE	103	0.34	percent	100	75.0	83.3	117	125	8.33
506206	1201055202	21-MAR-2006 17:35	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
509439	1201046013	22-MAR-2006 17:38	DONE	109	1	percent	100	75.0	83.3	117	125	8.33
509445	1201046017	22-MAR-2006 17:56	DUSE	96	-0.47	percent	100	75.0	83.3	117	125	8.33
509577	1201046236	22-MAR-2006 22:50	DONE	104	0.46	percent	100	75.0	83.3	117	125	8.33
509449	1201046024	23-MAR-2006 12:45	DUSE	99	-0.14	percent	100	75.0	83.3	117	125	8.33
509579	1201046243	25-MAR-2006 14:21	DUSE	96	-0.47	percent	100	75.0	83.3	117	125	8.33
498915	1201021245	26-MAR-2006 20:50	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
513814	1201055632	28-MAR-2006 04:36	DONE	106	0.7	percent	100	75.0	83.3	117	125	8.33
513815	1201055635	28-MAR-2006 20:48	DONE	106	0.77	percent	100	75.0	83.3	117	125	8.33
512778	1201053531	30-MAR-2006 09:25	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
514959	1201058063	30-MAR-2006 14:51	DONE	92	-0.96	percent	100	75.0	83.3	117	125	8.33

513797	1201055598	31-MAR-2006 06:06	DONE	94	-0.73	percent	100	75.0	83.3	117	125	8.33
512787	1201053543	04-APR-2006 09:03	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
516236	1201060950	05-APR-2006 06:02	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
513810	1201055629	06-APR-2006 08:46	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
517045	1201062678	06-APR-2006 11:31	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
517980	1201064811	06-APR-2006 12:37	DONE	105	0.65	percent	100	75.0	83.3	117	125	8.33
517983	1201064814	07-APR-2006 06:28	DONE	104	0.53	percent	100	75.0	83.3	117	125	8.33
513432	1201054907	08-APR-2006 20:51	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
513162	1201054361	09-APR-2006 21:18	DONE	100	-0.02	percent	100	75.0	83.3	117	125	8.33
519008	1201067118	11-APR-2006 13:11	DUSE	97	-0.33	percent	100	75.0	83.3	117	125	8.33
519499	1201068200	11-APR-2006 17:47	DONE	92	-0.95	percent	100	75.0	83.3	117	125	8.33
518359	1201065661	11-APR-2006 20:04	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
513799	1201055605	12-APR-2006 12:22	DONE	104	0.5	percent	100	75.0	83.3	117	125	8.33

Cobalt-60 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507626	1201041698	16-MAR-2006 15:21	DONE	0.17	-0.43	dec	1.61	0	-5.1	8.37	3.00	3.38
509666	1201046399	16-MAR-2006 21:46	DONE	1.43	-0.06	dec	1.61	0	-5.1	8.37	3.00	3.38
508605	1201044042	17-MAR-2006 00:39	DONE	0.31	-0.39	dec	1.61	0	-5.1	8.37	3.00	3.38
507622	1201041687	17-MAR-2006 00:40	DONE	0.58	-0.31	dec	1.61	0	-5.1	8.37	3.00	3.38
508637	1201044144	17-MAR-2006 10:33	DONE	0.28	-0.39	dec	1.61	0	-5.1	8.37	3.00	3.38
498916	1201021255	20-MAR-2006 01:43	DONE	0.43	-0.35	dec	1.61	0	-5.1	8.37	3.00	3.38
498916	1201021256	20-MAR-2006 01:43	DONE	0.67	-0.28	dec	1.61	0	-5.1	8.37	3.00	3.38
512599	1201053130	20-MAR-2006 10:07	DONE	0.44	-0.35	dec	1.61	0	-5.1	8.37	3.00	3.38
508903	1201044757	20-MAR-2006 14:36	DONE	0.14	-0.44	dec	1.61	0	-5.1	8.37	3.00	3.38
505207	1201035925	20-MAR-2006 20:56	DONE	0.46	-0.34	dec	1.61	0	-5.1	8.37	3.00	3.38
512597	1201053124	20-MAR-2006 22:02	DONE	1.26	-0.1	dec	1.61	0	-5.1	8.37	3.00	3.38
499544	1201022691	21-MAR-2006 05:31	DONE	1.22	-0.12	dec	1.61	0	-5.1	8.37	3.00	3.38
512598	1201053127	21-MAR-2006 10:48	DONE	0.49	-0.33	dec	1.61	0	-5.1	8.37	3.00	3.38
506206	1201055201	21-MAR-2006 19:40	DONE	1.56	-0.02	dec	1.61	0	-5.1	8.37	3.00	3.38
498916	1201021257	22-MAR-2006 05:44	DONE	0.02	-0.47	dec	1.61	0	-5.1	8.37	3.00	3.38
509445	1201046016	22-MAR-2006 18:51	DUSE	1.05	-0.17	dec	1.61	0	-5.1	8.37	3.00	3.38
509439	1201046012	22-MAR-2006 20:39	DONE	0.7	-0.27	dec	1.61	0	-5.1	8.37	3.00	3.38
509577	1201046235	22-MAR-2006 22:31	DONE	0.39	-0.36	dec	1.61	0	-5.1	8.37	3.00	3.38
509449	1201046023	23-MAR-2006 05:27	DUSE	0.77	-0.25	dec	1.61	0	-5.1	8.37	3.00	3.38
498915	1201021243	24-MAR-2006 16:26	DONE	0.55	-0.32	dec	1.61	0	-5.1	8.37	3.00	3.38
509579	1201046242	25-MAR-2006 12:07	DUSE	0.68	-0.28	dec	1.61	0	-5.1	8.37	3.00	3.38
498915	1201021246	26-MAR-2006 23:53	DONE	9.5	2.3	dec	1.61	0	-5.1	8.37	3.00	3.38
513814	1201055631	27-MAR-2006 23:07	DONE	4.81	0.95	dec	1.61	0	-5.1	8.37	3.00	3.38
513815	1201055634	28-MAR-2006 20:48	DONE	2.23	0.18	dec	1.61	0	-5.1	8.37	3.00	3.38
514959	1201058061	29-MAR-2006 12:17	DONE	0.73	-0.26	dec	1.61	0	-5.1	8.37	3.00	3.38
512778	1201053530	30-MAR-2006 14:52	DONE	0.86	-0.22	dec	1.61	0	-5.1	8.37	3.00	3.38
513797	1201055597	31-MAR-2006 06:04	DONE	1.42	-0.06	dec	1.61	0	-5.1	8.37	3.00	3.38
512787	1201053542	01-APR-2006 20:06	DONE	0.06	-0.46	dec	1.61	0	-5.1	8.37	3.00	3.38
517045	1201062677	05-APR-2006 22:28	DONE	2.52	0.27	dec	1.61	0	-5.1	8.37	3.00	3.38
516236	1201060949	06-APR-2006 06:01	DONE	19.7	5.3	dec	1.61	0	-5.1	8.37	3.00	3.38
513810	1201055628	06-APR-2006 10:52	DONE	0.05	-0.46	dec	1.61	0	-5.1	8.37	3.00	3.38
517980	1201064809	07-APR-2006 06:16	DONE	1.04	-0.17	dec	1.61	0	-5.1	8.37	3.00	3.38
517983	1201064813	07-APR-2006 06:28	DONE	1.83	0.06	dec	1.61	0	-5.1	8.37	3.00	3.38
513432	1201054906	07-APR-2006 21:54	DONE	0.65	-0.29	dec	1.61	0	-5.1	8.37	3.00	3.38

513162	1201054360	09-APR-2006 21:34	DONE	1.11	-0.15	dec	1.61	0	-5.1	8.37	3.00	3.38
513799	1201055604	10-APR-2006 15:42	DUSE	0.83	-0.23	dec	1.61	0	-5.1	8.37	3.00	3.38
519499	1201068199	11-APR-2006 16:44	DONE	0.52	-0.32	dec	1.61	0	-5.1	8.37	3.00	3.38
519008	1201067117	11-APR-2006 19:22	DUSE	0.83	-0.23	dec	1.61	0	-5.1	8.37	3.00	3.38
518359	1201065660	11-APR-2006 21:47	DUSE	0.71	-0.27	dec	1.61	0	-5.1	8.37	3.00	3.38

Lead-212 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507626	1201041698	16-MAR-2006 15:21	DONE	3	1.5	dec	1.11	0	-1.3	3.55	3.00	1.22
509666	1201046399	16-MAR-2006 21:46	DONE	0.52	-0.49	dec	1.11	0	-1.3	3.55	3.00	1.22
508605	1201044042	17-MAR-2006 00:39	DONE	0.18	-0.76	dec	1.11	0	-1.3	3.55	3.00	1.22
507622	1201041687	17-MAR-2006 00:40	DONE	0.38	-0.59	dec	1.11	0	-1.3	3.55	3.00	1.22
508637	1201044144	17-MAR-2006 10:33	DONE	0.8	-0.25	dec	1.11	0	-1.3	3.55	3.00	1.22
498916	1201021255	20-MAR-2006 01:43	DUSE	2.61	1.2	dec	1.11	0	-1.3	3.55	3.00	1.22
498916	1201021256	20-MAR-2006 01:43	DUSE	2.22	0.91	dec	1.11	0	-1.3	3.55	3.00	1.22
512599	1201053130	20-MAR-2006 10:07	DONE	1.7	0.49	dec	1.11	0	-1.3	3.55	3.00	1.22
508903	1201044757	20-MAR-2006 14:36	DONE	1.09	-0.01	dec	1.11	0	-1.3	3.55	3.00	1.22
505207	1201035925	20-MAR-2006 20:56	DONE	5.43	3.5	dec	1.11	0	-1.3	3.55	3.00	1.22
512597	1201053124	20-MAR-2006 22:02	DONE	0.45	-0.54	dec	1.11	0	-1.3	3.55	3.00	1.22
499544	1201022691	21-MAR-2006 05:31	DONE	0.11	-0.82	dec	1.11	0	-1.3	3.55	3.00	1.22
512598	1201053127	21-MAR-2006 10:48	DONE	0.63	-0.39	dec	1.11	0	-1.3	3.55	3.00	1.22
506206	1201055201	21-MAR-2006 19:40	DONE	1.37	0.22	dec	1.11	0	-1.3	3.55	3.00	1.22
498916	1201021257	22-MAR-2006 05:44	DUSE	0.07	-0.85	dec	1.11	0	-1.3	3.55	3.00	1.22
509445	1201046016	22-MAR-2006 18:51	DUSE	1.25	0.12	dec	1.11	0	-1.3	3.55	3.00	1.22
509439	1201046012	22-MAR-2006 20:39	DUSE	1.01	-0.08	dec	1.11	0	-1.3	3.55	3.00	1.22
509577	1201046235	22-MAR-2006 22:31	DUSE	0.14	-0.8	dec	1.11	0	-1.3	3.55	3.00	1.22
509449	1201046023	23-MAR-2006 05:27	DUSE	0.45	-0.54	dec	1.11	0	-1.3	3.55	3.00	1.22
498915	1201021243	24-MAR-2006 16:26	DUSE	0.59	-0.42	dec	1.11	0	-1.3	3.55	3.00	1.22
509579	1201046242	25-MAR-2006 12:07	DONE	1.81	0.58	dec	1.11	0	-1.3	3.55	3.00	1.22
498915	1201021246	26-MAR-2006 23:53	DUSE	5.06	3.2	dec	1.11	0	-1.3	3.55	3.00	1.22
513814	1201055631	27-MAR-2006 23:07	DONE	0.11	-0.82	dec	1.11	0	-1.3	3.55	3.00	1.22
513815	1201055634	28-MAR-2006 20:48	DONE	1.23	0.1	dec	1.11	0	-1.3	3.55	3.00	1.22
514959	1201058061	29-MAR-2006 12:17	DUSE	0.51	-0.49	dec	1.11	0	-1.3	3.55	3.00	1.22
512778	1201053530	30-MAR-2006 14:52	DONE	00	-0.91	dec	1.11	0	-1.3	3.55	3.00	1.22
513797	1201055597	31-MAR-2006 06:04	DONE	2.29	0.97	dec	1.11	0	-1.3	3.55	3.00	1.22
512787	1201053542	01-APR-2006 20:06	DONE	0.93	-0.15	dec	1.11	0	-1.3	3.55	3.00	1.22
517045	1201062677	05-APR-2006 22:28	DONE	1.07	-0.03	dec	1.11	0	-1.3	3.55	3.00	1.22
516236	1201060949	06-APR-2006 06:01	DONE	0.49	-0.51	dec	1.11	0	-1.3	3.55	3.00	1.22
513810	1201055628	06-APR-2006 10:52	DONE	1.26	0.12	dec	1.11	0	-1.3	3.55	3.00	1.22
517980	1201064809	07-APR-2006 06:16	DONE	0.66	-0.37	dec	1.11	0	-1.3	3.55	3.00	1.22
517983	1201064813	07-APR-2006 06:28	DONE	1.27	0.14	dec	1.11	0	-1.3	3.55	3.00	1.22
513432	1201054906	07-APR-2006 21:54	DONE	0.83	-0.23	dec	1.11	0	-1.3	3.55	3.00	1.22
513162	1201054360	09-APR-2006 21:34	DONE	0.5	-0.5	dec	1.11	0	-1.3	3.55	3.00	1.22
513799	1201055604	10-APR-2006 15:42	DONE	0.86	-0.21	dec	1.11	0	-1.3	3.55	3.00	1.22
519499	1201068199	11-APR-2006 16:44	DONE	0.16	-0.78	dec	1.11	0	-1.3	3.55	3.00	1.22
519008	1201067117	11-APR-2006 19:22	DUSE	0.16	-0.78	dec	1.11	0	-1.3	3.55	3.00	1.22
518359	1201065660	11-APR-2006 21:47	DUSE	0.04	-0.88	dec	1.11	0	-1.3	3.55	3.00	1.22

Protactinium-231 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev

507626	1201041698	16-MAR-2006 15:21	DONE	0.71	-0.1	dec	0.8	0	-1	2.65	3.00	0.92
509666	1201046399	16-MAR-2006 21:46	DUSE	4.73	4.3	dec	0.8	0	-1	2.65	3.00	0.92
508605	1201044042	17-MAR-2006 00:39	DUSE	0.62	-0.2	dec	0.8	0	-1	2.65	3.00	0.92
507622	1201041687	17-MAR-2006 00:40	DUSE	0.29	-0.56	dec	0.8	0	-1	2.65	3.00	0.92
508637	1201044144	17-MAR-2006 10:33	DUSE	0.32	-0.53	dec	0.8	0	-1	2.65	3.00	0.92
498916	1201021255	20-MAR-2006 01:43	DUSE	0.16	-0.7	dec	0.8	0	-1	2.65	3.00	0.92
498916	1201021256	20-MAR-2006 01:43	DUSE	0.02	-0.85	dec	0.8	0	-1	2.65	3.00	0.92
512599	1201053130	20-MAR-2006 10:07	DUSE	1.04	0.26	dec	0.8	0	-1	2.65	3.00	0.92
508903	1201044757	20-MAR-2006 14:36	DUSE	0.54	-0.28	dec	0.8	0	-1	2.65	3.00	0.92
505207	1201035925	20-MAR-2006 20:56	DONE	0.74	-0.07	dec	0.8	0	-1	2.65	3.00	0.92
512597	1201053124	20-MAR-2006 22:02	DUSE	3.49	2.9	dec	0.8	0	-1	2.65	3.00	0.92
499544	1201022691	21-MAR-2006 05:31	DUSE	0.96	0.17	dec	0.8	0	-1	2.65	3.00	0.92
512598	1201053127	21-MAR-2006 10:48	DUSE	1.53	0.79	dec	0.8	0	-1	2.65	3.00	0.92
506206	1201055201	21-MAR-2006 19:40	DONE	1.42	0.67	dec	0.8	0	-1	2.65	3.00	0.92
498916	1201021257	22-MAR-2006 05:44	DUSE	0.17	-0.68	dec	0.8	0	-1	2.65	3.00	0.92
509445	1201046016	22-MAR-2006 18:51	DUSE	1.04	0.25	dec	0.8	0	-1	2.65	3.00	0.92
509439	1201046012	22-MAR-2006 20:39	DUSE	1.33	0.57	dec	0.8	0	-1	2.65	3.00	0.92
509577	1201046235	22-MAR-2006 22:31	DUSE	1.22	0.45	dec	0.8	0	-1	2.65	3.00	0.92
509449	1201046023	23-MAR-2006 05:27	DUSE	1.22	0.45	dec	0.8	0	-1	2.65	3.00	0.92
498915	1201021243	24-MAR-2006 16:26	DUSE	0.54	-0.29	dec	0.8	0	-1	2.65	3.00	0.92
509579	1201046242	25-MAR-2006 12:07	DUSE	0.72	-0.09	dec	0.8	0	-1	2.65	3.00	0.92
498915	1201021246	26-MAR-2006 23:53	DUSE	0.41	-0.43	dec	0.8	0	-1	2.65	3.00	0.92
513814	1201055631	27-MAR-2006 23:07	DONE	0.69	-0.12	dec	0.8	0	-1	2.65	3.00	0.92
513815	1201055634	28-MAR-2006 20:48	DUSE	0.54	-0.29	dec	0.8	0	-1	2.65	3.00	0.92
514959	1201058061	29-MAR-2006 12:17	DUSE	0.42	-0.42	dec	0.8	0	-1	2.65	3.00	0.92
512778	1201053530	30-MAR-2006 14:52	DUSE	0.17	-0.69	dec	0.8	0	-1	2.65	3.00	0.92
513797	1201055597	31-MAR-2006 06:04	DUSE	1.01	0.23	dec	0.8	0	-1	2.65	3.00	0.92
512787	1201053542	01-APR-2006 20:06	DUSE	0.04	-0.83	dec	0.8	0	-1	2.65	3.00	0.92
517045	1201062677	05-APR-2006 22:28	DUSE	0.05	-0.82	dec	0.8	0	-1	2.65	3.00	0.92
516236	1201060949	06-APR-2006 06:01	DUSE	0.61	-0.21	dec	0.8	0	-1	2.65	3.00	0.92
513810	1201055628	06-APR-2006 10:52	DUSE	0.07	-0.79	dec	0.8	0	-1	2.65	3.00	0.92
517980	1201064809	07-APR-2006 06:16	DUSE	1.19	0.42	dec	0.8	0	-1	2.65	3.00	0.92
517983	1201064813	07-APR-2006 06:28	DUSE	0.21	-0.64	dec	0.8	0	-1	2.65	3.00	0.92
513432	1201054906	07-APR-2006 21:54	DUSE	0.04	-0.83	dec	0.8	0	-1	2.65	3.00	0.92
513162	1201054360	09-APR-2006 21:34	DONE	0.12	-0.74	dec	0.8	0	-1	2.65	3.00	0.92
513799	1201055604	10-APR-2006 15:42	DONE	0.05	-0.82	dec	0.8	0	-1	2.65	3.00	0.92
519499	1201068199	11-APR-2006 16:44	DUSE	0.6	-0.22	dec	0.8	0	-1	2.65	3.00	0.92
519008	1201067117	11-APR-2006 19:22	DUSE	1.82	1.1	dec	0.8	0	-1	2.65	3.00	0.92
518359	1201065660	11-APR-2006 21:47	DUSE	0.47	-0.36	dec	0.8	0	-1	2.65	3.00	0.92

Radium-226 BLANK: Limits LCL = -34.4 UCL = 38.9

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510151	1201047468	01-APR-2006 17:55	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
512787	1201053541	01-APR-2006 20:05	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
510153	1201047482	01-APR-2006 20:23	DUSE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516236	1201060948	03-APR-2006 22:12	DUSE	12	0.78	pCi/g	2.25	-34	-22	26.7	38.9	12.2
510153	1201047482	03-APR-2006 23:22	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
510952	1201049298	04-APR-2006 01:43	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
510881	1201049180	04-APR-2006 05:48	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516989	1201062554	05-APR-2006 08:18	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2

508902	1201044753	05-APR-2006 09:43	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
508900	1201044747	05-APR-2006 17:35	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517983	1201064812	05-APR-2006 18:28	DUSE	0	-0.19	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516986	1201062545	06-APR-2006 08:33	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513810	1201055627	06-APR-2006 09:43	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516987	1201062548	06-APR-2006 10:43	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517045	1201062676	06-APR-2006 10:56	DUSE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516991	1201062560	06-APR-2006 11:51	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516993	1201062566	06-APR-2006 16:35	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
510982	1201049354	06-APR-2006 16:39	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
510976	1201049346	06-APR-2006 18:46	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516996	1201062572	07-APR-2006 06:08	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
516999	1201062578	07-APR-2006 08:19	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
511760	1201051194	07-APR-2006 10:19	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517980	1201064808	07-APR-2006 14:52	DUSE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513432	1201054905	07-APR-2006 17:03	DUSE	0	-0.17	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517004	1201062584	08-APR-2006 16:03	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517006	1201062590	08-APR-2006 21:37	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517018	1201062614	09-APR-2006 21:09	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517011	1201062602	10-APR-2006 06:23	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513162	1201054359	10-APR-2006 06:36	DUSE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517009	1201062596	10-APR-2006 10:47	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513799	1201055603	10-APR-2006 11:17	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
517015	1201062608	10-APR-2006 13:00	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
512595	1201053117	10-APR-2006 13:17	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513054	1201054080	11-APR-2006 11:51	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
519499	1201068198	11-APR-2006 14:26	DUSE	76	6	pCi/g	2.25	-34	-22	26.7	38.9	12.2
519008	1201067116	11-APR-2006 18:52	DUSE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
518359	1201065659	11-APR-2006 18:53	DUSE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513058	1201054086	11-APR-2006 21:43	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2
513780	1201055549	11-APR-2006 23:45	DONE	0	-0.18	pCi/g	2.25	-34	-22	26.7	38.9	12.2

Radium-226 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510153	1201047483	03-APR-2006 23:01	DUSE	9	-0.32	percent	21.9	0	-62	106	20.0	41.9
510952	1201049299	04-APR-2006 01:41	DONE	3	-0.45	percent	21.9	0	-62	106	20.0	41.9
510881	1201049181	04-APR-2006 06:40	DONE	6	-0.39	percent	21.9	0	-62	106	20.0	41.9
510153	1201047483	04-APR-2006 07:57	DONE	5	-0.41	percent	21.9	0	-62	106	20.0	41.9
516989	1201062555	05-APR-2006 08:18	DONE	2	-0.48	percent	21.9	0	-62	106	20.0	41.9
508902	1201044754	05-APR-2006 09:43	DONE	3	-0.46	percent	21.9	0	-62	106	20.0	41.9
508900	1201044748	05-APR-2006 17:36	DONE	14	-0.2	percent	21.9	0	-62	106	20.0	41.9
517045	1201062677	05-APR-2006 22:28	DUSE	171	3.6	percent	21.9	0	-62	106	20.0	41.9
516236	1201060949	06-APR-2006 06:01	DUSE	105	2	percent	21.9	0	-62	106	20.0	41.9
516986	1201062546	06-APR-2006 08:33	DONE	10	-0.29	percent	21.9	0	-62	106	20.0	41.9
516987	1201062549	06-APR-2006 10:43	DONE	0	-0.52	percent	21.9	0	-62	106	20.0	41.9
513810	1201055628	06-APR-2006 10:52	DONE	3	-0.46	percent	21.9	0	-62	106	20.0	41.9
516991	1201062561	06-APR-2006 12:45	DONE	0	-0.51	percent	21.9	0	-62	106	20.0	41.9
516993	1201062567	06-APR-2006 16:35	DONE	5	-0.41	percent	21.9	0	-62	106	20.0	41.9
510976	1201049347	06-APR-2006 18:47	DUSE	6	-0.39	percent	21.9	0	-62	106	20.0	41.9
510982	1201049355	06-APR-2006 18:47	DONE	6	-0.37	percent	21.9	0	-62	106	20.0	41.9

516996	1201062573	07-APR-2006 06:09	DUSE	3	-0.45	percent	21.9	0	-62	106	20.0	41.9
517980	1201064809	07-APR-2006 06:16	DUSE	78	1.3	percent	21.9	0	-62	106	20.0	41.9
517983	1201064813	07-APR-2006 06:28	DUSE	5	-0.39	percent	21.9	0	-62	106	20.0	41.9
516999	1201062579	07-APR-2006 08:20	DONE	10	-0.28	percent	21.9	0	-62	106	20.0	41.9
511760	1201051195	07-APR-2006 10:20	DONE	1	-0.49	percent	21.9	0	-62	106	20.0	41.9
516996	1201062573	07-APR-2006 10:31	DONE	3	-0.44	percent	21.9	0	-62	106	20.0	41.9
513432	1201054906	07-APR-2006 21:54	DUSE	16	-0.14	percent	21.9	0	-62	106	20.0	41.9
510976	1201049347	07-APR-2006 22:28	DONE	1	-0.49	percent	21.9	0	-62	106	20.0	41.9
517004	1201062585	08-APR-2006 16:02	DONE	13	-0.22	percent	21.9	0	-62	106	20.0	41.9
517006	1201062591	08-APR-2006 21:38	DONE	6	-0.37	percent	21.9	0	-62	106	20.0	41.9
517018	1201062615	09-APR-2006 21:10	DONE	1	-0.5	percent	21.9	0	-62	106	20.0	41.9
513162	1201054360	09-APR-2006 21:34	DUSE	14	-0.19	percent	21.9	0	-62	106	20.0	41.9
517011	1201062603	10-APR-2006 06:23	DONE	5	-0.4	percent	21.9	0	-62	106	20.0	41.9
517009	1201062597	10-APR-2006 10:48	DONE	51	0.7	percent	21.9	0	-62	106	20.0	41.9
517015	1201062609	10-APR-2006 10:51	DONE	17	-0.12	percent	21.9	0	-62	106	20.0	41.9
512595	1201053118	10-APR-2006 13:18	DONE	19	-0.08	percent	21.9	0	-62	106	20.0	41.9
513799	1201055604	10-APR-2006 15:42	DONE	10	-0.27	percent	21.9	0	-62	106	20.0	41.9
513054	1201054081	11-APR-2006 10:21	DONE	6	-0.39	percent	21.9	0	-62	106	20.0	41.9
519499	1201068199	11-APR-2006 16:44	DUSE	19	-0.07	percent	21.9	0	-62	106	20.0	41.9
519008	1201067117	11-APR-2006 19:22	DUSE	35	0.32	percent	21.9	0	-62	106	20.0	41.9
513058	1201054087	11-APR-2006 21:43	DONE	3	-0.46	percent	21.9	0	-62	106	20.0	41.9
518359	1201065660	11-APR-2006 21:47	DUSE	180	3.8	percent	21.9	0	-62	106	20.0	41.9
513780	1201055550	11-APR-2006 23:45	DONE	10	-0.28	percent	21.9	0	-62	106	20.0	41.9

Radium-226 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508864	1201044686	27-MAR-2006 17:32	DONE	97	-0.34	percent	100	75.0	83.3	117	125	8.33
513785	1201055566	27-MAR-2006 18:45	DONE	100	-0.02	percent	100	75.0	83.3	117	125	8.33
508865	1201044689	27-MAR-2006 21:56	DONE	101	0.17	percent	100	75.0	83.3	117	125	8.33
513779	1201055548	28-MAR-2006 08:25	DONE	100	-0.05	percent	100	75.0	83.3	117	125	8.33
515289	1201058838	28-MAR-2006 10:08	DONE	97	-0.4	percent	100	75.0	83.3	117	125	8.33
513783	1201055560	29-MAR-2006 07:56	DONE	98	-0.28	percent	100	75.0	83.3	117	125	8.33
515230	1201058656	30-MAR-2006 04:39	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
510133	1201047439	31-MAR-2006 10:31	DONE	93	-0.8	percent	100	75.0	83.3	117	125	8.33
510114	1201047414	31-MAR-2006 13:58	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
510144	1201047452	31-MAR-2006 17:31	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
510151	1201047470	31-MAR-2006 21:07	DONE	94	-0.74	percent	100	75.0	83.3	117	125	8.33
516059	1201060578	01-APR-2006 11:49	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
510153	1201047484	03-APR-2006 05:22	DONE	97	-0.4	percent	100	75.0	83.3	117	125	8.33
510952	1201049300	04-APR-2006 00:35	DONE	107	0.78	percent	100	75.0	83.3	117	125	8.33
510881	1201049182	04-APR-2006 06:47	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
516989	1201062556	05-APR-2006 08:19	DONE	104	0.46	percent	100	75.0	83.3	117	125	8.33
508902	1201044755	05-APR-2006 09:44	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
508900	1201044749	05-APR-2006 17:37	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
516986	1201062547	06-APR-2006 08:34	DONE	105	0.58	percent	100	75.0	83.3	117	125	8.33
516987	1201062550	06-APR-2006 09:41	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
516993	1201062568	06-APR-2006 18:48	DUSE	121	2.5	percent	100	75.0	83.3	117	125	8.33
516996	1201062574	07-APR-2006 06:22	DONE	103	0.39	percent	100	75.0	83.3	117	125	8.33
516999	1201062580	07-APR-2006 08:20	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
516993	1201062568	07-APR-2006 09:23	DONE	117	2.1	percent	100	75.0	83.3	117	125	8.33

510976	1201049348	07-APR-2006 13:56	DUSE	0	-12	percent	100	75.0	83.3	117	125	8.33
510982	1201049356	07-APR-2006 16:32	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
516991	1201062562	07-APR-2006 17:34	DONE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
511760	1201051196	07-APR-2006 18:35	DONE	94	-0.67	percent	100	75.0	83.3	117	125	8.33
510976	1201049348	07-APR-2006 20:56	DONE	92	-0.94	percent	100	75.0	83.3	117	125	8.33
517006	1201062592	08-APR-2006 21:40	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
517004	1201062586	08-APR-2006 22:57	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
517018	1201062616	09-APR-2006 21:08	DONE	96	-0.51	percent	100	75.0	83.3	117	125	8.33
517011	1201062604	09-APR-2006 22:21	DONE	92	-0.94	percent	100	75.0	83.3	117	125	8.33
517009	1201062598	10-APR-2006 10:48	DONE	96	-0.48	percent	100	75.0	83.3	117	125	8.33
517015	1201062610	10-APR-2006 12:03	DONE	104	0.45	percent	100	75.0	83.3	117	125	8.33
512595	1201053119	10-APR-2006 13:19	DONE	108	0.97	percent	100	75.0	83.3	117	125	8.33
513054	1201054082	11-APR-2006 11:51	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
513058	1201054088	11-APR-2006 13:59	DONE	95	-0.66	percent	100	75.0	83.3	117	125	8.33
513780	1201055551	11-APR-2006 23:46	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33

Radium-226 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510153	1201047483	03-APR-2006 23:01	DUSE	0.92	0.06	dec	0.85	0	-1.4	3.06	3.00	1.1
510952	1201049299	04-APR-2006 01:41	DONE	0.41	-0.4	dec	0.85	0	-1.4	3.06	3.00	1.1
510881	1201049181	04-APR-2006 06:40	DONE	0.4	-0.41	dec	0.85	0	-1.4	3.06	3.00	1.1
510153	1201047483	04-APR-2006 07:57	DONE	0.41	-0.4	dec	0.85	0	-1.4	3.06	3.00	1.1
516989	1201062555	05-APR-2006 08:18	DONE	0.18	-0.61	dec	0.85	0	-1.4	3.06	3.00	1.1
508902	1201044754	05-APR-2006 09:43	DONE	0.24	-0.55	dec	0.85	0	-1.4	3.06	3.00	1.1
508900	1201044748	05-APR-2006 17:36	DONE	1.23	0.34	dec	0.85	0	-1.4	3.06	3.00	1.1
517045	1201062677	05-APR-2006 22:28	DUSE	2.09	1.1	dec	0.85	0	-1.4	3.06	3.00	1.1
516236	1201060949	06-APR-2006 06:01	DUSE	0.29	-0.51	dec	0.85	0	-1.4	3.06	3.00	1.1
516986	1201062546	06-APR-2006 08:33	DONE	1.09	0.22	dec	0.85	0	-1.4	3.06	3.00	1.1
516987	1201062549	06-APR-2006 10:43	DONE	0.01	-0.76	dec	0.85	0	-1.4	3.06	3.00	1.1
513810	1201055628	06-APR-2006 10:52	DONE	0.11	-0.67	dec	0.85	0	-1.4	3.06	3.00	1.1
516991	1201062561	06-APR-2006 12:45	DONE	0.04	-0.74	dec	0.85	0	-1.4	3.06	3.00	1.1
516993	1201062567	06-APR-2006 16:35	DONE	0.55	-0.27	dec	0.85	0	-1.4	3.06	3.00	1.1
510976	1201049347	06-APR-2006 18:47	DUSE	0.84	-0.01	dec	0.85	0	-1.4	3.06	3.00	1.1
510982	1201049355	06-APR-2006 18:47	DONE	0.49	-0.33	dec	0.85	0	-1.4	3.06	3.00	1.1
516996	1201062573	07-APR-2006 06:09	DUSE	0.3	-0.5	dec	0.85	0	-1.4	3.06	3.00	1.1
517980	1201064809	07-APR-2006 06:16	DUSE	0.63	-0.21	dec	0.85	0	-1.4	3.06	3.00	1.1
517983	1201064813	07-APR-2006 06:28	DUSE	0.4	-0.41	dec	0.85	0	-1.4	3.06	3.00	1.1
516999	1201062579	07-APR-2006 08:20	DONE	1.06	0.19	dec	0.85	0	-1.4	3.06	3.00	1.1
511760	1201051195	07-APR-2006 10:20	DONE	0.08	-0.7	dec	0.85	0	-1.4	3.06	3.00	1.1
516996	1201062573	07-APR-2006 10:31	DONE	0.29	-0.51	dec	0.85	0	-1.4	3.06	3.00	1.1
513432	1201054906	07-APR-2006 21:54	DUSE	0.15	-0.63	dec	0.85	0	-1.4	3.06	3.00	1.1
510976	1201049347	07-APR-2006 22:28	DONE	0.2	-0.59	dec	0.85	0	-1.4	3.06	3.00	1.1
517004	1201062585	08-APR-2006 16:02	DONE	1.81	0.87	dec	0.85	0	-1.4	3.06	3.00	1.1
517006	1201062591	08-APR-2006 21:38	DONE	0.75	-0.09	dec	0.85	0	-1.4	3.06	3.00	1.1
517018	1201062615	09-APR-2006 21:10	DONE	0.08	-0.7	dec	0.85	0	-1.4	3.06	3.00	1.1
513162	1201054360	09-APR-2006 21:34	DUSE	1.17	0.29	dec	0.85	0	-1.4	3.06	3.00	1.1
517011	1201062603	10-APR-2006 06:23	DONE	0.65	-0.18	dec	0.85	0	-1.4	3.06	3.00	1.1
517009	1201062597	10-APR-2006 10:48	DONE	6.54	5.2	dec	0.85	0	-1.4	3.06	3.00	1.1
517015	1201062609	10-APR-2006 10:51	DONE	1.82	0.88	dec	0.85	0	-1.4	3.06	3.00	1.1
512595	1201053118	10-APR-2006 13:18	DONE	1.57	0.65	dec	0.85	0	-1.4	3.06	3.00	1.1

513799	1201055604	10-APR-2006 15:42	DONE	1.31	0.42	dec	0.85	0	-1.4	3.06	3.00	1.1
513054	1201054081	11-APR-2006 10:21	DONE	0.68	-0.16	dec	0.85	0	-1.4	3.06	3.00	1.1
519499	1201068199	11-APR-2006 16:44	DUSE	0.32	-0.48	dec	0.85	0	-1.4	3.06	3.00	1.1
519008	1201067117	11-APR-2006 19:22	DUSE	0.36	-0.45	dec	0.85	0	-1.4	3.06	3.00	1.1
513058	1201054087	11-APR-2006 21:43	DONE	0.3	-0.5	dec	0.85	0	-1.4	3.06	3.00	1.1
518359	1201065660	11-APR-2006 21:47	DUSE	2.01	1	dec	0.85	0	-1.4	3.06	3.00	1.1
513780	1201055550	11-APR-2006 23:45	DONE	1.46	0.55	dec	0.85	0	-1.4	3.06	3.00	1.1

Radium-228 BLANK: Limits LCL = -23.8 UCL = 27.4

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510151	1201047468	01-APR-2006 17:55	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
512787	1201053541	01-APR-2006 20:05	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
510153	1201047482	01-APR-2006 20:23	DUSE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516236	1201060948	03-APR-2006 22:12	DONE	50	5.7	pCi/g	1.79	-24	-15	18.9	27.4	8.54
510153	1201047482	03-APR-2006 23:22	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
510952	1201049298	04-APR-2006 01:43	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
510881	1201049180	04-APR-2006 05:48	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516989	1201062554	05-APR-2006 08:18	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
508902	1201044753	05-APR-2006 09:43	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
508900	1201044747	05-APR-2006 17:35	DONE	0	-0.2	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517983	1201064812	05-APR-2006 18:28	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516986	1201062545	06-APR-2006 08:33	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513810	1201055627	06-APR-2006 09:43	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516987	1201062548	06-APR-2006 10:43	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517045	1201062676	06-APR-2006 10:56	DONE	0	-0.2	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516991	1201062560	06-APR-2006 11:51	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516993	1201062566	06-APR-2006 16:35	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
510982	1201049354	06-APR-2006 16:39	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
510976	1201049346	06-APR-2006 18:46	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516996	1201062572	07-APR-2006 06:08	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
516999	1201062578	07-APR-2006 08:19	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
511760	1201051194	07-APR-2006 10:19	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517980	1201064808	07-APR-2006 14:52	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513432	1201054905	07-APR-2006 17:03	DONE	0	-0.18	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517004	1201062584	08-APR-2006 16:03	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517006	1201062590	08-APR-2006 21:37	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517018	1201062614	09-APR-2006 21:09	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517011	1201062602	10-APR-2006 06:23	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513162	1201054359	10-APR-2006 06:36	DUSE	0	-0.2	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517009	1201062596	10-APR-2006 10:47	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513799	1201055603	10-APR-2006 11:17	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
517015	1201062608	10-APR-2006 13:00	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
512595	1201053117	10-APR-2006 13:17	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513054	1201054080	11-APR-2006 11:51	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
519499	1201068198	11-APR-2006 14:26	DONE	19	2	pCi/g	1.79	-24	-15	18.9	27.4	8.54
519008	1201067116	11-APR-2006 18:52	DUSE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
518359	1201065659	11-APR-2006 18:53	DUSE	0	-0.19	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513058	1201054086	11-APR-2006 21:43	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54
513780	1201055549	11-APR-2006 23:45	DONE	0	-0.21	pCi/g	1.79	-24	-15	18.9	27.4	8.54

Radium-228 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510153	1201047483	03-APR-2006 23:01	DUSE	14	-0.23	percent	21.1	0	-36	77.8	20.0	28.4
510952	1201049299	04-APR-2006 01:41	DONE	14	-0.26	percent	21.1	0	-36	77.8	20.0	28.4
510881	1201049181	04-APR-2006 06:40	DONE	16	-0.18	percent	21.1	0	-36	77.8	20.0	28.4
510153	1201047483	04-APR-2006 07:57	DONE	27	0.22	percent	21.1	0	-36	77.8	20.0	28.4
516989	1201062555	05-APR-2006 08:18	DONE	10	-0.39	percent	21.1	0	-36	77.8	20.0	28.4
508902	1201044754	05-APR-2006 09:43	DONE	36	0.53	percent	21.1	0	-36	77.8	20.0	28.4
508900	1201044748	05-APR-2006 17:36	DONE	12	-0.34	percent	21.1	0	-36	77.8	20.0	28.4
517045	1201062677	05-APR-2006 22:28	DONE	1	-0.71	percent	21.1	0	-36	77.8	20.0	28.4
516236	1201060949	06-APR-2006 06:01	DONE	70	1.7	percent	21.1	0	-36	77.8	20.0	28.4
516986	1201062546	06-APR-2006 08:33	DONE	11	-0.36	percent	21.1	0	-36	77.8	20.0	28.4
516987	1201062549	06-APR-2006 10:43	DONE	7	-0.5	percent	21.1	0	-36	77.8	20.0	28.4
513810	1201055628	06-APR-2006 10:52	DONE	15	-0.2	percent	21.1	0	-36	77.8	20.0	28.4
516991	1201062561	06-APR-2006 12:45	DONE	28	0.25	percent	21.1	0	-36	77.8	20.0	28.4
516993	1201062567	06-APR-2006 16:35	DONE	10	-0.39	percent	21.1	0	-36	77.8	20.0	28.4
510976	1201049347	06-APR-2006 18:47	DUSE	7	-0.51	percent	21.1	0	-36	77.8	20.0	28.4
510982	1201049355	06-APR-2006 18:47	DONE	3	-0.63	percent	21.1	0	-36	77.8	20.0	28.4
516996	1201062573	07-APR-2006 06:09	DUSE	11	-0.36	percent	21.1	0	-36	77.8	20.0	28.4
517980	1201064809	07-APR-2006 06:16	DONE	38	0.6	percent	21.1	0	-36	77.8	20.0	28.4
517983	1201064813	07-APR-2006 06:28	DONE	1	-0.73	percent	21.1	0	-36	77.8	20.0	28.4
516999	1201062579	07-APR-2006 08:20	DONE	3	-0.63	percent	21.1	0	-36	77.8	20.0	28.4
511760	1201051195	07-APR-2006 10:20	DONE	26	0.19	percent	21.1	0	-36	77.8	20.0	28.4
516996	1201062573	07-APR-2006 10:31	DONE	3	-0.63	percent	21.1	0	-36	77.8	20.0	28.4
513432	1201054906	07-APR-2006 21:54	DONE	26	0.17	percent	21.1	0	-36	77.8	20.0	28.4
510976	1201049347	07-APR-2006 22:28	DONE	12	-0.33	percent	21.1	0	-36	77.8	20.0	28.4
517004	1201062585	08-APR-2006 16:02	DONE	6	-0.54	percent	21.1	0	-36	77.8	20.0	28.4
517006	1201062591	08-APR-2006 21:38	DONE	4	-0.6	percent	21.1	0	-36	77.8	20.0	28.4
517018	1201062615	09-APR-2006 21:10	DONE	16	-0.19	percent	21.1	0	-36	77.8	20.0	28.4
513162	1201054360	09-APR-2006 21:34	DUSE	15	-0.22	percent	21.1	0	-36	77.8	20.0	28.4
517011	1201062603	10-APR-2006 06:23	DONE	11	-0.37	percent	21.1	0	-36	77.8	20.0	28.4
517009	1201062597	10-APR-2006 10:48	DONE	38	0.6	percent	21.1	0	-36	77.8	20.0	28.4
517015	1201062609	10-APR-2006 10:51	DONE	12	-0.31	percent	21.1	0	-36	77.8	20.0	28.4
512595	1201053118	10-APR-2006 13:18	DONE	23	0.05	percent	21.1	0	-36	77.8	20.0	28.4
513799	1201055604	10-APR-2006 15:42	DONE	2	-0.68	percent	21.1	0	-36	77.8	20.0	28.4
513054	1201054081	11-APR-2006 10:21	DONE	2	-0.69	percent	21.1	0	-36	77.8	20.0	28.4
519499	1201068199	11-APR-2006 16:44	DONE	27	0.21	percent	21.1	0	-36	77.8	20.0	28.4
519008	1201067117	11-APR-2006 19:22	DUSE	146	4.4	percent	21.1	0	-36	77.8	20.0	28.4
513058	1201054087	11-APR-2006 21:43	DONE	14	-0.24	percent	21.1	0	-36	77.8	20.0	28.4
518359	1201065660	11-APR-2006 21:47	DUSE	103	2.9	percent	21.1	0	-36	77.8	20.0	28.4
513780	1201055550	11-APR-2006 23:45	DONE	3	-0.64	percent	21.1	0	-36	77.8	20.0	28.4

Radium-228 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
345003	1200653378	01-JUL-2004 19:26	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
347180	1200658503	12-JUL-2004 13:36	DONE	95	-0.62	percent	100	75.0	83.3	117	125	8.33
343603	1200650208	16-JUL-2004 11:52	DONE	97	-0.34	percent	100	75.0	83.3	117	125	8.33
359453	1200687782	24-AUG-2004 23:18	DONE	100	0.01	percent	100	75.0	83.3	117	125	8.33
359457	1200687791	25-AUG-2004 12:11	DONE	95	-0.61	percent	100	75.0	83.3	117	125	8.33
359710	1200688274	25-AUG-2004 17:01	DONE	93	-0.86	percent	100	75.0	83.3	117	125	8.33

359720	1200688312	01-SEP-2004 14:23	DONE	103	0.3	percent	100	75.0	83.3	117	125	8.33
358061	1200684548	07-SEP-2004 14:48	DONE	97	-0.35	percent	100	75.0	83.3	117	125	8.33
364331	1200699256	09-SEP-2004 12:09	DONE	95	-0.61	percent	100	75.0	83.3	117	125	8.33
382774	1200743863	22-NOV-2004 07:06	DONE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
382466	1200743128	09-DEC-2004 16:58	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
399581	1200784220	10-FEB-2005 10:29	DONE	99	-0.09	percent	100	75.0	83.3	117	125	8.33
399617	1200784322	10-FEB-2005 14:55	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
399589	1200784243	10-FEB-2005 17:20	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
399828	1200784836	11-FEB-2005 09:15	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
406056	1200799617	03-MAR-2005 19:09	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
407061	1200801919	09-MAR-2005 06:55	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
411084	1200811555	25-MAR-2005 15:34	DONE	100	-0.01	percent	100	75.0	83.3	117	125	8.33
411079	1200811539	27-MAR-2005 10:22	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
411095	1200811624	27-MAR-2005 12:17	DONE	98	-0.22	percent	100	75.0	83.3	117	125	8.33
411096	1200811596	27-MAR-2005 13:59	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
411082	1200811549	28-MAR-2005 08:30	DONE	99	-0.17	percent	100	75.0	83.3	117	125	8.33
411081	1200811544	28-MAR-2005 12:15	DONE	97	-0.37	percent	100	75.0	83.3	117	125	8.33
412955	1200816027	31-MAR-2005 11:08	DONE	95	-0.6	percent	100	75.0	83.3	117	125	8.33
416592	1200824751	14-APR-2005 10:02	DONE	97	-0.36	percent	100	75.0	83.3	117	125	8.33
418044	1200828270	20-APR-2005 07:19	DONE	92	-0.91	percent	100	75.0	83.3	117	125	8.33
418049	1200828282	20-APR-2005 18:10	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
420732	1200834636	29-APR-2005 15:09	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
420479	1200834014	30-APR-2005 13:54	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
420733	1200834642	01-MAY-2005 20:43	DONE	94	-0.7	percent	100	75.0	83.3	117	125	8.33
420727	1200834633	01-MAY-2005 21:49	DONE	92	-0.99	percent	100	75.0	83.3	117	125	8.33
425591	1200846646	18-MAY-2005 07:36	DUSE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
439055	1200879082	05-JUL-2005 15:03	DONE	103	0.37	percent	100	75.0	83.3	117	125	8.33
439482	1200880146	11-JUL-2005 11:42	DONE	98	-0.22	percent	100	75.0	83.3	117	125	8.33
446335	1200896857	28-JUL-2005 21:31	DONE	93	-0.84	percent	100	75.0	83.3	117	125	8.33
450952	1200907783	11-AUG-2005 19:15	DONE	93	-0.87	percent	100	75.0	83.3	117	125	8.33
454223	1200915333	19-AUG-2005 09:34	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
454227	1200915343	19-AUG-2005 21:57	DONE	98	-0.24	percent	100	75.0	83.3	117	125	8.33
458471	1200925741	02-SEP-2005 12:34	DONE	95	-0.57	percent	100	75.0	83.3	117	125	8.33

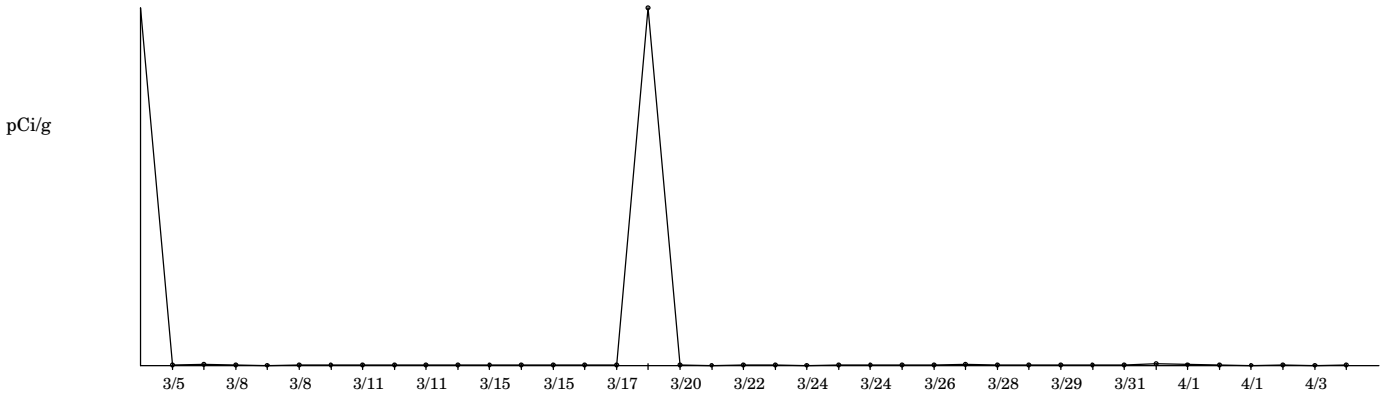
Radium-228 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
510153	1201047483	03-APR-2006 23:01	DUSE	1.31	0.37	dec	0.99	0	-0.799	2.77	3.00	0.89
510952	1201049299	04-APR-2006 01:41	DONE	1.98	1.1	dec	0.99	0	-0.799	2.77	3.00	0.89
510881	1201049181	04-APR-2006 06:40	DONE	0.85	-0.15	dec	0.99	0	-0.799	2.77	3.00	0.89
510153	1201047483	04-APR-2006 07:57	DONE	2.32	1.5	dec	0.99	0	-0.799	2.77	3.00	0.89
516989	1201062555	05-APR-2006 08:18	DONE	1.25	0.3	dec	0.99	0	-0.799	2.77	3.00	0.89
508902	1201044754	05-APR-2006 09:43	DONE	2.12	1.3	dec	0.99	0	-0.799	2.77	3.00	0.89
508900	1201044748	05-APR-2006 17:36	DONE	0.66	-0.36	dec	0.99	0	-0.799	2.77	3.00	0.89
517045	1201062677	05-APR-2006 22:28	DONE	00	-1	dec	0.99	0	-0.799	2.77	3.00	0.89
516236	1201060949	06-APR-2006 06:01	DONE	1.29	0.34	dec	0.99	0	-0.799	2.77	3.00	0.89
516986	1201062546	06-APR-2006 08:33	DONE	1.23	0.28	dec	0.99	0	-0.799	2.77	3.00	0.89
516987	1201062549	06-APR-2006 10:43	DONE	0.78	-0.23	dec	0.99	0	-0.799	2.77	3.00	0.89
513810	1201055628	06-APR-2006 10:52	DONE	0.46	-0.59	dec	0.99	0	-0.799	2.77	3.00	0.89
516991	1201062561	06-APR-2006 12:45	DONE	1.98	1.1	dec	0.99	0	-0.799	2.77	3.00	0.89
516993	1201062567	06-APR-2006 16:35	DONE	1.19	0.23	dec	0.99	0	-0.799	2.77	3.00	0.89

510976	1201049347	06-APR-2006 18:47	DUSE	0.44	-0.61	dec	0.99	0	-0.799	2.77	3.00	0.89
510982	1201049355	06-APR-2006 18:47	DONE	0.2	-0.88	dec	0.99	0	-0.799	2.77	3.00	0.89
516996	1201062573	07-APR-2006 06:09	DUSE	0.78	-0.23	dec	0.99	0	-0.799	2.77	3.00	0.89
517980	1201064809	07-APR-2006 06:16	DONE	0.33	-0.73	dec	0.99	0	-0.799	2.77	3.00	0.89
517983	1201064813	07-APR-2006 06:28	DONE	0.02	-1	dec	0.99	0	-0.799	2.77	3.00	0.89
516999	1201062579	07-APR-2006 08:20	DONE	0.34	-0.72	dec	0.99	0	-0.799	2.77	3.00	0.89
511760	1201051195	07-APR-2006 10:20	DONE	0.99	00	dec	0.99	0	-0.799	2.77	3.00	0.89
516996	1201062573	07-APR-2006 10:31	DONE	0.24	-0.84	dec	0.99	0	-0.799	2.77	3.00	0.89
513432	1201054906	07-APR-2006 21:54	DONE	0.06	-1	dec	0.99	0	-0.799	2.77	3.00	0.89
510976	1201049347	07-APR-2006 22:28	DONE	0.94	-0.05	dec	0.99	0	-0.799	2.77	3.00	0.89
517004	1201062585	08-APR-2006 16:02	DONE	0.67	-0.35	dec	0.99	0	-0.799	2.77	3.00	0.89
517006	1201062591	08-APR-2006 21:38	DONE	0.43	-0.63	dec	0.99	0	-0.799	2.77	3.00	0.89
517018	1201062615	09-APR-2006 21:10	DONE	1.32	0.38	dec	0.99	0	-0.799	2.77	3.00	0.89
513162	1201054360	09-APR-2006 21:34	DUSE	0.56	-0.48	dec	0.99	0	-0.799	2.77	3.00	0.89
517011	1201062603	10-APR-2006 06:23	DONE	1.39	0.45	dec	0.99	0	-0.799	2.77	3.00	0.89
517009	1201062597	10-APR-2006 10:48	DONE	4.9	4.4	dec	0.99	0	-0.799	2.77	3.00	0.89
517015	1201062609	10-APR-2006 10:51	DONE	0.98	-0.01	dec	0.99	0	-0.799	2.77	3.00	0.89
512595	1201053118	10-APR-2006 13:18	DONE	1.17	0.21	dec	0.99	0	-0.799	2.77	3.00	0.89
513799	1201055604	10-APR-2006 15:42	DONE	0.15	-0.93	dec	0.99	0	-0.799	2.77	3.00	0.89
513054	1201054081	11-APR-2006 10:21	DONE	0.2	-0.88	dec	0.99	0	-0.799	2.77	3.00	0.89
519499	1201068199	11-APR-2006 16:44	DONE	0.35	-0.71	dec	0.99	0	-0.799	2.77	3.00	0.89
519008	1201067117	11-APR-2006 19:22	DUSE	1.04	0.06	dec	0.99	0	-0.799	2.77	3.00	0.89
513058	1201054087	11-APR-2006 21:43	DONE	1.81	0.93	dec	0.99	0	-0.799	2.77	3.00	0.89
518359	1201065660	11-APR-2006 21:47	DUSE	1.39	0.45	dec	0.99	0	-0.799	2.77	3.00	0.89
513780	1201055550	11-APR-2006 23:45	DONE	0.3	-0.77	dec	0.99	0	-0.799	2.77	3.00	0.89

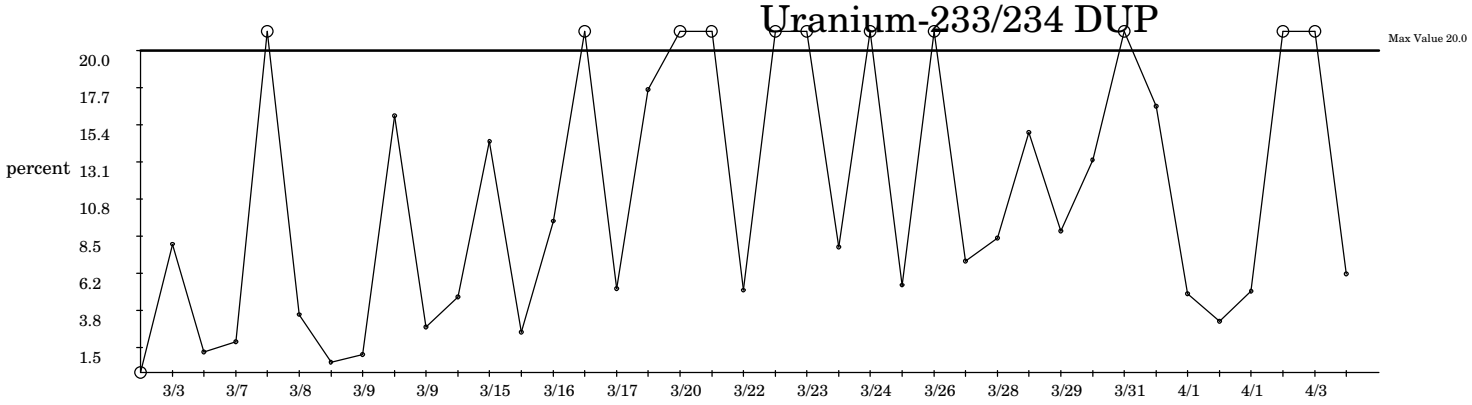
SPC Graph for Alpha SpecUranium in Solids 4/5/2006

Uranium-233/234 BLANK



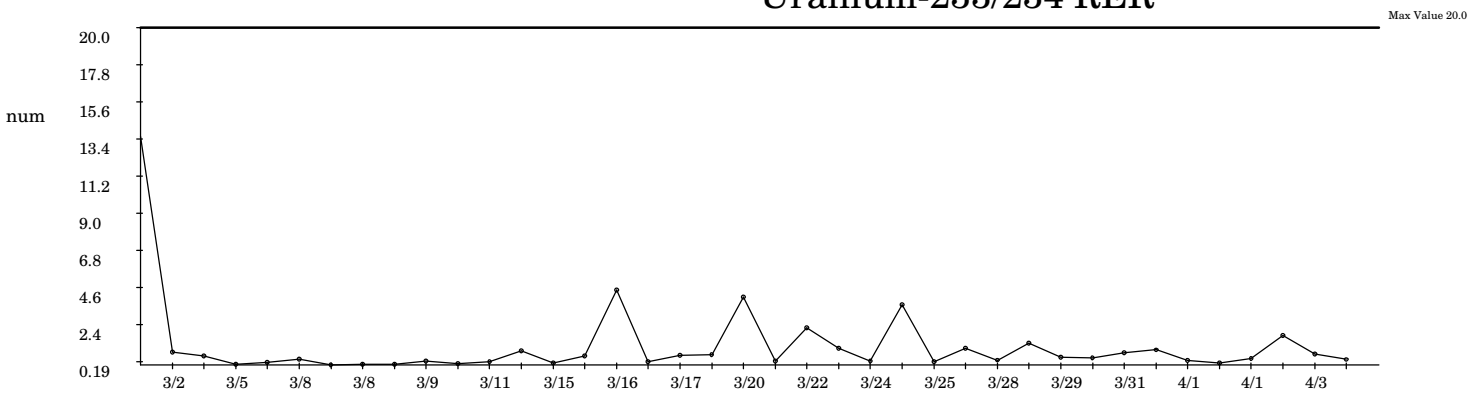
DATE

Uranium-233/234 DUP



DATE

Uranium-233/234 RER

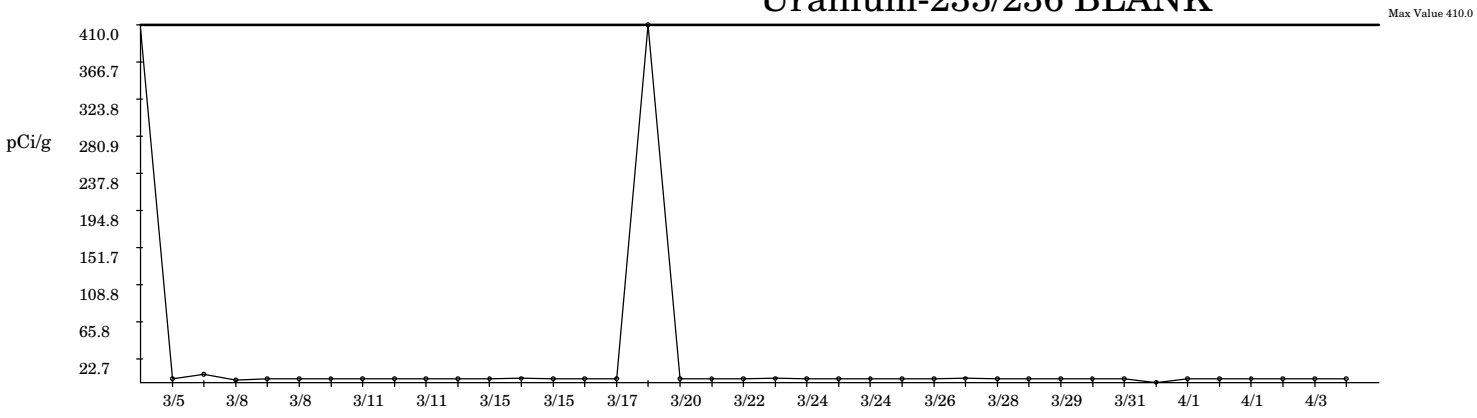


DATE

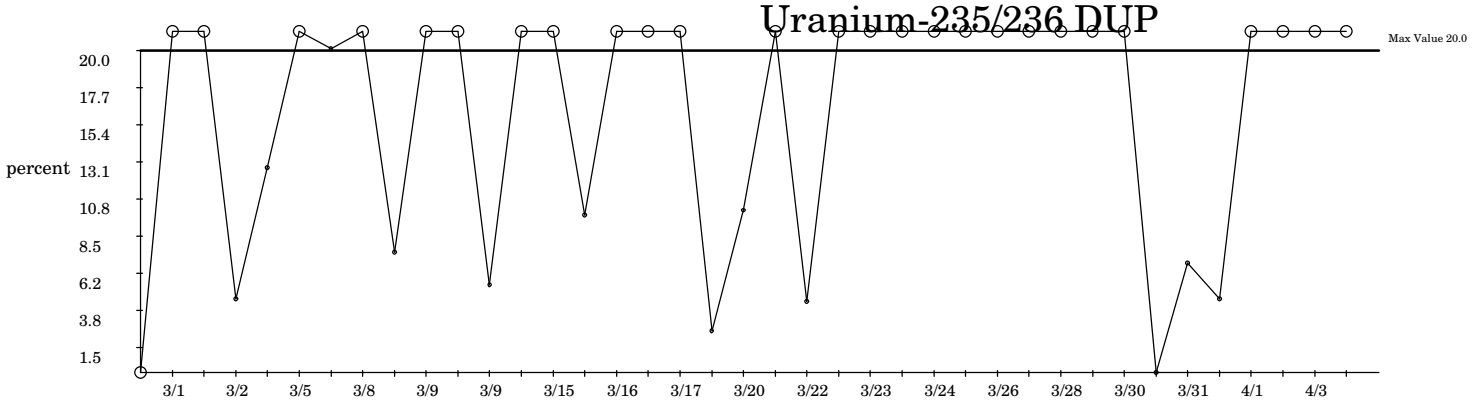
○ Denotes Outlier

SPC Graph for Alpha SpecUranium in Solids 4/5/2006

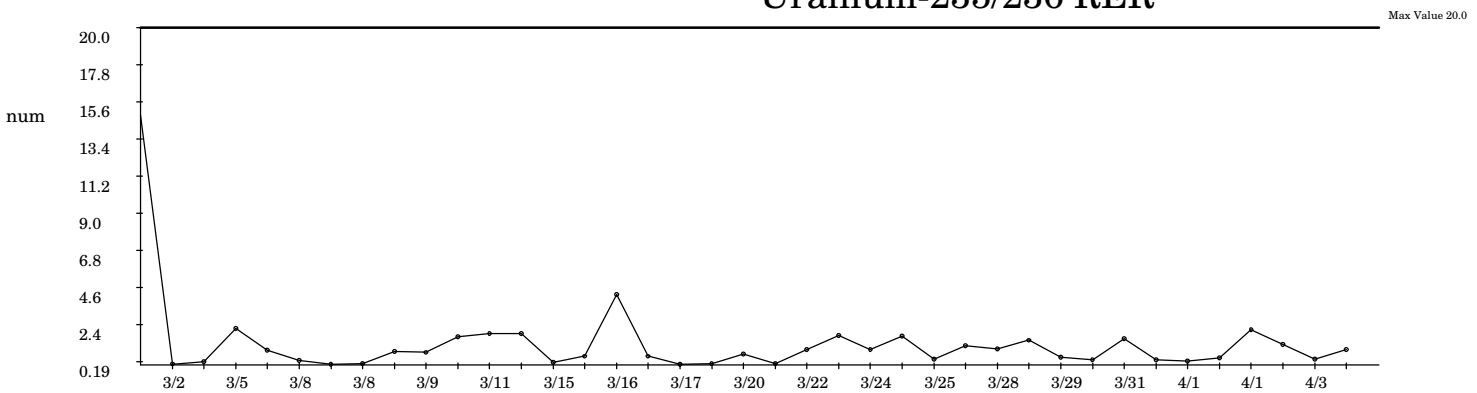
Uranium-235/236 BLANK



Uranium-235/236 DUP



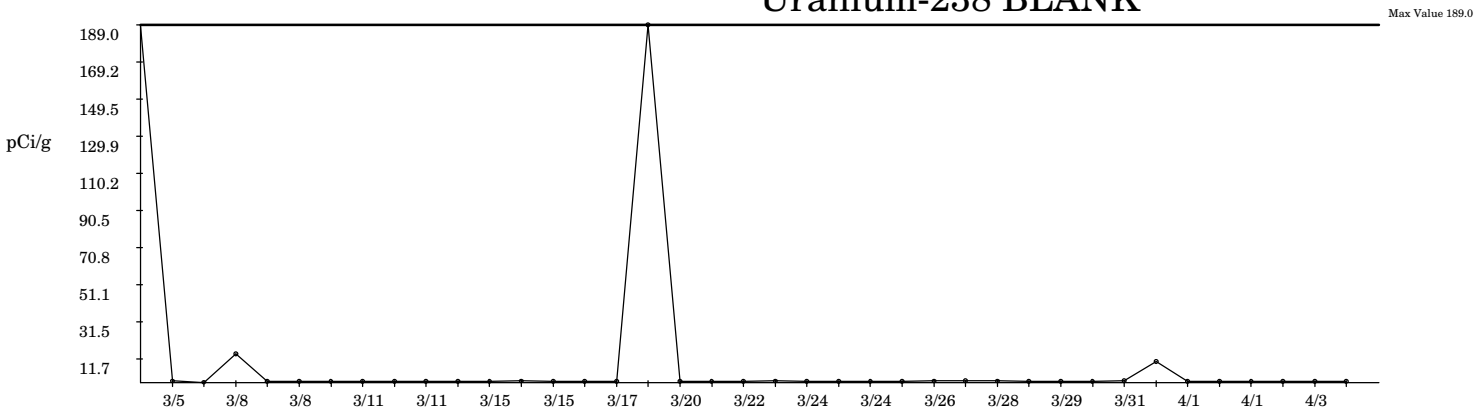
Uranium-235/236 RER



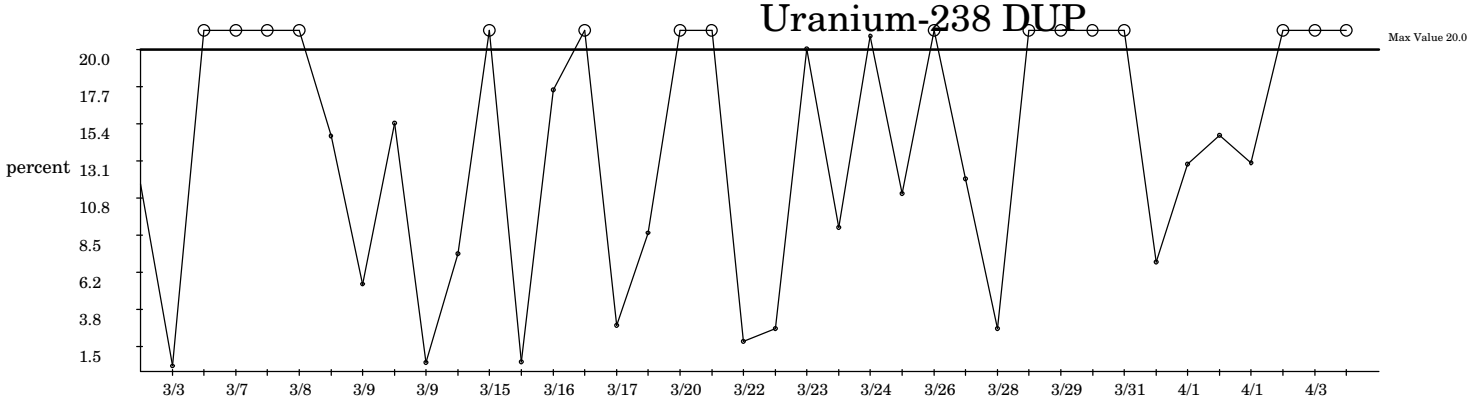
○ Denotes Outlier

SPC Graph for Alpha SpecUranium in Solids 4/5/2006

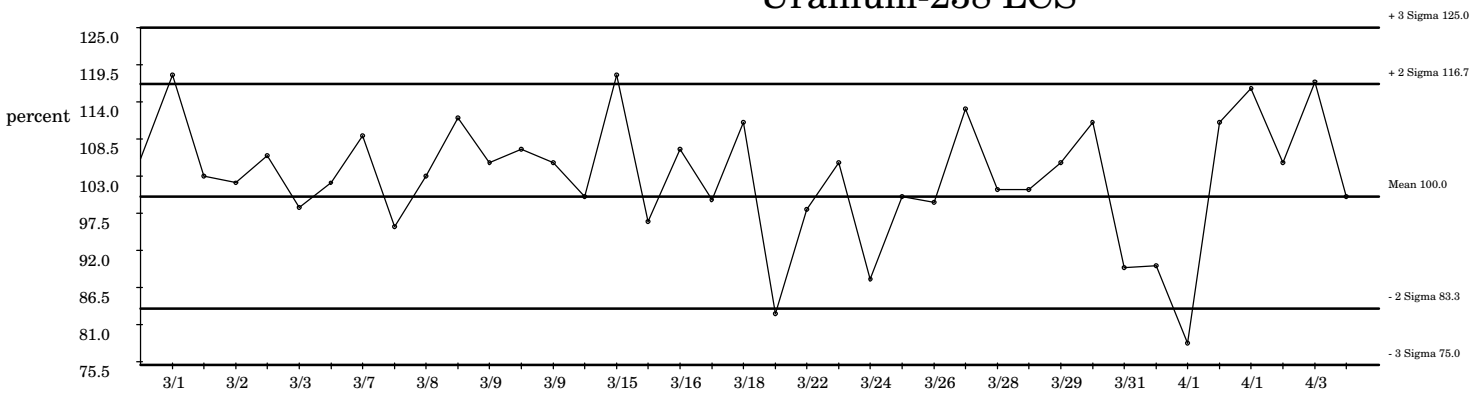
Uranium-238 BLANK



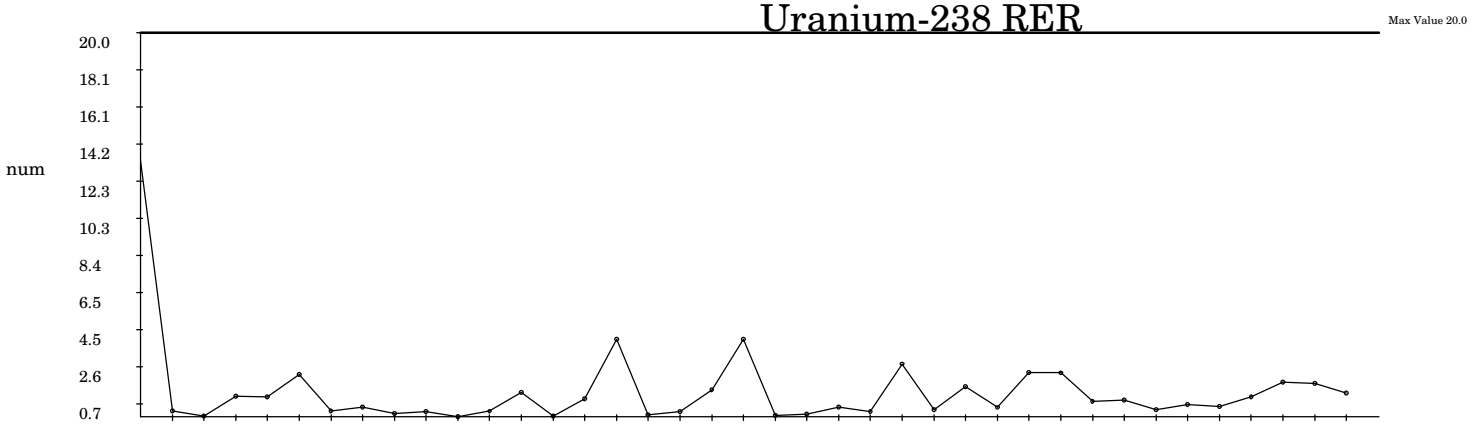
Uranium-238 DUP



Uranium-238 LCS

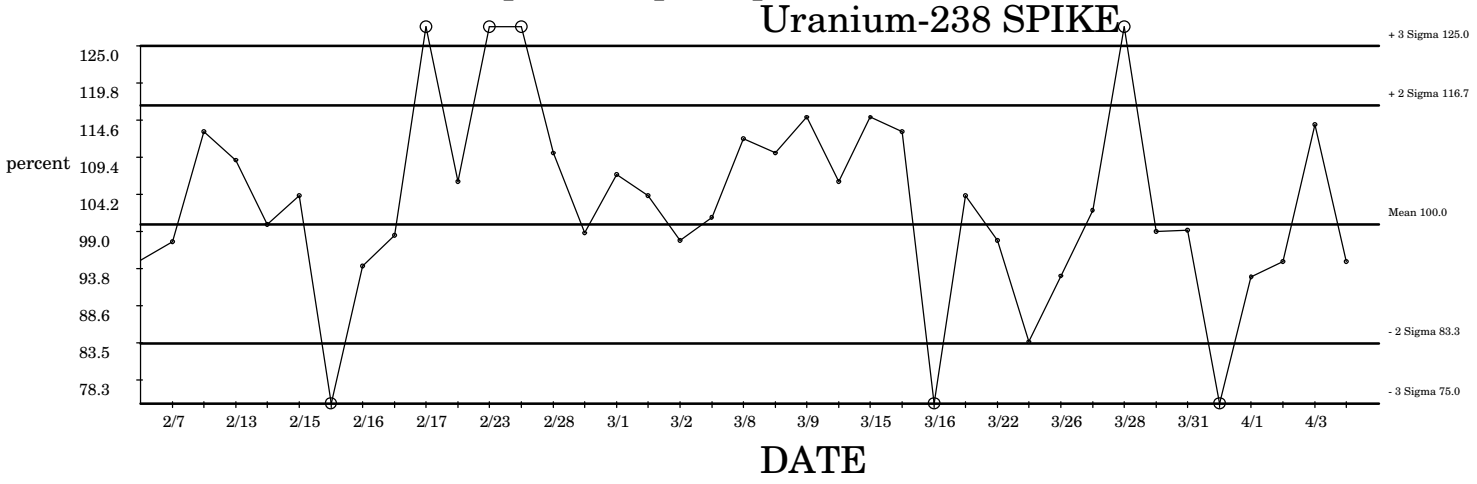


Uranium-238 RER



○ Denotes Outlier

SPC Graph for Alpha SpecUranium in Solids 4/5/2006
Uranium-238 SPIKE



○ Denotes Outlier

Data used for Alpha SpecUranium in Solids 06-APR-2006

Uranium-233/234 BLANK: Limits LCL = -172.1 UCL = 191.9

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
506034	1201037873	03-MAR-2006 15:56	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
507067	1201040272	05-MAR-2006 08:42	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
503952	1201032894	07-MAR-2006 19:14	DONE	1	-0.15	pCi/g	9.89	-170	-110	131	192	60.7
504175	1201033487	08-MAR-2006 08:59	DONE	1	-0.15	pCi/g	9.89	-170	-110	131	192	60.7
509084	1201045145	08-MAR-2006 13:55	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
508638	1201044146	08-MAR-2006 17:42	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
509121	1201045268	09-MAR-2006 15:47	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
508588	1201044005	11-MAR-2006 09:34	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
508590	1201044013	11-MAR-2006 14:29	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
510234	1201047741	11-MAR-2006 14:29	DUSE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
509833	1201046785	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
511711	1201051087	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
510648	1201048635	15-MAR-2006 12:44	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
511205	1201049867	15-MAR-2006 16:54	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
510653	1201048649	16-MAR-2006 14:20	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
511197	1201049839	17-MAR-2006 13:41	DUSE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
512186	1201052164	20-MAR-2006 16:57	DONE	379	6.1	pCi/g	9.89	-170	-110	131	192	60.7
511556	1201050731	20-MAR-2006 20:55	DUSE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
513065	1201054107	22-MAR-2006 14:23	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
512000	1201051707	22-MAR-2006 19:22	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
513417	1201054860	23-MAR-2006 23:50	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
513967	1201055907	24-MAR-2006 17:20	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
511995	1201051696	24-MAR-2006 17:20	DUSE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
511573	1201050778	24-MAR-2006 19:41	DUSE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
511656	1201050971	25-MAR-2006 10:35	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
513419	1201054868	26-MAR-2006 07:39	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
513434	1201054911	28-MAR-2006 11:41	DONE	1	-0.15	pCi/g	9.89	-170	-110	131	192	60.7
506038	1201037885	28-MAR-2006 16:43	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
515154	1201058499	29-MAR-2006 08:48	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
514145	1201056277	29-MAR-2006 22:27	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
515145	1201058488	30-MAR-2006 14:53	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
515262	1201058713	31-MAR-2006 00:27	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
512056	1201051825	31-MAR-2006 13:48	DONE	2	-0.13	pCi/g	9.89	-170	-110	131	192	60.7
514172	1201056341	01-APR-2006 09:22	DONE	1	-0.15	pCi/g	9.89	-170	-110	131	192	60.7
512045	1201051809	01-APR-2006 13:50	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
515259	1201058705	01-APR-2006 14:24	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
515558	1201059454	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
515551	1201059426	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7
512069	1201051877	05-APR-2006 09:52	DONE	0	-0.16	pCi/g	9.89	-170	-110	131	192	60.7

Uranium-233/234 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508045	1201042750	02-MAR-2006 22:23	DONE	23	0.03	percent	21.8	0	-38	81.5	20.0	29.9
506034	1201037874	03-MAR-2006 15:56	DONE	8	-0.46	percent	21.8	0	-38	81.5	20.0	29.9
507067	1201040273	05-MAR-2006 08:42	DONE	1	-0.69	percent	21.8	0	-38	81.5	20.0	29.9
503952	1201032895	07-MAR-2006 19:14	DONE	2	-0.67	percent	21.8	0	-38	81.5	20.0	29.9

504175	1201033488	08-MAR-2006 08:59	DONE	32	0.34	percent	21.8	0	-38	81.5	20.0	29.9
509084	1201045146	08-MAR-2006 13:55	DONE	4	-0.61	percent	21.8	0	-38	81.5	20.0	29.9
508638	1201044147	08-MAR-2006 17:42	DONE	1	-0.71	percent	21.8	0	-38	81.5	20.0	29.9
509121	1201045269	09-MAR-2006 15:47	DONE	1	-0.69	percent	21.8	0	-38	81.5	20.0	29.9
508588	1201044006	09-MAR-2006 15:47	DONE	16	-0.19	percent	21.8	0	-38	81.5	20.0	29.9
508590	1201044014	09-MAR-2006 18:21	DONE	3	-0.63	percent	21.8	0	-38	81.5	20.0	29.9
510234	1201047742	11-MAR-2006 14:29	DUSE	5	-0.57	percent	21.8	0	-38	81.5	20.0	29.9
511711	1201051088	15-MAR-2006 09:16	DONE	14	-0.25	percent	21.8	0	-38	81.5	20.0	29.9
511205	1201049868	15-MAR-2006 16:54	DONE	3	-0.65	percent	21.8	0	-38	81.5	20.0	29.9
510648	1201048636	16-MAR-2006 09:25	DONE	9	-0.41	percent	21.8	0	-38	81.5	20.0	29.9
509833	1201046786	16-MAR-2006 10:10	DONE	55	1.1	percent	21.8	0	-38	81.5	20.0	29.9
510653	1201048650	17-MAR-2006 13:41	DONE	5	-0.56	percent	21.8	0	-38	81.5	20.0	29.9
511197	1201049840	17-MAR-2006 15:33	DUSE	18	-0.14	percent	21.8	0	-38	81.5	20.0	29.9
512186	1201052165	20-MAR-2006 16:57	DONE	34	0.4	percent	21.8	0	-38	81.5	20.0	29.9
511556	1201050732	20-MAR-2006 20:55	DUSE	121	3.3	percent	21.8	0	-38	81.5	20.0	29.9
513065	1201054108	22-MAR-2006 14:23	DONE	5	-0.56	percent	21.8	0	-38	81.5	20.0	29.9
512000	1201051708	22-MAR-2006 19:22	DONE	40	0.63	percent	21.8	0	-38	81.5	20.0	29.9
513417	1201054861	23-MAR-2006 23:50	DONE	41	0.64	percent	21.8	0	-38	81.5	20.0	29.9
513967	1201055908	24-MAR-2006 17:20	DONE	8	-0.47	percent	21.8	0	-38	81.5	20.0	29.9
511995	1201051697	24-MAR-2006 17:20	DUSE	26	0.14	percent	21.8	0	-38	81.5	20.0	29.9
511656	1201050972	25-MAR-2006 10:35	DONE	5	-0.55	percent	21.8	0	-38	81.5	20.0	29.9
513419	1201054869	26-MAR-2006 07:39	DONE	44	0.75	percent	21.8	0	-38	81.5	20.0	29.9
513434	1201054912	28-MAR-2006 11:41	DONE	7	-0.5	percent	21.8	0	-38	81.5	20.0	29.9
506038	1201037886	28-MAR-2006 16:43	DONE	8	-0.45	percent	21.8	0	-38	81.5	20.0	29.9
515154	1201058500	28-MAR-2006 22:08	DONE	15	-0.23	percent	21.8	0	-38	81.5	20.0	29.9
514145	1201056278	29-MAR-2006 22:27	DONE	9	-0.43	percent	21.8	0	-38	81.5	20.0	29.9
515145	1201058489	30-MAR-2006 14:53	DONE	13	-0.29	percent	21.8	0	-38	81.5	20.0	29.9
515262	1201058714	31-MAR-2006 00:27	DONE	30	0.27	percent	21.8	0	-38	81.5	20.0	29.9
512056	1201051826	31-MAR-2006 13:48	DONE	17	-0.18	percent	21.8	0	-38	81.5	20.0	29.9
514172	1201056342	01-APR-2006 09:22	DONE	5	-0.57	percent	21.8	0	-38	81.5	20.0	29.9
512045	1201051810	01-APR-2006 13:50	DONE	3	-0.62	percent	21.8	0	-38	81.5	20.0	29.9
515259	1201058706	01-APR-2006 14:24	DONE	5	-0.56	percent	21.8	0	-38	81.5	20.0	29.9
515558	1201059455	03-APR-2006 06:56	DONE	78	1.9	percent	21.8	0	-38	81.5	20.0	29.9
515551	1201059427	03-APR-2006 06:56	DONE	131	3.7	percent	21.8	0	-38	81.5	20.0	29.9
512069	1201051878	05-APR-2006 09:52	DONE	6	-0.52	percent	21.8	0	-38	81.5	20.0	29.9

Uranium-233/234 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507392	1201041187	02-MAR-2006 16:43	DONE	6.43	4	num	0.92	0	-1.9	3.71	20.0	1.39
508045	1201042750	02-MAR-2006 22:23	DONE	0.76	-0.12	num	0.92	0	-1.9	3.71	20.0	1.39
506034	1201037874	03-MAR-2006 15:56	DONE	0.52	-0.29	num	0.92	0	-1.9	3.71	20.0	1.39
507067	1201040273	05-MAR-2006 08:42	DONE	0.04	-0.64	num	0.92	0	-1.9	3.71	20.0	1.39
503952	1201032895	07-MAR-2006 19:14	DONE	0.17	-0.55	num	0.92	0	-1.9	3.71	20.0	1.39
504175	1201033488	08-MAR-2006 08:59	DONE	0.35	-0.41	num	0.92	0	-1.9	3.71	20.0	1.39
509084	1201045146	08-MAR-2006 13:55	DONE	0.01	-0.66	num	0.92	0	-1.9	3.71	20.0	1.39
508638	1201044147	08-MAR-2006 17:42	DONE	0.02	-0.65	num	0.92	0	-1.9	3.71	20.0	1.39
509121	1201045269	09-MAR-2006 15:47	DONE	0.04	-0.64	num	0.92	0	-1.9	3.71	20.0	1.39
508588	1201044006	09-MAR-2006 15:47	DONE	0.22	-0.51	num	0.92	0	-1.9	3.71	20.0	1.39
508590	1201044014	09-MAR-2006 18:21	DONE	0.09	-0.6	num	0.92	0	-1.9	3.71	20.0	1.39
510234	1201047742	11-MAR-2006 14:29	DUSE	0.19	-0.53	num	0.92	0	-1.9	3.71	20.0	1.39

511711	1201051088	15-MAR-2006 09:16	DONE	0.84	-0.06	num	0.92	0	-1.9	3.71	20.0	1.39
511205	1201049868	15-MAR-2006 16:54	DONE	0.1	-0.59	num	0.92	0	-1.9	3.71	20.0	1.39
510648	1201048636	16-MAR-2006 09:25	DONE	0.52	-0.29	num	0.92	0	-1.9	3.71	20.0	1.39
509833	1201046786	16-MAR-2006 10:10	DONE	4.43	2.5	num	0.92	0	-1.9	3.71	20.0	1.39
510653	1201048650	17-MAR-2006 13:41	DONE	0.19	-0.53	num	0.92	0	-1.9	3.71	20.0	1.39
511197	1201049840	17-MAR-2006 15:33	DUSE	0.57	-0.26	num	0.92	0	-1.9	3.71	20.0	1.39
512186	1201052165	20-MAR-2006 16:57	DONE	0.6	-0.23	num	0.92	0	-1.9	3.71	20.0	1.39
511556	1201050732	20-MAR-2006 20:55	DUSE	4.02	2.2	num	0.92	0	-1.9	3.71	20.0	1.39
513065	1201054108	22-MAR-2006 14:23	DONE	0.22	-0.51	num	0.92	0	-1.9	3.71	20.0	1.39
512000	1201051708	22-MAR-2006 19:22	DONE	2.2	0.92	num	0.92	0	-1.9	3.71	20.0	1.39
513417	1201054861	23-MAR-2006 23:50	DONE	0.99	0.05	num	0.92	0	-1.9	3.71	20.0	1.39
513967	1201055908	24-MAR-2006 17:20	DONE	0.22	-0.5	num	0.92	0	-1.9	3.71	20.0	1.39
511995	1201051697	24-MAR-2006 17:20	DUSE	3.58	1.9	num	0.92	0	-1.9	3.71	20.0	1.39
511656	1201050972	25-MAR-2006 10:35	DONE	0.18	-0.54	num	0.92	0	-1.9	3.71	20.0	1.39
513419	1201054869	26-MAR-2006 07:39	DONE	0.99	0.05	num	0.92	0	-1.9	3.71	20.0	1.39
513434	1201054912	28-MAR-2006 11:41	DONE	0.28	-0.46	num	0.92	0	-1.9	3.71	20.0	1.39
515154	1201058500	28-MAR-2006 22:08	DONE	1.3	0.27	num	0.92	0	-1.9	3.71	20.0	1.39
514145	1201056278	29-MAR-2006 22:27	DONE	0.46	-0.34	num	0.92	0	-1.9	3.71	20.0	1.39
515145	1201058489	30-MAR-2006 14:53	DONE	0.42	-0.37	num	0.92	0	-1.9	3.71	20.0	1.39
515262	1201058714	31-MAR-2006 00:27	DONE	0.73	-0.14	num	0.92	0	-1.9	3.71	20.0	1.39
512056	1201051826	31-MAR-2006 13:48	DONE	0.89	-0.02	num	0.92	0	-1.9	3.71	20.0	1.39
514172	1201056342	01-APR-2006 09:22	DONE	0.26	-0.48	num	0.92	0	-1.9	3.71	20.0	1.39
512045	1201051810	01-APR-2006 13:50	DONE	0.12	-0.58	num	0.92	0	-1.9	3.71	20.0	1.39
515259	1201058706	01-APR-2006 14:24	DONE	0.39	-0.38	num	0.92	0	-1.9	3.71	20.0	1.39
515558	1201059455	03-APR-2006 06:56	DONE	1.76	0.6	num	0.92	0	-1.9	3.71	20.0	1.39
515551	1201059427	03-APR-2006 06:56	DONE	0.65	-0.2	num	0.92	0	-1.9	3.71	20.0	1.39
512069	1201051878	05-APR-2006 09:52	DONE	0.32	-0.43	num	0.92	0	-1.9	3.71	20.0	1.39

Uranium-235/236 BLANK: Limits LCL = -186.5 UCL = 207.5

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
506034	1201037873	03-MAR-2006 15:56	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
507067	1201040272	05-MAR-2006 08:42	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
503952	1201032894	07-MAR-2006 19:14	DONE	5	-0.09	pCi/g	10.5	-190	-120	142	207	65.7
504175	1201033487	08-MAR-2006 08:59	DONE	-2	-0.19	pCi/g	10.5	-190	-120	142	207	65.7
509084	1201045145	08-MAR-2006 13:55	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
508638	1201044146	08-MAR-2006 17:42	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
509121	1201045268	09-MAR-2006 15:47	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
508588	1201044005	11-MAR-2006 09:34	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
508590	1201044013	11-MAR-2006 14:29	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
510234	1201047741	11-MAR-2006 14:29	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
509833	1201046785	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
511711	1201051087	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
510648	1201048635	15-MAR-2006 12:44	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
511205	1201049867	15-MAR-2006 16:54	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
510653	1201048649	16-MAR-2006 14:20	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
511197	1201049839	17-MAR-2006 13:41	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
512186	1201052164	20-MAR-2006 16:57	DONE	410	6.1	pCi/g	10.5	-190	-120	142	207	65.7
511556	1201050731	20-MAR-2006 20:55	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
513065	1201054107	22-MAR-2006 14:23	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
512000	1201051707	22-MAR-2006 19:22	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7

513417	1201054860	23-MAR-2006 23:50	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
513967	1201055907	24-MAR-2006 17:20	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
511995	1201051696	24-MAR-2006 17:20	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
511573	1201050778	24-MAR-2006 19:41	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
511656	1201050971	25-MAR-2006 10:35	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
513419	1201054868	26-MAR-2006 07:39	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
513434	1201054911	28-MAR-2006 11:41	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
506038	1201037885	28-MAR-2006 16:43	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
515154	1201058499	29-MAR-2006 08:48	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
514145	1201056277	29-MAR-2006 22:27	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
515145	1201058488	30-MAR-2006 14:53	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
515262	1201058713	31-MAR-2006 00:27	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
512056	1201051825	31-MAR-2006 13:48	DONE	-4	-0.23	pCi/g	10.5	-190	-120	142	207	65.7
514172	1201056341	01-APR-2006 09:22	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
512045	1201051809	01-APR-2006 13:50	DUSE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
515259	1201058705	01-APR-2006 14:24	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
515558	1201059454	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
515551	1201059426	03-APR-2006 06:56	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7
512069	1201051877	05-APR-2006 09:52	DONE	0	-0.16	pCi/g	10.5	-190	-120	142	207	65.7

Uranium-235/236 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
504465	1201034142	01-MAR-2006 16:22	DONE	27	-0.55	percent	67.3	0	-79	214	20.0	73.4
504468	1201034154	01-MAR-2006 16:22	DONE	50	-0.24	percent	67.3	0	-79	214	20.0	73.4
507392	1201041187	02-MAR-2006 16:43	DONE	102	0.47	percent	67.3	0	-79	214	20.0	73.4
508045	1201042750	02-MAR-2006 22:23	DONE	5	-0.86	percent	67.3	0	-79	214	20.0	73.4
506034	1201037874	03-MAR-2006 15:56	DUSE	13	-0.74	percent	67.3	0	-79	214	20.0	73.4
507067	1201040273	05-MAR-2006 08:42	DONE	216	2	percent	67.3	0	-79	214	20.0	73.4
503952	1201032895	07-MAR-2006 19:14	DONE	20	-0.64	percent	67.3	0	-79	214	20.0	73.4
504175	1201033488	08-MAR-2006 08:59	DONE	132	0.88	percent	67.3	0	-79	214	20.0	73.4
508638	1201044147	08-MAR-2006 17:42	DONE	7	-0.82	percent	67.3	0	-79	214	20.0	73.4
509121	1201045269	09-MAR-2006 15:47	DONE	63	-0.05	percent	67.3	0	-79	214	20.0	73.4
508588	1201044006	09-MAR-2006 15:47	DONE	94	0.37	percent	67.3	0	-79	214	20.0	73.4
508590	1201044014	09-MAR-2006 18:21	DONE	5	-0.84	percent	67.3	0	-79	214	20.0	73.4
510234	1201047742	11-MAR-2006 14:29	DUSE	94	0.36	percent	67.3	0	-79	214	20.0	73.4
511711	1201051088	15-MAR-2006 09:16	DONE	201	1.8	percent	67.3	0	-79	214	20.0	73.4
511205	1201049868	15-MAR-2006 16:54	DONE	10	-0.78	percent	67.3	0	-79	214	20.0	73.4
510648	1201048636	16-MAR-2006 09:25	DONE	33	-0.47	percent	67.3	0	-79	214	20.0	73.4
509833	1201046786	16-MAR-2006 10:10	DONE	96	0.39	percent	67.3	0	-79	214	20.0	73.4
510653	1201048650	17-MAR-2006 13:41	DONE	38	-0.4	percent	67.3	0	-79	214	20.0	73.4
511197	1201049840	17-MAR-2006 15:33	DUSE	3	-0.88	percent	67.3	0	-79	214	20.0	73.4
512186	1201052165	20-MAR-2006 16:57	DONE	10	-0.78	percent	67.3	0	-79	214	20.0	73.4
511556	1201050732	20-MAR-2006 20:55	DUSE	60	-0.09	percent	67.3	0	-79	214	20.0	73.4
513065	1201054108	22-MAR-2006 14:23	DONE	4	-0.86	percent	67.3	0	-79	214	20.0	73.4
512000	1201051708	22-MAR-2006 19:22	DONE	74	0.1	percent	67.3	0	-79	214	20.0	73.4
513417	1201054861	23-MAR-2006 23:50	DONE	228	2.2	percent	67.3	0	-79	214	20.0	73.4
513967	1201055908	24-MAR-2006 17:20	DONE	104	0.51	percent	67.3	0	-79	214	20.0	73.4
511995	1201051697	24-MAR-2006 17:20	DUSE	28	-0.54	percent	67.3	0	-79	214	20.0	73.4
511656	1201050972	25-MAR-2006 10:35	DONE	38	-0.39	percent	67.3	0	-79	214	20.0	73.4
513419	1201054869	26-MAR-2006 07:39	DONE	167	1.4	percent	67.3	0	-79	214	20.0	73.4

513434	1201054912	28-MAR-2006 11:41	DONE	25	-0.58	percent	67.3	0	-79	214	20.0	73.4
515154	1201058500	28-MAR-2006 22:08	DONE	54	-0.18	percent	67.3	0	-79	214	20.0	73.4
514145	1201056278	29-MAR-2006 22:27	DONE	70	0.03	percent	67.3	0	-79	214	20.0	73.4
515145	1201058489	30-MAR-2006 14:53	DONE	30	-0.51	percent	67.3	0	-79	214	20.0	73.4
515262	1201058714	31-MAR-2006 00:27	DONE	0	-0.92	percent	67.3	0	-79	214	20.0	73.4
512056	1201051826	31-MAR-2006 13:48	DONE	7	-0.82	percent	67.3	0	-79	214	20.0	73.4
514172	1201056342	01-APR-2006 09:22	DONE	5	-0.86	percent	67.3	0	-79	214	20.0	73.4
512045	1201051810	01-APR-2006 13:50	DUSE	43	-0.33	percent	67.3	0	-79	214	20.0	73.4
515259	1201058706	01-APR-2006 14:24	DONE	70	0.04	percent	67.3	0	-79	214	20.0	73.4
515558	1201059455	03-APR-2006 06:56	DONE	324	3.5	percent	67.3	0	-79	214	20.0	73.4
512069	1201051878	05-APR-2006 09:52	DONE	75	0.11	percent	67.3	0	-79	214	20.0	73.4

Uranium-235/236 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507392	1201041187	02-MAR-2006 16:43	DONE	5.19	3.9	num	1	0	-1.2	3.17	20.0	1.09
508045	1201042750	02-MAR-2006 22:23	DONE	0.05	-0.87	num	1	0	-1.2	3.17	20.0	1.09
506034	1201037874	03-MAR-2006 15:56	DUSE	0.21	-0.73	num	1	0	-1.2	3.17	20.0	1.09
507067	1201040273	05-MAR-2006 08:42	DONE	2.16	1.1	num	1	0	-1.2	3.17	20.0	1.09
503952	1201032895	07-MAR-2006 19:14	DONE	0.87	-0.12	num	1	0	-1.2	3.17	20.0	1.09
504175	1201033488	08-MAR-2006 08:59	DONE	0.25	-0.69	num	1	0	-1.2	3.17	20.0	1.09
509084	1201045146	08-MAR-2006 13:55	DONE	0.03	-0.9	num	1	0	-1.2	3.17	20.0	1.09
508638	1201044147	08-MAR-2006 17:42	DONE	0.08	-0.85	num	1	0	-1.2	3.17	20.0	1.09
509121	1201045269	09-MAR-2006 15:47	DONE	0.8	-0.19	num	1	0	-1.2	3.17	20.0	1.09
508588	1201044006	09-MAR-2006 15:47	DONE	0.74	-0.24	num	1	0	-1.2	3.17	20.0	1.09
508590	1201044014	09-MAR-2006 18:21	DONE	1.67	0.62	num	1	0	-1.2	3.17	20.0	1.09
510234	1201047742	11-MAR-2006 14:29	DUSE	1.86	0.79	num	1	0	-1.2	3.17	20.0	1.09
511711	1201051088	15-MAR-2006 09:16	DONE	1.87	0.8	num	1	0	-1.2	3.17	20.0	1.09
511205	1201049868	15-MAR-2006 16:54	DONE	0.17	-0.77	num	1	0	-1.2	3.17	20.0	1.09
510648	1201048636	16-MAR-2006 09:25	DONE	0.51	-0.45	num	1	0	-1.2	3.17	20.0	1.09
509833	1201046786	16-MAR-2006 10:10	DONE	4.18	2.9	num	1	0	-1.2	3.17	20.0	1.09
510653	1201048650	17-MAR-2006 13:41	DONE	0.52	-0.45	num	1	0	-1.2	3.17	20.0	1.09
511197	1201049840	17-MAR-2006 15:33	DUSE	0.03	-0.9	num	1	0	-1.2	3.17	20.0	1.09
512186	1201052165	20-MAR-2006 16:57	DONE	0.06	-0.86	num	1	0	-1.2	3.17	20.0	1.09
511556	1201050732	20-MAR-2006 20:55	DUSE	0.65	-0.32	num	1	0	-1.2	3.17	20.0	1.09
513065	1201054108	22-MAR-2006 14:23	DONE	0.08	-0.85	num	1	0	-1.2	3.17	20.0	1.09
512000	1201051708	22-MAR-2006 19:22	DONE	0.92	-0.08	num	1	0	-1.2	3.17	20.0	1.09
513417	1201054861	23-MAR-2006 23:50	DONE	1.75	0.69	num	1	0	-1.2	3.17	20.0	1.09
513967	1201055908	24-MAR-2006 17:20	DONE	0.92	-0.07	num	1	0	-1.2	3.17	20.0	1.09
511995	1201051697	24-MAR-2006 17:20	DUSE	1.72	0.66	num	1	0	-1.2	3.17	20.0	1.09
511656	1201050972	25-MAR-2006 10:35	DONE	0.36	-0.59	num	1	0	-1.2	3.17	20.0	1.09
513419	1201054869	26-MAR-2006 07:39	DONE	1.16	0.14	num	1	0	-1.2	3.17	20.0	1.09
513434	1201054912	28-MAR-2006 11:41	DONE	0.96	-0.03	num	1	0	-1.2	3.17	20.0	1.09
515154	1201058500	28-MAR-2006 22:08	DONE	1.47	0.43	num	1	0	-1.2	3.17	20.0	1.09
514145	1201056278	29-MAR-2006 22:27	DONE	0.45	-0.51	num	1	0	-1.2	3.17	20.0	1.09
515145	1201058489	30-MAR-2006 14:53	DONE	0.3	-0.64	num	1	0	-1.2	3.17	20.0	1.09
515262	1201058714	31-MAR-2006 00:27	DONE	1.55	0.5	num	1	0	-1.2	3.17	20.0	1.09
512056	1201051826	31-MAR-2006 13:48	DONE	0.31	-0.64	num	1	0	-1.2	3.17	20.0	1.09
514172	1201056342	01-APR-2006 09:22	DONE	0.22	-0.72	num	1	0	-1.2	3.17	20.0	1.09
512045	1201051810	01-APR-2006 13:50	DUSE	0.43	-0.53	num	1	0	-1.2	3.17	20.0	1.09
515259	1201058706	01-APR-2006 14:24	DONE	2.08	01	num	1	0	-1.2	3.17	20.0	1.09

515558	1201059455	03-APR-2006 06:56	DONE	1.21	0.2	num	1	0	-1.2	3.17	20.0	1.09
515551	1201059427	03-APR-2006 06:56	DONE	0.35	-0.6	num	1	0	-1.2	3.17	20.0	1.09
512069	1201051878	05-APR-2006 09:52	DONE	0.92	-0.08	num	1	0	-1.2	3.17	20.0	1.09

Uranium-238 BLANK: Limits LCL = -85.4 UCL = 96.4

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
506034	1201037873	03-MAR-2006 15:56	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
507067	1201040272	05-MAR-2006 08:42	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
503952	1201032894	07-MAR-2006 19:14	DONE	-1	-0.2	pCi/g	5.49	-85	-55	66.1	96.4	30.3
504175	1201033487	08-MAR-2006 08:59	DONE	15	0.3	pCi/g	5.49	-85	-55	66.1	96.4	30.3
509084	1201045145	08-MAR-2006 13:55	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
508638	1201044146	08-MAR-2006 17:42	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
509121	1201045268	09-MAR-2006 15:47	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
508588	1201044005	11-MAR-2006 09:34	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
508590	1201044013	11-MAR-2006 14:29	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
510234	1201047741	11-MAR-2006 14:29	DUSE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
509833	1201046785	15-MAR-2006 09:16	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511711	1201051087	15-MAR-2006 09:16	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
510648	1201048635	15-MAR-2006 12:44	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511205	1201049867	15-MAR-2006 16:54	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
510653	1201048649	16-MAR-2006 14:20	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511197	1201049839	17-MAR-2006 13:41	DUSE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
512186	1201052164	20-MAR-2006 16:57	DONE	189	6.1	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511556	1201050731	20-MAR-2006 20:55	DUSE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
513065	1201054107	22-MAR-2006 14:23	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
512000	1201051707	22-MAR-2006 19:22	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
513417	1201054860	23-MAR-2006 23:50	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
513967	1201055907	24-MAR-2006 17:20	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511995	1201051696	24-MAR-2006 17:20	DUSE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511573	1201050778	24-MAR-2006 19:41	DUSE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
511656	1201050971	25-MAR-2006 10:35	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
513419	1201054868	26-MAR-2006 07:39	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
513434	1201054911	28-MAR-2006 11:41	DONE	0	-0.17	pCi/g	5.49	-85	-55	66.1	96.4	30.3
506038	1201037885	28-MAR-2006 16:43	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
515154	1201058499	29-MAR-2006 08:48	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
514145	1201056277	29-MAR-2006 22:27	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
515145	1201058488	30-MAR-2006 14:53	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
515262	1201058713	31-MAR-2006 00:27	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
512056	1201051825	31-MAR-2006 13:48	DONE	11	0.17	pCi/g	5.49	-85	-55	66.1	96.4	30.3
514172	1201056341	01-APR-2006 09:22	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
512045	1201051809	01-APR-2006 13:50	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
515259	1201058705	01-APR-2006 14:24	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
515558	1201059454	03-APR-2006 06:56	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
515551	1201059426	03-APR-2006 06:56	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3
512069	1201051877	05-APR-2006 09:52	DONE	0	-0.18	pCi/g	5.49	-85	-55	66.1	96.4	30.3

Uranium-238 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
508045	1201042750	02-MAR-2006 22:23	DONE	8	-0.39	percent	55.2	0	-180	294	20.0	119
506034	1201037874	03-MAR-2006 15:56	DONE	0	-0.46	percent	55.2	0	-180	294	20.0	119

507067	1201040273	05-MAR-2006 08:42	DONE	34	-0.18	percent	55.2	0	-180	294	20.0	119
503952	1201032895	07-MAR-2006 19:14	DONE	22	-0.28	percent	55.2	0	-180	294	20.0	119
504175	1201033488	08-MAR-2006 08:59	DONE	632	4.8	percent	55.2	0	-180	294	20.0	119
509084	1201045146	08-MAR-2006 13:55	DONE	168	0.95	percent	55.2	0	-180	294	20.0	119
508638	1201044147	08-MAR-2006 17:42	DONE	15	-0.34	percent	55.2	0	-180	294	20.0	119
509121	1201045269	09-MAR-2006 15:47	DONE	5	-0.42	percent	55.2	0	-180	294	20.0	119
508588	1201044006	09-MAR-2006 15:47	DONE	15	-0.33	percent	55.2	0	-180	294	20.0	119
508590	1201044014	09-MAR-2006 18:21	DONE	1	-0.46	percent	55.2	0	-180	294	20.0	119
510234	1201047742	11-MAR-2006 14:29	DUSE	7	-0.4	percent	55.2	0	-180	294	20.0	119
511711	1201051088	15-MAR-2006 09:16	DONE	21	-0.28	percent	55.2	0	-180	294	20.0	119
511205	1201049868	15-MAR-2006 16:54	DONE	1	-0.46	percent	55.2	0	-180	294	20.0	119
510648	1201048636	16-MAR-2006 09:25	DONE	18	-0.32	percent	55.2	0	-180	294	20.0	119
509833	1201046786	16-MAR-2006 10:10	DONE	54	-0.01	percent	55.2	0	-180	294	20.0	119
510653	1201048650	17-MAR-2006 13:41	DONE	3	-0.44	percent	55.2	0	-180	294	20.0	119
511197	1201049840	17-MAR-2006 15:33	DUSE	9	-0.39	percent	55.2	0	-180	294	20.0	119
512186	1201052165	20-MAR-2006 16:57	DONE	200	1.2	percent	55.2	0	-180	294	20.0	119
511556	1201050732	20-MAR-2006 20:55	DUSE	119	0.54	percent	55.2	0	-180	294	20.0	119
513065	1201054108	22-MAR-2006 14:23	DONE	2	-0.45	percent	55.2	0	-180	294	20.0	119
512000	1201051708	22-MAR-2006 19:22	DONE	3	-0.44	percent	55.2	0	-180	294	20.0	119
513417	1201054861	23-MAR-2006 23:50	DONE	20	-0.29	percent	55.2	0	-180	294	20.0	119
513967	1201055908	24-MAR-2006 17:20	DONE	9	-0.39	percent	55.2	0	-180	294	20.0	119
511995	1201051697	24-MAR-2006 17:20	DUSE	21	-0.29	percent	55.2	0	-180	294	20.0	119
511656	1201050972	25-MAR-2006 10:35	DONE	11	-0.37	percent	55.2	0	-180	294	20.0	119
513419	1201054869	26-MAR-2006 07:39	DONE	61	0.05	percent	55.2	0	-180	294	20.0	119
513434	1201054912	28-MAR-2006 11:41	DONE	12	-0.36	percent	55.2	0	-180	294	20.0	119
506038	1201037886	28-MAR-2006 16:43	DONE	3	-0.44	percent	55.2	0	-180	294	20.0	119
515154	1201058500	28-MAR-2006 22:08	DONE	29	-0.22	percent	55.2	0	-180	294	20.0	119
514145	1201056278	29-MAR-2006 22:27	DONE	47	-0.07	percent	55.2	0	-180	294	20.0	119
515145	1201058489	30-MAR-2006 14:53	DONE	25	-0.26	percent	55.2	0	-180	294	20.0	119
515262	1201058714	31-MAR-2006 00:27	DONE	38	-0.14	percent	55.2	0	-180	294	20.0	119
512056	1201051826	31-MAR-2006 13:48	DONE	7	-0.41	percent	55.2	0	-180	294	20.0	119
514172	1201056342	01-APR-2006 09:22	DONE	13	-0.35	percent	55.2	0	-180	294	20.0	119
512045	1201051810	01-APR-2006 13:50	DONE	15	-0.34	percent	55.2	0	-180	294	20.0	119
515259	1201058706	01-APR-2006 14:24	DONE	13	-0.35	percent	55.2	0	-180	294	20.0	119
515558	1201059455	03-APR-2006 06:56	DONE	72	0.14	percent	55.2	0	-180	294	20.0	119
515551	1201059427	03-APR-2006 06:56	DONE	395	2.8	percent	55.2	0	-180	294	20.0	119
512069	1201051878	05-APR-2006 09:52	DONE	26	-0.25	percent	55.2	0	-180	294	20.0	119

Uranium-238 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
504464	1201034140	28-FEB-2006 20:08	DONE	94	-0.67	percent	100	75.0	83.3	117	125	8.33
504465	1201034144	01-MAR-2006 16:22	DONE	118	2.2	percent	100	75.0	83.3	117	125	8.33
504468	1201034156	01-MAR-2006 16:22	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
507392	1201041188	02-MAR-2006 16:43	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
508045	1201042752	02-MAR-2006 22:23	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
506034	1201037876	03-MAR-2006 15:56	DONE	98	-0.2	percent	100	75.0	83.3	117	125	8.33
507067	1201040274	05-MAR-2006 08:42	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
503952	1201032896	07-MAR-2006 19:14	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
504175	1201033490	08-MAR-2006 08:59	DONE	96	-0.54	percent	100	75.0	83.3	117	125	8.33
509084	1201045148	08-MAR-2006 13:55	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33

508638	1201044148	08-MAR-2006 17:42	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
509121	1201045270	09-MAR-2006 15:47	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
508588	1201044008	09-MAR-2006 15:47	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
508590	1201044016	09-MAR-2006 18:21	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
509833	1201046788	15-MAR-2006 09:16	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
511711	1201051090	15-MAR-2006 09:16	DONE	118	2.2	percent	100	75.0	83.3	117	125	8.33
511205	1201049869	15-MAR-2006 16:54	DONE	96	-0.44	percent	100	75.0	83.3	117	125	8.33
510648	1201048638	16-MAR-2006 09:25	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
510653	1201048651	16-MAR-2006 15:06	DONE	100	-0.06	percent	100	75.0	83.3	117	125	8.33
512186	1201052167	18-MAR-2006 09:47	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
513065	1201054109	22-MAR-2006 14:23	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
512000	1201051710	22-MAR-2006 19:22	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
513417	1201054863	23-MAR-2006 23:50	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
513967	1201055909	24-MAR-2006 17:20	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
511656	1201050973	25-MAR-2006 10:35	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
513419	1201054871	26-MAR-2006 07:39	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
513434	1201054913	28-MAR-2006 11:41	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
506038	1201037888	28-MAR-2006 16:43	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
515154	1201058502	28-MAR-2006 22:08	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
514145	1201056280	29-MAR-2006 22:27	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
515145	1201058490	30-MAR-2006 18:03	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
515262	1201058716	31-MAR-2006 07:47	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
512056	1201051827	31-MAR-2006 13:48	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
514172	1201056344	01-APR-2006 09:22	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
515259	1201058708	01-APR-2006 09:22	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
512045	1201051811	01-APR-2006 13:50	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
515558	1201059457	03-APR-2006 06:56	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
515551	1201059429	03-APR-2006 06:56	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
512069	1201051880	05-APR-2006 09:52	DONE	100	0	percent	100	75.0	83.3	117	125	8.33

Uranium-238 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
507392	1201041187	02-MAR-2006 16:43	DONE	6.66	4.1	num	1.15	0	-1.6	3.86	20.0	1.36
508045	1201042750	02-MAR-2006 22:23	DONE	0.31	-0.61	num	1.15	0	-1.6	3.86	20.0	1.36
506034	1201037874	03-MAR-2006 15:56	DONE	0.02	-0.83	num	1.15	0	-1.6	3.86	20.0	1.36
507067	1201040273	05-MAR-2006 08:42	DONE	1.07	-0.06	num	1.15	0	-1.6	3.86	20.0	1.36
503952	1201032895	07-MAR-2006 19:14	DONE	1.04	-0.08	num	1.15	0	-1.6	3.86	20.0	1.36
504175	1201033488	08-MAR-2006 08:59	DONE	2.2	0.78	num	1.15	0	-1.6	3.86	20.0	1.36
509084	1201045146	08-MAR-2006 13:55	DONE	0.29	-0.63	num	1.15	0	-1.6	3.86	20.0	1.36
508638	1201044147	08-MAR-2006 17:42	DONE	0.51	-0.47	num	1.15	0	-1.6	3.86	20.0	1.36
509121	1201045269	09-MAR-2006 15:47	DONE	0.18	-0.71	num	1.15	0	-1.6	3.86	20.0	1.36
508588	1201044006	09-MAR-2006 15:47	DONE	0.27	-0.64	num	1.15	0	-1.6	3.86	20.0	1.36
508590	1201044014	09-MAR-2006 18:21	DONE	0.02	-0.83	num	1.15	0	-1.6	3.86	20.0	1.36
510234	1201047742	11-MAR-2006 14:29	DUSE	0.29	-0.63	num	1.15	0	-1.6	3.86	20.0	1.36
511711	1201051088	15-MAR-2006 09:16	DONE	1.25	0.08	num	1.15	0	-1.6	3.86	20.0	1.36
511205	1201049868	15-MAR-2006 16:54	DONE	0.02	-0.83	num	1.15	0	-1.6	3.86	20.0	1.36
510648	1201048636	16-MAR-2006 09:25	DONE	0.94	-0.15	num	1.15	0	-1.6	3.86	20.0	1.36
509833	1201046786	16-MAR-2006 10:10	DONE	4.02	2.1	num	1.15	0	-1.6	3.86	20.0	1.36
510653	1201048650	17-MAR-2006 13:41	DONE	0.11	-0.76	num	1.15	0	-1.6	3.86	20.0	1.36
511197	1201049840	17-MAR-2006 15:33	DUSE	0.28	-0.64	num	1.15	0	-1.6	3.86	20.0	1.36

512186	1201052165	20-MAR-2006 16:57	DONE	1.39	0.18	num	1.15	0	-1.6	3.86	20.0	1.36
511556	1201050732	20-MAR-2006 20:55	DUSE	4.03	2.1	num	1.15	0	-1.6	3.86	20.0	1.36
513065	1201054108	22-MAR-2006 14:23	DONE	0.08	-0.78	num	1.15	0	-1.6	3.86	20.0	1.36
512000	1201051708	22-MAR-2006 19:22	DONE	0.13	-0.74	num	1.15	0	-1.6	3.86	20.0	1.36
513417	1201054861	23-MAR-2006 23:50	DONE	0.52	-0.46	num	1.15	0	-1.6	3.86	20.0	1.36
513967	1201055908	24-MAR-2006 17:20	DONE	0.27	-0.65	num	1.15	0	-1.6	3.86	20.0	1.36
511995	1201051697	24-MAR-2006 17:20	DUSE	2.75	1.2	num	1.15	0	-1.6	3.86	20.0	1.36
511656	1201050972	25-MAR-2006 10:35	DONE	0.37	-0.57	num	1.15	0	-1.6	3.86	20.0	1.36
513419	1201054869	26-MAR-2006 07:39	DONE	1.56	0.31	num	1.15	0	-1.6	3.86	20.0	1.36
513434	1201054912	28-MAR-2006 11:41	DONE	0.49	-0.48	num	1.15	0	-1.6	3.86	20.0	1.36
515154	1201058500	28-MAR-2006 22:08	DONE	2.3	0.85	num	1.15	0	-1.6	3.86	20.0	1.36
514145	1201056278	29-MAR-2006 22:27	DONE	2.29	0.84	num	1.15	0	-1.6	3.86	20.0	1.36
515145	1201058489	30-MAR-2006 14:53	DONE	0.81	-0.25	num	1.15	0	-1.6	3.86	20.0	1.36
515262	1201058714	31-MAR-2006 00:27	DONE	0.85	-0.22	num	1.15	0	-1.6	3.86	20.0	1.36
512056	1201051826	31-MAR-2006 13:48	DONE	0.37	-0.57	num	1.15	0	-1.6	3.86	20.0	1.36
514172	1201056342	01-APR-2006 09:22	DONE	0.65	-0.37	num	1.15	0	-1.6	3.86	20.0	1.36
512045	1201051810	01-APR-2006 13:50	DONE	0.54	-0.44	num	1.15	0	-1.6	3.86	20.0	1.36
515259	1201058706	01-APR-2006 14:24	DONE	1.02	-0.09	num	1.15	0	-1.6	3.86	20.0	1.36
515558	1201059455	03-APR-2006 06:56	DONE	1.8	0.48	num	1.15	0	-1.6	3.86	20.0	1.36
515551	1201059427	03-APR-2006 06:56	DONE	1.73	0.43	num	1.15	0	-1.6	3.86	20.0	1.36
512069	1201051878	05-APR-2006 09:52	DONE	1.24	0.07	num	1.15	0	-1.6	3.86	20.0	1.36

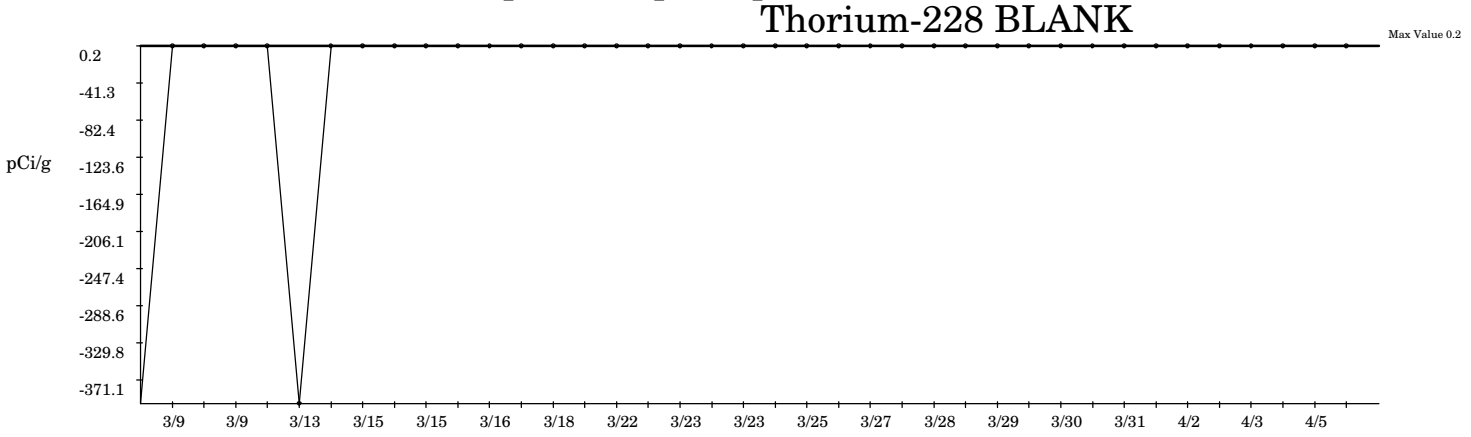
Uranium-238 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
499884	1201023628	06-FEB-2006 10:51	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
498149	1201021301	07-FEB-2006 17:28	DONE	98	-0.29	percent	100	75.0	83.3	117	125	8.33
501144	1201026494	10-FEB-2006 09:55	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
501929	1201028476	13-FEB-2006 16:03	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
502834	1201030477	14-FEB-2006 20:33	DUSE	100	0	percent	100	75.0	83.3	117	125	8.33
497596	1201018298	15-FEB-2006 23:29	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
499590	1201022771	16-FEB-2006 15:13	DONE	67	-4	percent	100	75.0	83.3	117	125	8.33
503672	1201032614	16-FEB-2006 21:40	DONE	94	-0.7	percent	100	75.0	83.3	117	125	8.33
503668	1201032259	16-FEB-2006 21:41	DONE	99	-0.18	percent	100	75.0	83.3	117	125	8.33
503154	1201031112	17-FEB-2006 11:01	DUSE	1350	150	percent	100	75.0	83.3	117	125	8.33
505620	1201036924	21-FEB-2006 23:51	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
505875	1201037477	23-FEB-2006 10:53	DONE	2102	240	percent	100	75.0	83.3	117	125	8.33
507246	1201040730	28-FEB-2006 15:46	DONE	203	12	percent	100	75.0	83.3	117	125	8.33
507176	1201040560	28-FEB-2006 20:08	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
504464	1201034139	28-FEB-2006 20:08	DONE	99	-0.14	percent	100	75.0	83.3	117	125	8.33
504465	1201034143	01-MAR-2006 16:22	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
504468	1201034155	01-MAR-2006 16:22	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
508045	1201042751	02-MAR-2006 22:23	DONE	98	-0.26	percent	100	75.0	83.3	117	125	8.33
506034	1201037875	03-MAR-2006 15:56	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
504175	1201033489	08-MAR-2006 08:59	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
509084	1201045147	08-MAR-2006 13:55	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
508588	1201044007	09-MAR-2006 15:47	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
508590	1201044015	09-MAR-2006 18:21	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
511711	1201051089	15-MAR-2006 09:16	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
510648	1201048637	16-MAR-2006 09:25	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
509833	1201046787	16-MAR-2006 10:10	DONE	49	-6	percent	100	75.0	83.3	117	125	8.33

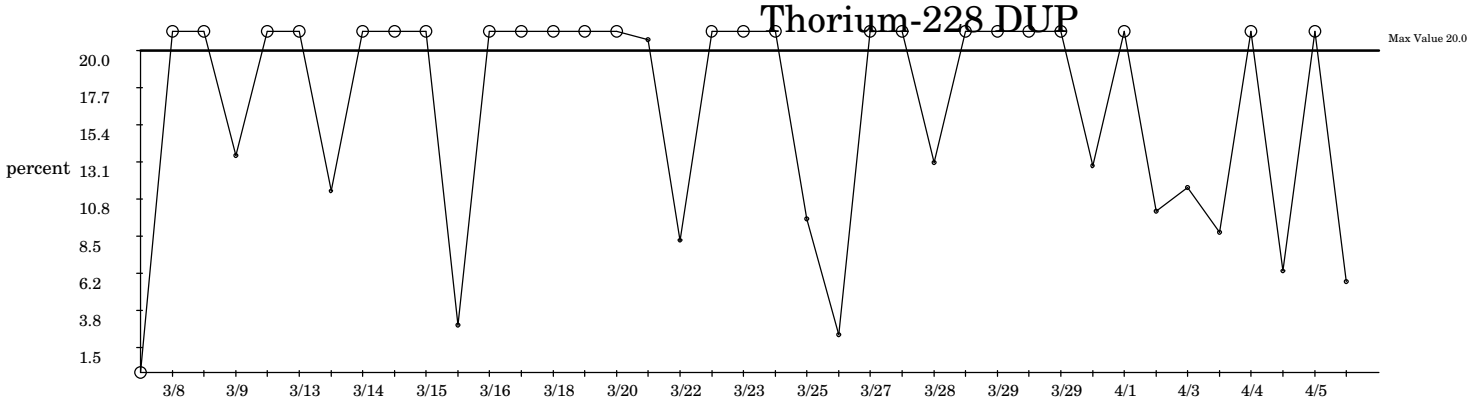
512186	1201052166	18-MAR-2006 09:47	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
512000	1201051709	22-MAR-2006 19:22	DONE	98	-0.26	percent	100	75.0	83.3	117	125	8.33
513417	1201054862	23-MAR-2006 23:50	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
513419	1201054870	26-MAR-2006 07:39	DONE	93	-0.86	percent	100	75.0	83.3	117	125	8.33
506038	1201037887	28-MAR-2006 16:43	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
515154	1201058501	28-MAR-2006 22:08	DONE	138	4.6	percent	100	75.0	83.3	117	125	8.33
514145	1201056279	29-MAR-2006 22:27	DONE	99	-0.12	percent	100	75.0	83.3	117	125	8.33
515262	1201058715	31-MAR-2006 07:47	DONE	99	-0.1	percent	100	75.0	83.3	117	125	8.33
514172	1201056343	01-APR-2006 09:22	DONE	4	-10	percent	100	75.0	83.3	117	125	8.33
515259	1201058707	01-APR-2006 09:22	DONE	93	-0.88	percent	100	75.0	83.3	117	125	8.33
515558	1201059456	03-APR-2006 06:56	DONE	95	-0.62	percent	100	75.0	83.3	117	125	8.33
515551	1201059428	03-APR-2006 06:56	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
512069	1201051879	05-APR-2006 09:52	DONE	95	-0.62	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Alpha SpecThorium in Solids 4/5/2006

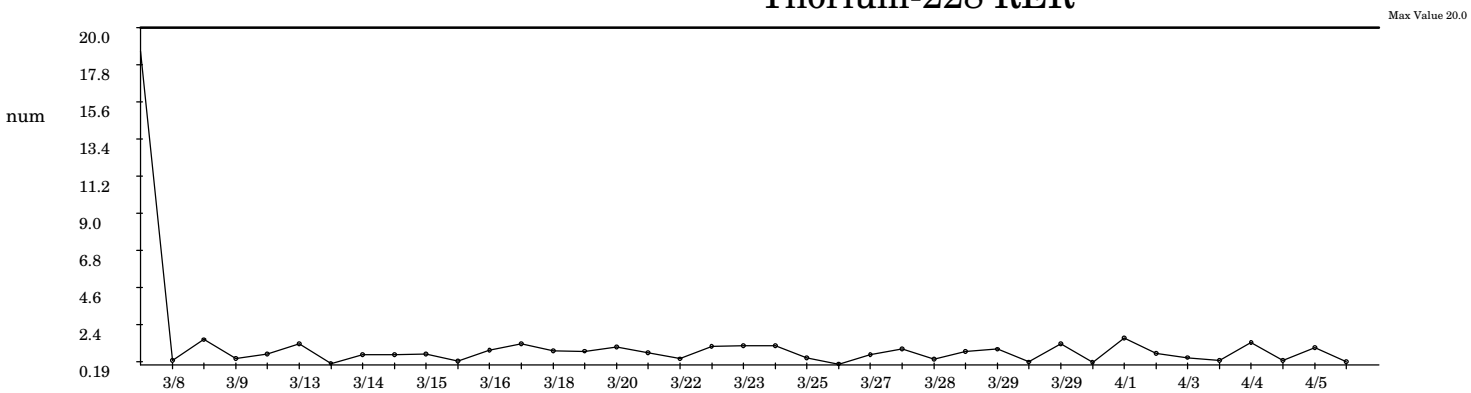
Thorium-228 BLANK



Thorium-228 DUP



Thorium-228 RER



○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/5/2006

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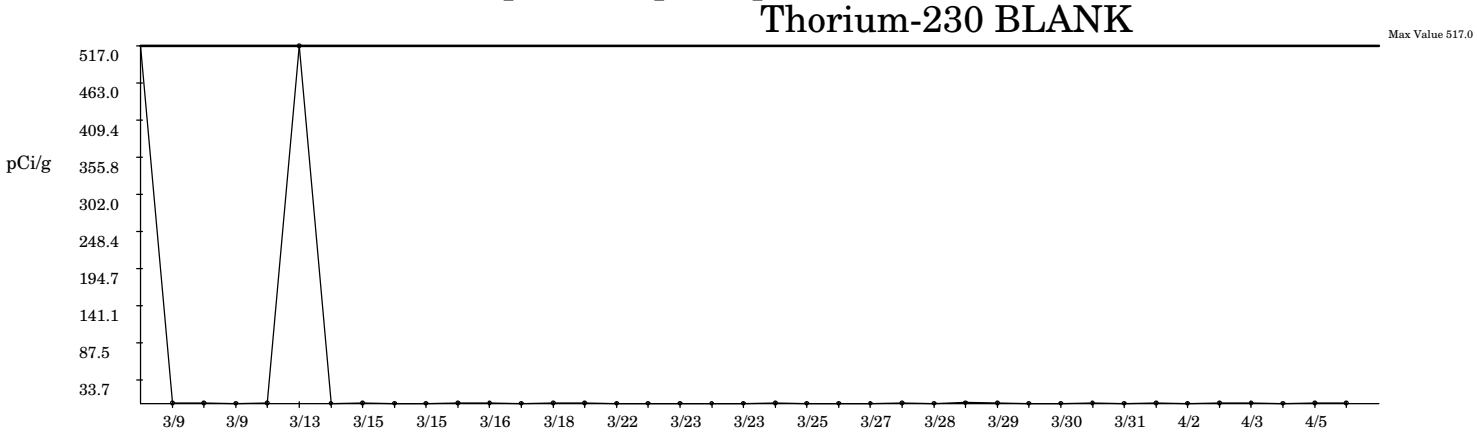
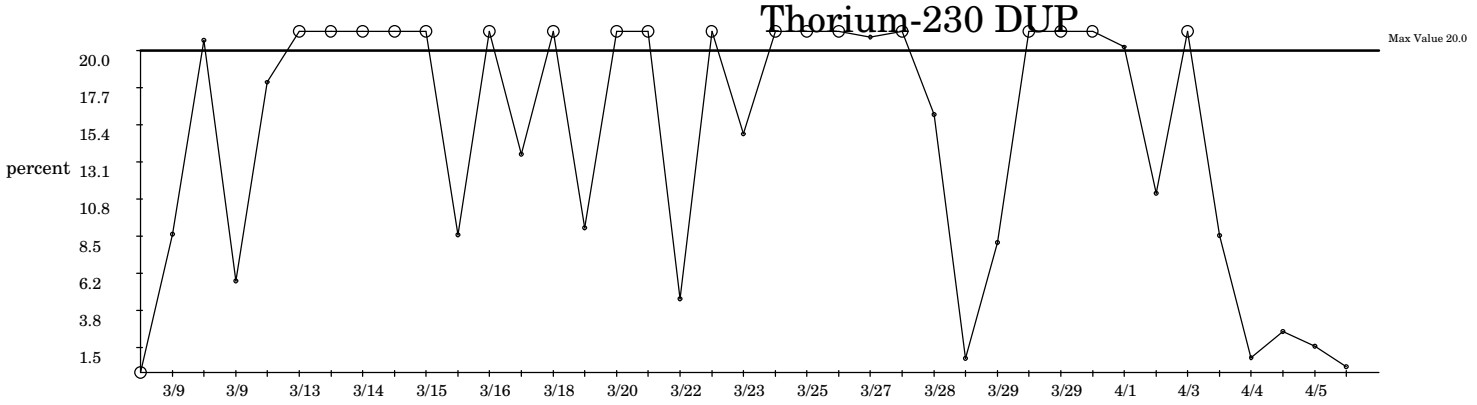
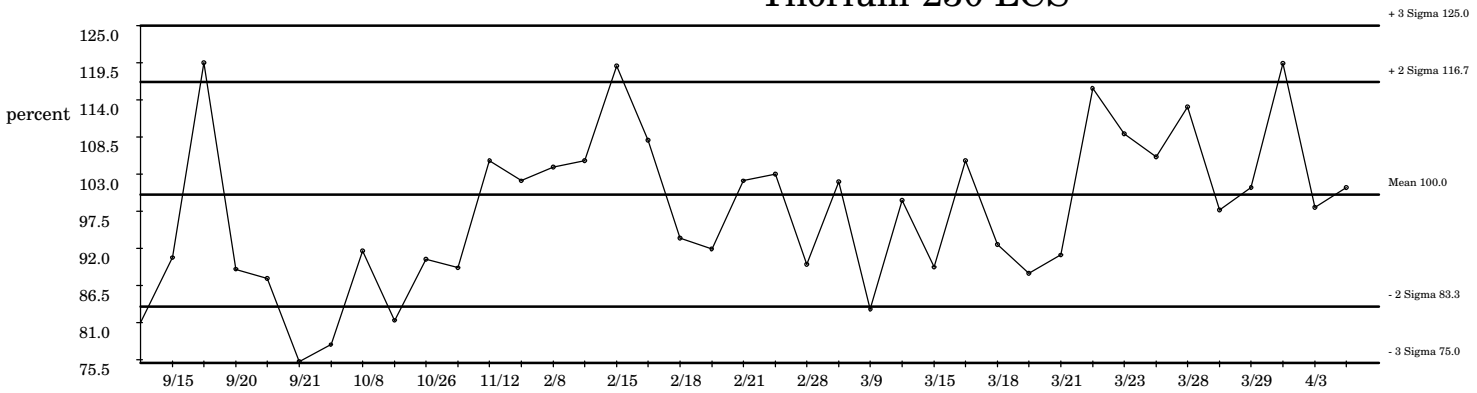


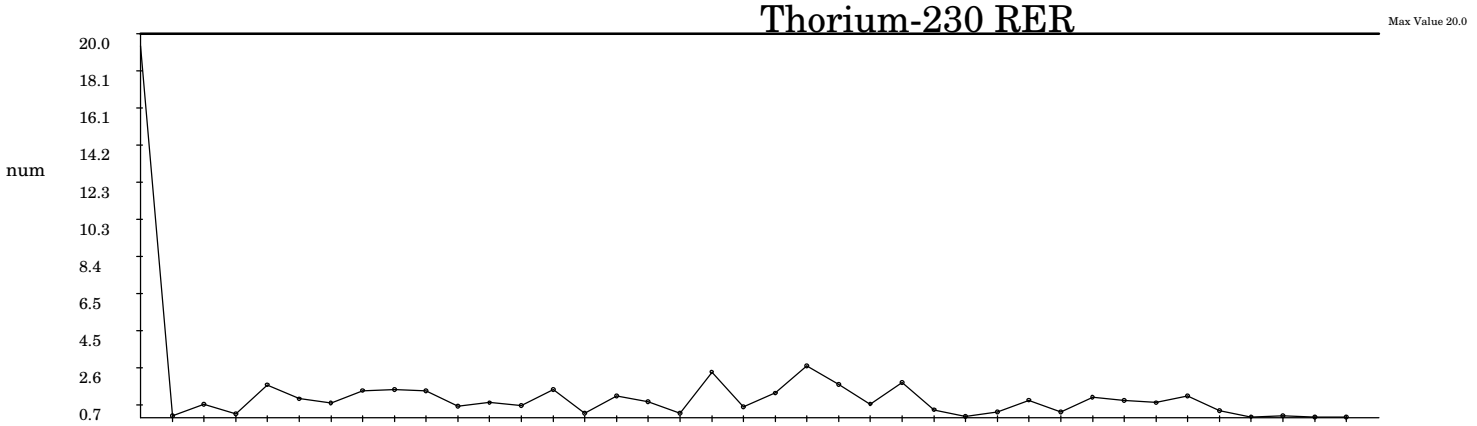
Thorium-230 DUP



Thorium-230 LCS

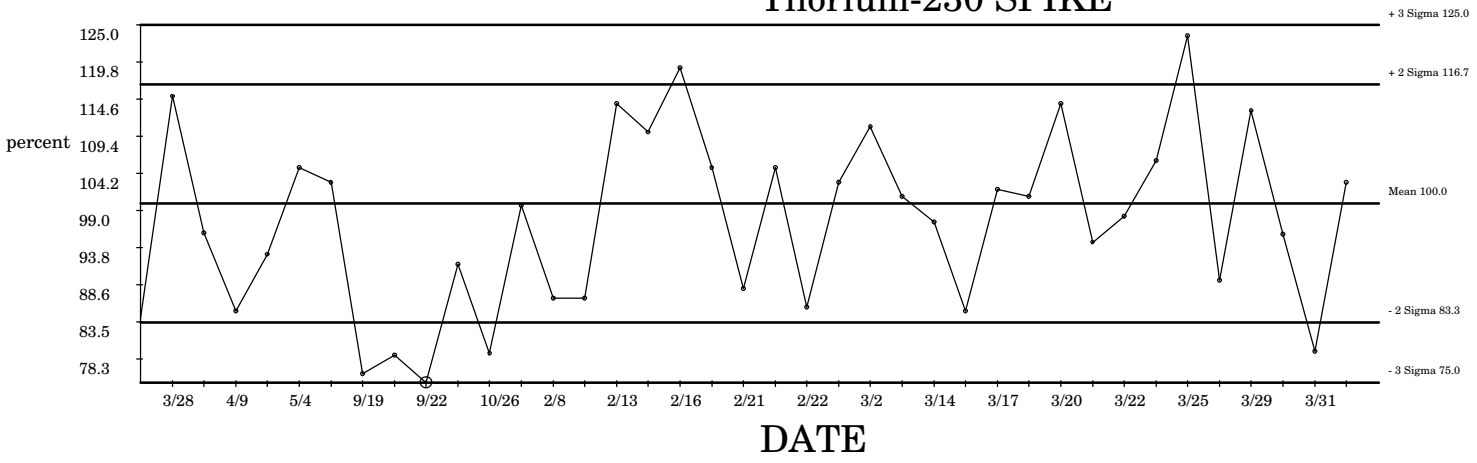


Thorium-230 RER



○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/5/2006
Thorium-230 SPIKE



○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/5/2006

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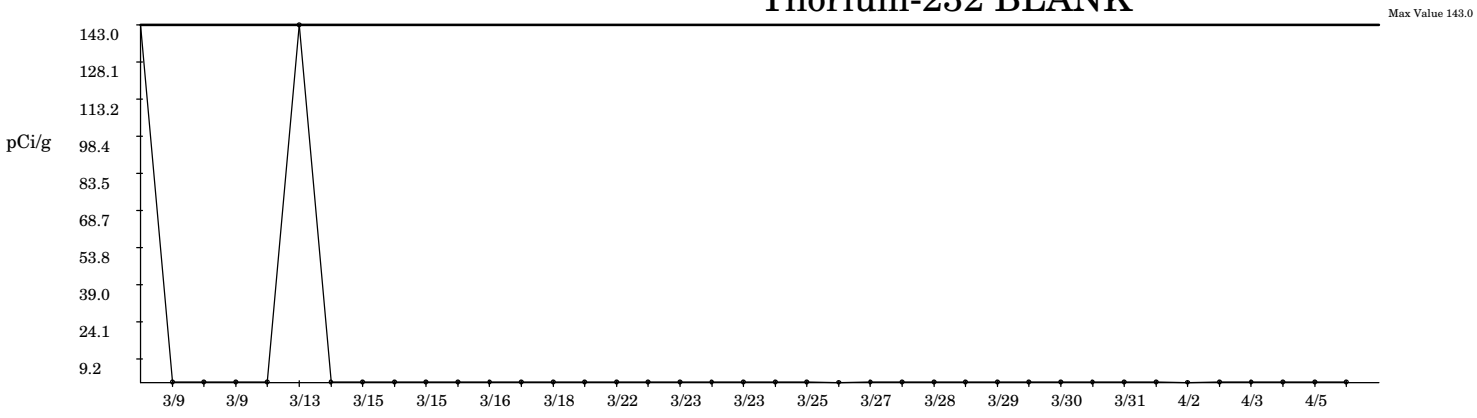
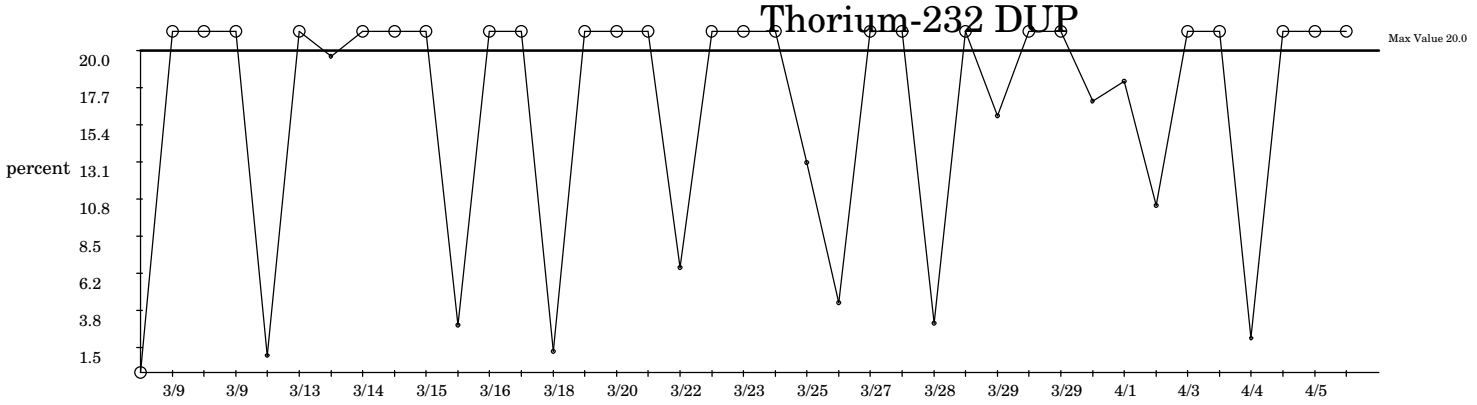
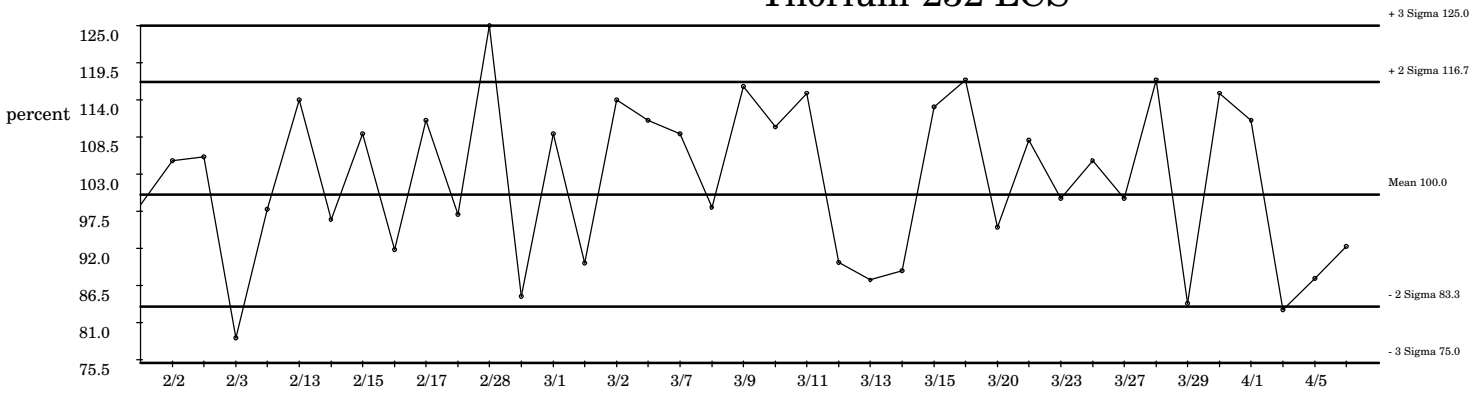


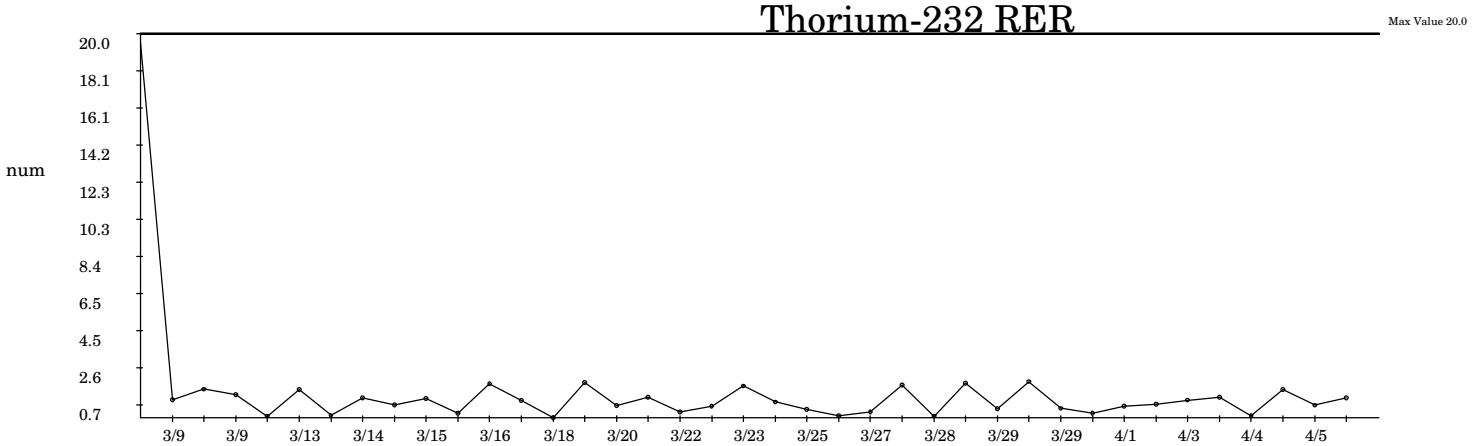
Thorium-232 DUP



Thorium-232 LCS

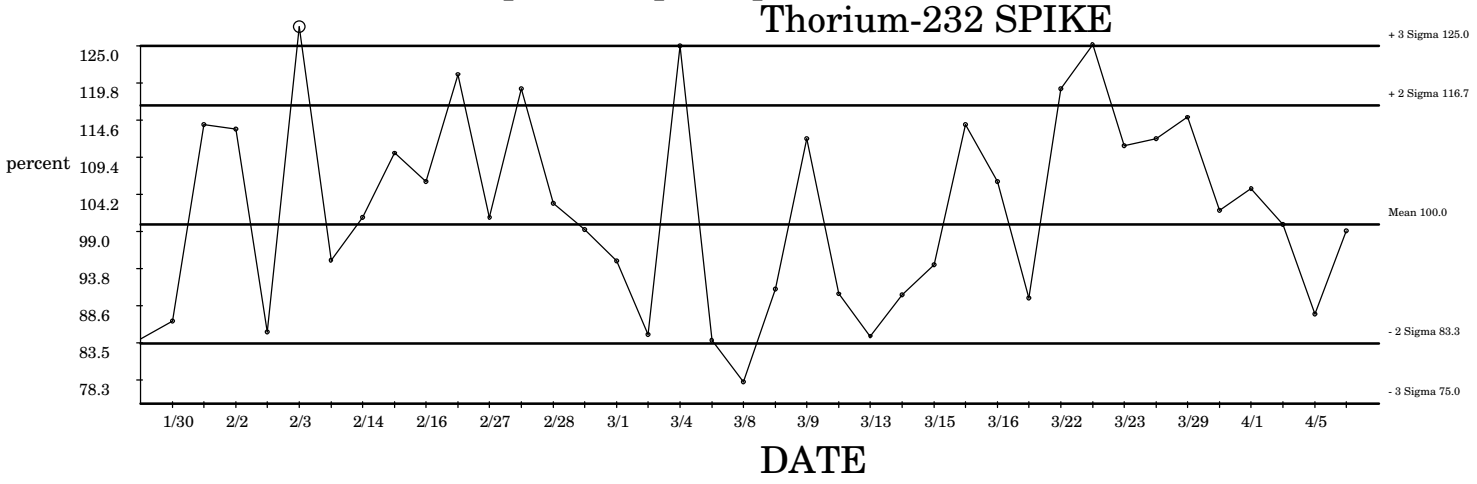


Thorium-232 RER



○ Denotes Outlier

SPC Graph for Alpha SpecThorium in Solids 4/5/2006
Thorium-232 SPIKE



○ Denotes Outlier

Data used for Alpha SpecThorium in Solids 06-APR-2006

Thorium-228 BLANK: Limits LCL = -200.9 UCL = 180.6

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045141	08-MAR-2006 16:39	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
508587	1201044001	09-MAR-2006 11:36	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
508589	1201044009	09-MAR-2006 16:01	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
508286	1201043310	09-MAR-2006 22:56	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
510495	1201048292	13-MAR-2006 13:51	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
510629	1201048586	13-MAR-2006 13:51	DONE	-397	-6	pCi/g	-10	-200	-140	117	181	63.6
511064	1201049590	14-MAR-2006 21:50	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
509832	1201046781	15-MAR-2006 09:16	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511066	1201049594	15-MAR-2006 09:16	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511710	1201051083	15-MAR-2006 13:59	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
509059	1201045077	16-MAR-2006 08:39	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
510647	1201048631	16-MAR-2006 10:55	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511635	1201050914	18-MAR-2006 15:00	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511985	1201051674	18-MAR-2006 15:00	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511630	1201050905	20-MAR-2006 07:42	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511996	1201051700	22-MAR-2006 14:23	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513053	1201054070	22-MAR-2006 19:41	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513051	1201054062	23-MAR-2006 08:31	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
511992	1201051686	23-MAR-2006 21:21	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513052	1201054066	23-MAR-2006 23:50	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513416	1201054856	24-MAR-2006 12:39	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
514672	1201057502	25-MAR-2006 19:34	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513418	1201054864	26-MAR-2006 07:39	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513759	1201055494	27-MAR-2006 17:14	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
513435	1201054914	28-MAR-2006 11:41	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
512017	1201051748	28-MAR-2006 16:43	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
514175	1201056354	29-MAR-2006 15:32	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515260	1201058709	29-MAR-2006 16:59	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515263	1201058717	29-MAR-2006 22:27	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515264	1201058721	30-MAR-2006 09:13	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
514144	1201056273	30-MAR-2006 18:04	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515871	1201060180	31-MAR-2006 23:48	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515258	1201058701	01-APR-2006 09:23	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515550	1201059422	02-APR-2006 07:36	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515556	1201059443	03-APR-2006 06:56	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
516132	1201060710	03-APR-2006 12:42	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
512068	1201051873	05-APR-2006 09:52	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
512060	1201051841	05-APR-2006 10:05	DONE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6
515901	1201060261	05-APR-2006 19:49	DUSE	0	0.16	pCi/g	-10	-200	-140	117	181	63.6

Thorium-228 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
504176	1201033492	08-MAR-2006 13:29	DUSE	338	3.3	percent	57.2	0	-120	230	20.0	86.4
509083	1201045142	08-MAR-2006 16:39	DONE	140	0.96	percent	57.2	0	-120	230	20.0	86.4
508587	1201044002	09-MAR-2006 13:56	DONE	108	0.59	percent	57.2	0	-120	230	20.0	86.4
508589	1201044010	09-MAR-2006 16:01	DONE	13	-0.51	percent	57.2	0	-120	230	20.0	86.4

508286	1201043311	09-MAR-2006 22:56	DUSE	26	-0.37	percent	57.2	0	-120	230	20.0	86.4
510495	1201048293	13-MAR-2006 13:51	DONE	89	0.37	percent	57.2	0	-120	230	20.0	86.4
510629	1201048587	13-MAR-2006 13:51	DONE	11	-0.53	percent	57.2	0	-120	230	20.0	86.4
511064	1201049591	14-MAR-2006 21:50	DUSE	37	-0.23	percent	57.2	0	-120	230	20.0	86.4
509832	1201046782	15-MAR-2006 09:16	DONE	443	4.5	percent	57.2	0	-120	230	20.0	86.4
511066	1201049595	15-MAR-2006 09:16	DUSE	48	-0.1	percent	57.2	0	-120	230	20.0	86.4
511710	1201051084	15-MAR-2006 13:59	DONE	3	-0.63	percent	57.2	0	-120	230	20.0	86.4
509059	1201045078	16-MAR-2006 08:39	DONE	36	-0.24	percent	57.2	0	-120	230	20.0	86.4
510647	1201048632	16-MAR-2006 23:45	DONE	42	-0.18	percent	57.2	0	-120	230	20.0	86.4
511635	1201050915	18-MAR-2006 15:00	DUSE	85	0.32	percent	57.2	0	-120	230	20.0	86.4
511985	1201051675	18-MAR-2006 15:00	DUSE	90	0.38	percent	57.2	0	-120	230	20.0	86.4
511630	1201050906	20-MAR-2006 07:42	DONE	22	-0.41	percent	57.2	0	-120	230	20.0	86.4
513052	1201054067	22-MAR-2006 12:16	DUSE	21	-0.42	percent	57.2	0	-120	230	20.0	86.4
511996	1201051701	22-MAR-2006 14:23	DONE	8	-0.57	percent	57.2	0	-120	230	20.0	86.4
513053	1201054071	22-MAR-2006 19:41	DUSE	112	0.64	percent	57.2	0	-120	230	20.0	86.4
513051	1201054063	23-MAR-2006 08:31	DUSE	36	-0.25	percent	57.2	0	-120	230	20.0	86.4
513416	1201054857	23-MAR-2006 23:50	DONE	50	-0.08	percent	57.2	0	-120	230	20.0	86.4
511992	1201051687	25-MAR-2006 19:34	DONE	10	-0.55	percent	57.2	0	-120	230	20.0	86.4
513418	1201054865	26-MAR-2006 07:39	DONE	2	-0.64	percent	57.2	0	-120	230	20.0	86.4
513759	1201055495	27-MAR-2006 17:14	DUSE	48	-0.1	percent	57.2	0	-120	230	20.0	86.4
513435	1201054915	28-MAR-2006 11:41	DONE	36	-0.24	percent	57.2	0	-120	230	20.0	86.4
512017	1201051749	28-MAR-2006 16:43	DUSE	13	-0.51	percent	57.2	0	-120	230	20.0	86.4
514175	1201056355	29-MAR-2006 15:32	DUSE	26	-0.37	percent	57.2	0	-120	230	20.0	86.4
514144	1201056274	29-MAR-2006 19:54	DONE	39	-0.21	percent	57.2	0	-120	230	20.0	86.4
515263	1201058718	29-MAR-2006 22:27	DUSE	48	-0.11	percent	57.2	0	-120	230	20.0	86.4
515260	1201058710	29-MAR-2006 22:27	DONE	87	0.35	percent	57.2	0	-120	230	20.0	86.4
515264	1201058722	30-MAR-2006 09:13	DUSE	13	-0.51	percent	57.2	0	-120	230	20.0	86.4
515258	1201058702	01-APR-2006 09:23	DONE	44	-0.15	percent	57.2	0	-120	230	20.0	86.4
515550	1201059423	02-APR-2006 07:36	DONE	10	-0.55	percent	57.2	0	-120	230	20.0	86.4
515556	1201059444	03-APR-2006 06:56	DUSE	12	-0.53	percent	57.2	0	-120	230	20.0	86.4
516132	1201060711	03-APR-2006 12:42	DUSE	9	-0.56	percent	57.2	0	-120	230	20.0	86.4
515871	1201060181	04-APR-2006 07:44	DUSE	33	-0.27	percent	57.2	0	-120	230	20.0	86.4
512068	1201051874	05-APR-2006 09:52	DONE	6	-0.59	percent	57.2	0	-120	230	20.0	86.4
512060	1201051842	05-APR-2006 10:05	DONE	29	-0.32	percent	57.2	0	-120	230	20.0	86.4
515901	1201060262	05-APR-2006 17:13	DUSE	6	-0.6	percent	57.2	0	-120	230	20.0	86.4

Thorium-228 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
504176	1201033492	08-MAR-2006 13:29	DUSE	1.38	1.5	num	0.73	0	-0.138	1.59	20.0	0.43
509083	1201045142	08-MAR-2006 16:39	DONE	0.25	-1	num	0.73	0	-0.138	1.59	20.0	0.43
508587	1201044002	09-MAR-2006 13:56	DONE	1.5	1.8	num	0.73	0	-0.138	1.59	20.0	0.43
508589	1201044010	09-MAR-2006 16:01	DONE	0.38	-0.79	num	0.73	0	-0.138	1.59	20.0	0.43
508286	1201043311	09-MAR-2006 22:56	DUSE	0.64	-0.2	num	0.73	0	-0.138	1.59	20.0	0.43
510495	1201048293	13-MAR-2006 13:51	DONE	1.24	1.2	num	0.73	0	-0.138	1.59	20.0	0.43
510629	1201048587	13-MAR-2006 13:51	DONE	0.1	-1	num	0.73	0	-0.138	1.59	20.0	0.43
511064	1201049591	14-MAR-2006 21:50	DUSE	0.61	-0.27	num	0.73	0	-0.138	1.59	20.0	0.43
509832	1201046782	15-MAR-2006 09:16	DONE	0.59	-0.32	num	0.73	0	-0.138	1.59	20.0	0.43
511066	1201049595	15-MAR-2006 09:16	DUSE	0.63	-0.23	num	0.73	0	-0.138	1.59	20.0	0.43
511710	1201051084	15-MAR-2006 13:59	DONE	0.23	-1	num	0.73	0	-0.138	1.59	20.0	0.43
509059	1201045078	16-MAR-2006 08:39	DONE	0.89	0.37	num	0.73	0	-0.138	1.59	20.0	0.43

510647	1201048632	16-MAR-2006 23:45	DONE	1.27	1.3	num	0.73	0	-0.138	1.59	20.0	0.43
511635	1201050915	18-MAR-2006 15:00	DUSE	0.83	0.23	num	0.73	0	-0.138	1.59	20.0	0.43
511985	1201051675	18-MAR-2006 15:00	DUSE	0.81	0.2	num	0.73	0	-0.138	1.59	20.0	0.43
511630	1201050906	20-MAR-2006 07:42	DONE	1.06	0.76	num	0.73	0	-0.138	1.59	20.0	0.43
513052	1201054067	22-MAR-2006 12:16	DUSE	0.71	-0.03	num	0.73	0	-0.138	1.59	20.0	0.43
511996	1201051701	22-MAR-2006 14:23	DONE	0.37	-0.84	num	0.73	0	-0.138	1.59	20.0	0.43
513053	1201054071	22-MAR-2006 19:41	DUSE	1.11	0.89	num	0.73	0	-0.138	1.59	20.0	0.43
513051	1201054063	23-MAR-2006 08:31	DUSE	1.15	0.97	num	0.73	0	-0.138	1.59	20.0	0.43
513416	1201054857	23-MAR-2006 23:50	DONE	1.15	0.98	num	0.73	0	-0.138	1.59	20.0	0.43
511992	1201051687	25-MAR-2006 19:34	DONE	0.4	-0.75	num	0.73	0	-0.138	1.59	20.0	0.43
513418	1201054865	26-MAR-2006 07:39	DONE	0.06	-2	num	0.73	0	-0.138	1.59	20.0	0.43
513759	1201055495	27-MAR-2006 17:14	DUSE	0.59	-0.32	num	0.73	0	-0.138	1.59	20.0	0.43
513435	1201054915	28-MAR-2006 11:41	DONE	0.96	0.55	num	0.73	0	-0.138	1.59	20.0	0.43
512017	1201051749	28-MAR-2006 16:43	DUSE	0.36	-0.86	num	0.73	0	-0.138	1.59	20.0	0.43
514175	1201056355	29-MAR-2006 15:32	DUSE	0.78	0.13	num	0.73	0	-0.138	1.59	20.0	0.43
514144	1201056274	29-MAR-2006 19:54	DONE	0.93	0.48	num	0.73	0	-0.138	1.59	20.0	0.43
515263	1201058718	29-MAR-2006 22:27	DUSE	0.18	-1	num	0.73	0	-0.138	1.59	20.0	0.43
515260	1201058710	29-MAR-2006 22:27	DONE	1.27	1.2	num	0.73	0	-0.138	1.59	20.0	0.43
515264	1201058722	30-MAR-2006 09:13	DUSE	0.17	-1	num	0.73	0	-0.138	1.59	20.0	0.43
515258	1201058702	01-APR-2006 09:23	DONE	1.58	2	num	0.73	0	-0.138	1.59	20.0	0.43
515550	1201059423	02-APR-2006 07:36	DONE	0.67	-0.12	num	0.73	0	-0.138	1.59	20.0	0.43
515556	1201059444	03-APR-2006 06:56	DUSE	0.43	-0.68	num	0.73	0	-0.138	1.59	20.0	0.43
516132	1201060711	03-APR-2006 12:42	DUSE	0.27	-1	num	0.73	0	-0.138	1.59	20.0	0.43
515871	1201060181	04-APR-2006 07:44	DUSE	1.33	1.4	num	0.73	0	-0.138	1.59	20.0	0.43
512068	1201051874	05-APR-2006 09:52	DONE	0.27	-1	num	0.73	0	-0.138	1.59	20.0	0.43
512060	1201051842	05-APR-2006 10:05	DONE	1.02	0.67	num	0.73	0	-0.138	1.59	20.0	0.43
515901	1201060262	05-APR-2006 17:13	DUSE	0.18	-1	num	0.73	0	-0.138	1.59	20.0	0.43

Thorium-230 BLANK: Limits LCL = -235 UCL = 261.7

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045141	08-MAR-2006 16:39	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
508587	1201044001	09-MAR-2006 11:36	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
508589	1201044009	09-MAR-2006 16:01	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
508286	1201043310	09-MAR-2006 22:56	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
510495	1201048292	13-MAR-2006 13:51	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
510629	1201048586	13-MAR-2006 13:51	DONE	517	6.1	pCi/g	13.3	-230	-150	179	262	82.8
511064	1201049590	14-MAR-2006 21:50	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
509832	1201046781	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
511066	1201049594	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
511710	1201051083	15-MAR-2006 13:59	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
509059	1201045077	16-MAR-2006 08:39	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
510647	1201048631	16-MAR-2006 10:55	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
511635	1201050914	18-MAR-2006 15:00	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
511985	1201051674	18-MAR-2006 15:00	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
511630	1201050905	20-MAR-2006 07:42	DONE	1	-0.15	pCi/g	13.3	-230	-150	179	262	82.8
511996	1201051700	22-MAR-2006 14:23	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
513053	1201054070	22-MAR-2006 19:41	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
513051	1201054062	23-MAR-2006 08:31	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
511992	1201051686	23-MAR-2006 21:21	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
513052	1201054066	23-MAR-2006 23:50	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8

513416	1201054856	24-MAR-2006 12:39	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
514672	1201057502	25-MAR-2006 19:34	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
513418	1201054864	26-MAR-2006 07:39	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
513759	1201055494	27-MAR-2006 17:14	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
513435	1201054914	28-MAR-2006 11:41	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
512017	1201051748	28-MAR-2006 16:43	DUSE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
514175	1201056354	29-MAR-2006 15:32	DUSE	1	-0.15	pCi/g	13.3	-230	-150	179	262	82.8
515260	1201058709	29-MAR-2006 16:59	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515263	1201058717	29-MAR-2006 22:27	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515264	1201058721	30-MAR-2006 09:13	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
514144	1201056273	30-MAR-2006 18:04	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515871	1201060180	31-MAR-2006 23:48	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515258	1201058701	01-APR-2006 09:23	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515550	1201059422	02-APR-2006 07:36	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515556	1201059443	03-APR-2006 06:56	DUSE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
516132	1201060710	03-APR-2006 12:42	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
512068	1201051873	05-APR-2006 09:52	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
512060	1201051841	05-APR-2006 10:05	DONE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8
515901	1201060261	05-APR-2006 19:49	DUSE	0	-0.16	pCi/g	13.3	-230	-150	179	262	82.8

Thorium-230 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045142	08-MAR-2006 16:39	DONE	139	2.8	percent	33.9	0	-40	108	20.0	37.1
508587	1201044002	09-MAR-2006 13:56	DONE	9	-0.68	percent	33.9	0	-40	108	20.0	37.1
508589	1201044010	09-MAR-2006 16:01	DONE	21	-0.36	percent	33.9	0	-40	108	20.0	37.1
508286	1201043311	09-MAR-2006 22:56	DONE	6	-0.76	percent	33.9	0	-40	108	20.0	37.1
508285	1201043302	10-MAR-2006 07:04	DONE	18	-0.43	percent	33.9	0	-40	108	20.0	37.1
510495	1201048293	13-MAR-2006 13:51	DONE	89	1.5	percent	33.9	0	-40	108	20.0	37.1
510629	1201048587	13-MAR-2006 13:51	DONE	24	-0.27	percent	33.9	0	-40	108	20.0	37.1
511064	1201049591	14-MAR-2006 21:50	DONE	52	0.48	percent	33.9	0	-40	108	20.0	37.1
509832	1201046782	15-MAR-2006 09:16	DONE	146	3	percent	33.9	0	-40	108	20.0	37.1
511066	1201049595	15-MAR-2006 09:16	DONE	55	0.57	percent	33.9	0	-40	108	20.0	37.1
511710	1201051084	15-MAR-2006 13:59	DONE	9	-0.68	percent	33.9	0	-40	108	20.0	37.1
509059	1201045078	16-MAR-2006 08:39	DONE	32	-0.06	percent	33.9	0	-40	108	20.0	37.1
510647	1201048632	16-MAR-2006 23:45	DONE	14	-0.55	percent	33.9	0	-40	108	20.0	37.1
511635	1201050915	18-MAR-2006 15:00	DONE	57	0.62	percent	33.9	0	-40	108	20.0	37.1
511985	1201051675	18-MAR-2006 15:00	DONE	9	-0.67	percent	33.9	0	-40	108	20.0	37.1
511630	1201050906	20-MAR-2006 07:42	DONE	52	0.48	percent	33.9	0	-40	108	20.0	37.1
513052	1201054067	22-MAR-2006 12:16	DONE	23	-0.28	percent	33.9	0	-40	108	20.0	37.1
511996	1201051701	22-MAR-2006 14:23	DONE	5	-0.79	percent	33.9	0	-40	108	20.0	37.1
513053	1201054071	22-MAR-2006 19:41	DONE	80	1.3	percent	33.9	0	-40	108	20.0	37.1
513051	1201054063	23-MAR-2006 08:31	DONE	15	-0.52	percent	33.9	0	-40	108	20.0	37.1
513416	1201054857	23-MAR-2006 23:50	DONE	40	0.16	percent	33.9	0	-40	108	20.0	37.1
511992	1201051687	25-MAR-2006 19:34	DONE	34	-0.01	percent	33.9	0	-40	108	20.0	37.1
513418	1201054865	26-MAR-2006 07:39	DONE	64	0.8	percent	33.9	0	-40	108	20.0	37.1
513759	1201055495	27-MAR-2006 17:14	DONE	21	-0.35	percent	33.9	0	-40	108	20.0	37.1
513435	1201054915	28-MAR-2006 11:41	DONE	122	2.4	percent	33.9	0	-40	108	20.0	37.1
512017	1201051749	28-MAR-2006 16:43	DUSE	16	-0.48	percent	33.9	0	-40	108	20.0	37.1
514175	1201056355	29-MAR-2006 15:32	DUSE	1	-0.89	percent	33.9	0	-40	108	20.0	37.1
514144	1201056274	29-MAR-2006 19:54	DONE	8	-0.7	percent	33.9	0	-40	108	20.0	37.1

515263	1201058718	29-MAR-2006 22:27	DONE	35	0.04	percent	33.9	0	-40	108	20.0	37.1
515260	1201058710	29-MAR-2006 22:27	DONE	23	-0.3	percent	33.9	0	-40	108	20.0	37.1
515264	1201058722	30-MAR-2006 09:13	DONE	32	-0.06	percent	33.9	0	-40	108	20.0	37.1
515258	1201058702	01-APR-2006 09:23	DONE	20	-0.37	percent	33.9	0	-40	108	20.0	37.1
515550	1201059423	02-APR-2006 07:36	DONE	11	-0.61	percent	33.9	0	-40	108	20.0	37.1
515556	1201059444	03-APR-2006 06:56	DUSE	30	-0.11	percent	33.9	0	-40	108	20.0	37.1
516132	1201060711	03-APR-2006 12:42	DONE	9	-0.69	percent	33.9	0	-40	108	20.0	37.1
515871	1201060181	04-APR-2006 07:44	DONE	1	-0.89	percent	33.9	0	-40	108	20.0	37.1
512068	1201051874	05-APR-2006 09:52	DONE	3	-0.85	percent	33.9	0	-40	108	20.0	37.1
512060	1201051842	05-APR-2006 10:05	DONE	2	-0.87	percent	33.9	0	-40	108	20.0	37.1
515901	1201060262	05-APR-2006 17:13	DUSE	0	-0.91	percent	33.9	0	-40	108	20.0	37.1

Thorium-230 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
458673	1200926205	08-SEP-2005 08:40	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
457992	1200924520	15-SEP-2005 16:09	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
460792	1200931180	16-SEP-2005 13:43	DONE	120	2.3	percent	100	75.0	83.3	117	125	8.33
458331	1200925418	20-SEP-2005 15:10	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
460835	1200931303	20-SEP-2005 19:29	DONE	88	-2	percent	100	75.0	83.3	117	125	8.33
458322	1200925402	21-SEP-2005 12:54	DONE	75	-3	percent	100	75.0	83.3	117	125	8.33
458329	1200925414	21-SEP-2005 12:55	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
468546	1200949878	08-OCT-2005 11:20	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
469909	1200953017	13-OCT-2005 14:33	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
474649	1200964500	26-OCT-2005 11:44	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
473628	1200962206	29-OCT-2005 17:54	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
477050	1200970382	12-NOV-2005 14:49	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
484101	1200987270	30-NOV-2005 14:54	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
501251	1201026784	08-FEB-2006 22:33	DONE	104	0.48	percent	100	75.0	83.3	117	125	8.33
502256	1201029224	13-FEB-2006 20:20	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
503140	1201031089	15-FEB-2006 23:29	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
503146	1201031097	16-FEB-2006 21:40	DONE	108	0.96	percent	100	75.0	83.3	117	125	8.33
504921	1201035218	18-FEB-2006 21:35	DONE	94	-0.78	percent	100	75.0	83.3	117	125	8.33
505231	1201036007	21-FEB-2006 23:52	DONE	92	-0.97	percent	100	75.0	83.3	117	125	8.33
505233	1201036015	21-FEB-2006 23:52	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
505622	1201036907	22-FEB-2006 21:19	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
505914	1201037581	28-FEB-2006 20:09	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
508120	1201042932	02-MAR-2006 22:23	DONE	102	0.22	percent	100	75.0	83.3	117	125	8.33
508286	1201043313	09-MAR-2006 22:56	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
511064	1201049593	15-MAR-2006 07:51	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
511066	1201049597	15-MAR-2006 09:16	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
509059	1201045080	16-MAR-2006 09:25	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
511635	1201050917	18-MAR-2006 15:00	DONE	93	-0.89	percent	100	75.0	83.3	117	125	8.33
511985	1201051677	18-MAR-2006 15:00	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
513053	1201054073	21-MAR-2006 17:40	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
513052	1201054069	22-MAR-2006 12:16	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
513051	1201054065	23-MAR-2006 08:31	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
514672	1201057504	25-MAR-2006 19:34	DONE	106	0.67	percent	100	75.0	83.3	117	125	8.33
513759	1201055497	28-MAR-2006 14:57	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
512017	1201051750	28-MAR-2006 16:43	DONE	98	-0.28	percent	100	75.0	83.3	117	125	8.33
515263	1201058720	29-MAR-2006 22:27	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33

515264	1201058724	30-MAR-2006 09:13	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
516132	1201060713	03-APR-2006 12:42	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
515871	1201060183	04-APR-2006 07:44	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33

Thorium-230 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045142	08-MAR-2006 16:39	DONE	0.63	-0.33	num	0.85	0	-0.463	2.16	20.0	0.66
508587	1201044002	09-MAR-2006 13:56	DONE	0.1	-1	num	0.85	0	-0.463	2.16	20.0	0.66
508589	1201044010	09-MAR-2006 16:01	DONE	0.71	-0.21	num	0.85	0	-0.463	2.16	20.0	0.66
508286	1201043311	09-MAR-2006 22:56	DONE	0.21	-0.98	num	0.85	0	-0.463	2.16	20.0	0.66
508285	1201043302	10-MAR-2006 07:04	DONE	1.72	1.3	num	0.85	0	-0.463	2.16	20.0	0.66
510495	1201048293	13-MAR-2006 13:51	DONE	0.99	0.21	num	0.85	0	-0.463	2.16	20.0	0.66
510629	1201048587	13-MAR-2006 13:51	DONE	0.77	-0.11	num	0.85	0	-0.463	2.16	20.0	0.66
511064	1201049591	14-MAR-2006 21:50	DONE	1.41	0.87	num	0.85	0	-0.463	2.16	20.0	0.66
509832	1201046782	15-MAR-2006 09:16	DONE	1.47	0.95	num	0.85	0	-0.463	2.16	20.0	0.66
511066	1201049595	15-MAR-2006 09:16	DONE	1.4	0.84	num	0.85	0	-0.463	2.16	20.0	0.66
511710	1201051084	15-MAR-2006 13:59	DONE	0.6	-0.37	num	0.85	0	-0.463	2.16	20.0	0.66
509059	1201045078	16-MAR-2006 08:39	DONE	0.78	-0.1	num	0.85	0	-0.463	2.16	20.0	0.66
510647	1201048632	16-MAR-2006 23:45	DONE	0.64	-0.32	num	0.85	0	-0.463	2.16	20.0	0.66
511635	1201050915	18-MAR-2006 15:00	DONE	1.47	0.95	num	0.85	0	-0.463	2.16	20.0	0.66
511985	1201051675	18-MAR-2006 15:00	DONE	0.22	-0.95	num	0.85	0	-0.463	2.16	20.0	0.66
511630	1201050906	20-MAR-2006 07:42	DONE	1.15	0.46	num	0.85	0	-0.463	2.16	20.0	0.66
513052	1201054067	22-MAR-2006 12:16	DONE	0.83	-0.03	num	0.85	0	-0.463	2.16	20.0	0.66
511996	1201051701	22-MAR-2006 14:23	DONE	0.24	-0.93	num	0.85	0	-0.463	2.16	20.0	0.66
513053	1201054071	22-MAR-2006 19:41	DONE	2.38	2.3	num	0.85	0	-0.463	2.16	20.0	0.66
513051	1201054063	23-MAR-2006 08:31	DONE	0.55	-0.45	num	0.85	0	-0.463	2.16	20.0	0.66
513416	1201054857	23-MAR-2006 23:50	DONE	1.28	0.66	num	0.85	0	-0.463	2.16	20.0	0.66
511992	1201051687	25-MAR-2006 19:34	DONE	2.7	2.8	num	0.85	0	-0.463	2.16	20.0	0.66
513418	1201054865	26-MAR-2006 07:39	DONE	1.74	1.4	num	0.85	0	-0.463	2.16	20.0	0.66
513759	1201055495	27-MAR-2006 17:14	DONE	0.71	-0.2	num	0.85	0	-0.463	2.16	20.0	0.66
513435	1201054915	28-MAR-2006 11:41	DONE	1.83	1.5	num	0.85	0	-0.463	2.16	20.0	0.66
512017	1201051749	28-MAR-2006 16:43	DUSE	0.41	-0.66	num	0.85	0	-0.463	2.16	20.0	0.66
514175	1201056355	29-MAR-2006 15:32	DUSE	0.06	-1	num	0.85	0	-0.463	2.16	20.0	0.66
514144	1201056274	29-MAR-2006 19:54	DONE	0.31	-0.82	num	0.85	0	-0.463	2.16	20.0	0.66
515263	1201058718	29-MAR-2006 22:27	DONE	0.92	0.1	num	0.85	0	-0.463	2.16	20.0	0.66
515260	1201058710	29-MAR-2006 22:27	DONE	0.31	-0.82	num	0.85	0	-0.463	2.16	20.0	0.66
515264	1201058722	30-MAR-2006 09:13	DONE	1.08	0.35	num	0.85	0	-0.463	2.16	20.0	0.66
515258	1201058702	01-APR-2006 09:23	DONE	0.9	0.07	num	0.85	0	-0.463	2.16	20.0	0.66
515550	1201059423	02-APR-2006 07:36	DONE	0.78	-0.1	num	0.85	0	-0.463	2.16	20.0	0.66
515556	1201059444	03-APR-2006 06:56	DUSE	1.14	0.45	num	0.85	0	-0.463	2.16	20.0	0.66
516132	1201060711	03-APR-2006 12:42	DONE	0.38	-0.72	num	0.85	0	-0.463	2.16	20.0	0.66
515871	1201060181	04-APR-2006 07:44	DONE	0.05	-1	num	0.85	0	-0.463	2.16	20.0	0.66
512068	1201051874	05-APR-2006 09:52	DONE	0.11	-1	num	0.85	0	-0.463	2.16	20.0	0.66
512060	1201051842	05-APR-2006 10:05	DONE	0.04	-1	num	0.85	0	-0.463	2.16	20.0	0.66
515901	1201060262	05-APR-2006 17:13	DUSE	0.02	-1	num	0.85	0	-0.463	2.16	20.0	0.66

Thorium-230 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
410815	1200810919	28-MAR-2005 18:10	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
410804	1200810904	28-MAR-2005 18:10	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33

412596	1200815153	07-APR-2005 09:33	DONE	96	-0.49	percent	100	75.0	83.3	117	125	8.33
415141	1200821177	09-APR-2005 13:40	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
419009	1200830534	25-APR-2005 16:48	DONE	93	-0.85	percent	100	75.0	83.3	117	125	8.33
421627	1200836822	04-MAY-2005 11:05	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
458673	1200926204	08-SEP-2005 08:40	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
458331	1200925417	19-SEP-2005 17:20	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33
458329	1200925413	22-SEP-2005 10:43	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
458322	1200925401	22-SEP-2005 10:43	DONE	67	-4	percent	100	75.0	83.3	117	125	8.33
468546	1200949877	08-OCT-2005 11:20	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
474649	1200964499	26-OCT-2005 11:44	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
484101	1200987269	30-NOV-2005 14:54	DONE	100	-0.04	percent	100	75.0	83.3	117	125	8.33
501251	1201026783	08-FEB-2006 22:33	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
501251	1201026786	08-FEB-2006 22:33	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
502256	1201029223	13-FEB-2006 20:20	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
503140	1201031088	15-FEB-2006 23:29	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
503146	1201031096	16-FEB-2006 21:40	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
504921	1201035217	18-FEB-2006 21:35	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
505231	1201036006	21-FEB-2006 23:52	DONE	88	-1	percent	100	75.0	83.3	117	125	8.33
505233	1201036014	21-FEB-2006 23:52	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
505622	1201036906	22-FEB-2006 21:19	DONE	86	-2	percent	100	75.0	83.3	117	125	8.33
505914	1201037580	27-FEB-2006 22:01	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
508120	1201042931	02-MAR-2006 22:23	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
508286	1201043312	09-MAR-2006 22:56	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
511064	1201049592	14-MAR-2006 21:50	DONE	97	-0.31	percent	100	75.0	83.3	117	125	8.33
511066	1201049596	15-MAR-2006 09:16	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
509059	1201045079	17-MAR-2006 09:53	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
511985	1201051676	18-MAR-2006 15:00	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
511635	1201050916	20-MAR-2006 16:57	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
513053	1201054072	21-MAR-2006 17:40	DONE	95	-0.65	percent	100	75.0	83.3	117	125	8.33
513052	1201054068	22-MAR-2006 12:16	DONE	98	-0.22	percent	100	75.0	83.3	117	125	8.33
513051	1201054064	23-MAR-2006 08:31	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
514672	1201057503	25-MAR-2006 19:34	DONE	123	2.8	percent	100	75.0	83.3	117	125	8.33
513759	1201055496	27-MAR-2006 17:14	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
515263	1201058719	29-MAR-2006 22:27	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
515264	1201058723	30-MAR-2006 09:13	DONE	96	-0.51	percent	100	75.0	83.3	117	125	8.33
515871	1201060182	31-MAR-2006 23:48	DONE	79	-2	percent	100	75.0	83.3	117	125	8.33
516132	1201060712	03-APR-2006 12:42	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33

Thorium-232 BLANK: Limits LCL = -65 UCL = 72.4

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045141	08-MAR-2006 16:39	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
508587	1201044001	09-MAR-2006 11:36	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
508589	1201044009	09-MAR-2006 16:01	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
508286	1201043310	09-MAR-2006 22:56	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
510495	1201048292	13-MAR-2006 13:51	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
510629	1201048586	13-MAR-2006 13:51	DONE	143	6.1	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511064	1201049590	14-MAR-2006 21:50	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
509832	1201046781	15-MAR-2006 09:16	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511066	1201049594	15-MAR-2006 09:16	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511710	1201051083	15-MAR-2006 13:59	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9

509059	1201045077	16-MAR-2006 08:39	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
510647	1201048631	16-MAR-2006 10:55	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511635	1201050914	18-MAR-2006 15:00	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511985	1201051674	18-MAR-2006 15:00	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511630	1201050905	20-MAR-2006 07:42	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511996	1201051700	22-MAR-2006 14:23	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513053	1201054070	22-MAR-2006 19:41	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513051	1201054062	23-MAR-2006 08:31	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
511992	1201051686	23-MAR-2006 21:21	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513052	1201054066	23-MAR-2006 23:50	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513416	1201054856	24-MAR-2006 12:39	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
514672	1201057502	25-MAR-2006 19:34	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513418	1201054864	26-MAR-2006 07:39	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513759	1201055494	27-MAR-2006 17:14	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
513435	1201054914	28-MAR-2006 11:41	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
512017	1201051748	28-MAR-2006 16:43	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
514175	1201056354	29-MAR-2006 15:32	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515260	1201058709	29-MAR-2006 16:59	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515263	1201058717	29-MAR-2006 22:27	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515264	1201058721	30-MAR-2006 09:13	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
514144	1201056273	30-MAR-2006 18:04	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515871	1201060180	31-MAR-2006 23:48	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515258	1201058701	01-APR-2006 09:23	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515550	1201059422	02-APR-2006 07:36	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515556	1201059443	03-APR-2006 06:56	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
516132	1201060710	03-APR-2006 12:42	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
512068	1201051873	05-APR-2006 09:52	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
512060	1201051841	05-APR-2006 10:05	DONE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9
515901	1201060261	05-APR-2006 19:49	DUSE	0	-0.16	pCi/g	3.67	-65	-42	49.5	72.4	22.9

Thorium-232 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045142	08-MAR-2006 16:39	DONE	2121	5.5	percent	126	0	-590	846	20.0	360
508587	1201044002	09-MAR-2006 13:56	DONE	59	-0.18	percent	126	0	-590	846	20.0	360
508589	1201044010	09-MAR-2006 16:01	DONE	48	-0.22	percent	126	0	-590	846	20.0	360
508286	1201043311	09-MAR-2006 22:56	DUSE	38	-0.25	percent	126	0	-590	846	20.0	360
508285	1201043302	10-MAR-2006 07:04	DONE	1	-0.35	percent	126	0	-590	846	20.0	360
510495	1201048293	13-MAR-2006 13:51	DONE	277	0.42	percent	126	0	-590	846	20.0	360
510629	1201048587	13-MAR-2006 13:51	DONE	20	-0.3	percent	126	0	-590	846	20.0	360
511064	1201049591	14-MAR-2006 21:50	DUSE	48	-0.22	percent	126	0	-590	846	20.0	360
509832	1201046782	15-MAR-2006 09:16	DONE	580	1.3	percent	126	0	-590	846	20.0	360
511066	1201049595	15-MAR-2006 09:16	DUSE	71	-0.15	percent	126	0	-590	846	20.0	360
511710	1201051084	15-MAR-2006 13:59	DONE	3	-0.34	percent	126	0	-590	846	20.0	360
509059	1201045078	16-MAR-2006 08:39	DONE	78	-0.13	percent	126	0	-590	846	20.0	360
510647	1201048632	16-MAR-2006 23:45	DONE	28	-0.27	percent	126	0	-590	846	20.0	360
511635	1201050915	18-MAR-2006 15:00	DUSE	1	-0.35	percent	126	0	-590	846	20.0	360
511985	1201051675	18-MAR-2006 15:00	DUSE	88	-0.11	percent	126	0	-590	846	20.0	360
511630	1201050906	20-MAR-2006 07:42	DONE	45	-0.22	percent	126	0	-590	846	20.0	360
513052	1201054067	22-MAR-2006 12:16	DUSE	39	-0.24	percent	126	0	-590	846	20.0	360
511996	1201051701	22-MAR-2006 14:23	DONE	7	-0.33	percent	126	0	-590	846	20.0	360

513053	1201054071	22-MAR-2006 19:41	DUSE	29	-0.27	percent	126	0	-590	846	20.0	360
513051	1201054063	23-MAR-2006 08:31	DUSE	56	-0.19	percent	126	0	-590	846	20.0	360
513416	1201054857	23-MAR-2006 23:50	DONE	40	-0.24	percent	126	0	-590	846	20.0	360
511992	1201051687	25-MAR-2006 19:34	DONE	13	-0.31	percent	126	0	-590	846	20.0	360
513418	1201054865	26-MAR-2006 07:39	DONE	4	-0.34	percent	126	0	-590	846	20.0	360
513759	1201055495	27-MAR-2006 17:14	DUSE	24	-0.28	percent	126	0	-590	846	20.0	360
513435	1201054915	28-MAR-2006 11:41	DONE	744	1.7	percent	126	0	-590	846	20.0	360
512017	1201051749	28-MAR-2006 16:43	DONE	3	-0.34	percent	126	0	-590	846	20.0	360
514175	1201056355	29-MAR-2006 15:32	DUSE	44	-0.23	percent	126	0	-590	846	20.0	360
514144	1201056274	29-MAR-2006 19:54	DONE	16	-0.31	percent	126	0	-590	846	20.0	360
515263	1201058718	29-MAR-2006 22:27	DUSE	155	0.08	percent	126	0	-590	846	20.0	360
515260	1201058710	29-MAR-2006 22:27	DONE	38	-0.24	percent	126	0	-590	846	20.0	360
515264	1201058722	30-MAR-2006 09:13	DUSE	17	-0.3	percent	126	0	-590	846	20.0	360
515258	1201058702	01-APR-2006 09:23	DONE	18	-0.3	percent	126	0	-590	846	20.0	360
515550	1201059423	02-APR-2006 07:36	DONE	10	-0.32	percent	126	0	-590	846	20.0	360
515556	1201059444	03-APR-2006 06:56	DUSE	27	-0.28	percent	126	0	-590	846	20.0	360
516132	1201060711	03-APR-2006 12:42	DUSE	31	-0.26	percent	126	0	-590	846	20.0	360
515871	1201060181	04-APR-2006 07:44	DUSE	2	-0.34	percent	126	0	-590	846	20.0	360
512068	1201051874	05-APR-2006 09:52	DONE	35	-0.25	percent	126	0	-590	846	20.0	360
512060	1201051842	05-APR-2006 10:05	DONE	24	-0.28	percent	126	0	-590	846	20.0	360
515901	1201060262	05-APR-2006 17:13	DUSE	27	-0.27	percent	126	0	-590	846	20.0	360

Thorium-232 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
497257	1201017587	30-JAN-2006 10:15	DONE	102	0.19	percent	100	75.0	83.3	117	125	8.33
498900	1201021188	02-FEB-2006 08:12	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
499692	1201023013	02-FEB-2006 21:07	DONE	106	0.67	percent	100	75.0	83.3	117	125	8.33
498910	1201021223	03-FEB-2006 12:18	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
499049	1201021535	03-FEB-2006 12:18	DONE	98	-0.26	percent	100	75.0	83.3	117	125	8.33
500715	1201025585	13-FEB-2006 16:03	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
502831	1201030463	14-FEB-2006 20:33	DUSE	96	-0.44	percent	100	75.0	83.3	117	125	8.33
503670	1201032267	15-FEB-2006 23:29	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
503667	1201032256	16-FEB-2006 21:40	DONE	92	-0.98	percent	100	75.0	83.3	117	125	8.33
499044	1201021522	17-FEB-2006 16:17	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
505917	1201037593	27-FEB-2006 12:52	DUSE	97	-0.36	percent	100	75.0	83.3	117	125	8.33
507247	1201040735	28-FEB-2006 15:46	DONE	125	3.00	percent	100	75.0	83.3	117	125	8.33
504463	1201034136	28-FEB-2006 15:47	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
504462	1201034132	01-MAR-2006 16:22	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
504467	1201034152	01-MAR-2006 16:22	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
508044	1201042748	02-MAR-2006 22:23	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
508046	1201042756	06-MAR-2006 20:51	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
508285	1201043299	07-MAR-2006 23:35	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
507801	1201042216	08-MAR-2006 08:59	DONE	98	-0.23	percent	100	75.0	83.3	117	125	8.33
509083	1201045144	09-MAR-2006 07:20	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
508587	1201044004	10-MAR-2006 13:18	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
508589	1201044012	11-MAR-2006 09:34	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
510495	1201048295	13-MAR-2006 13:51	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
510629	1201048589	13-MAR-2006 13:51	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
509832	1201046784	15-MAR-2006 09:16	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
511710	1201051086	15-MAR-2006 13:59	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33

510647	1201048634	16-MAR-2006 23:45	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
511630	1201050908	20-MAR-2006 07:42	DONE	95	-0.59	percent	100	75.0	83.3	117	125	8.33
511996	1201051703	22-MAR-2006 14:23	DONE	108	0.96	percent	100	75.0	83.3	117	125	8.33
511992	1201051689	23-MAR-2006 21:21	DONE	99	-0.08	percent	100	75.0	83.3	117	125	8.33
513416	1201054859	23-MAR-2006 23:50	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
513418	1201054867	27-MAR-2006 14:43	DONE	99	-0.07	percent	100	75.0	83.3	117	125	8.33
513435	1201054917	28-MAR-2006 11:41	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
514144	1201056276	29-MAR-2006 19:54	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
515260	1201058712	29-MAR-2006 22:27	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
515258	1201058704	01-APR-2006 09:23	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
515550	1201059425	02-APR-2006 07:36	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
512068	1201051876	05-APR-2006 09:52	DONE	88	-2	percent	100	75.0	83.3	117	125	8.33
512060	1201051844	05-APR-2006 10:05	DONE	92	-0.92	percent	100	75.0	83.3	117	125	8.33

Thorium-232 RER: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
509083	1201045142	08-MAR-2006 16:39	DONE	0.46	-0.64	num	0.83	0	-0.314	1.97	20.0	0.57
508587	1201044002	09-MAR-2006 13:56	DONE	0.93	0.18	num	0.83	0	-0.314	1.97	20.0	0.57
508589	1201044010	09-MAR-2006 16:01	DONE	1.49	1.2	num	0.83	0	-0.314	1.97	20.0	0.57
508286	1201043311	09-MAR-2006 22:56	DUSE	1.2	0.65	num	0.83	0	-0.314	1.97	20.0	0.57
508285	1201043302	10-MAR-2006 07:04	DONE	0.09	-1	num	0.83	0	-0.314	1.97	20.0	0.57
510495	1201048293	13-MAR-2006 13:51	DONE	1.46	1.1	num	0.83	0	-0.314	1.97	20.0	0.57
510629	1201048587	13-MAR-2006 13:51	DONE	0.12	-1	num	0.83	0	-0.314	1.97	20.0	0.57
511064	1201049591	14-MAR-2006 21:50	DUSE	1.05	0.38	num	0.83	0	-0.314	1.97	20.0	0.57
509832	1201046782	15-MAR-2006 09:16	DONE	0.68	-0.26	num	0.83	0	-0.314	1.97	20.0	0.57
511066	1201049595	15-MAR-2006 09:16	DUSE	1.01	0.32	num	0.83	0	-0.314	1.97	20.0	0.57
511710	1201051084	15-MAR-2006 13:59	DONE	0.23	-1	num	0.83	0	-0.314	1.97	20.0	0.57
509059	1201045078	16-MAR-2006 08:39	DONE	1.76	1.6	num	0.83	0	-0.314	1.97	20.0	0.57
510647	1201048632	16-MAR-2006 23:45	DONE	0.9	0.12	num	0.83	0	-0.314	1.97	20.0	0.57
511635	1201050915	18-MAR-2006 15:00	DUSE	0.01	-1	num	0.83	0	-0.314	1.97	20.0	0.57
511985	1201051675	18-MAR-2006 15:00	DUSE	1.84	1.8	num	0.83	0	-0.314	1.97	20.0	0.57
511630	1201050906	20-MAR-2006 07:42	DONE	0.64	-0.33	num	0.83	0	-0.314	1.97	20.0	0.57
513052	1201054067	22-MAR-2006 12:16	DUSE	1.06	0.4	num	0.83	0	-0.314	1.97	20.0	0.57
511996	1201051701	22-MAR-2006 14:23	DONE	0.31	-0.9	num	0.83	0	-0.314	1.97	20.0	0.57
513053	1201054071	22-MAR-2006 19:41	DUSE	0.59	-0.41	num	0.83	0	-0.314	1.97	20.0	0.57
513051	1201054063	23-MAR-2006 08:31	DUSE	1.65	1.4	num	0.83	0	-0.314	1.97	20.0	0.57
513416	1201054857	23-MAR-2006 23:50	DONE	0.82	-0.02	num	0.83	0	-0.314	1.97	20.0	0.57
511992	1201051687	25-MAR-2006 19:34	DONE	0.42	-0.71	num	0.83	0	-0.314	1.97	20.0	0.57
513418	1201054865	26-MAR-2006 07:39	DONE	0.09	-1	num	0.83	0	-0.314	1.97	20.0	0.57
513759	1201055495	27-MAR-2006 17:14	DUSE	0.31	-0.91	num	0.83	0	-0.314	1.97	20.0	0.57
513435	1201054915	28-MAR-2006 11:41	DONE	1.7	1.5	num	0.83	0	-0.314	1.97	20.0	0.57
512017	1201051749	28-MAR-2006 16:43	DONE	0.08	-1	num	0.83	0	-0.314	1.97	20.0	0.57
514175	1201056355	29-MAR-2006 15:32	DUSE	1.81	1.7	num	0.83	0	-0.314	1.97	20.0	0.57
514144	1201056274	29-MAR-2006 19:54	DONE	0.47	-0.64	num	0.83	0	-0.314	1.97	20.0	0.57
515263	1201058718	29-MAR-2006 22:27	DUSE	1.88	1.8	num	0.83	0	-0.314	1.97	20.0	0.57
515260	1201058710	29-MAR-2006 22:27	DONE	0.48	-0.6	num	0.83	0	-0.314	1.97	20.0	0.57
515264	1201058722	30-MAR-2006 09:13	DUSE	0.24	-1	num	0.83	0	-0.314	1.97	20.0	0.57
515258	1201058702	01-APR-2006 09:23	DONE	0.61	-0.39	num	0.83	0	-0.314	1.97	20.0	0.57
515550	1201059423	02-APR-2006 07:36	DONE	0.7	-0.22	num	0.83	0	-0.314	1.97	20.0	0.57
515556	1201059444	03-APR-2006 06:56	DUSE	0.91	0.15	num	0.83	0	-0.314	1.97	20.0	0.57

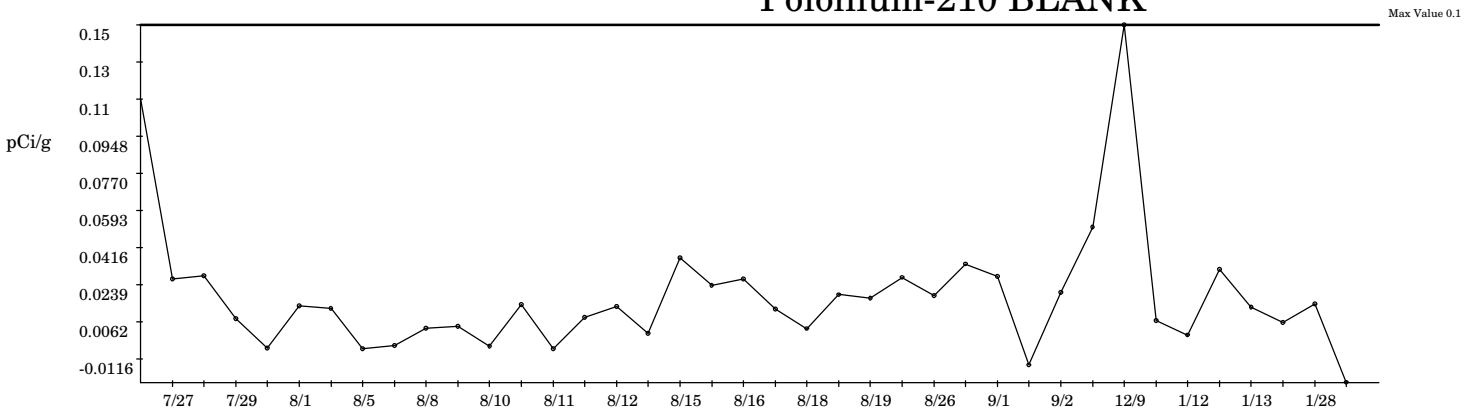
516132	1201060711	03-APR-2006 12:42	DUSE	1.08	0.43	num	0.83	0	-0.314	1.97	20.0	0.57
515871	1201060181	04-APR-2006 07:44	DUSE	0.09	-1	num	0.83	0	-0.314	1.97	20.0	0.57
512068	1201051874	05-APR-2006 09:52	DONE	1.48	1.1	num	0.83	0	-0.314	1.97	20.0	0.57
512060	1201051842	05-APR-2006 10:05	DONE	0.65	-0.31	num	0.83	0	-0.314	1.97	20.0	0.57
515901	1201060262	05-APR-2006 17:13	DUSE	1.04	0.37	num	0.83	0	-0.314	1.97	20.0	0.57

Thorium-232 SPIKE: Limits LCL = 75 UCL = 125

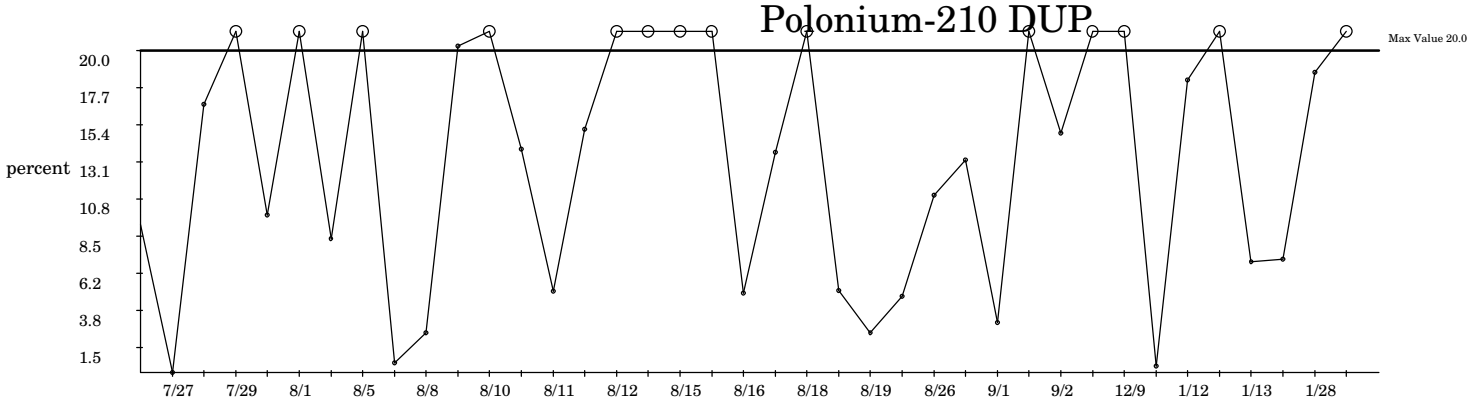
Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
494962	1201012310	27-JAN-2006 08:18	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
497257	1201017586	30-JAN-2006 10:15	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
498900	1201021187	02-FEB-2006 21:06	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
499692	1201023012	02-FEB-2006 21:07	DONE	113	1.6	percent	100	75.0	83.3	117	125	8.33
498910	1201021222	03-FEB-2006 12:18	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
499049	1201021534	03-FEB-2006 12:18	DONE	133	4	percent	100	75.0	83.3	117	125	8.33
500715	1201025584	13-FEB-2006 16:03	DONE	95	-0.6	percent	100	75.0	83.3	117	125	8.33
502831	1201030462	14-FEB-2006 20:33	DUSE	101	0.12	percent	100	75.0	83.3	117	125	8.33
503670	1201032266	15-FEB-2006 23:29	DONE	110	1.2	percent	100	75.0	83.3	117	125	8.33
503667	1201032255	16-FEB-2006 21:41	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
499044	1201021521	17-FEB-2006 16:17	DONE	121	2.5	percent	100	75.0	83.3	117	125	8.33
505917	1201037592	27-FEB-2006 12:52	DUSE	101	0.12	percent	100	75.0	83.3	117	125	8.33
507247	1201040734	28-FEB-2006 15:46	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
504463	1201034135	28-FEB-2006 15:47	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
504462	1201034131	01-MAR-2006 16:22	DONE	99	-0.08	percent	100	75.0	83.3	117	125	8.33
504467	1201034151	01-MAR-2006 16:22	DONE	95	-0.61	percent	100	75.0	83.3	117	125	8.33
508044	1201042747	02-MAR-2006 22:23	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
508046	1201042755	04-MAR-2006 21:34	DONE	125	3.00	percent	100	75.0	83.3	117	125	8.33
508285	1201043303	07-MAR-2006 23:35	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
507801	1201042215	08-MAR-2006 08:59	DONE	78	-3	percent	100	75.0	83.3	117	125	8.33
509083	1201045143	08-MAR-2006 16:39	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
508587	1201044003	09-MAR-2006 13:56	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
508589	1201044011	09-MAR-2006 16:01	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
510495	1201048294	13-MAR-2006 13:51	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
510629	1201048588	13-MAR-2006 13:51	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
509832	1201046783	15-MAR-2006 09:16	DONE	94	-0.67	percent	100	75.0	83.3	117	125	8.33
511710	1201051085	15-MAR-2006 13:59	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
510647	1201048633	16-MAR-2006 23:45	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
511630	1201050907	20-MAR-2006 07:42	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
511996	1201051702	22-MAR-2006 14:23	DONE	119	2.3	percent	100	75.0	83.3	117	125	8.33
511992	1201051688	23-MAR-2006 21:21	DONE	125	3	percent	100	75.0	83.3	117	125	8.33
513416	1201054858	23-MAR-2006 23:50	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
513418	1201054866	26-MAR-2006 07:39	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
514144	1201056275	29-MAR-2006 19:54	DONE	115	1.8	percent	100	75.0	83.3	117	125	8.33
515260	1201058711	29-MAR-2006 22:27	DONE	102	0.24	percent	100	75.0	83.3	117	125	8.33
515258	1201058703	01-APR-2006 09:23	DONE	105	0.6	percent	100	75.0	83.3	117	125	8.33
515550	1201059424	02-APR-2006 07:36	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
512068	1201051875	05-APR-2006 09:52	DONE	88	-2	percent	100	75.0	83.3	117	125	8.33
512060	1201051843	05-APR-2006 10:05	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33

SPC Graph for Alpha SpecPolonium in Solids 4/9/2006

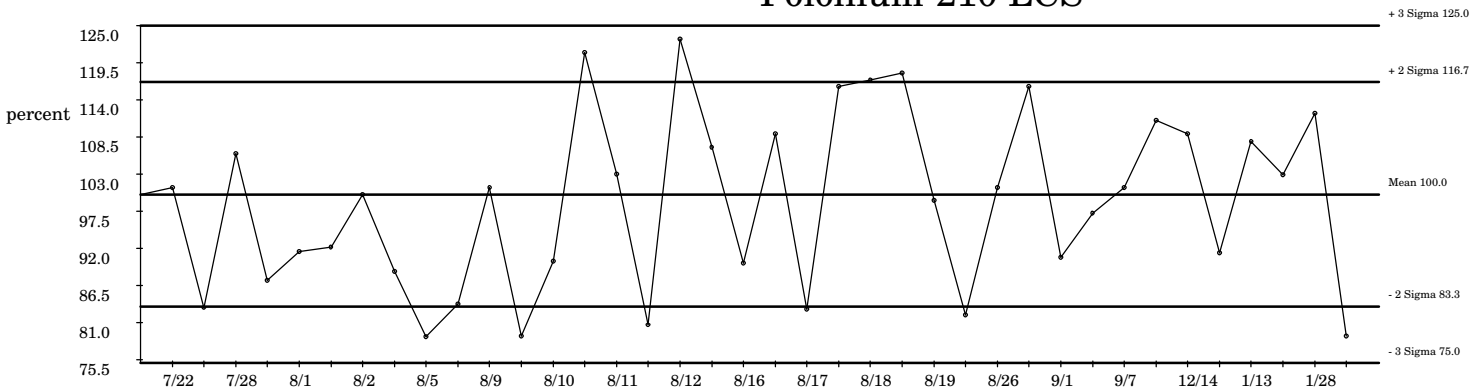
Polonium-210 BLANK



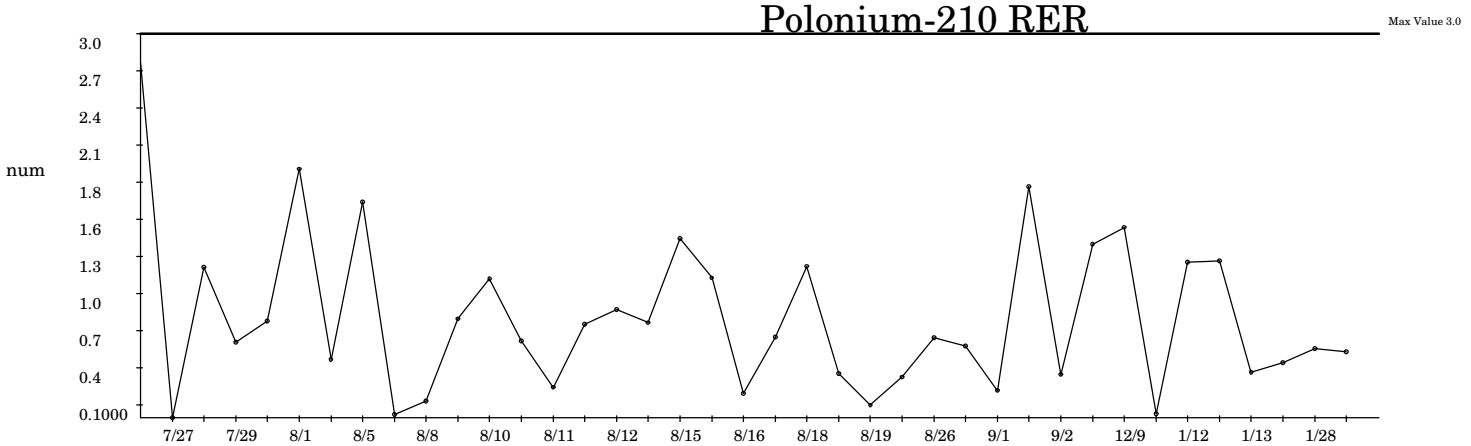
Polonium-210 DUP



Polonium-210 LCS

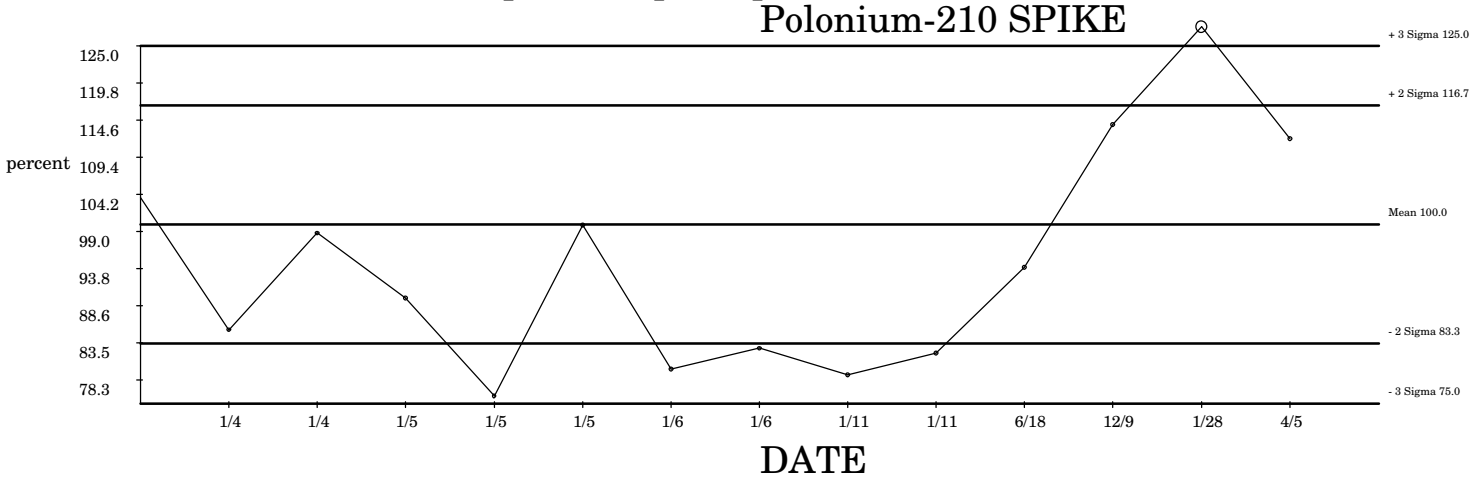


Polonium-210 RER



○ Denotes Outlier

SPC Graph for Alpha SpecPolonium in Solids 4/9/2006
Polonium-210 SPIKE



○ Denotes Outlier

Data used for Alpha SpecPolonium in Solids 10-APR-2006

Polonium-210 BLANK: Limits LCL = -.1 UCL = .1

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
442685	1200888205	22-JUL-2005 15:26	DONE	0	-0.13	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
444953	1200893530	27-JUL-2005 07:54	DONE	0	0.41	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
444962	1200893544	28-JUL-2005 13:11	DONE	0	0.47	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
447163	1200898782	29-JUL-2005 17:24	DONE	0	-0.3	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
445898	1200895696	01-AUG-2005 20:55	DONE	0	-0.84	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
444965	1200893547	01-AUG-2005 20:55	DONE	0	-0.08	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
445899	1200895699	02-AUG-2005 21:00	DONE	0	-0.12	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
446816	1200897998	05-AUG-2005 10:10	DONE	0	-0.85	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
448976	1200903201	05-AUG-2005 16:03	DONE	0	-0.79	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
448980	1200903215	08-AUG-2005 12:15	DONE	0	-0.48	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
449907	1200905293	09-AUG-2005 15:34	DONE	0	-0.44	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
448979	1200903212	10-AUG-2005 10:43	DONE	0	-0.81	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
448977	1200903205	10-AUG-2005 15:33	DONE	0	-0.05	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
449905	1200905287	11-AUG-2005 14:44	DONE	0	-0.85	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
448982	1200903218	11-AUG-2005 21:51	DONE	0	-0.28	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
449906	1200905290	12-AUG-2005 03:24	DONE	0	-0.09	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
452330	1200910984	12-AUG-2005 16:41	DONE	0	-0.57	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451462	1200908922	15-AUG-2005 17:31	DONE	0	0.79	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451464	1200908928	16-AUG-2005 13:35	DONE	0	0.29	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451463	1200908925	16-AUG-2005 16:49	DONE	0	0.41	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
453266	1200913153	17-AUG-2005 09:27	DONE	0	-0.13	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451903	1200909925	18-AUG-2005 13:25	DONE	0	-0.49	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451893	1200909904	18-AUG-2005 13:25	DONE	0	0.13	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451900	1200909911	19-AUG-2005 15:08	DONE	0	0.07	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
451901	1200909914	19-AUG-2005 15:09	DONE	0	0.44	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
455748	1200919210	26-AUG-2005 10:53	DONE	0	0.11	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
455747	1200919207	26-AUG-2005 17:05	DONE	0	0.68	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
455749	1200919213	01-SEP-2005 09:15	DONE	0	0.46	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
455753	1200919219	01-SEP-2005 14:02	DONE	0	-1	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
455751	1200919216	02-SEP-2005 11:48	DONE	0	0.17	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
459154	1200927279	07-SEP-2005 10:15	DONE	0	1.3	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
485298	1200990237	09-DEC-2005 13:14	DONE	0	5	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
485568	1200990963	12-DEC-2005 14:50	DONE	0	-0.34	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
491954	1201005639	12-JAN-2006 17:05	DONE	0	-0.6	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
491952	1201005632	13-JAN-2006 08:18	DONE	0	0.58	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
491951	1201005629	13-JAN-2006 19:33	DONE	0	-0.09	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
496881	1201016693	26-JAN-2006 12:19	DUSE	0	-0.38	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
498323	1201019920	28-JAN-2006 15:24	DONE	0	-0.04	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03
515989	1201060425	05-APR-2006 17:34	DONE	0	-1	pCi/g	0.02	-0.064	-0.037	0.07	0.1	0.03

Polonium-210 DUP: Limits LCL = 0 UCL = 20

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
442685	1200888206	22-JUL-2005 15:26	DONE	11	-0.46	percent	17.8	0	-13	48.4	20.0	15.3
444953	1200893531	27-JUL-2005 07:54	DONE	0	-1	percent	17.8	0	-13	48.4	20.0	15.3
444962	1200893545	28-JUL-2005 13:11	DONE	17	-0.08	percent	17.8	0	-13	48.4	20.0	15.3
447163	1200898783	29-JUL-2005 17:24	DONE	32	0.92	percent	17.8	0	-13	48.4	20.0	15.3

445898	1200895697	01-AUG-2005 20:55	DONE	10	-0.53	percent	17.8	0	-13	48.4	20.0	15.3
444965	1200893548	01-AUG-2005 20:55	DONE	45	1.8	percent	17.8	0	-13	48.4	20.0	15.3
445899	1200895700	02-AUG-2005 21:00	DONE	8	-0.63	percent	17.8	0	-13	48.4	20.0	15.3
446816	1200897999	05-AUG-2005 10:10	DONE	39	1.4	percent	17.8	0	-13	48.4	20.0	15.3
448976	1200903202	05-AUG-2005 16:03	DONE	1	-1	percent	17.8	0	-13	48.4	20.0	15.3
448980	1200903216	08-AUG-2005 12:15	DONE	2	-1	percent	17.8	0	-13	48.4	20.0	15.3
449907	1200905294	09-AUG-2005 15:34	DONE	20	0.16	percent	17.8	0	-13	48.4	20.0	15.3
448979	1200903213	10-AUG-2005 10:43	DONE	24	0.37	percent	17.8	0	-13	48.4	20.0	15.3
448977	1200903206	10-AUG-2005 15:33	DONE	14	-0.26	percent	17.8	0	-13	48.4	20.0	15.3
449905	1200905288	11-AUG-2005 14:44	DONE	5	-0.84	percent	17.8	0	-13	48.4	20.0	15.3
448982	1200903219	11-AUG-2005 21:51	DONE	15	-0.18	percent	17.8	0	-13	48.4	20.0	15.3
449906	1200905291	12-AUG-2005 03:24	DONE	37	1.2	percent	17.8	0	-13	48.4	20.0	15.3
452330	1200910985	12-AUG-2005 16:41	DONE	23	0.33	percent	17.8	0	-13	48.4	20.0	15.3
451462	1200908923	15-AUG-2005 17:31	DONE	23	0.32	percent	17.8	0	-13	48.4	20.0	15.3
451464	1200908929	16-AUG-2005 13:35	DONE	26	0.52	percent	17.8	0	-13	48.4	20.0	15.3
451463	1200908926	16-AUG-2005 16:49	DONE	5	-0.85	percent	17.8	0	-13	48.4	20.0	15.3
453266	1200913154	17-AUG-2005 09:27	DONE	14	-0.27	percent	17.8	0	-13	48.4	20.0	15.3
451903	1200909926	18-AUG-2005 13:25	DONE	31	0.83	percent	17.8	0	-13	48.4	20.0	15.3
451893	1200909905	18-AUG-2005 13:25	DONE	5	-0.84	percent	17.8	0	-13	48.4	20.0	15.3
451900	1200909912	19-AUG-2005 15:08	DONE	2	-1	percent	17.8	0	-13	48.4	20.0	15.3
451901	1200909915	19-AUG-2005 15:09	DONE	5	-0.86	percent	17.8	0	-13	48.4	20.0	15.3
455748	1200919211	26-AUG-2005 10:53	DONE	11	-0.45	percent	17.8	0	-13	48.4	20.0	15.3
455747	1200919208	26-AUG-2005 17:05	DONE	13	-0.3	percent	17.8	0	-13	48.4	20.0	15.3
455749	1200919214	01-SEP-2005 09:15	DONE	3	-0.97	percent	17.8	0	-13	48.4	20.0	15.3
455753	1200919220	01-SEP-2005 14:02	DONE	42	1.6	percent	17.8	0	-13	48.4	20.0	15.3
455751	1200919217	02-SEP-2005 11:48	DONE	15	-0.19	percent	17.8	0	-13	48.4	20.0	15.3
459154	1200927280	07-SEP-2005 10:15	DONE	31	0.84	percent	17.8	0	-13	48.4	20.0	15.3
485298	1200990238	09-DEC-2005 13:14	DONE	74	3.7	percent	17.8	0	-13	48.4	20.0	15.3
485568	1200990964	12-DEC-2005 14:50	DONE	0	-1	percent	17.8	0	-13	48.4	20.0	15.3
491954	1201005640	12-JAN-2006 17:05	DONE	18	0.02	percent	17.8	0	-13	48.4	20.0	15.3
491952	1201005633	13-JAN-2006 08:18	DONE	23	0.34	percent	17.8	0	-13	48.4	20.0	15.3
491951	1201005630	13-JAN-2006 19:33	DONE	7	-0.72	percent	17.8	0	-13	48.4	20.0	15.3
496881	1201016694	26-JAN-2006 12:19	DUSE	7	-0.71	percent	17.8	0	-13	48.4	20.0	15.3
498323	1201019921	28-JAN-2006 15:24	DONE	19	0.05	percent	17.8	0	-13	48.4	20.0	15.3
515989	1201060426	05-APR-2006 17:34	DONE	21	0.22	percent	17.8	0	-13	48.4	20.0	15.3

Polonium-210 LCS: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
432476	1200863694	18-JUN-2005 13:41	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
442685	1200888207	22-JUL-2005 15:26	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
444953	1200893532	27-JUL-2005 07:54	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
444962	1200893546	28-JUL-2005 13:11	DONE	106	0.72	percent	100	75.0	83.3	117	125	8.33
447163	1200898784	29-JUL-2005 17:24	DONE	87	-2	percent	100	75.0	83.3	117	125	8.33
445898	1200895698	01-AUG-2005 20:55	DONE	92	-1	percent	100	75.0	83.3	117	125	8.33
444965	1200893549	01-AUG-2005 20:55	DONE	92	-0.94	percent	100	75.0	83.3	117	125	8.33
445899	1200895701	02-AUG-2005 21:00	DONE	100	0	percent	100	75.0	83.3	117	125	8.33
446816	1200898000	05-AUG-2005 10:10	DONE	89	-1	percent	100	75.0	83.3	117	125	8.33
448976	1200903203	05-AUG-2005 14:31	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
448980	1200903217	08-AUG-2005 12:15	DONE	84	-2	percent	100	75.0	83.3	117	125	8.33
449907	1200905295	09-AUG-2005 15:34	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33

448979	1200903214	10-AUG-2005 10:43	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
448977	1200903207	10-AUG-2005 15:33	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
449905	1200905289	11-AUG-2005 14:44	DONE	121	2.5	percent	100	75.0	83.3	117	125	8.33
448982	1200903220	11-AUG-2005 21:51	DONE	103	0.36	percent	100	75.0	83.3	117	125	8.33
449906	1200905292	12-AUG-2005 03:24	DONE	81	-2	percent	100	75.0	83.3	117	125	8.33
452330	1200910986	12-AUG-2005 21:11	DONE	123	2.8	percent	100	75.0	83.3	117	125	8.33
451462	1200908924	15-AUG-2005 17:31	DONE	107	0.84	percent	100	75.0	83.3	117	125	8.33
451464	1200908930	16-AUG-2005 13:35	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
453266	1200913155	17-AUG-2005 09:27	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
451463	1200908927	17-AUG-2005 10:31	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
451893	1200909906	18-AUG-2005 13:25	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
451903	1200909927	18-AUG-2005 13:25	DONE	117	2	percent	100	75.0	83.3	117	125	8.33
451900	1200909913	19-AUG-2005 15:08	DONE	118	2.2	percent	100	75.0	83.3	117	125	8.33
451901	1200909916	19-AUG-2005 15:09	DONE	99	-0.11	percent	100	75.0	83.3	117	125	8.33
455748	1200919212	26-AUG-2005 10:53	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
455747	1200919209	26-AUG-2005 17:05	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
455749	1200919215	31-AUG-2005 11:10	DONE	116	1.9	percent	100	75.0	83.3	117	125	8.33
455753	1200919221	01-SEP-2005 14:02	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
455751	1200919218	02-SEP-2005 11:53	DONE	97	-0.34	percent	100	75.0	83.3	117	125	8.33
459154	1200927281	07-SEP-2005 10:15	DONE	101	0.12	percent	100	75.0	83.3	117	125	8.33
485568	1200990965	12-DEC-2005 14:50	DONE	111	1.3	percent	100	75.0	83.3	117	125	8.33
485298	1200990240	14-DEC-2005 18:13	DONE	109	1.1	percent	100	75.0	83.3	117	125	8.33
491954	1201005641	12-JAN-2006 17:05	DONE	91	-1	percent	100	75.0	83.3	117	125	8.33
491952	1201005634	13-JAN-2006 08:18	DONE	108	0.94	percent	100	75.0	83.3	117	125	8.33
491951	1201005631	13-JAN-2006 19:33	DONE	103	0.34	percent	100	75.0	83.3	117	125	8.33
498323	1201019923	28-JAN-2006 15:24	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33
515989	1201060428	06-APR-2006 13:23	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33

Polonium-210 RER: Limits LCL = 0 UCL = 3

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
442685	1200888206	22-JUL-2005 15:26	DONE	0.22	-0.94	num	0.72	0	-0.329	1.76	3.00	0.52
444953	1200893531	27-JUL-2005 07:54	DONE	0	-1	num	0.72	0	-0.329	1.76	3.00	0.52
444962	1200893545	28-JUL-2005 13:11	DONE	1.18	0.88	num	0.72	0	-0.329	1.76	3.00	0.52
447163	1200898783	29-JUL-2005 17:24	DONE	0.59	-0.24	num	0.72	0	-0.329	1.76	3.00	0.52
445898	1200895697	01-AUG-2005 20:55	DONE	0.75	0.07	num	0.72	0	-0.329	1.76	3.00	0.52
444965	1200893548	01-AUG-2005 20:55	DONE	1.94	2.3	num	0.72	0	-0.329	1.76	3.00	0.52
445899	1200895700	02-AUG-2005 21:00	DONE	0.45	-0.5	num	0.72	0	-0.329	1.76	3.00	0.52
446816	1200897999	05-AUG-2005 10:10	DONE	1.69	1.9	num	0.72	0	-0.329	1.76	3.00	0.52
448976	1200903202	05-AUG-2005 16:03	DONE	0.03	-1	num	0.72	0	-0.329	1.76	3.00	0.52
448980	1200903216	08-AUG-2005 12:15	DONE	0.13	-1	num	0.72	0	-0.329	1.76	3.00	0.52
449907	1200905294	09-AUG-2005 15:34	DONE	0.77	0.11	num	0.72	0	-0.329	1.76	3.00	0.52
448979	1200903213	10-AUG-2005 10:43	DONE	1.08	0.7	num	0.72	0	-0.329	1.76	3.00	0.52
448977	1200903206	10-AUG-2005 15:33	DONE	0.6	-0.22	num	0.72	0	-0.329	1.76	3.00	0.52
449905	1200905288	11-AUG-2005 14:44	DONE	0.24	-0.92	num	0.72	0	-0.329	1.76	3.00	0.52
448982	1200903219	11-AUG-2005 21:51	DONE	0.73	0.03	num	0.72	0	-0.329	1.76	3.00	0.52
449906	1200905291	12-AUG-2005 03:24	DONE	0.84	0.24	num	0.72	0	-0.329	1.76	3.00	0.52
452330	1200910985	12-AUG-2005 16:41	DONE	0.74	0.05	num	0.72	0	-0.329	1.76	3.00	0.52
451462	1200908923	15-AUG-2005 17:31	DONE	1.4	1.3	num	0.72	0	-0.329	1.76	3.00	0.52
451464	1200908929	16-AUG-2005 13:35	DONE	1.09	0.72	num	0.72	0	-0.329	1.76	3.00	0.52
451463	1200908926	16-AUG-2005 16:49	DONE	0.19	-1	num	0.72	0	-0.329	1.76	3.00	0.52

453266	1200913154	17-AUG-2005 09:27	DONE	0.63	-0.17	num	0.72	0	-0.329	1.76	3.00	0.52
451903	1200909926	18-AUG-2005 13:25	DONE	1.18	0.89	num	0.72	0	-0.329	1.76	3.00	0.52
451893	1200909905	18-AUG-2005 13:25	DONE	0.35	-0.71	num	0.72	0	-0.329	1.76	3.00	0.52
451900	1200909912	19-AUG-2005 15:08	DONE	0.1	-1	num	0.72	0	-0.329	1.76	3.00	0.52
451901	1200909915	19-AUG-2005 15:09	DONE	0.32	-0.76	num	0.72	0	-0.329	1.76	3.00	0.52
455748	1200919211	26-AUG-2005 10:53	DONE	0.62	-0.18	num	0.72	0	-0.329	1.76	3.00	0.52
455747	1200919208	26-AUG-2005 17:05	DONE	0.56	-0.3	num	0.72	0	-0.329	1.76	3.00	0.52
455749	1200919214	01-SEP-2005 09:15	DONE	0.21	-0.96	num	0.72	0	-0.329	1.76	3.00	0.52
455753	1200919220	01-SEP-2005 14:02	DONE	1.8	2.1	num	0.72	0	-0.329	1.76	3.00	0.52
455751	1200919217	02-SEP-2005 11:48	DONE	0.34	-0.73	num	0.72	0	-0.329	1.76	3.00	0.52
459154	1200927280	07-SEP-2005 10:15	DONE	1.35	1.2	num	0.72	0	-0.329	1.76	3.00	0.52
485298	1200990238	09-DEC-2005 13:14	DONE	1.49	1.5	num	0.72	0	-0.329	1.76	3.00	0.52
485568	1200990964	12-DEC-2005 14:50	DONE	0.03	-1	num	0.72	0	-0.329	1.76	3.00	0.52
491954	1201005640	12-JAN-2006 17:05	DONE	1.22	0.95	num	0.72	0	-0.329	1.76	3.00	0.52
491952	1201005633	13-JAN-2006 08:18	DONE	1.22	0.97	num	0.72	0	-0.329	1.76	3.00	0.52
491951	1201005630	13-JAN-2006 19:33	DONE	0.35	-0.69	num	0.72	0	-0.329	1.76	3.00	0.52
496881	1201016694	26-JAN-2006 12:19	DUSE	0.43	-0.55	num	0.72	0	-0.329	1.76	3.00	0.52
498323	1201019921	28-JAN-2006 15:24	DONE	0.54	-0.34	num	0.72	0	-0.329	1.76	3.00	0.52
515989	1201060426	05-APR-2006 17:34	DONE	0.52	-0.38	num	0.72	0	-0.329	1.76	3.00	0.52

Polonium-210 SPIKE: Limits LCL = 75 UCL = 125

Batch ID	Samp ID	Run Date	Status	Value	Deviation	Units	Mean	LCL	LWL	UWL	UCL	Stdev
390986	1200763747	04-JAN-2005 18:07	DONE	96	-0.46	percent	100	75.0	83.3	117	125	8.33
390986	1200763748	04-JAN-2005 18:07	DONE	85	-2	percent	100	75.0	83.3	117	125	8.33
391055	1200763934	04-JAN-2005 18:07	DONE	99	-0.14	percent	100	75.0	83.3	117	125	8.33
388514	1200757885	05-JAN-2005 13:02	DONE	90	-1	percent	100	75.0	83.3	117	125	8.33
388514	1200757886	05-JAN-2005 13:02	DONE	76	-3	percent	100	75.0	83.3	117	125	8.33
391055	1200763933	05-JAN-2005 17:25	DONE	100	-0.01	percent	100	75.0	83.3	117	125	8.33
388516	1200757889	06-JAN-2005 14:39	DONE	80	-2	percent	100	75.0	83.3	117	125	8.33
388516	1200757890	06-JAN-2005 14:39	DONE	83	-2	percent	100	75.0	83.3	117	125	8.33
392926	1200768581	11-JAN-2005 18:18	DONE	79	-3	percent	100	75.0	83.3	117	125	8.33
392926	1200768580	11-JAN-2005 18:18	DONE	82	-2	percent	100	75.0	83.3	117	125	8.33
432476	1200863693	18-JUN-2005 13:41	DONE	94	-0.72	percent	100	75.0	83.3	117	125	8.33
485298	1200990239	09-DEC-2005 13:14	DONE	114	1.7	percent	100	75.0	83.3	117	125	8.33
498323	1201019922	28-JAN-2006 15:24	DONE	129	3.5	percent	100	75.0	83.3	117	125	8.33
515989	1201060427	05-APR-2006 17:34	DONE	112	1.4	percent	100	75.0	83.3	117	125	8.33

STANDARDS DATA

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

0159

Radionuclide	Th-230	Customer:	GENERAL ENGINEERING LABS
Half Life:	(7.54 ± 0.03) x 10^4 years	P.O.No.:	2507 RD
Catalog No.:	7230	Reference Date:	1 Sep 99 12:00 PST.
Source No.:	678-28-1	Contained Radioactivity:	Th-230: 9.740 μCi (360.4 kBq)

Description of Solution

a. Mass of solution: 4.89252 grams in 5 mL flame sealed ampoule
b. Chemical form: Thorium nitrate in 0.1M nitric acid
c. Carrier content: 10 μg Th/mL of solution
d. Density: 1.0016 gram/ml @ 20°C.

Radioimpurities

Am-241: See Technical Data Sheet

Radioactive Daughters

Ra-226: See Technical Data Sheet

Radionuclide Concentration

Th-230: 1.991 μCi/gram of solution (73.67 kBq/gram of solution)

Method of Calibration

Weighed aliquots of the solution were assayed using a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±2.0%
b. Random uncertainty in assay:	±0.8%
c. Random uncertainty in weighing(s):	±0.0%
d. Total uncertainty at the 99% confidence level:	±2.2%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

2. Nuclear data were taken from Table of Radioactive Isotopes (1986), edited by Virginia Shirley.

Daniel James Van Dalsem
QUALITY CONTROL

26-Aug-99
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

RCS-024-102

ISOTOPE PRODUCTS LABORATORIES

Corporate and
Manufacturing
18000 E. Keystone Street
Burbank, California
91504
818-843-7000
FAX 818-843-6163

0159

Th-230 TECHNICAL DATA

The Th-230 used to prepare your order was taken from Isotope Products Laboratories Lot #6481 and had the following composition as of December 15, 1994.

NUCLIDE	ATOM%	ACTIVITY%
Th-229	<0.001	$<1.23 \times 10^{-2}$
Th-230	83.71	99.79
Th-232	16.29	1.08×10^{-4}
Ra-226 (daughter Th-230)	----	0.15
Am-241	----	0.05

Isotopic composition provided by Oak Ridge National Laboratory.

No other alpha emitting nuclides were detected.

If you have any questions, please contact Technical Service.

Rc-S-024-102A

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0159
Prepared By:	Joe Davis
Carrier Conc:	0.1M HNO3
Reference Date:	09/01/1999
Ampoule Mass (g):	4.89252 g
Uncertainty:	+/- 2.2 %
LogBook No:	RC S 023 102

A Solution Material Info	
Isotope:	Thorium-230
Prepared By:	Joe Davis
Prep Date:	09/21/1999
Verification Date:	06/19/2004
Expiration Date:	06/19/2005
Primary Code:	0159-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.7484 g
Density(g/mL):	0.9992

Calculations Converting parent activity to dpm/mL | dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.7484 g) * (1.991 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 209880.2297 dpm/mL
(4.7484 g) * (1.991 uCi/g) * (2220000 dpm/uCi) / (0.9992 g/mL) / (100 mL) = 210051.8397 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
01/29/2001	Angela Albee	.0992	100	0159-H	208.37 dpm/mL	01/29/2001	01/29/2002
02/28/2001	Angela Albee	1.0451	1000	0159-I-102	219.525 dpm/mL	03/06/2002	03/06/2003
02/28/2001	Angela Albee	1.0451	1000	0159-I-202	219.525 dpm/mL	03/12/2002	03/12/2003
09/21/1999	Joe Davis	.1172	100	0159-B	246.18 dpm/mL	09/21/1999	09/21/2000
09/23/1999	Joe Davis	.1016	100	0159-C	213.41 dpm/mL	09/23/1999	09/23/2000
01/10/2000	Joe Davis	.1008	100	0159-D	211.56 dpm/mL	01/10/2000	01/10/2001
02/16/2000	Richard Kinney	.2422	500	0159-E	101.75 dpm/mL	02/16/2000	02/16/2001
03/20/2000	Joe Davis	.0998	100	0159-F	209.63 dpm/mL	03/20/2000	03/20/2001
07/28/2000	Robert Timm	1.0046	1000	0159-G	211.02 dpm/mL	07/28/2000	07/28/2001
05/10/2001	Angela Albee	.0987	1000	0159-J	210.1569 dpm/mL	05/10/2001	05/10/2002
08/31/2001	Lonnie Morris	.0416	100	0159-K	87.31 dpm/mL	09/23/2002	09/23/2003
06/07/2002	Angela Albee	1.0002	1000	0159-L	207.278 dpm/mL	06/07/2002	06/07/2003
01/16/2003	Angela Albee	4.5144	1000	0159-M	947.483 dpm/mL	01/16/2003	01/16/2004
02/27/2003	Angela Albee	1.1079	1000	0159-N	232.526 dpm/mL	02/27/2004	02/27/2005
06/23/2004	Amanda Fehr	1.14	1000	0159-O	239.459 dpm/mL	07/03/2005	07/03/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Th-230 Standard 0159-O

A. Fehr
7/3/2005

Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Amt Used (mL)	Source DPM/mL
0159-N N1	258.0000	23.3000	234.7000	0.9696	1.0000	242.0585809
0159-N N2	259.3000	23.3000	236.0000	0.9696	1.0000	243.3993399
0159-N N3	255.4000	23.3000	232.1000	0.9696	1.0000	239.3770627

Mean Value (Counting) =	241.6116612	dpm/mL	**100.903182**	**% of known**
Stdev =	2.048043318	dpm/mL	0.00847659	
Certificate Value =	239.449	dpm/mL		
Lower Limit =	237.5155745	dpm/mL		
Upper Limit =	245.7077478	dpm/mL		
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**	
Two sigma =	4.096086636			
10 % of Mean =	24.16116612			
Rule 2 (Pass/Fail)	**Pass**			

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three standard verification sources for Th-230 source 0159-O by transferring 1.0 mL portions of the standard to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 26 for alpha source standard verification. The alpha efficiency calibration which was used for verification calculations was performed using NIST source 0556-A (Th-230). Calibration data is recorded in this logbook under Th-230 0556-A. Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.
Reference RAD SOP M-001

Amanda L. Fehr 7/13/05

Angela A. Johnson 7/15/05

0133

Certificate of calibration of absolutely standardised radioactive solution

P 3574

UKAS ACCREDITED CALIBRATION LABORATORY No. 0146

Measurement

Reference time for solution number **S6/7/19**: **1200 GMT on 1 April 1996**

Radioactive concentration of strontium-90:	477.1	kilobecquerels per gram of solution
which is equivalent to:	12.89	microcuries per gram of solution
Mass of solution:	5.0669	grams
Total activity of strontium-90:	2.417	megabecquerels
which is equivalent to:	65.3	microcuries

Method of measurement used (see page 3 of the certificate): K

Calibration dates: 25 March 1996 to 27 March 1996

The calibration date is provided for added information only, and must not be confused with the reference date on pages 1 and 2 of the certificate. It is the reference date that must be used in all calculations relating to the values of activity.

Accuracy

Expanded uncertainty in the radioactive concentration quoted above: ± 0.80 %

Combined Type A uncertainty : ± 0.05 %

Combined Type B uncertainty : ± 0.40 %

Radionuclidic purity

The estimated activities of any radioactive impurities found by high-resolution gamma ray spectrometry, or in any other examination of the solution, are listed below expressed as percentages of the activity of the principal radionuclide at the reference time.

Other radionuclides 0.0005(3) %

Chemical composition

0.1 M HCl containing 100 micrograms of strontium and 100 micrograms of yttrium per ml.

Physical data

Recommended half life: 29.12 ± 0.24 years (1 year = 365.25 days)

Strontium-90: 100% beta particle emission.
Yttrium-90: 100% beta particle emission. Half life 64.1 ± 0.1 hours.

The activity of the yttrium-90 is equal to the activity of the strontium-90.

Remarks

This product meets the quality assurance requirements for achieving traceability to NIST as defined in ANSI N42.22-1995.

Tests made over a period of 2 years on standardised solutions of strontium-90 stored in glass ampoules have shown that loss of strontium-90 from solution is negligible other than by radioactive decay.

R(-5-073-060

Nycomed Amersham plc
Amersham Laboratories

Certificate of calibration of absolutely standardised radioactive solution P 35374

NAMAS
CALIBRATION
No. 0146

ISSUED BY:	Nycomed Amersham plc Radiation & Radioactivity Calibration Laboratory Amersham Laboratories White Lion Road Amersham Buckinghamshire HP7 9LL	ISSUED FOR:	AEA Technology plc Isotrak Amersham Laboratories White Lion Road Amersham Buckinghamshire HP7 9LL

Description Principal radionuclide: Strontium-90

Product code: SIZ64
Solution number: S6/7/19

Measurement Reference time: 1200 GMT on 1 April 1996

Nuclear data Nuclear data quoted on this certificate are taken from the Joint European File, Version 2.2.

Expression of uncertainties The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2.00$, which for a *t*-distribution with $\nu_{eff} = \infty$ effective degrees of freedom corresponds to a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Unless indicated, all other uncertainties are expressed at the confidence level associated with one standard uncertainty.

The format used for the uncertainties in the values of radionuclidic purity is illustrated by the following examples;

6.5(21)	=	6.5 ± 2.1
6.54(21)	=	6.54 ± 0.21
6.543(21)	=	6.543 ± 0.021

Approved Signatory W. F. Case

Date of issue 11 May 1999

LC-S-073-060A

Nycomed

Certificate of calibration of absolutely standardised radioactive solution P 35474

UKAS ACCREDITED CALIBRATION LABORATORY No. 0146

Methods of measurement The measurement techniques listed below are currently in use at Nycomed Amersham for the absolute standardisation of radioactive solutions. The methods used for this standardisation are indicated on page 2 of the certificate.

Using a gas flow proportional counter

A	4 pi beta counting
B	4 pi alpha counting
C	4 pi internal conversion electron counting
D	4 pi coincidence counting
E	4 pi anticoincidence counting
F	4 pi coincidence and anticoincidence counting

Using a liquid scintillation counter

G	4 pi coincidence counting
H	4 pi anticoincidence counting
J	4 pi coincidence and anticoincidence counting
K	4 pi efficiency tracing

SI unit of radioactivity The S.I. unit of radioactivity is the becquerel

1 becquerel (Bq) = 1 nuclear transformation per second, therefore
1 curie (Ci) = 3.7×10^{10} becquerels exactly

Useful conversion factors are:

1 microcurie (μCi)	=	3.7×10^{4} Bq	=	37 kilobecquerels (kBq)
1 millicurie (mCi)	=	3.7×10^{7} Bq	=	37 megabecquerels (MBq)
1 kilobecquerel (kBq)	=	27.027 nanocuries (nCi)		
1 megabecquerel (MBq)	=	27.027 microcuries (μCi)		

RC-5-023-060B

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0133
Prepared By:	Joe Davis
Carrier Conc:	0.1 M HCL
Reference Date:	04/01/1996
Ampoule Mass (g):	5.0669 g
Uncertainty:	+/- .8 %
LogBook No:	RC S 023 060

A Solution Material Info	
Isotope:	Strontium-90
Prepared By:	Joe Davis
Prep Date:	09/25/1999
Verification Date:	12/20/2005
Expiration Date:	12/20/2006
Primary Code:	0133-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.8374 g
Density(g/mL):	1.0041

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.8374 g) * (12.89 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 1384260.7092 dpm/mL
(4.8374 g) * (12.89 uCi/g) * (2220000 dpm/uCi) / (1.0041 g/mL) / (100 mL) = 1378622.1492 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
09/06/2000	Joe Davis	.0899	1000	0133-F	124.445 dpm/mL	09/06/2000	09/06/2001
12/05/1999	Joe Davis	.9937	100	0133-C	13699.37 dpm/mL	12/05/1999	12/05/2000
12/05/1999	Joe Davis	.0995	100	0133-B	1371.73 dpm/mL	12/05/1999	12/05/2000
02/16/2000	Richard Kinney	.0349	500	0133-D	96.23 dpm/mL	02/16/2000	02/16/2001
03/09/2000	Richard Kinney	.0282	250	0133-E	155.51 dpm/mL	03/09/2000	03/09/2001
10/13/2000	Robert Timm	.3194	1000	0133-G-104	440.332 dpm/mL	10/09/2001	10/09/2002
10/13/2000	Robert Timm	1.0865	100	0133-H	14978.73 dpm/mL	10/09/2002	10/09/2003
10/13/2000	Robert Timm	.3194	1000	0133-G-204	440.332 dpm/mL	10/09/2001	10/09/2002
10/13/2000	Robert Timm	.3194	1000	0133-G-304	440.332 dpm/mL	10/09/2001	10/09/2002
10/13/2000	Robert Timm	.3194	1000	0133-G-404	440.332 dpm/mL	10/09/2001	10/09/2002
05/10/2001	Angela Johnson	1.0005	1000	0133-I	1379.311 dpm/mL	05/11/2001	05/11/2002
05/06/2002	Angela Johnson	.3738	1000	0133-J	515.329 dpm/mL	05/09/2002	05/09/2003
06/07/2002	Angela Johnson	.1816	1000	0133-K	250.358 dpm/mL	06/07/2002	06/07/2003
01/16/2003	Angela Johnson	.2964	1000	0133-L	408.624 dpm/mL	01/16/2003	01/16/2004
04/18/2003	Lonnie Morris	.3247	1000	0133-M	447.6386 dpm/mL	04/16/2004	04/16/2005
10/31/2002	Angela Johnson	10.11	1000	0133-G		10/31/2002	10/31/2003
05/25/2004	Amanda Fehr	.361	1000	0133-N	497.6826 dpm/mL	05/24/2005	05/24/2006
07/22/2005	Brenda Burke	.098	500	0133-O	270.2099 dpm/mL	08/16/2005	08/16/2006
08/15/2005	Amanda Fehr	.1582	500	0133-P	436.196 dpm/mL	08/15/2005	08/15/2006
12/20/2005	Amanda Fehr	.3248	100	0133-Q	447.78 dpm/mL	12/20/2005	12/20/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

0387

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

61762-278

Ac-227 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked by alpha spectroscopy. The nuclear decay rate and assay date for this source are given below.

Analytics maintains traceability to the National Institute of Standards and Technology through participation in a Measurements Assurance Program as described in USNRC Reg. Guide 4.15, Revision 1, February 1979.

ISOTOPE:	Ac-227
ACTIVITY (dps):	2.085 E5
HALF-LIFE:	21.77 years
CALIBRATION DATE:	June 8, 2001 12:00 EST
TOTAL UNCERTAINTY*:	5.0%
SYSTEMATIC:	2.0%
RANDOM:	3.0%

*99% Confidence Level

Impurities: γ-impurities (other than decay products) <0.1%
α-impurities <0.3%

5.3136 grams 2M HNO_3 solution, carrier free.

P O NUMBER 2533RD, Item 2

SOURCE PREPARED BY: _____
E. A. Taskaev, Production Manager

Q A APPROVED: _____ 6/26/01

RC-S-034-049a

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0387
Prepared By:	Angela Johnson
Carrier Conc:	2 M HNO3
Reference Date:	06/08/2001
Ampoule Mass (g):	5.3136 g
Uncertainty:	+/- 5 %
LogBook No:	RC S 034

A Solution Material Info	
Isotope:	Actinium-227
Prepared By:	Angela Johnson
Prep Date:	07/17/2001
Verification Date:	07/01/2002
Expiration Date:	07/01/2003
Primary Code:	0387-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.7794 g
Density(g/mL):	1.0370

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.7794 g) * (208500 dps) * (59.9 dpm/dps) / (5.3136 g * 100 mL) = 112335.5983 dpm/mL
(4.7794 g) * (208500 dps) * (59.9 dpm/dps) / (1.0370 g/mL)/ (5.3136 g * 100 mL) = 108330.3019 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
07/17/2001	Lonnie Morris	.4684	1000	0387-B-102	50.8266 dpm/mL	07/11/2005	07/11/2006
07/17/2001	Lonnie Morris	.4684	1000	0387-B-202	50.827 dpm/mL	07/11/2004	07/11/2005

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Ac-227 Standard 0387-B

A. Fehr 7/13/2005	Isotope 0387-B #1 0387-B #2 0387-B #3	Value 193.600 181.200 192.900	Uncertainty 38.1000 36.2000 52.4000
Mean Value (Counting) =	189.233	0.9416936	
Stdev =	6.965869173		
Target =	200.95		
Lower Limit =	175.301595		
Upper Limit =	203.1650717		
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**
Two sigma =	13.93173835		
10 % of Mean =	18.92333333		
Rule 2 (Pass/Fail)	**Pass**		

The analyst prepared three standard verification sources for standard 0387-B using 0.1 mL for each source. Each standard was combined with 0.1 mL of Th-230 standard 0159-K and 50 micrograms of cerium carrier in a disposable centrifuge tube. Each standard was diluted to 20 mL with 0.1 M HCl. Three mL of 48% HF was added to precipitate cerium(and Thorium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for Ac-227 were calculated by comparison to Th-230 certified values.

Amanda L. Fehr
7/13/05

0546

National Institute of Standards & Technology

Certificate

Standard Reference Material 4326
Polonium-209 Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive polonium-209 chloride and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains polonium-209 with a total activity of approximately 500 Bq. Polonium-209 decays by alpha-particle emission. None of the alpha particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 10 to 900 keV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 2 moles per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004. Refer to reference [5] for details on the long-term stability of polonium solution standards.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by R. Collé of the Radioactivity Group and Z. Lin, Guest Researcher.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
January 1995 (Text only revised November 1997)

Thomas E. Gills, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 to 7.

RC-S-035-06/a

Liquid-Scintillation Counting Warning

Polonium-209 decays primarily by alpha-particle emission. One of the principal alpha-particle transitions feeds a low-energy, **delayed**, isomeric state in the lead-205 daughter. Liquid-scintillation measurements of polonium-209 activity can include some of the activity of this isomeric state. Refer to reference [6] for further information about the effect of this isomeric transition on routine liquid-scintillation counting of polonium-209.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have an acid concentration comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 to 7.

PROPERTIES OF SRM 4326
(Certified values are shown in bold type)

Source identification number	NIST SRM 4326		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.031 ± 0.004) g·mL^{-1} at 22 °C** [b]*		
Solution mass	**(5.160 ± 0.003) g** [b]		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O HCl HNO_3 $PoCl_4$	53 2 <3×10^{-3} 7×10^{-10}	0.93 0.07 <2×10^{-4} 2×10^{-10}
Radiological Properties:			
Radionuclide	**Polonium-209**		
Reference time	**1200 EST, 15 March 1994**		
Massic alpha-particle-emission rate of the solution [c]	**85.42 $\alpha \cdot s^{-1} \cdot g^{-1}$** (Polonium-209 only) [d]		
Relative expanded uncertainty (k=2)	**0.42%** [e]		
Alpha-particle-emitting impurities	**Polonium-208: (0.106 ± 0.017) $\alpha \cdot s^{-1} \cdot g^{-1}$** [b, f]		
Photon-emitting impurities	None detected [g]		
Half lives used	Polonium-209: (102 ± 5) a [h] Polonium-208: (2.898 ± 0.002) a [h]		
Measuring instruments	Two 4πα liquid-scintillation counting systems, 2πα gas-flow proportional counter, and silicon surface-barrier detector		

*Notes and references are on pages 5 to 7.

RC-S-035-0610

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ALPHA-PARTICLE-EMISSION RATE [e]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [i]	Relative Sensitivity Factor, $\lvert\partial y/\partial x_i\rvert \cdot (x_i/y)$ [j]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [k]
Massic liquid-scintillation count rate, corrected for background and decay	Standard deviation for repeated measurements. Six degrees of freedom. (A)	0.06	1.0	0.06
Background variability	Multiple comparisons (A) [7]	0.20	0.02 [m]	0.004
Liquid-scintillator quench corrections	Multiple comparisons (A) [7]	0.12	1.0	0.12
Liquid-scintillation-cocktail stability	Multiple comparisons (A) [7]	0.7	0.007	0.005
Gravimetric measurements	Estimated (B)	0.05	1.0	0.05
Half life of Po-208 Half life of Po-209	Standard uncertainty of the half life (A)	0.07 [n] 4.9 [n]	0.0003 [p] 0.004 [p]	0.00002 0.02
Extrapolation of alpha-particle-count-rate-versus-energy to zero energy	Estimated (B) [7]	0.06	1.0	0.06
Live-time [q]	Estimated (B) [7]	0.04	1.0	0.04
Alpha-particle detection efficiency of scintillator	Estimated (B) [7]	0.10	1.0	0.10
Correction for non-alpha-particle decay modes	Estimated (B) [7]	0.06	1.0	0.06
Alpha-particle-emitting impurities	Estimated (B) [r] Limit of detection (B) [s]	8.1 100.	0.001 0.0006	0.01 0.06
Photon-emitting impurities	Limit of detection (B) [s]	100.	0.0002	0.02
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)				0.21
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)				0.42

*Notes and references are on pages 5 to 7.

RC-S-035-061.2

NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1	-	-

[b] The stated uncertainty is two times the standard uncertainty.

[c] **Massic alpha-particle-emission rate** is the preferred name for the quantity alpha-particle-emission rate divided by the total mass of the sample. **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The polonium-209 massic activity of the solution is 85.83 $Bq \cdot g^{-1}$, assuming an alpha-particle branching ratio of (0.9952 ± 0.0004) $\alpha \cdot s^{-1} \cdot Bq^{-1}$ [h].

[e] The reported value, y, of massic alpha-particle-emission rate (alpha-particle-emission rate per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a **standard uncertainty**, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) \equiv |\partial y/\partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y.

The **combined standard uncertainty** of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a **coverage factor** of $k = 2$ to obtain U, the **expanded uncertainty** of y.

Since it can be assumed that the possible estimated values of the massic alpha-particle-emission rate are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic alpha-particle-emission rate is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3]. See reference [7] for further information on uncertainties related to this calibration.

[f] Estimated limits of detection for alpha-particle-emitting impurities are:
0.002 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies less than 3.5 MeV,
0.05 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies between 3.5 and 4.2 MeV, and
0.0002 $\alpha \cdot s^{-1} \cdot g^{-1}$ for energies greater than 5.18 MeV.

[g] Estimated limits of detection for photon-emitting impurities are:
2×10^{-4} $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 15 and 68 keV,
2×10^{-4} $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 81 and 256 keV,
6×10^{-5} $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 266 and 892 keV, and
4×10^{-6} $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 900 and 3300 keV,
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of polonium-209. See reference [7] for further information about the impurity analyses.

[h] The stated uncertainty is the standard uncertainty. See reference [8].

[i] Relative standard uncertainty of the input quantity x_i.

[j] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[k] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[m] $|\partial y/\partial x_i| \cdot (x_i/y)$ = (average background count rate)/(average net sample count rate).

[n] The relative standard uncertainty of $\lambda \cdot t$ is determined by the relative standard uncertainty of λ (i.e., of the half life). The relative standard uncertainty of t is negligible.

[p] $|\partial y/\partial x_i| \cdot (x_i/y) = |\lambda \cdot t| \cdot$ {(response per Bq of impurity)/(response per Bq of Po-209)}·{(Bq of impurity)/(Bq of Po-209)}.

[q] The live time is determined by counting the pulses from a gated oscillator.

[r] The standard uncertainty given is for the detected Po-208 impurity. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Po-209)}·{(Bq of impurity)/(Bq of Po-209)}.

[s] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i$ = 100%. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of Po-209)}·{(Bq of impurity)/(Bq of Po-209)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] R. Collé, Long-term Stability of Carrier-Free Polonium Solution Standards, *Radioactivity and Radiochemistry*, **4** (1993) 18.

[6] R. Collé, Z. Lin, J.M.R. Hutchinson, and F.J. Schima, A Delayed Isomeric State in ^{205}Pb and Its Implications for $4\pi\alpha$ Liquid-Scintillation Spectrometry of ^{209}Po, *Appl. Radiat. Isot.*, **45** (1994) 1165.

[7] R. Collé, Z. Lin, F.J. Schima, P.A. Hodge, J.W.L. Thomas, J.M.R. Hutchinson, and B.M. Coursey, Preparation and Calibration of Carrier-free ^{209}Po Solution Standards, *J. Res. NIST*, **100** (1995) 1.

[8] Evaluated Nuclear Structure Data File (ENSDF), July 1994.

RC-S-035-0619

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0546
Prepared By:	Lonnie Morris
Carrier Conc:	2M HCl
Reference Date:	03/15/1994
Ampoule Mass (g):	5.16 g
Uncertainty:	+/- .42 %
LogBook No:	RC-S-035-061

A Solution Material Info	
Isotope:	Polonium-209
Prepared By:	Lonnie Morris
Prep Date:	12/21/2004
Verification Date:	12/28/2004
Expiration Date:	12/28/2005
Primary Code:	0546-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.9457 g
Density(g/mL):	1.0006

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps/g)) * (conversion dpm to dps) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps/g)) * (conversion dpm to dps) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.9457 g) * (85.42 dps/g) * (59.9 dpm/dps) / (100 mL) = 253.0546 dpm/mL
(4.9457 g) * (85.42 dps/g) * (59.9 dpm/dps) / (1.0006 g/mL) / (100 mL) = 252.9148 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
12/21/2004	Amanda Fehr	20.0158	100	0546-B	50.71 dpm/mL	12/21/2004	12/21/2005
12/28/2004	Amanda Fehr	20.0112	100	0546-C	50.7 dpm/mL	12/28/2004	12/28/2005
08/31/2005	Mary Avins	20.0649	100	0546-D	50.83 dpm/mL	11/30/2005	11/30/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Po-209 Standard 0546-D

M. Avins	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Amt Used (mL)	Source DPM/mL
11/30/2005	0546-D N1	41.2000	1.4000	39.8000	0.93038064	1.0000	42.77819
	0546-D N2	44.9000	1.4000	43.5000	0.93038064	1.0000	46.75506
	0546-D N3	42.4000	1.4000	41.0000	0.93038064	1.0000	44.06798
						Average =	44.53374
Mean Value (Counting) =	44.53374386		**94.7119405**	**% of known**			
Stdev =	2.02893231		0.04555944				
Certificate Value =	47.0						
Lower Limit =	40.47587924						
Upper Limit =	48.59160848						
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**				
Two sigma =	4.057864621						
10 % of Mean =	4.453374386						
Rule 2 (Pass/Fail)	**Pass**						

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three standard verification sources for Po-209 source 0546-D by transferring 1.0 mL portions of the standard by pipette to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1.0 mL of DI water and 10 mL of Ready Gel liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 32 for Po-210 source standard verification. The Po-210 efficiency calibration which was used for verification calculations was performed on11/30/2005 using source 0685-A. Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

11/30/05
Amanda L. Ebn 12/1/05

Isotope Products Laboratories
An Eckert & Ziegler Company

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Valencia, California 91355

Tel 661•309•1010
Fax 661•257•8303

0685

RECEIVED 5/24/04

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide:	Po-210	**Customer:**	GENERAL ENGINEERING LABS
Half-life:	138.376 ± 0.002 days	**P.O. No.:**	3242RD
Catalog No.:	7310	**Reference Date:**	1-Jun-04 12:00 PST
Source No.:	1066-2	**Contained Radioactivity:**	9.153 µCi 338.7 kBq

Physical Description:

A. Mass of solution:	5.16490 g in 5 mL flame-sealed ampoule
B. Chemical form:	$PoCl_4$ in 2M HCl
C. Carrier content:	None
D. Density:	1.033 g/mL @ 20°C

RECEIVED 5/24/04 TCW

Radioimpurities:

None detected

Radionuclide Concentration: 1.772 µCi/g, 65.56 kBq/g

Method of Calibration:

This source was prepared from a weighed aliquot of solution whose activity in µCi/g was determined using a liquid scintillation counter.

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 1.5 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.0 %
D. Total uncertainty at the 99% confidence level:	± 3.4 %

Notes:

- See reverse side for leak test(s) performed on this source.
- IPL participates in a NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (as in NRC Regulatory Guide 4.15).
- Nuclear data was taken from NCRP Report No. 58, 1985.
- This solution has a working life of 9 months.

Daniel James Van Dalsem
Quality Control

17-May-04
Date

IPL Ref. No.: 1066-2

THE LEAK TEST(S) INDICATED BY THE CHECKED BOX(ES) WAS(WERE) APPLIED TO DETERMINE THE INTEGRITY OF THE SOURCE DESCRIBED ON THE FRONT SIDE

[X] **Standard Wipe Test**

The source is wiped over its entire surface with a moistened filter paper disk. After drying, the disk is checked for activity using a windowless proportional counter or end-window G.M. tube. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

[ ] **Special Wipe Test**

The source is wiped over its entire surface with moistened polystyrene. The polystyrene is then dissolved in a cocktail and counted in a liquid scintillation counter. An activity level exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha is cause for rejection of the source.

[ ] **Soak Test**

The source is immersed in distilled water and maintained at 50 ± 10°C for a minimum of four hours or at room temperature for a minimum of 12 hours. After removal of the source, the liquid is a) checked for activity using a liquid scintillation counter, or b) evaporated in a planchet and the residue is checked for activity using a windowless proportional counter or end-window G.M. tube. An activity level exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha is cause for rejection of the source.

[ ] **Vacuum Bubble Test**

The source is submerged completely in isopropanol to a depth of at least 5 cm below the liquid level in a suitable vacuum chamber between 15 and 25 kPa (113 and 188 mm Hg) absolute. Observe for bubble(s) over a period of 2 minutes. After the removal of the source, the liquid is checked for activity using a liquid scintillation counter. If bubbles are observed and/or an activity level exceeds 0.001 μCi beta-gamma or 0.0001 μCi alpha, the source is rejected.

[ ] **Gas Source Test**

The source is placed in a vacuum desiccator and maintained at a pressure less than 10 mm Hg for not less than 12 hours. The activity is checked by introducing air into the desiccator and monitoring the air with an end-window G.M. tube. An activity level exceeding 0.001 μCi beta-gamma is cause for rejection of the source.

[X] **Ampule Leak Test**

The ampule is kept in an inverted position on a filter paper disk or polystyrene wipe for a minimum of 16 hours. The wipe is then checked for activity using a windowless proportional counter, end-window G.M. tube, or liquid scintillation counter. Activity levels exceeding 0.001 μCi beta-gamma or 0.0001 μCi alpha are cause for rejection of the source.

[ ] **Bubble Leak Test**

The container is pressurized to its fill pressure; then soapy water is applied over its valve and neck or, the valve and neck of the vessel is immersed in water. If no growing bubbles are observed, the container is considered leak free.

[ ] **Leak Test Not Applicable**

The active area of the source is uncovered or is protected by a very thin coating. Although the deposit is adherent, it is not designed or certified to pass a standard leak test. The inactive portions of the source have been checked using the standard wipe test. Levels of removable activity did not exceed 0.001 μCi beta-gamma or 0.0001 μCi alpha at the time of shipment.

[ ] **Wipe Test for Industrial Ni-63 Sources**

The sources are wipe tested by an approved sampling plan which may call for either 100% of the batch to be individually wipe tested, or, a subset thereof. The results are recorded on the front of this form.

[ ] **Other Leak Test**

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0685
Prepared By:	Amanda Fehr
Carrier Conc:	2M HCl
Reference Date:	06/01/2004
Ampoule Mass (g):	5.1649 g
Uncertainty:	+/- 3.4 %
LogBook No:	RC-S-037-084

A Solution Material Info	
Isotope:	Polonium-210
Prepared By:	Amanda Fehr
Prep Date:	05/25/2004
Verification Date:	02/22/2006
Expiration Date:	02/22/2007
Primary Code:	0685-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.855 g
Density(g/mL):	1.0322

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (uCi/g)) * (conversion dpm to uCi) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.855 g) * (1.772 uCi/g) * (2220000 dpm/uCi) / (100 mL) = 190987.9320 dpm/mL
(4.855 g) * (1.772 uCi/g) * (2220000 dpm/uCi) / (1.0322 g/mL) / (100 mL) = 185021.5420 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
06/08/2004	Amanda Fehr	.7367	100	0685-B	1363.0537 dpm/mL	06/11/2004	06/11/2005
06/10/2004	Amanda Fehr	.7126	100	0685-C	1318.4635 dpm/mL	06/11/2004	06/11/2005
06/16/2004	Amanda Fehr	.135	100	0685-D	249.779 dpm/mL	02/22/2006	02/22/2007

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Po-210 Standard 0685-D

A. Fehr	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Vol. Used (ml)	Source DPM/ml
2/10/2006	0685-D N1	19.0000	5.0000	14.0000	0.66242488	2.0000	10.5672359
	0685-D N2	19.4000	5.0000	14.4000	0.66242488	2.0000	10.86915693
	0685-D N3	21.3000	5.0000	16.3000	0.66242488	2.0000	12.3032818

Mean Value (Counting) =	11.24655821		**100.06%**	**% of known**
Stdev =	0.92751692			
Certificate Value =	11.24			
Lower Limit =	9.391524372			
Upper Limit =	13.10159205			
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**	
Two sigma =	1.855033839			
10 % of Mean =	1.124655821			
Rule 2 (Pass/Fail)	**Fail**	*		

*Exception taken for this rule because 100.06% of standard was recovered and all other rules were met.

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three standard verification sources for Po-210 source 0685-D by transferring portions of the standard by pipette to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1.0 mL of DI water and 10 mL of Ready Gel cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 32 for Po-210 source standard verification. The Po-210 efficiency calibration which was used for verification calculations was performed on 2/5/06 using source 0685-A (Po-210). Calibration data is recorded in this logbook under Po-210 0685-A. Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.

Amanda L. Fehr 2/10/06

AAF 2/10/06

ANALYTICS

0688

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

68509-278

U-232 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 23236.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	U-232
ACTIVITY (dps):	3.779 E3
CALIBRATION DATE:	June 18, 2004 12:00 EST
HALF-LIFE:	68.9 years
RELATIVE EXPANDED UNCERTAINTY (k=2):	3.3%

Impurities: Am-241 <0.15%
U-233 <0.3%

RECEIVED Lab/Tech

5.20343 grams 1M HNO_3 solution.

P O NUMBER 3243 RD, Item 1

SOURCE PREPARED BY: M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED: 6/23/04

RC-S-037-081

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0688
Prepared By:	Amanda Fehr
Carrier Conc:	1M HNO3
Reference Date:	06/18/2004
Ampoule Mass (g):	5.20343 g
Uncertainty:	+/- 3.3 %
LogBook No:	RC-S-037-087

A Solution Material Info	
Isotope:	Uranium-232
Prepared By:	Amanda Fehr
Prep Date:	06/25/2004
Verification Date:	01/12/2006
Expiration Date:	01/12/2007
Primary Code:	0688-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.9894 g
Density(g/mL):	1.0276

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dps)) * (conversion dpm to dps) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(4.9894 g) * (3779 dps) * (59.9 dpm/dps) / (5.20343 g * 100 mL) = 2170.5126 dpm/mL
(4.9894 g) * (3779 dps) * (59.9 dpm/dps) / (1.0276 g/mL)/ (5.20343 g * 100 mL) = 2112.2178 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
06/18/2004	Brenda Burke	2.203	250	0688-B	18.6439 g/mL	06/28/2005	06/28/2006
07/06/2004	Tim Chandler	2.2243	250	0688-C	18.8242 dpm/mL	08/14/2004	08/14/2005
07/06/2004	Amanda Fehr	26.03	1000	0688-D	55.0728 dpm/mL	07/06/2004	07/06/2005
04/19/2005	Amanda Fehr	26.01	1000	0688-E	55.0305 dpm/mL	05/04/2005	05/04/2006
05/27/2005	Brenda Burke	.612	250	0688-F	5.17934 dpm/mL	05/31/2005	05/31/2006
06/23/2005	Brenda Burke	2.227	250	0688-G	18.847 dpm/mL	06/28/2005	06/28/2006
01/06/2006	Mary Avins	26.01	1000	0688-H	55.0305 dpm/mL	01/12/2006	01/12/2007

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Uranium-232 Standard *0688-H*

Analyst: M Avins	Isotope	Value		Uncertainty	
Date: 1/12/06	0688-H N1	2.46	pCi/L	0.292	pCi/L
	0688-H N2	2.49	pCi/L	0.383	pCi/L
	0688-H N3	2.48	pCi/L	0.315	pCi/L
Mean Value (Counting) =	2.477	pCi/L		**0.9992767**	**% of known**
Stdev =	0.015275252	pCi/L			
Target =	2.48	pCi/L			
Lower Limit =	2.446116162	pCi/L			
Upper Limit =	2.507217171	pCi/L			
Rule 1 Pass/Fail	**Pass**	**Pass**		**Pass**	
Two sigma =	0.030550505				
10 % of Mean =	0.247666667				
Rule 2 (Pass/Fail)	**Pass**				

The analyst prepared three standard verification sources for standard **0688-H** using 0.1 mL for each source. Each standard was combined with 0.1 mL of **U-238** standard **0858-B** and 50 micrograms of Nd carrier in a disposable centrifuge tube. Each standard was diluted to 4 mL with 2 M HCl, and 2 mL of DI water. One mL of TiCl3 was added. Two mL of 48% HF was added to precipitate Nd(and **Uranium**) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for **U-232** were calculated by comparison to **U-238** certified values.

Reference SOP RAD M-001

Mary L. Avins 1/12/06

Amanda L. Fike 1/24/06

National Institute of Standards & Technology

Certificate

Standard Reference Material 4321C
Natural Uranium Radioactivity Standard

This Standard Reference Material (SRM) consists of radioactive natural uranium nitrate and nitric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of alpha-particle counting instruments and for the monitoring of radiochemical procedures.

Radiological Hazard

The SRM ampoule contains uranium-238, uranium-235, and uranium-234 with a total activity of approximately 2600 Bq. Uranium decays by alpha-particle emission. The progeny of uranium-238, uranium-235, and uranium-234 have a total activity of approximately 2600 Bq and decay by alpha- and beta-particle emission. None of the alpha or beta particles escape from the SRM ampoule. During the decay process X-rays and gamma rays with energies from 11 keV to 2.0 MeV are also emitted. Most of these photons escape from the SRM ampoule but their intensities are so small that they do not represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains nitric acid (HNO_3) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least August 2007.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
November 1997

Thomas E. Gills, Chief
Standard Reference Materials Program

*Notes and references are on pages 5 and 6.

Recommended Procedure for Opening the SRM Ampoule

1) If the SRM solution is to be diluted, it is recommended that the diluting solution have a composition comparable to that of the SRM solution.

2) Wear eye protection, gloves, and protective clothing and work over a tray with absorbent paper in it. Work in a fume hood. In addition to the radioactive material, the solution contains strong acid and is corrosive.

3) Shake the ampoule to wet all of the inside surface of the ampoule. Return the ampoule to the upright position.

4) Check that all of the liquid has drained out of the neck of the ampoule. If necessary, gently tap the neck to speed the process.

5) Holding the ampoule upright, score the narrowest part of the neck with a scribe or diamond pencil.

6) Lightly wet the scored line. This reduces the crack propagation velocity and makes for a cleaner break.

7) Hold the ampoule upright with a paper towel, a wiper, or a support jig. Position the scored line away from you. Using a paper towel or wiper to avoid contamination, snap off the top of the ampoule by pressing the narrowest part of the neck away from you while pulling the tip of the ampoule towards you.

8) Transfer the solution from the ampoule using a pycnometer or a pipet with dispenser handle. NEVER PIPETTE BY MOUTH.

9) Seal any unused SRM solution in a flame-sealed glass ampoule, if possible, to minimize the evaporation loss.

See also reference [4]*.

*Notes and references are on pages 5 and 6.

PROPERTIES OF SRM 4321C
(Certified values are shown in bold type)

Source identification number	NIST SRM 4321C		
Physical Properties:			
Source description	Liquid in flame-sealed NIST borosilicate-glass ampoule		
Ampoule specifications	Body outside diameter Wall Thickness Barium content Lead-oxide content Other heavy elements	(16.5 ± 0.5) mm (0.60 ± 0.04) mm Less than 2.5% Less than 0.02% Trace quantities	
Solution density	**(1.053 ± 0.001) g·mL^{-1} at 21.4 °C** [b]*		
Solution mass	**(5.258 ± 0.002) g** [b]		
Chemical Properties:			
Solution composition	Chemical Formula	Concentration (mol·L^{-1})	Mass Fraction (g·g^{-1})
	H_2O HNO_3 $UO_2(NO_3)_2$	53 1.0 0.09	0.91 0.06 0.03
Radiological Properties:			
Radionuclide	**Natural Uranium (Mixture of U-238, U-235, and U-234)**		
Reference time	**1200 EST, 1 August 1997**		
Massic activity of the solution [c]	**U-238: 242.0 Bq·g^{-1}** **U-235: 11.14 Bq·g^{-1}** **U-234: 233.1 Bq·g^{-1}**		
Relative expanded uncertainty (k=2)	**U-238: 0.60%** [d] [e] **U-235: 0.62%** [d] [e] **U-234: 0.98%** [d] [e]		
Mass fraction of uranium	**(0.01960 ± 0.00010) g·g^{-1}** [b]		
Photon-emitting impurities	None detected [f]		
Half lives used	Uranium-238: (4.468 ± 0.003) × 10^9 a [g] Uranium-235: (7.038 ± 0.005) × 10^8 a [g] Uranium-234: (2.455 ± 0.006) × 10^5 a [g]		
Measuring instruments	Mass spectrometer, silicon surface-barrier detector, and $4\pi(\alpha+\beta)$ liquid-scintillation counting systems.		

*Notes and references are on pages 5 and 6.

EVALUATION OF THE UNCERTAINTY OF THE MASSIC ACTIVITY [d]*

Input Quantity x_i, the source of uncertainty (and individual uncertainty components where appropriate)	Method Used To Evaluate $u(x_i)$, the standard uncertainty of x_i (A) denotes evaluation by statistical methods (B) denotes evaluation by other methods	Relative Uncertainty Of Input Quantity, $u(x_i)/x_i$, (%) [h]	Relative Sensitivity Factor, $\lvert\partial y/\partial x_i\rvert \cdot (x_i/y)$ [i]	Relative Uncertainty Of Output Quantity, $u_i(y)/y$, (%) [j]
Isotopic uranium atom fraction in SRM 960	Standard deviation of the mean for repeated mass-spectrometric measurements (A)	U-238: 0.001 U-235: 0.07 U-234: 0.31	1.0 1.0 1.0	0.001 0.07 0.31
Half life	Standard uncertainty of the half life (A)	U-238: 0.07 U-235: 0.07 U-234: 0.25	1.0 1.0 1.0	0.07 0.07 0.25
Uranium mass fraction in SRM 960	Certificate value (B)	0.003	1.0	0.003
Quantitative dissolution	Estimated (B)	0.25	1.0	0.25
Gravimetric measurements	Estimated (B)	0.10	1.0	0.10
Photon-emitting impurities	Limit of detection (B) [k]	100.	0.001	0.10
Relative Combined Standard Uncertainty of the Output Quantity, $u_c(y)/y$, (%)			U-238: U-235: U-234:	0.30 0.31 0.49
Coverage Factor, k				x 2
Relative Expanded Uncertainty of the Output Quantity, U/y, (%)			U-238: U-235: U-234:	0.60 0.62 0.98

*Notes and references are on pages 5 and

NOTES

[a] The Sievert is the SI unit for dose equivalent. See reference [1]. One μSv is equal to 0.1 mrem.

Distance from Ampoule (cm):	1	30	100
Approximate Dose Rate (μSv/h):	<0.1	-	-

[b] The stated uncertainty is two times the standard uncertainty.

[c] **Massic activity** is the preferred name for the quantity activity divided by the total mass of the sample. See reference [1].

[d] The reported value, y, of massic activity (activity per unit mass) at the reference time was not measured directly but was derived from measurements and calculations of other quantities. This can be expressed as $y = f(x_1, x_2, x_3, \ldots x_n)$, where f is a mathematical function derived from the assumed model of the measurement process.

The value, x_i, used for each input quantity i has a **standard uncertainty**, $u(x_i)$, that generates a corresponding uncertainty in y, $u_i(y) \equiv |\partial y/\partial x_i| \cdot u(x_i)$, called a **component of combined standard uncertainty** of y.

The **combined standard uncertainty** of y, $u_c(y)$, is the positive square root of the sum of the squares of the components of combined standard uncertainty.

The combined standard uncertainty is multiplied by a **coverage factor** of $k = 2$ to obtain U, the **expanded uncertainty** of y.

Since it can be assumed that the possible estimated values of the massic activity are approximately normally distributed with approximate standard deviation $u_c(y)$, the unknown value of the massic activity is believed to lie in the interval $y \pm U$ with a level of confidence of approximately 95 percent.

For further information on the expression of uncertainties, see references [2] and [3].

[e] The value of each standard uncertainty component, and hence the value of the expanded uncertainty itself, is a best estimate based upon all available information, but is only approximately known. That is to say, the "uncertainty of the uncertainty" is large and not well known. This is true for uncertainties evaluated by statistical methods (e.g., the relative standard deviation of the standard deviation of the mean for the massic count rate is approximately 50%) and for uncertainties evaluated by other methods (which could easily be over estimated or under estimated by substantial amounts). The unknown value of the expanded uncertainty is believed to lie in the interval $U/2$ to $2U$ (i.e., within a factor of 2 of the estimated value).

[f] Estimated limits of detection for photon-emitting impurities are:
1.4 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 8 and 59 keV,
1.1 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 67 and 88 keV,
0.5 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 102 and 197 keV,
0.3 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 205 and 762 keV,
0.2 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 770 and 996 keV, and
0.1 $\gamma \cdot s^{-1} \cdot g^{-1}$ for energies between 1006 and 1900 keV,
provided that the photons are separated in energy by 4 keV or more from photons emitted in the decay of uranium-238, uranium-235, uranium-234, or their progeny.

[g] The stated uncertainty is the standard uncertainty. See reference [5].

[h] Relative standard uncertainty of the input quantity x_i.

[i] The relative change in the output quantity y divided by the relative change in the input quantity x_i. If $|\partial y/\partial x_i| \cdot (x_i/y) = 1.0$, then a 1% change in x_i results in a 1% change in y. If $|\partial y/\partial x_i| \cdot (x_i/y) = 0.05$, then a 1% change in x_i results in a 0.05% change in y.

[j] Relative component of combined standard uncertainty of output quantity y, rounded to two significant figures or less. The relative component of combined standard uncertainty of y is given by $u_i(y)/y \equiv |\partial y/\partial x_i| \cdot u(x_i)/y = |\partial y/\partial x_i| \cdot (x_i/y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y/\partial x_i| \cdot (x_i/y)$, and $u_i(y)/y$, all dimensionless quantities, are listed in columns 3, 4, and 5, respectively. Thus, the value in column 5 is equal to the value in column 4 multiplied by the value in column 3. The input quantities are independent, or very nearly so. Hence the covariances are zero or negligible.

[k] The standard uncertainty for each undetected impurity that might reasonably be expected to be present is estimated to be equal to the estimated limit of detection for that impurity, i.e. $u(x_i)/x_i = 100\%$. $|\partial y/\partial x_i| \cdot (x_i/y)$ = {(response per Bq of impurity)/(response per Bq of U-238)}·{(Bq of impurity)/(Bq of U-238)}. Thus $u_i(y)/y$ is the relative change in y if the impurity were present with a massic activity equal to the estimated limit of detection.

REFERENCES

[1] International Organization for Standardization (ISO), *ISO Standards Handbook - Quantities and Units*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900.

[2] International Organization for Standardization (ISO), *Guide to the Expression of Uncertainty in Measurement*, 1993. Available from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, U.S.A. 1-212-642-4900. (Listed under ISO miscellaneous publications as "ISO Guide to the Expression 1993".)

[3] B. N. Taylor and C. E. Kuyatt, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, NIST Technical Note 1297, 1994. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20407, U.S.A.

[4] National Council on Radiation Protection and Measurements Report No. 58, *A Handbook of Radioactivity Measurements Procedures*, Second Edition, 1985. Available from the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD 20814 U.S.A.

[5] Evaluated Nuclear Structure Data File (ENSDF), August 1997.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0858
Prepared By:	Mary Avins
Carrier Conc:	HNO3
Reference Date:	08/01/1997
Ampoule Mass (g):	5.258 g
Uncertainty:	+/- .6 %
LogBook No:	RC-S-041-034

A Solution Material Info	
Isotope:	Uranium-238
Prepared By:	Mary Avins
Prep Date:	11/21/2005
Verification Date:	11/21/2005
Expiration Date:	11/21/2006
Primary Code:	0858-A
Dilution(mL):	100 mL
Mass of Parent(g):	4.972 g
Density(g/mL):	1.0155

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (bq/g)) * (conversion dpm to bq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (bq/g)) * (conversion dpm to bq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(4.972 g) * (242 bq/g) * (60 dpm/bq) / (100 mL) = 721.9344 dpm/mL
(4.972 g) * (242 bq/g) * (60 dpm/bq) / (1.0155 g/mL) / (100 mL) = 710.9460 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
11/21/2005	Mary Avins	8.2104	100	0858-B	58.3715 dpm/mL	11/21/2005	11/21/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

DEUTSCHER KALIBRIERDIENST (DKD)

Kalibrierlaboratorium für Meßgrößen der Radioaktivität
Calibration laboratory for measurements of radioactivity
AKKREDITIERT DURCH DIE PHYSIKALISCH-TECHNISCHE BUNDESANSTALT (PTB)

Amersham Buchler GmbH & Co KG
Postfach 11 49 Gieselweg 1
D-38001 Braunschweig D-38110 Braunschweig

Telefon (05307) 930-0
Telefax (05307) 930-293
Telefax-Zentrale 930-237

02628
DKD-K-06501
95-10

Kalibrierschein
Calibration Certificate

Kalibrierzeichen
Calibration mark

Gegenstand *Object*	Radioactive Reference Solution
Hersteller *Manufacturer*	Amersham Buchler GmbH & Co KG Postfach 11 49 Gieselweg 1 D-38001 Braunschweig D-38110 Braunschweig
Typ *Type*	RBZB44
Strahler-Nr. *Source number*	ET 491
Auftraggeber *Customer*	Amersham Corporation 2636 S. Clearbrook Drive Arlington Heights, IL 60005 USA-Arlington Heights, IL
Auftragsnummer *Work order number*	112116
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	2
Referenzdatum *Reference date*	1 January 1995

Der Deutsche Kalibrierdienst ist Unterzeichner des multilateralen Übereinkommens der Western European Calibration Cooperation (WECC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Die Kalibrierung erfolgt auf der Grundlage des zwischen der Physikalisch-Technischen Bundesanstalt und dem Träger abgeschlossenen Vertrages.
Dieser Kalibrierschein dokumentiert die Rückführbarkeit auf nationale Normale zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI).
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
The Deutscher Kalibrierdienst is signatory to the multilateral agreement of the Western European Calibration Cooperation (WECC) for the mutual recognition of calibration certificates.
The calibration is performed according to the stipulations of the contract between the Physikalisch-Technische Bundesanstalt and the holder of the calibration laboratory.
This calibration certificate documents the traceability to national standards, which realize the physical units of measurement according to the International System of Units (SI).
The user is obliged to have the object recalibrated at appropriate intervals.

Stempel Seal	Datum Date	Leiter des Kalibrierlaboratoriums Head of the calibration laboratory	Stellvertreter Deputy	Bearbeiter Person responsible
Deutscher Kalibrierdienst DKD-K-06501	18 October 1995	Dr. Dornhöfer	Dr. Thieme	E. Schuler

DC-5-013-4

Amersham

Radioactive Reference Solution

Solution No.:	ET 491
Drawing No.:	VZ-2058
Nuclide:	Lead-210
Radioactive concentration:	38.1 kBq/g
Reference date:	1 January 1995 at 12.00 GMT
Mass of solution:	(5.182 ± 0.001) g
Volume of solution:	approx. 5 ml
Chemical composition:	Solution in 1.2 M HNO3 Carrier: Pb (NO3)2, Bi (NO3)3; each 20 mg/l of the corresponding element.
Measuring method:	The activity was determined by comparision with a reference solution by measurement with a Ge-detector with MCA.
Traceability:	Additional to the direct traceability to the PTB through the DKD this product satisfies the quality assurance requirements of USNRC Regulatory Guide 4.15 Revision 1, February 1979, for achieving NIST traceability through Amersham's participation in the NEI-NIST Measurements Assurance Program of the Nuclear Power Industry.
Uncertainty:	The relative uncertainty of the activity is ± 3 %. The declared uncertainty U is an expanded uncertainty $U = k * u_c$ with a coverage factor of $k = 3$. The combined uncertainty u_c is the sum of all uncertainties which can be evaluated by statistical means (uncertainty type A, u_A) and all other uncertainties (uncertainty type B, u_B) whereby $u_c^2 = u_A^2 + u_B^2$. (Ref.: NIST Technical Note 1297 / WECC-Doc. 19-1990)
Radioactive impurities:	Related to Pb-210 (equal 100 %) the following radioactive impurities were detected: Ra-226: 0.003 %

Deutscher DKD-K-06501 Kalibrierdienst

RC-5-013-47

Amersham
The Health Science Group

Amersham Corporation
2636 S. Clearbrook Drive
Arlington Heights, IL 60005
tel (708) 593-6300
fax (708) 593-8091

Amersham

TRACEABILITY TO NIST

Traceability is the ability to relate the accuracy of measurement of radionuclides to the National Institute of Standards and Technology (NIST). Traceability is achieved by participation in a Measurements Assurance Program linked to NIST and production of certified materials in accordance with a quality assurance program.

Amersham participates in measurement assurance programs conducted by NIST in cooperation with the Nuclear Energy Institute (NEI, formerly USCEA). Additionally, our production facilities and measurement laboratories operate under routinely audited quality assurance programs.

Therefore, Amersham certified standardized products meet or exceed, the NRC requirements for measurements traceable to NIST.

278004C

RC-5-013-4B

Standard Traceability Log Rad

Source Material Info	
Parent Code:	ET491
Prepared By:	Garret Ray
Carrier Conc:	1.2M HNO3
Reference Date:	01/01/1995
Ampoule Mass (g):	5.182 g
Uncertainty:	+/- 3 %
LogBook No:	RC S 014 004

A Solution Material Info	
Isotope:	Lead-210
Prepared By:	Garret Ray
Prep Date:	03/01/1996
Verification Date:	07/12/2005
Expiration Date:	07/12/2006
Primary Code:	ET491-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.0547 g
Density(g/mL):	1.0000

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / (Dilution Vol) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (kBq/g)) * (conversion dpm to kBq) / Density (g/mL)/ (Dilution Vol) = Parent Activity (dpm/g)
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (100 mL) = 115550.4420 dpm/mL
(5.0547 g) * (38.1 kBq/g) * (60000 dpm/kBq) / (1.0000 g/mL) / (100 mL) = 115550.4420 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date
10/20/1997	Richard Kinney	.467	100	ET491-B	524.45 dpm/ml	03/01/1997	03/01/1998
10/29/1997	Richard Kinney	3.0992	500	ET491-C	696.09 dpm/mL	10/29/1998	10/29/1999
04/03/2001	Angela Johnson	.5184	100	ET491-D	582.17 dpm/mL	04/16/2003	04/16/2004
09/15/2003	Angela Johnson	.5132	100	ET491-E	576.33 dpm/mL	11/11/2005	11/11/2006

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Pb-210 Standard ET491-E

A. Fehr
11/11/2005

	Isotope	Detector CPM	BKG CPM	NET CPM	Detector Eff	Standard Mass. Used (mL)	Source DPM/mL
	ET491-E N1	1098.1000	21.6000	1098.1000	2.63365	1.0000	416.9502415
	ET491-E N2	1124.3000	21.6000	1124.3000	2.63365	1.0000	426.8984214
	ET491-E N3	1105.2000	21.6000	1105.2000	2.63365	1.0000	419.6461223
						Average =	421.1649284
Mean Value (Counting) =	421.1649284		**102.491173**	**% of known**			
Stdev =	5.145060708		0.01221626				
Certificate Value =	410.9						
Lower Limit =	410.874807						
Upper Limit =	431.4550498						
Rule 1 Pass/Fail	**Pass**	**Pass**	**Pass**				
Two sigma =	10.29012142						
10 % of Mean =	42.11649284						
Rule 2 (Pass/Fail)	**Pass**						

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

The analyst prepared three calibration sources for source ET491-E by transferring 1.0 mL portions of the standard to glass liquid scintillation vials. Ten mL of Ready Gel liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ready Gel cocktail. The calibration vials and background source were dark adapted for two hours and counted on LSC Yellow (Wallac) using Protocol 31 for Pb-210 standard verification. The efficiency calibration which was used for verification calculations was performed on 4/19/04 using source 0356-A (Pb-210). Each verification source calculation was performed as follows:

Source dpm/g = (A - B)/(C)(D)
where:
A = Ver. source cpm,
B = BKG cpm,
C = System efficiency, (cpm/dpm), and
D = mass used for standard verification.
Reference RAD SOP M-001

Amanda L. Fehr 11/11/05

STANDARDIZATION OF LEAD CARRIER

DATE: 1/30/2006
LOT NUMBER: 1006864

	LEAD PRECIPITATES				Average	Std. Dev.	
	1	2	3	4	13.88	± 0.05	0.003604
Weight of carrier added	1.00	1.01	1.00	1.01	13.81	± 0.12	0.008355
Aliquot (1.00 mL)	1	1	1	1			
filter + ppt	0.0975	0.0970	0.0979	0.0978			
filter	0.0836	0.0832	0.0840	0.0839			
Wt. of ppt., g	0.0139	0.0138	0.0139	0.0139	**13.88**	**mg Pb/mL**	
					13.81	**mg Pb/g**	
mg Ca/mL	13.90	13.80	13.90	13.90			
mg Ca/g	13.90	13.66	13.90	13.76			

0.5% of Mean Value = 0.069 Pass

A satisfactory standardization is obtained when results give a standard deviation of less than 0.5% of the mean value.

ANALYTICS

0781

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

70361-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: April 1, 2005 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	3372	4.5
Cd-109	88	462.6	d	4698	3.3
Co-57	122	271.79	d	2450	3.0
Ce-139	166	137.6	d	3496	2.8
Hg-203	279	46.61	d	7565	2.7
Sn-113	392	115.1	d	4711	2.6
Cs-137	662	30.07	y	3109	3.0
Y-88	898	106.6	d	12320	2.6
Co-60	1173	5.2714	y	5769	2.7
Co-60	1332	5.2714	y	5830	2.6
Y-88	1836	106.6	d	12860	2.6

5.32720 grams 4M HCl solution.
P O NUMBER 2704RD, Item 1

SOURCE PREPARED BY: M Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED: 04-11-2005

This standard will expire one year after the calibration date.

U.S. DEPARTMENT OF COMMERCE
National Institute of Standards & Technology
Gaithersburg, MD 20899

Certificate of Participation

Analytics, Incorporated
Atlanta, Georgia

is a participant for the period January 1, 2005, through December 31, 2005, in a radioactivity measurements assurance program conducted by the National Institute of Standards and Technology, in cooperation with the Nuclear Energy Institute. Continued participation is evidenced by dated Reports of Traceability issued for particular radionuclides, which indicate the deviation of the participant's reported value from that measured by the National Institute of Standards and Technology. The significance of these Reports is addressed below.*

For the Director,

Michael P. Unterweger, Acting Leader
Radioactivity Group
Physics Laboratory

*As guidance for the proper use of Reports of Traceability, it should be emphasized that the National Institute of Standards and Technology is concerned only with fostering good measurements capability and consistency with the national measurements system. The assurance of the proper application of that capability to the ultimate consumer products is the responsibility of each manufacturer of these products and of the Federal regulatory agencies.

A continuing traceability program in radioactivity demonstrates, to the degree established by the periodic assays of calibrated radioactivity samples, a continuing competence to maintain the methods and standards necessary for accurate measurement. Such a program cannot, however, endorse each and every measurement nor the final product, any more than a spot check can vouch for every unchecked item. Care should be taken, therefore, not to imply such endorsement. The proper use of this Report is governed by section 200.114 of Title 15 of the Code of Federal Regulations. These regulations may be met if Reports are quoted only in their entirety. Excerpts out of context may be misleading.

RC-S-039-065b

ANALYTICS

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ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS

BATCH 120

CALIBRATION DATE: April 1, 2005 12:00 EST

Isotope	Energy (keV)	Calibration Method[1]	Statistics[2]	Calibration[2]	Peak Fitting[2]	Geometry[2]	Impurities[2]	Weighing[2]	Combined Standard Uncertainty[2]	Relative Expanded Uncertinty[2] (k=2)
Cd-109	88	HPGe	0.16	1.1	0.88	0.8	0	0.2	1.64	3.3
Co-57	122	HPGe	0.23	1.1	0.71	0.7	0	0.2	1.52	3.0
Ce-139	166	HPGe	0.17	1.0	0.58	0.7	0	0.2	1.38	2.8
Hg-203	279	HPGe	0.11	1.1	0.34	0.7	0	0.2	1.37	2.7
Sn-113	392	HPGe	0.21	1.0	0.35	0.7	0	0.2	1.30	2.6
Cs-137	662	HPGe	0.36	1.1	0.60	0.7	0	0.2	1.49	3.0
Y-88	898	HPGe	0.19	1.0	0.33	0.7	0	0.2	1.29	2.6
Co-60	1173	HPGe	0.31	.97	0.45	0.7	0	0.2	1.33	2.7
Co-60	1332	HPGe	0.33	.93	0.48	0.7	0	0.2	1.32	2.6
Y-88	1836	HPGe	0.24	1.0	0.35	0.7	0	0.2	1.31	2.6

Optional Additional Isotopes

Pb-210	46.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Am-241	59.5	4π LS	0.33	1.1	0	0.9	0.30	0.2	1.50	3.0
Sr-85	514	IC	0.30	1.1	0	0.7	0.17	0.2	1.36	2.7
Cs-134	605	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Cs-134	796	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Mn-54	835	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7
Zn-65	1116	IC	0.30	1.0	0	0.8	0.17	0.2	1.34	2.7

[1]Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)
HPGe (High Purity Germanium Gamma Ray Spectrometer)
IC (Gamma Ray Ionization Chamber)

[2]As Percent (%)from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

Source Material Info	
Parent Code:	0781
Prepared By:	Amanda Fehr
Carrier Conc:	4M HCL
Reference Date:	04/01/2005
Ampoule Mass (g):	5.3272 g
Uncertainty:	+/- 3 %
LogBook No:	RC-S-039-065

A Solution Material Info	
Isotope:	Mixed Gamma
Prepared By:	Amanda Fehr
Prep Date:	04/26/2005
Verification Date:	04/27/2005
Expiration Date:	04/27/2006
Primary Code:	0781-A
Dilution(mL):	100 mL
Mass of Parent(g):	5.1233 g
Density(g/mL):	5.4962

Calculations Converting parent activity to dpm/mL|dpm/g

(Mass of parent(g)) * (Parm Activity (dpm)) * (conversion dpm to dpm) / (Ampoule Mass(g) *(Dilution Vol)) = Parent Activity (dpm/mL)
(Mass of parent(g)) * (Parm Activity (dpm)) * (conversion dpm to dpm) / Density / (Ampoule Mass (g) * (Dilution Vol)) = Parent Activity (dpm/g)
(5.1233 g) * (219149.436 dpm) * (1 dpm/dpm) / (5.3272 g * 100 mL) = 2107.6143 dpm/mL
(5.1233 g) * (219149.436 dpm) * (1 dpm/dpm) / (5.4962 g/mL)/ (5.3272 g * 100 mL) = 383.4709 dpm/g

Secondary Standards

Prep Date	Preparer	Mass Primary	Dilution (mL)	Code	Conc dpm/mL	Verification Date	Expiration Date

General Engineering Laboratories, LLC
Version 1.0 9/18/2000

Verification for Mixed Gamma Standard 0781-A (AM-241 & Cs-137)

A. Fehr
4/29/2005

Am-241	Isotope	Result		Cs-137	Isotope	Result	
	Mixed Gamma N1	9796			Mixed Gamma N1	3753	
	Mixed Gamma N2	9930			Mixed Gamma N2	4015	
	Mixed Gamma N3	10290			Mixed Gamma N3	3878	
Mean Value (Counting) =	10005.33	**102.47**	**Pass**		3882.00	**102.39**	**Pass**
Stdev =	255.471		**Rule 3 (Pass/Fail)**		131.046		**Rule 3 (Pass/I**
Certificate Value =	9764.6				3791.3		
Lower Limit =	9494.391719				3619.908413		
Upper Limit =	10516.27495				4144.091587		
Rule 1 (Pass/Fail)	**Pass**				**Pass**		
Two sigma =	510.9416144				262.091587		
10 % of Mean =	1000.53333333				388.20000000		
Rule 2 (Pass/Fail)	**Pass**				**Pass**		

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

Amanda L. Fehr 4/29/05

Angela A. Johnson 5/6/05

Verification for Mixed Gamma Standard 0781-A (Co-60)

A. Fehr 4/29/2005	**Isotope**	**Result** **pCi/L**		
	Mixed Gamma N1	6132		
	Mixed Gamma N2	6073		
	Mixed Gamma N3	6240		
Mean Value (Counting) =	6148.33	pCi/L	**102.365**	**Pass**
Stdev =	84.690	pCi/L		**Rule 3 (Pass/Fail)**
Certificate Value =	6006.3	pCi/L		
Lower Limit =	5978.954074	pCi/L		
Upper Limit =	6317.712592	pCi/L		
Rule 1 Pass/Fail	**Pass**			
Two sigma =	169.3792589			
10 % of Mean =	614.8333333			
Rule 2 (Pass/Fail)	**Pass**			

Verification Rules

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
Rule 3 = The determined mean value shall be within 10% of the certificate value.

Amanda L. Fehr 4/29/05

Angela A. Johnson 5/6/05

0842

o2si smart solutions®

Certificate of Analysis

Catalog No: 060092-17
Lot No: 1006458
Storage: Ambient
Matrix: 1M HNO_3
Container: 250 ml Narrow Mouth, HDPE
Description: Uranium 500 µg/L ± 0.5% in 1M HNO_3

Quality System Audited & Registered by NSF-ISR to ISO 9001:2000

te Received: 7-OCT-05
piration Date: 11/1/2006

Element	Symbol	CAS No	Source Lot No	Purity %	Concentration ug/L
Uranium Total	U	7440-61-1	7075.42.5	100	500

by: Mark Filla

was prepared gravimetrically using balances calibrated with NIST traceable weights (NIST Test Number 00). Only calibrated Class A volumetric glassware was used to prepare this standard. Sub-boiled distilled acid and deionized water were used to stabilize the product. All raw materials were checked for stoichiometry and purity his standard has been spectrometrically certified by an independent source, which is directly traceable to NIST.

2040 Savage Road • Charleston, SC 29407
Phone (843) 763-4884 • Fax (843) 766-9182
www.o2si.com

RUNLOGS

Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158048001	SAMPLE	DDR1	1001		05-APR-2006 09:52	512068	DONE		
158048002	SAMPLE	DDR1	1003		05-APR-2006 09:52	512068	DONE		
158048003	SAMPLE	DDR1	1004		05-APR-2006 09:52	512068	DONE		
158048004	SAMPLE	DDR1	1005		05-APR-2006 09:52	512068	DONE		
158048005	SAMPLE	DDR1	1009		05-APR-2006 09:52	512068	DONE		
1201051873	MB	DDR1	1010		05-APR-2006 09:52	512068	DONE		
1201051874	DUP	DDR1	1011		05-APR-2006 09:52	512068	DONE		
1201051875	MS	DDR1	1026		05-APR-2006 09:52	512068	DONE		
1201051876	LCS	DDR1	1027		05-APR-2006 09:52	512068	DONE		

Version 1.1 9/5/05
General Engineering Laboratories, LLC

Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158048001	SAMPLE	DDR1	1020		05-APR-2006 08:19	512069	DONE		
158048002	SAMPLE	DDR1	1021		05-APR-2006 08:19	512069	DONE		
158048003	SAMPLE	DDR1	1023		05-APR-2006 08:19	512069	DONE		
1201051879	MS	DDR1	1028		05-APR-2006 09:52	512069	DONE		
1201051880	LCS	DDR1	1029		05-APR-2006 09:52	512069	DONE		
158048004	SAMPLE	DDR1	1077		05-APR-2006 09:52	512069	DONE		
158048005	SAMPLE	DDR1	1078		05-APR-2006 09:52	512069	DONE		
1201051877	MB	DDR1	1079		05-APR-2006 09:52	512069	DONE		
1201051878	DUP	DDR1	1080		05-APR-2006 09:52	512069	DONE		

Version 1.1 9/5/05
General Engineering Laboratories, LLC

Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
1201060429	KNOWN	JXG1	1098		05-APR-2006 17:34	515989	DONE		
158048001	SAMPLE	JXG1	1089		05-APR-2006 17:34	515989	DONE		
158048002	SAMPLE	JXG1	1090		05-APR-2006 17:34	515989	DONE		
158048003	SAMPLE	JXG1	1091		05-APR-2006 17:34	515989	DONE		
1201060425	MB	JXG1	1092		05-APR-2006 17:34	515989	DONE		
1201060426	DUP	JXG1	1093		05-APR-2006 17:34	515989	DONE		
1201060427	MS	JXG1	1094		05-APR-2006 17:34	515989	DONE		
1201060428	LCS	JXG1	1018		06-APR-2006 13:23	515989	DONE		

Version 1.1 9/5/05
General Engineering Laboratories, LLC

Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158048001	SAMPLE	MJH1	GAMMA18		06-APR-2006 23:45	513799	DONE	CAN	14-AUG-2005
158048002	SAMPLE	MJH1	HP		06-APR-2006 23:45	513799	DONE	CAN	01-FEB-2006
158048003	SAMPLE	MJH1	GAMMA13		06-APR-2006 23:46	513799	DONE	CAN	22-JUN-2005
158048004	SAMPLE	MJH1	WELL		06-APR-2006 23:46	513799	DONE	CAN	29-DEC-2005
158048005	SAMPLE	MJH1	GAMMA3		06-APR-2006 23:46	513799	DONE	CAN	25-MAR-2006
1201055603	MB	MJH1	GAMMA16		10-APR-2006 11:17	513799	DONE	CAN	22-MAR-2006
1201055604	DUP	MJH1	GAMMA16		10-APR-2006 15:42	513799	DONE	CAN	22-MAR-2006
1201055605	LCS	MJH1	GAMMA12		12-APR-2006 12:22	513799	DONE	CAN	10-JAN-2006

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158048002	SAMPLE	CXO1	LB4100B1		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
158048003	SAMPLE	CXO1	LB4100B2		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
1201061724	MB	CXO1	LB4100B3		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
1201061725	DUP	CXO1	LB4100C1		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
1201061726	MS	CXO1	LB4100C2		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
1201061727	LCS	CXO1	LB4100C4		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
1201061728	MSD	CXO1	LB4100C3		03-APR-2006 19:01	516630	DONE	2 inch Planchett	18-AUG-2005
158048001	SAMPLE	CXO1	LB4100H4		03-APR-2006 19:10	516630	DONE	2 inch Planchett	18-AUG-2005

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
158048001	SAMPLE	BXF1	PIC1A		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
158048002	SAMPLE	BXF1	PIC1B		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
1201063764	MB	BXF1	PIC3C		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
1201063765	DUP	BXF1	PIC3D		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
1201063766	MS	BXF1	PIC4A		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
1201063767	LCS	BXF1	PIC4B		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
158048003	SAMPLE	BXF1	PIC1C		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
158048004	SAMPLE	BXF1	PIC1D		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
158048005	SAMPLE	BXF1	PIC2A		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
158269001	SAMPLE	BXF1	PIC2B		09-APR-2006 09:57	517517	DONE	Tuffryn Filter	29-JUL-2005
158269002	SAMPLE	BXF1	PIC2C		09-APR-2006 09:58	517517	DONE	Tuffryn Filter	29-JUL-2005
158269003	SAMPLE	BXF1	PIC2D		09-APR-2006 09:58	517517	DONE	Tuffryn Filter	29-JUL-2005
158269004	SAMPLE	BXF1	PIC3B		09-APR-2006 09:58	517517	DONE	Tuffryn Filter	29-JUL-2005

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Instrument Run Log

ID	Sample Type	Analyst	Instrument	Dil	Run Date	Batch Id	Status	Geometry	Cal Date
1201063863	MB	DRS1	KPA11AUTO1		07-APR-2006 13:10	517556	DONE		
1201063864	DUP	DRS1	KPA11AUTO1		07-APR-2006 13:14	517556	DONE		
1201063865	MS	DRS1	KPA11AUTO1		07-APR-2006 13:18	517556	DONE		
1201063867	LCSD	DRS1	KPA11AUTO1		07-APR-2006 13:19	517556	DONE		
1201063866	LCS	DRS1	KPA11AUTO1		07-APR-2006 13:24	517556	DONE		
158048001	SAMPLE	DRS1	KPA11AUTO1		07-APR-2006 13:26	517556	DONE		
158048002	SAMPLE	DRS1	KPA11AUTO1		07-APR-2006 13:28	517556	DONE		
158048004	SAMPLE	DRS1	KPA11AUTO1		07-APR-2006 13:32	517556	DONE		
158048005	SAMPLE	DRS1	KPA11AUTO1		07-APR-2006 13:34	517556	DONE		
158048003	SAMPLE	DRS1	KPA11AUTO1		07-APR-2006 14:10	517556	DONE		

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